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NASA THESAURUS

VOLUME 1

Hierarchical Listing With Definitions

January 2012

NASA STI Program ... in Profile

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The NASA STI program operates under the auspices of the Agency Chief Information Officer. It collects, organizes, provides for archiving, and disseminates NASA's STI. The NASA STI program provides access to the NASA Aeronautics and Space Database and its public interface, the NASA Technical Reports Server, thus providing one of the largest collections of aeronautical and space science STI in the world. Results are published in both non-NASA channels and by NASA in the NASA STI Report Series, which includes the following report types:

- **TECHNICAL PUBLICATION.** Reports of completed research or a major significant phase of research that present the results of NASA Programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA counterpart of peer-reviewed formal professional papers but has less stringent limitations on manuscript length and extent of graphic presentations.
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Table of Contents

Volume 1 • Hierarchical Listing With Definitions

Introduction	v
Nomenclature and Conventions	vi
Cross Reference Structure	viii
Filing Order	ix
Retrospective Indexing	ix
Thesaurus Term Definitions	ix
Previous Editions	x
Typical Listing	xi
Hierarchical Listing With Definitions:	

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

Volume 2 • Rotated Term Display

Introduction

The *NASA Thesaurus* contains the authorized subject terms by which the documents in the NASA Aeronautics and Space Database are indexed and retrieved. The *NASA Thesaurus* comprises two volumes: *Volume 1 – Hierarchical Listing With Definitions* and *Volume 2 – Rotated Term Display*.

The *Hierarchical Listing With Definitions* contains all subject terms and USE cross references currently approved for use, and displays the full hierarchical structure for each term along with a definition when available. In addition, the listing has been developed to serve as an orthographic authority for upper/lowercase forms of all terms and cross references. The **term-added date**, displayed for all terms added after April 1988, is also given. The listing includes terms appearing in the *NASA Thesaurus, Preliminary Edition* (December 1967), the *NASA Thesaurus Alphabetical Update* (September 1971), the *NASA Thesaurus* (1982, 1985, 1988, 1994, and 1998 editions), and other terms approved for use through the end of January 2012. Over 18,400 terms, 4,300 definitions, and approximately 4,500 USE references are contained in the *Hierarchical Listing With Definitions*.

The *Rotated Term Display* is a ready-reference tool that provides thousands of additional ‘access points’ to the thesaurus terminology. It contains the postable terms and nonpostable terms found in the *Hierarchical Listing* arranged in a KWIC (key-word-in-context) index. It is a useful companion to the *Volume 1* listing, containing approximately 52,000 entries.

New editions of the *NASA Thesaurus* CD-ROM are produced annually. Monthly updates are posted on the Thesaurus information page of the NASA scientific and technical information Web site at <http://www.sti.nasa.gov/thestermsupdate.html>. Suggestions for term modification, deletion, and addition may be e-mailed to michael.genuardi-1@nasa.gov, or postal mailed to:

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The terminology of the earliest edition of the *NASA Thesaurus* was based in large part on the actual indexing vocabulary developed by NASA during the 1960s. Other thesauri, notably the DOD *Thesaurus of Engineering and Scientific Terms* (AD-672000), have provided additional candidate terms. The general guidelines for the initial creation of the *NASA Thesaurus* were based on the COSATI *Guidelines for the Development of Information Retrieval Thesauri* (1 September 1967). Continuing development of the *NASA Thesaurus* conforms to the thesaurus standard of the National Information Standards Organization (*Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies*, ANSI/NISO Z39.19-2005).

Nomenclature and Conventions

Postable Terms. Subject terms that have been approved for use in indexing, and thus can be ‘posted.’ In *Volume 1*, postable terms are shown in non-italic type.

Nonpostable Terms. Terms that are included for cross reference information and cannot be used for indexing. In *Volume 1*, nonpostable terms are set in italics.

Term Selection. Subject terms have been chosen on the basis of their significance and use in aerospace literature and their effectiveness in representing productive retrieval concepts. Particular consideration has been given to frequency of use in earlier NASA indexing and search vocabularies, to relationships with other terms in the vocabulary, and to precise scientific and technical usage.

Noun Usage. In general, subject terms are presented in the noun form.

Singular vs. Plural. The plural form has, in general, been used for subject terms. The singular form, however, is employed for non-count nouns (such as *snow*), terms that refer to unique entities such as *Mariner 10 Space Probe*, and terms related to specific processes, properties, and conditions.

Term Length. No more than 42 characters, including spaces, are used for any subject term. Various words in longer terms are sometimes truncated. Full expanded forms of such truncated terms are generally included in the scope notes.

Term Ambiguity. When subject terms have more than one meaning in aerospace usage, or where distinction between terms must be made, clarification is provided in one of two ways:

a) Parenthetical qualifying expressions or glosses are added, becoming part of the subject term. For example:

sizing (shaping)
sizing (surface treatment)

b) Scope notes are also added for explanation or definition; they do not become part of the subject term. For example:

rotational states
SN (LIMITED TO MOLECULAR ENERGY LEVELS — EXCLUDES
ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)

Word Order. Subject terms that consist of more than one word are listed in *direct order*, i.e., in their natural word order rather than in an inverted form. (The *Rotated Term Display* can be used to access terms by embedded words.)

Abbreviations and Acronyms. Abbreviations and acronyms that are in common usage in the aerospace and general engineering communities are employed for some postable terms in this thesaurus. In most cases, USE cross references are made from the unabbreviated forms. For example:

Orbiting Solar Observatory
USE **OSO**

Synonyms. When candidate subject terms are true synonyms, one is chosen to be the valid, or postable term, and the other is provided with a USE cross reference. For example:

Columbium	niobium
USE niobium	UF columbium

Array Terms. Subject terms with meanings either too broad or ambiguous for effective indexing or retrieval of information, have been designated array terms and carry the following scope note (USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW). Relationships with other postable terms are shown by the Related Term (RT) reference only. For example:

∞ **beams**

SN	(USE OF A MORE SPECIFIC TERM IS RECOMMENDED — CONSULT THE TERMS LISTED BELOW)
RT	beams (radiation) beams (supports)

An infinity symbol (∞) precedes an array term in each of its appearances in *Volume 1*.

Identifiers. In the *NASA Thesaurus*, identifiers (i.e., terms that designate unique entities) are treated as regular terms and are provided complete cross references. Most identifiers are proper nouns and many include a numeric or alphabetic designation for a particular model or item. As a general rule, identifiers are added to the thesaurus only if they have an important relation to the aerospace sciences.

F-111 aircraft

UF	LASV TFX aircraft
GS	attack aircraft . fighter aircraft . . F-111 aircraft General Dynamics aircraft . F-111 aircraft Grumman aircraft . F-111 aircraft jet aircraft . turbofan aircraft . . F-111 aircraft supersonic aircraft . F-111 aircraft
RT ∞	aircraft mission adaptive wings variable sweep wings

Cross Reference Structure

Cross reference relationships in the *Hierarchical Listing With Definitions* are shown as follows:

Cross References	Notation
Broader Term	GS
Narrower Term	GS
Related Term	RT
Use	USE
Used For	UF

These cross references have the following applications:

Broader Term. This reference indicates that the term represents a more inclusive concept. In the Generic Structure (GS), the broader terms appear above and to the left of the term referenced. For example:

reentry communication
GS telecommunication
 . space communication
 . . spacecraft communication
 . . . **reentry communication**

The terms *telecommunication*, *space communication*, and *spacecraft communication* are broader terms to *reentry communication*.

Narrower Term. This reference indicates that the term represents a more specific concept. In the Generic Structure (GS), the narrower terms appear below and to the right (indented) of the term referenced. For example:

GS **scanners**
 . Coastal Zone Color Scanner
 . horizon scanners
 . infrared scanners
 . ocean color scanner
 . optical scanners
 . . flying spot scanners
 . . multispectral band scanners
 . . . Thematic Mappers (Landsat)
 . ultrasonic scanners

The terms *Coastal Zone Color Scanner*, *horizon scanners*, *infrared scanners*, *ocean color scanners*, *optical scanners*, and *ultrasonic scanners* are narrower terms to *scanners*. The terms *flying spot scanners*, *multispectral band scanners*, and *Thematic Mappers (Landsat)* are narrower to both *optical scanners* and *scanners*.

The number of narrower terms is not limited. For example, *artificial satellites* has nearly 500 narrower terms.

Related Terms (RT). This reference indicates that the two terms are conceptually associated, but not equivalent or generically related. The RT relationship is reciprocal, as illustrated in the following example:

radar equipment	radio equipment
RT radio equipment	RT radar equipment

Use (USE). This reference indicates that the listed term is not ‘postable,’ i.e., not a valid term, and that the term or terms adjacent to the USE indicator should be used instead. Note that all nonpostable terms are set in italics. For example:

jet airstreams
USE **jet streams (meteorology)**

Used For (UF). This relation is the reciprocal of the USE cross reference and indicates that the term listed above the UF indicator is a valid or ‘postable’ term, and term or terms adjacent to the UF indicator are nonpostable. For example:

jet streams (meteorology)
UF *jet airstreams*

Filing Order

The ordering of subject terms into an alphabetical arrangement can be accomplished in several ways. The most commonly used methods are the letter-by-letter, word-by-word, and the computer sorting order. In the absence of any universal agreement on a standardized approach, a word-oriented modification of the computer sorting technique has been adopted in this thesaurus.

A special feature has been added to this technique to sort numeric designations in natural ascending order. Non-alphanumeric characters contained within terms are sorted prior to alphanumeric characters. In *Volume 2*, non-alphanumerics are ignored altogether for the general KWIC sort. Thus, embedded parentheses are filed before the alphabet in *Volume 1*, but are ignored for filing in *Volume 2*. Hyphens, slashes and periods follow blank spaces.

Retrospective Indexing

Between 1984 and 1993, all terms added to the *NASA Thesaurus* were retrospectively assigned to past database records using a method that combined advanced search strategies and manual review. Most of the terms for which this procedure was carried out can be identified by checking the **term-added date** that appears directly below the term in *Volume 1*. Term-added dates are provided for all terms added to the *NASA Thesaurus* after April 1988.

Thesaurus Term Definitions

Definitions are given for most terms added since 1976 as well as for many earlier terms. Definitions of more common or general scientific terms are given a NASA slant if one exists. Certain x terms are not defined as a matter of policy: common place names, chemical elements, specific models of computers, and non-technical terms. Other terms lack definitions because the *NASA Thesaurus* predates by a number of years the systematic effort to define terms. Nevertheless, definitions of older terms are continually being added.

Many of the definitions contained in the *Thesaurus* were constructed by lexicographers at the NASA Center for AeroSpace Information, who rely on the following sources for their information: experts in the field, literature searches from the NASA STI databases, and specialized references. Other definitions were obtained from the following sources:

AGI. *Glossary of Geology*, 3rd edition. Alexandria, VA, American Geological Institute, 1987.

ASTM. *Compilation of ASTM Standard Definitions*, 6th edition. Philadelphia, PA, ASTM, 1986. Copyright, the American Society for Testing and Materials (ASTM). All rights reserved. Used with the permission of ASTM. The original definitions appeared in the *Annual Book of ASTM Standards*.

DOE. *Energy Data Base Subject Thesaurus* (DOE/TIC-7000-R7). Oak Ridge, TN, Department of Energy, 1987.

IEEE. *Standard Dictionary of Electrical and Electronics Terms*, Fourth ed., New York, NY, IEEE, 1988.

SP-7. *Dictionary of Technical Terms for Aerospace Use*, NASA SP-7. Washington, DC, NASA, 1965.

In some cases, definitions from these sources have been subjected to minor editorial alterations; for example, to make a definition agree in number with the NASA form of the term.

Historical Printed Editions

NASA Thesaurus; Subject Terms for Indexing Scientific and Technical Information. Preliminary Edition, 1967. NASA SP-7030. 3 Vols., *Vol. 1, Alphabetical Listing, A-L; Vol. 2, Alphabetical Listing, M-Z; Vol. 3, Appendixes.*

NASA Thesaurus Alphabetical Update, 1971. NASA SP-7040.

NASA Thesaurus. 1976 Edition. NASA SP-7050. 2 Vols., *Vol. 1, Alphabetical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1982 Edition. NASA SP-7051. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1985 Edition. NASA SP-7053. 2 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary.*

NASA Thesaurus. 1988 Edition. NASA SP-7064. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

NASA Thesaurus. 1994 Edition. NASA SP-7096. 3 Vols., *Vol. 1, Hierarchical Listing; Vol. 2, Access Vocabulary; Vol. 3, Definitions.*

NASA Thesaurus, 1998 Edition, NASA/SP-1998-7501, 2 Vols., *Vol. 1, Hierarchical Listing With Definitions; Vol. 2, Rotated Term Display.*

Typical Hierarchical Listing With Definition

- ① **microbursts (meteorology)**
- ② *(added January 1993)*
- ③ SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
- ④ DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radially from the impact point.
- ⑤ UF *bow echo microburst events*
- ⑥ GS meteorology
 - . micrometeorology
 - . . **microbursts (meteorology)**
 - storms
 - . storms (meteorology)
 - . . downbursts
 - . . . **microbursts (meteorology)**
- ⑦ RT aviation meteorology
 - flight hazards
 - thunderstorms
 - vertical air currents
 - wind shear

Key

1. Postable Term
2. Date Added
3. Scope Note
4. Definition
5. Used For Term
6. Generic Structure
7. Related Term

Typical USE Cross Reference

- ① *vacuum ultraviolet radiation*
- ② USE **far ultraviolet radiation**

Key

1. Nonpostable Term
2. Postable Note

Typical Array Term Listing

- ① ∞ **fields**
- ② SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- ③ RT boson fields
 - electric fields
 - field of view
 - field theory (algebra)
 - field theory (physics)
 - gravitational fields
 - magnetic fields
 - military air facilities
 - self consistent fields
 - visual fields

Key

1. Array Term
2. Scope Note
3. Related Term

NASA THESAURUS

VOLUME 1

HIERARCHICAL LISTING WITH DEFINITIONS

NUMERALS

2001 Mars Odyssey

(added May 2001)

DEF Mars orbiter mission designed to make global observations of Mars to improve our understanding of the Martian climate and geologic history, including the search for liquid water and evidence of past life. The three primary instruments carried onboard are THEMIS (Thermal Emission Imaging System), GRS (Gamma Ray Spectrometer), and MARIE (Mars Radiation Environment Experiment). Launched April 2001.

- GS space missions
 - . Mars missions
 - . . . **2001 Mars Odyssey**
- RT gamma ray spectrometers
 - Mars (planet)
 - Mars exploration
 - Mars surface
 - Mars Surveyor 2001 Mission

A

A stars

- GS celestial bodies
 - . stars
 - . . . early stars
 - . . . hot stars
 - **A stars**
- RT blue stars
 - peculiar stars
 - Wolf-Rayet stars

A-1 aircraft

- UF *Skyraider aircraft*
- GS attack aircraft
 - . **A-1 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . . **A-1 aircraft**
 - monoplanes
 - . **A-1 aircraft**
- RT ∞ aircraft

A-2 aircraft

- UF *Savage aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . . **A-2 aircraft**
 - jet aircraft
 - . **A-2 aircraft**
 - monoplanes
 - . **A-2 aircraft**
 - North American aircraft
 - . **A-2 aircraft**
- RT ∞ aircraft

A2F aircraft

- USE **A-6 aircraft**

A-3 aircraft

- UF *A3D aircraft*
- GS *Skywarrior aircraft*
 - attack aircraft
 - . bomber aircraft
 - . . . **A-3 aircraft**
 - jet aircraft
 - . **A-3 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . . **A-3 aircraft**
 - monoplanes
 - . **A-3 aircraft**
- RT ∞ aircraft

A3D aircraft

- USE **A-3 aircraft**

A3J aircraft

- USE **A-5 aircraft**

A-4 aircraft

- UF *A4D aircraft*
- GS *Skyhawk aircraft*
 - attack aircraft
 - . bomber aircraft
 - . . . **A-4 aircraft**
 - jet aircraft
 - . **A-4 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . . **A-4 aircraft**
 - monoplanes
 - . **A-4 aircraft**
- RT ∞ aircraft
 - J-65 engine

A4D aircraft

- USE **A-4 aircraft**

A-5 aircraft

- UF *A3J aircraft*
- GS *Vigilante aircraft*
 - attack aircraft
 - . bomber aircraft
 - . . . **A-5 aircraft**
 - jet aircraft
 - . **A-5 aircraft**
 - monoplanes
 - . **A-5 aircraft**
 - North American aircraft
 - . **A-5 aircraft**
 - supersonic aircraft
 - . **A-5 aircraft**
- RT ∞ aircraft

A-6 aircraft

- UF *A2F aircraft*
- GS *Intruder aircraft*
 - attack aircraft
 - . bomber aircraft
 - . . . **A-6 aircraft**
 - Grumman aircraft
 - . **A-6 aircraft**
 - jet aircraft
 - . **A-6 aircraft**
 - monoplanes
 - . **A-6 aircraft**
- RT ∞ aircraft

A-7 aircraft

- UF *Corsair aircraft*
- GS attack aircraft
 - . **A-7 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . . **A-7 aircraft**
 - Ling-Temco-Vought aircraft
 - . **A-7 aircraft**
 - monoplanes
 - . **A-7 aircraft**
- RT ∞ aircraft

A-9 aircraft

- GS attack aircraft
 - . **A-9 aircraft**
 - Northrop aircraft
 - . **A-9 aircraft**
 - reconnaissance aircraft
 - . **A-9 aircraft**
- RT ∞ aircraft

A-10 aircraft

- GS attack aircraft
 - . **A-10 aircraft**
 - Republic aircraft
 - . **A-10 aircraft**
- RT ∞ aircraft

A-11 satellite

- USE **Echo 1 satellite**

A-12 satellite

- USE **Echo 2 satellite**

A-37 aircraft

- GS attack aircraft
 - . **A-37 aircraft**
 - Cessna aircraft
 - . **A-37 aircraft**
 - monoplanes
 - . **A-37 aircraft**
- RT ∞ aircraft
 - ∞ military aircraft
 - T-37 aircraft

A-300 aircraft

- GS commercial aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
 - jet aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
 - passenger aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
 - transport aircraft
 - . European Airbus
 - . . . **A-300 aircraft**
- RT ∞ aircraft
 - international cooperation

A-310 aircraft

- GS commercial aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
 - jet aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
 - passenger aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
 - transport aircraft
 - . European Airbus
 - . . . **A-310 aircraft**
- RT international cooperation

A-320 aircraft

- GS commercial aircraft
 - . European Airbus
 - . . . **A-320 aircraft**
 - jet aircraft
 - . European Airbus
 - . . . **A-320 aircraft**
 - passenger aircraft
 - . European Airbus
 - . . . **A-320 aircraft**
 - transport aircraft
 - . European Airbus
 - . . . **A-320 aircraft**
- RT international cooperation

A-330 aircraft

(added September 1994)

- GS commercial aircraft
 - . European Airbus
 - . . . **A-330 aircraft**
 - jet aircraft
 - . European Airbus
 - . . . **A-330 aircraft**
 - passenger aircraft
 - . European Airbus
 - . . . **A-330 aircraft**
 - transport aircraft
 - . European Airbus
 - . . . **A-330 aircraft**
- RT ∞ aircraft
 - international cooperation

A-340 aircraft

(added September 1994)

- GS commercial aircraft
 - . European Airbus

A-380 aircraft

. . A-340 aircraft

jet aircraft

. European Airbus

. . A-340 aircraft

passenger aircraft

. European Airbus

. . A-340 aircraft

transport aircraft

. European Airbus

. . A-340 aircraft

RT ∞ aircraft

international cooperation

A-380 aircraft

(added June 2005)

GS commercial aircraft

. European Airbus

. . A-380 aircraft

jet aircraft

. European Airbus

. . A-380 aircraft

passenger aircraft

. European Airbus

. . A-380 aircraft

transport aircraft

. European Airbus

. . A-380 aircraft

RT civil aviation

international cooperation

AABNCP

USE **E-4A aircraft**

AAP 1 mission

RT Apollo applications program

Apollo project

Skylab program

AAP 2 mission

RT Apollo applications program

Apollo project

Skylab program

AAP 3 mission

RT Apollo applications program

Apollo project

Skylab program

AAP 4 mission

RT Apollo applications program

Apollo project

Skylab program

abbreviations

(added December 1994)

UF *acronyms*

initialisms

RT alphabets

coding

dictionaries

symbols

terminology

words (language)

abdomen

GS anatomy

. **abdomen**

RT digestive system

gastrointestinal system

intestines

peritoneum

stomach

ventral sections

viscera

Abel function

GS analysis (mathematics)

. real variables

. . **Abel function**

functions (mathematics)

. **Abel function**

RT series (mathematics)

aberration

DEF In astronomy, the apparent angular displacement of the position of a celestial body in the direction of motion of the observer, caused by the combination of the velocity of the observer and the velocity of light. In optics, a specific deviation from perfect imagery, as, for

example: spherical aberration, coma, astigmatism, curvature of field, and distortion.

RT abnormalities

anisoplanatism

asphericity

blurring

∞ coma

crystal optics

deviation

distortion

grazing incidence

spatial filtering

abilities

UF *proficiency*

skills

GS **abilities**

. aptitude

RT effort

human performance

intelligence

intelligence tests

mental performance

psychomotor performance

transfer of training

abiogenesis

DEF The development of living organisms from lifeless matter.

GS evolution (development)

. biological evolution

. . **abiogenesis**

RT autocatalysis

chemical evolution

life sciences

panspermia

protobiology

self assembly

spermatogenesis

ablated nosetips

USE **PANT program**

ablation

DEF The removal of surface material from a body by vaporization, melting, chipping, or other erosive process; specifically, the intentional removal of material from a nose cone or spacecraft during high speed movement through a planetary atmosphere to provide thermal protection to the underlying structure.

GS **ablation**

. laser ablation

RT ablative materials

ablative nose cones

aerodynamic heat transfer

aerodynamic heating

aerothermochemistry

atmospheric entry

burnthrough (failure)

charring

cooling

decomposition

erosion

gas-metal interactions

heat shielding

impingement

jet impingement

mass transfer

melting

pyrolysis

reentry

reentry effects

reentry physics

reentry shielding

sublimation

temperature effects

thermal absorption

thermal decomposition

vaporizing

ablative materials

DEF Materials, especially coating materials, designed to provide thermal protection to a body in a fluid stream through the loss of mass.

RT ablation

carbon-phenolic composites

cooling

heat shielding

heat sinks

∞ materials

nose cones

nozzle inserts

pyrolytic materials

refractory materials

temperature

thermal control coatings

thermal protection

ablative nose cones

GS cones

. nose cones

. . **ablative nose cones**

forebodies

. noses (forebodies)

. . nose cones

. . . **ablative nose cones**

RT ablation

heat shielding

reentry shielding

reentry vehicles

rocket nose cones

shielding

Ablestar launch vehicle

GS launch vehicles

. **Ablestar launch vehicle**

rocket vehicles

. multistage rocket vehicles

. . **Ablestar launch vehicle**

RT liquid propellant rocket engines

ABM

USE **apogee boost motors**

abnormalities

RT aberration

deviation

distortion

eccentricity

irregularities

uniqueness

aborigines

RT anthropology

human beings

inhabitants

abort apparatus

UF *flight termination systems*

GS safety devices

. **abort apparatus**

RT aborted missions

aircraft safety

arresting gear

∞ barriers

brakes (for arresting motion)

drag devices

ejection seats

∞ equipment

escape capsules

escape rockets

flying ejection seats

abort trajectories

GS trajectories

. **abort trajectories**

RT aborted missions

emergency landing

MATTS (systems)

aborted missions

RT abort apparatus

abort trajectories

destruction

engine failure

escape capsules

escape rockets

failure

malfunctions

∞ missions

abrasion

DEF The surface loss of a material due to frictional forces.

RT abrasives

chipping

cleaning

cutting

dry friction

erosion
files (tools)
friction
grinding (material removal)
lesions
metallography
polishing
scoring
soil erosion
tribology
wear
wear resistance

abrasion resistance
GS mechanical properties
. wear resistance
. . **abrasion resistance**
RT hardness
∞ resistance
toughness

abrasives
DEF Rocks, minerals, or other substances that, owing to their superior hardness, toughness, consistency, or other properties, are suitable for grinding, cutting, polishing, scouring, or similar use.
RT abrasion
aluminum oxides
Carborundum (trademark)
ceramics
diamonds
grit
paint removal
pumice
quartz
silicon carbides

Abrikosov theory
RT crystal structure
electromagnetic fields
horseshoe vortices
superconductivity
superconductors (materials)
∞ theories
vortices

abscisic acid
(added August 2004)
DEF Abscission-accelerating plant growth substance isolated from young cotton fruit, leaves of sycamore, birch, and other plants, and from potatoes, lemons, avocados, and other fruits.
GS acids
. carboxylic acids
. . **abscisic acid**
organic compounds
. carboxylic acids
. . **abscisic acid**
plant growth regulators
. **abscisic acid**
terpenes
. **abscisic acid**
RT plant physiology
plants (botany)

absolute zero
DEF Temperature of -273. 16 deg. C or -459. 69 deg. F or 0 deg. K at which molecular motion vanishes and a body has no heat energy.
GS temperature
. **absolute zero**
RT cryogenic temperature
cryogenics
subzero temperature
temperature effects
temperature scales
zero point energy

absorbents
UF *molecular sieves*
GS sorbents
. **absorbents**
RT ∞ absorbers
absorbers (equipment)
absorbers (materials)
adsorbents
air conditioning equipment
desiccants

low density materials
material absorption
∞ materials
∞ **absorbents**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT absorbents
absorbers (equipment)
absorbers (materials)
attenuators
cleaners
oscillation dampers
shock absorbers
vibration isolators

absorbers (equipment)
SN (EXCLUDES EQUIPMENT FOR ABSORBING ENERGY)
RT absorbents
∞ absorbers
absorbers (materials)
air conditioning equipment
cleaners
columns (process engineering)
condensers (liquefiers)
cooling systems
degassing
drying apparatus
∞ equipment
material absorption
refrigerating machinery
shock absorbers

absorbers (materials)
SN (EXCLUDES ABSORBENTS--LIMITED TO MATERIALS FOR ABSORBING RADIATION RATHER THAN OTHER MATERIALS)
GS **absorbers (materials)**
. neutron absorbers
. radar absorbers
. . antiradar coatings
. solar energy absorbers
RT absorbents
∞ absorbers
absorbers (equipment)
acoustic retrofitting
attenuators
cleaners
electromagnetic absorption
electromagnetic wave filters
energy absorption
∞ filters
heat sinks
insulation
jackets
low density materials
∞ materials
radiation shielding
refrigerants
shielding
sinks
stopping power
suppressors

absorptance
DEF The ratio of the radiant flux absorbed by a body to that incident upon it.
GS electromagnetic properties
. optical properties
. . **absorptance**
RT albedo
capture effect
cosmic ray albedo
density (mass/volume)
Earth albedo
electromagnetic absorption
light transmission
lunar albedo
microwave absorption
opacity
reflectance
surface properties
transmission
transmissivity
transmittance
transparence

turbidity
∞ **absorption**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The process by which radiant energy is absorbed and converted into other forms of energy. In general, the taking up or assimilation of one substance by another. In vacuum technology, gas entering the interior of a solid.
RT absorption cooling
absorption cross sections
absorption spectra
absorption spectroscopy
absorptivity
activated carbon
adsorption
atomic collisions
attenuation
auroral absorption
beneficiation
capture effect
collision parameters
cosmic ray albedo
damping
desorption
diffusion
drying
electromagnetic absorption
energy absorption
energy absorption films
gamma ray absorption
infrared absorption
infrared spectra
material absorption
materials recovery
microwave absorption
moderation (energy absorption)
molecular absorption
multiphoton absorption
permeating
photoabsorption
planetary atmospheres
polar cap absorption
radiation absorption
self absorption
sorption
sound transmission
thermal absorption
ultraviolet absorption
visible spectrum
x ray absorption

absorption bands
USE **absorption spectra**

absorption coefficient
USE **absorptivity**

absorption cooling
DEF Refrigeration in which cooling is effected by the expansion of liquid ammonia into gas and the absorption of the gas by water. The ammonia is reused after the water evaporates.
GS cooling
. **absorption cooling**
RT ∞ absorption
ammonia
magnetic cooling
refrigerants

absorption cross sections
DEF In radar, cross sections characterized by the amount of power removed from a beam by absorption of radio energy by a target to the power in the beam incident upon the target.
Used for capture cross sections.
UF *capture cross sections*
RT ∞ absorption
∞ cross sections
ionization cross sections
neutron cross sections
radiation absorption
scattering cross sections
stopping power

absorption spectra
DEF The arrays of absorption lines and absorption bands which result from the passage of radiant energy from a continuous source

absorption spectroscopy

through a selectively absorbing medium cooler than the source. Used for absorption bands and spectral absorption.

- UF *absorption bands*
spectral absorption
- GS spectra
 - . radiation spectra
 - . . . **absorption spectra**
 - . . . Fraunhofer lines
 - . . . Herzberg bands
 - . . . telluric lines
 - . spectral bands
 - . . . **absorption spectra**
 - . . . Fraunhofer lines
 - . . . Herzberg bands
 - . . . telluric lines
- RT ∞ absorption
 - Balmer series
- ∞ bands
 - blue shift
 - continuous radiation
 - D lines
 - differential absorption lidar
 - electromagnetic absorption
 - electromagnetic spectra
 - electron spectroscopy
 - electronic spectra
 - emission spectra
 - energy spectra
 - Fraunhofer line discriminators
 - galactic nuclei
 - gamma ray absorptiometry
 - H alpha line
 - H beta line
 - H gamma line
 - H lines
 - ionizing radiation
 - K lines
 - laser spectrometers
 - line spectra
 - microwave absorption
 - microwave spectra
 - molecular spectra
 - molecular spectroscopy
 - oscillator strengths
 - paramagnetic resonance
 - Paschen series
 - photoacoustic spectroscopy
 - photoluminescent bands
 - photon absorptiometry
 - Raman spectra
 - rotational spectra
 - Rydberg series
 - Schumann-Runge bands
 - self absorption
 - solar spectra
 - solar spectrometers
 - spectrum analysis
 - spin temperature
 - stellar spectra
 - symbiotic stars
 - ultraviolet spectra
 - visible spectrum

absorption spectroscopy

- GS spectroscopy
 - . **absorption spectroscopy**
 - . . . optogalvanic spectroscopy
- RT ∞ absorption
 - Fraunhofer lines
 - infrared spectroscopy
 - laser-induced breakdown spectroscopy
 - optical equipment
 - optical measuring instruments
 - ultraviolet spectroscopy

absorptive index

USE **absorptivity**

absorptivity

DEF The capacity of a material to absorb incident radiant energy, measured as the absorptance of a specimen of material thick enough to be completely opaque, and having an optically smooth surface. Used for absorption coefficient and absorptive index.

- UF *absorption coefficient*
absorptive index

GS electromagnetic properties

. optical properties

. . **absorptivity**

- RT ∞ absorption
 - Beer law
 - Bouguer law
 - density (mass/volume)
 - electromagnetic absorption
 - Kirchhoff law of radiation
 - microwave absorption
 - opacity
 - oscillator strengths
 - photoacoustic spectroscopy
 - scattering coefficients
 - self absorption
 - transmissivity
 - transparence

abstracts

- GS documents
 - . **abstracts**
 - summaries
 - . **abstracts**
- RT annotations
 - bibliographies
 - indexes (documentation)
 - information retrieval
 - technical writing

abundance

DEF The mean concentration of an element in a geochemical reservoir, e.g., the abundance of Ni in meteorites or the crustal abundance of oxygen. Also used for the relative average content, e.g., the order of abundance of elements in the Earth's crust is O, Si, AL, Fe, Ca, etc. Used for element abundance.

UF *element abundance*

- RT availability
 - energy policy
 - geochemistry
 - metallic stars
 - metallicity
 - reserves
 - resources
 - stellar composition

AC (current)

USE **alternating current**

AC generators

DEF Generators for the production of alternating-current power. Used for alternating current generators and alternators (generators).

UF *alternating current generators*
alternators (generators)

- GS electric generators
 - . **AC generators**
 - . . linear alternators
 - . . static alternators

- RT compulsators
 - free-piston engines
- ∞ generators
 - rotating generators
 - turbogenerators

AC-1 aircraft

USE **DHC 4 aircraft**

accelerated life tests

DEF Methods designed to approximate, in a short time, the deteriorating effects under normal long-term service conditions.

- RT acceptability
 - evaluation
 - fatigue life
 - life (durability)
 - performance tests
 - quality control
 - service life
- ∞ tests

accelerating agents

- RT ∞ accelerators
 - admixture
- ∞ agents
 - catalysts

retardants

∞ acceleration

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The time rate of change of velocity.
- RT acceleration (physics)
 - acceleration protection
 - acceleration stresses (physiology)
- ∞ accelerators
 - angular acceleration
 - catalysis
 - electromagnetic acceleration
 - electron acceleration
 - gravimetry
 - high acceleration
 - high gravity environments
 - human tolerances
 - impact acceleration
 - particle acceleration
 - physiological acceleration
 - plasma acceleration
 - transverse acceleration

acceleration (physics)

DEF The rate of change of velocity. The act or process of accelerating or the state of being accelerated. Used for boost and G force.

UF *boost*
G force

- GS rates (per time)
 - . **acceleration (physics)**
 - . . angular acceleration
 - . . deceleration
 - . . . spin reduction
 - . . electron acceleration
 - . . high acceleration
 - . . high gravity environments
 - . . impact acceleration
 - . . particle acceleration
 - . . plasma acceleration
 - . . transverse acceleration

- RT ∞ acceleration
 - acceleration measurement
 - acceleration stresses (physiology)
 - accelerometers
 - body kinematics
 - expulsion
 - flight stress (biology)
- ∞ force
 - kinematics
 - kinetics
 - mechanical shock
- ∞ motion
 - physiological acceleration
 - stress (physiology)
 - thrust
 - thrust-weight ratio
 - velocity

acceleration measurement

(added April 1997)

- SN (LIMITED TO TECHNIQUES AND INSTRUMENTATION FOR DETERMINING THE DIRECTION AND MAGNITUDE OF ACCELERATION; USE TERMS FROM THE "ACCELERATION (PHYSICS)" HIERARCHY TO INDICATE THE DATA OBTAINED FROM MEASUREMENT)
- RT acceleration (physics)
 - accelerometers
 - angular acceleration
 - inertial navigation
- ∞ measurement
 - robot sensors
 - transverse acceleration
 - velocity measurement

acceleration protection

- GS protection
 - . **acceleration protection**
- RT ∞ acceleration
 - embedding
 - supine position

acceleration stresses (physiology)

- GS stress (biology)
 - . **acceleration stresses (physiology)**
 - . . centrifuging stress
 - stress (physiology)
 - . **acceleration stresses (physiology)**

. . centrifuging stress
 RT ∞ acceleration
 acceleration (physics)
 aerospace medicine
 artificial gravity
 body kinematics
 dizziness
 gravitational effects
 gravitational physiology
 gravity perception
 head movement
 high acceleration
 lower body negative pressure
 motion sickness
 physiological acceleration
 transverse acceleration

acceleration tolerance

SN (LIMITED TO ABILITY OF ORGANISMS TO WITHSTAND ACCELERATION--FOR EFFECTS ON EQUIPMENT, USE SHOCK RESISTANCE AND MECHANICAL SHOCK)
 GS tolerances (physiology)
 . **acceleration tolerance**
 RT blackout (physiology)
 blackout prevention
 centrifuging stress
 gravitational effects
 gravity perception
 high acceleration
 human centrifuges
 human tolerances
 ∞ resistance

∞ **accelerators**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Machines that ionize gases and electrically accelerate the ions onto targets.
 RT accelerating agents
 ∞ acceleration
 coaxial plasma accelerators
 cyclic accelerators
 Cyclops plasma accelerator
 electron accelerators
 geocyclotrons
 Hall accelerators
 hypervelocity guns
 ion accelerators
 linear accelerators
 mass drivers
 Nimrod accelerator
 particle accelerator targets
 particle accelerators
 plasma accelerators
 racetracks (particle accelerators)
 railgun accelerators
 ram accelerators
 SEPAC (payload)
 storage rings (particle accelerators)
 synchrophasotrons
 Van de Graaff accelerators

accelerometers

DEF Transducers which measure acceleration or gravitational forces capable of imparting acceleration.
 GS measuring instruments
 . **accelerometers**
 . . strain gage accelerometers
 RT acceleration (physics)
 acceleration measurement
 gravimeters
 gravimetry
 gyroscopic pendulums
 mechanical measurement
 pendulums
 seismographs
 shock measuring instruments
 speed indicators
 thrust measurement
 velocity measurement
 vibration meters

acceptability

UF *acceptance*
 RT accelerated life tests
 compatibility
 evaluation
 examination

figure of merit
 inspection
 performance tests
 proving
 quality control
 rejection
 reliability
 risk
 samples
 standards
 suitability
 ∞ tests
 tolerances (mechanics)
 total quality management
 validity

acceptance

USE **acceptability**

acceptor materials

GS semiconductors (materials)
 . **acceptor materials**
 RT carrier density (solid state)
 electrons
 holes (electron deficiencies)
 ∞ materials

access control

DEF Hardware or software features, operating procedures, or management procedures designed to permit authorized access to a computer system.
 RT communication networks
 computer information security
 computer security
 ∞ control
 data transmission
 firewalls (computers)
 intrusion detection (computers)
 multiple access
 multiplexing
 radio communication
 telecommunication

access time

GS time
 . **access time**
 RT data processing rates (per time)
 time constant
 ∞ time response
 transmission rate (communications)

accessories

UF *attachments*
 RT ∞ components
 extensions
 fittings
 inserts
 subassemblies

accident investigation

GS investigation
 . **accident investigation**
 . . aircraft accident investigation
 RT accidents
 automobile accidents
 lessons learned
 wreckage

accident prevention

UF *precautions*
 GS prevention
 . **accident prevention**
 RT accidents
 aerospace safety
 air bag restraint devices
 automobile accidents
 avoidance
 fire prevention
 hazards
 lessons learned
 protection
 risk management
 safety
 safety devices
 safety management
 situational awareness
 warning

warning systems

accident proneness

RT safety devices
 safety factors

accidents

GS **accidents**
 . aircraft accidents
 . . bird-aircraft collisions
 . automobile accidents
 . loss of coolant
 RT accident investigation
 accident prevention
 air bag restraint devices
 crash injuries
 crashes
 destruction
 disasters
 emergencies
 explosions
 fires
 first aid
 hazards
 industrial safety
 injuries
 lessons learned
 sabotage
 safety
 safety devices
 traffic
 wreckage

acclimatization

DEF The adjustments of a human body or other organism to a new environment; the bodily changes which tend to increase efficiency and reduce energy loss. Used for deacclimatization.
 UF *deacclimatization*
 GS adaptation
 . **acclimatization**
 . . altitude acclimatization
 . . cold acclimatization
 . . heat acclimatization
 RT homeostasis
 liquid breathing
 stress (biology)
 stress (physiology)
 tolerances (physiology)

accommodation

RT adaptation
 correction
 eye (anatomy)
 focusing
 visual accommodation

accommodation coefficient

DEF The ratio of the average energy actually transferred between a surface and impinging gas molecules which are scattered by the surface to the average energy which would theoretically be transferred if the impinging molecules reached complete thermal equilibrium with the surface before leaving the surface. Used for thermal accommodation coefficients.
 UF *thermal accommodation coefficients*
 GS coefficients
 . **accommodation coefficient**
 RT heat transfer coefficients

accounting

DEF The practice and system of recording and summarizing business and financial transactions, and reporting as well as verifying and analyzing their results.
 RT budgeting
 costs
 finance

accretion

USE **deposition**

accretion disks

DEF Rotation disks of matter surrounding an astronomical object, such as a star, galactic nucleus, black hole, etc., which is accumulated gravitationally by the object.
 RT astrophysics
 binary stars

accumulations

black holes (astronomy)
blazars
cooling flows (astrophysics)
disks (shapes)
eclipsing binary stars
galactic nuclei
gravitational binding energy
protoplanetary disks
rotating disks
stellar mass accretion
superhumps (astronomy)
x ray binaries

accumulations

RT acquisition
agglomeration
assemblies
coagulation
collection
concentrating
deposition
filling
growth
increasing
input
nucleation
settling
stockpiling

accumulators

DEF Devices or apparatus that accumulate or store. Used for collectors.

UF *collectors*
GS **accumulators**
. accumulators (computers)
. dust collectors
. solar collectors
RT anodes
concentrators
entrapment
fuel systems
pressure vessels
pressurizing

accumulators (computers)

DEF In computer technology, devices which store a number and upon receipt of another number add it to the number already stored and store the sum.

GS accumulators
. **accumulators (computers)**
computer components
. computer storage devices
. . registers (computers)
. . . **accumulators (computers)**
RT adding circuits
counters
∞ equipment

accuracy

DEF The degree of agreement of the measurements with the true value of the magnitude of the quantity measured. Used for error band and fidelity.

UF *error band*
fidelity
GS **accuracy**
. geodetic accuracy
. geometric accuracy
RT angular resolution
calibrating
consistency
correction
definition
drift (instrumentation)
dynamic characteristics
errors
high resolution
hysteresis
linearity
∞ measurement
miss distance
precision
quality
range errors
reliability
resolution
sequential control
standards
surveys

∞ tests
tolerances (mechanics)
validity
virtual properties

ACE satellite

(added December 1999)

USE **Advanced Composition Explorer**

ACEE program

DEF A NASA program started in 1975 to reduce fuel consumption for transport aircraft through the study of structural and aerodynamic energy efficiency as well as engine energy efficiency consisting of engine component improvement, new energy efficient engines, and advanced turbopropellers. The acronym stands for aircraft energy efficiency. Used for Aircraft Energy Efficiency program and energy efficiency transport program.

UF *Aircraft Energy Efficiency program*
Energy Efficiency Transport program

GS programs
. NASA programs
. . **ACEE program**
RT aircraft engines
combustion efficiency

acetaldehyde

GS aldehydes
. **acetaldehyde**

acetals

GS ethers
. **acetals**

acetanilide

UF *phenacetin*
GS nitrogen compounds
. amides
. . **acetanilide**

acetates

GS **acetates**
. cobalt acetates
. lead acetates
. sodium chlorodifluoroacetates
. triacetin
RT acetic acid
acetylsalicylic acid
esters
ethylenediaminetetraacetic acids

acetalation

USE **acetylation**

acetazolamide

GS nitrogen compounds
. amides
. . **acetazolamide**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. . . . **acetazolamide**
RT carbonic anhydrase
diuretics

acetic acid

GS acids
. carboxylic acids
. . fatty acids
. . . **acetic acid**
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
organic compounds
. carboxylic acids
. . fatty acids
. . . **acetic acid**
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
RT acetates
acetyl compounds
triacetin

acetone

GS ketones
. **acetone**
RT acetylacetone

pentanone

acetonitrile

UF *ethane nitrile*
methyl cyanide
GS cyanides
. **acetonitrile**
methyl compounds
. **acetonitrile**
nitrogen compounds
. nitriles
. . **acetonitrile**
organic compounds
. nitriles
. . **acetonitrile**

acetyl compounds

GS organic compounds
. **acetyl compounds**
. . acetylacetone
. . acetylsalicylic acid
RT acetic acid
acetylation
aldehydes
∞ chemical compounds
esters

acetylacetone

GS ketones
. **acetylacetone**
organic compounds
. acetyl compounds
. . **acetylacetone**
RT acetone
pentanone

acetylation

DEF Substitution of an acetyl radical for an active hydrogen. Specifically, formation of cellulose acetate from cellulose. Used for acetation.

UF *acetalation*
GS chemical reactions
. acylation
. . **acetylation**
RT acetyl compounds

acetylcholine

(added August 2004)

DEF A major neurotransmitter in vertebrates at neuromuscular junctions, autonomic ganglia, parasympathetic effector junctions, a subset of sympathetic effector junctions, and at many sites in the central nervous system.

GS neurotransmitters
. **acetylcholine**
organic compounds
. amines
. . **acetylcholine**
RT neuromuscular transmission
synapses
vasodilator agents

acetylene

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkynes
. . . . **acetylene**
RT cyanoacetylene
hydrocarbon fuels
oxyacetylene

acetylsalicylic acid

UF *ASA*
GS acids
. carboxylic acids
. . fatty acids
. . . **acetylsalicylic acid**
organic compounds
. acetyl compounds
. . **acetylsalicylic acid**
. carboxylic acids
. . fatty acids
. . . **acetylsalicylic acid**
RT acetates
salicylates

achievement

RT completeness
goals

- learning
- achondrites**
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . **achondrites**
 Bondoc meteorite
 chassignites
 Kapoeta achondrite
 nakhlites
 Norton County achondrite
 shergottites
 SNC meteorites
 urelites
 RT chondrites
 iron meteorites
- acid base equilibrium**
 GS chemical equilibrium
 . **acid base equilibrium**
 RT ∞ equilibrium
 homeostasis
 pH
 pH factor
 stabilization
 thermodynamic equilibrium
- acid rain**
 DEF Low pH rainfall resulting from atmospheric reactions of aerosols containing chlorides and sulfates (or other negative ions).
 GS precipitation (meteorology)
 . rain
 . . **acid rain**
 RT air pollution
 atmospheric chemistry
 atmospheric moisture
 clouds (meteorology)
 dew
 meteorology
 pH
 rainstorms
 snow
 sulfur oxides
- acidity**
 GS chemical properties
 . **acidity**
 RT hydrogen ions
 ion concentration
 pH
 titration
- acidosis**
 DEF Reduction of alkali reserves due to an excess of acid metabolites.
 RT alkalosis
 hyperventilation
 pH
 pH factor
 toxicity
- acids**
 GS **acids**
 . amino acids
 . . alanine
 . . . phenylalanine
 . . . aspartic acid
 . . cysteine
 . . dopa
 . . folic acid
 . . glutamic acid
 . . glutamine
 . . glycine
 . . hippuric acid
 . . histidine
 . . leucine
 . . . norleucine
 . . lysine
 . . melanoidin
 . . methionine
 . . thyroxine
 . . tryptophan
 . . tyrosine
 . amobarbital
 . ascorbic acid
 . boric acids
 . butyric acid
 . carbonic acid
 . carboxylic acids
 . . acrylic acid
 . . alanine
 . . . phenylalanine
 . . aspartic acid
 . . citric acid
 . . dicarboxylic acids
 . . fatty acids
 . . . acetic acid
 ethylenediaminetetraacetic acids
 iodoacetic acid
 acetylsalicylic acid
 benzoic acid
 benzoic acid
 lipoic acid
 oleic acid
 palmitic acid
 propionic acid
 sebamic acid
 valeric acid
 abscisic acid
 folic acid
 formhydroxamic acid
 formic acid
 Hexogenes (trademark)
 lactic acid
 lysine
 nicotinic acid
 oxalic acid
 oxamic acids
 tryptophan
 chromic acid
 cyanuric acid
 cytidylic acid
 hydrazoic acid
 hydrobromic acid
 hydrochloric acid
 hydrocyanic acid
 hydrofluoric acid
 nitric acid
 nucleic acids
 deoxyribonucleic acid
 complementary DNA
 ribonucleic acids
 indoleacetic acids
 oxidase
 perchloric acid
 phosphoric acid
 sulfonic acid
 sulfuric acid
 thymidine
 thymine
 uric acid
 uridylic acid
 xanthic acids
 RT adrenocorticotropin (ACTH)
 anhydrides
 hydrogen compounds
 inorganic compounds
 ∞ oxygen compounds
- acoustic attenuation**
 GS attenuation
 . wave attenuation
 . . **acoustic attenuation**
 . . . shock wave attenuation
 RT acoustic coupling
 acoustics
 anechoic chambers
 atmospheric attenuation
 bioacoustics
 grazing flow
 noise reduction
 sound amplification
 wave propagation
 zero sound
- acoustic combustion*
 USE **combustion stability**
- acoustic coupling**
 (added September 1988)
 GS coupling
 . **acoustic coupling**
 RT acoustic attenuation
 acoustic excitation
 acoustics
 energy transfer
 sound waves
- wave interaction
- acoustic delay lines**
 DEF Devices used in a communications link or a computer memory in which the signal is delayed by the propagation of sound waves. Used for sonic waveguides.
 UF *sonic waveguides*
 GS delay lines
 . **acoustic delay lines**
 RT computer storage devices
 delay circuits
 surface acoustic wave devices
 transmission lines
- acoustic detection*
 USE **sound detecting and ranging**
- acoustic ducts**
 GS ducts
 . **acoustic ducts**
 RT grazing flow
 noise reduction
 spatial marching
- acoustic emission**
 DEF The stress and pressure waves generated during dynamic processes in materials and used in assessing structural integrity in machined parts.
 GS emission
 . **acoustic emission**
 RT acoustic measurement
 crack propagation
 failure analysis
 fatigue testing machines
 nondestructive tests
 stress waves
- acoustic excitation**
 DEF The process of inducing vibration in a structure by exposure to sound waves.
 GS excitation
 . wave excitation
 . . **acoustic excitation**
 RT acoustic coupling
 acoustic resonance
 acoustics
 sound amplification
 surface noise interactions
 thermoacoustic effects
- acoustic fatigue**
 UF *sonic fatigue*
 GS fatigue (materials)
 . **acoustic fatigue**
 RT acoustics
- acoustic frequencies**
 UF *sound frequencies*
 GS frequencies
 . **acoustic frequencies**
 . . audio frequencies
 . . . quefrequencies
 . . . screech tones
 RT acoustic measurement
 acoustic properties
 acoustic resonance
 acoustics
 frequency ranges
 noise spectra
 pressure oscillations
 resonant frequencies
 sound waves
 subaudible frequencies
 ultrasonic radiation
 whispering gallery modes
- acoustic generators*
 USE **sound generators**
- acoustic imaging**
 (added February 1993)
 GS imaging techniques
 . **acoustic imaging**
 . . acoustical holography
 RT acoustic measurement
 acoustic scattering
 nondestructive tests

acoustic impedance

ultrasonic flaw detection

acoustic impedance

- GS acoustic properties
 - . **acoustic impedance**
 - impedance
 - . **acoustic impedance**
- RT acoustics
 - evanescent waves
 - grazing flow

acoustic instability

- GS acoustic properties
 - . **acoustic instability**
 - stability
 - . **acoustic instability**
- RT signal fading
 - thermoacoustic effects

acoustic levitation

DEF Method by which molten materials in space are suspended during processing experiments in the low gravity environment. Also, the use of very intense sound waves to keep a body suspended, thereby eliminating any container contact.

- GS levitation
 - . **acoustic levitation**
- RT buoyancy
 - space processing

acoustic measurement

- SN (MEASUREMENT OF PROPERTIES, QUANTITIES OR CONDITIONS ASSOCIATED WITH ELASTIC WAVES)
- DEF Measurement of properties, quantities, or conditions of acoustical, i.e., mechanical waves. Used for sound measurement.
- UF *sound measurement*
- GS **acoustic measurement**
 - . noise measurement
- RT acoustic emission
 - acoustic frequencies
 - acoustic imaging
 - ambience
 - anechoic chambers
 - audio frequencies
 - audiometry
 - cepstral analysis
 - effective perceived noise levels
 - frequency measurement
 - grazing flow
- ∞ measurement
 - mechanical measurement
 - noise meters
 - reverberation chambers
 - seismographs
 - sound pressure
 - sound waves
 - ultrasonic tests

acoustic microscopes

DEF Instruments which use acoustic radiation at microwave frequencies to allow visualization of microscopic detail exhibited in elastic properties of objects. Used for scanning laser acoustic microscope (SLAM).

- UF *scanning laser acoustic microscope (SLAM)*
- GS microscopes
 - . **acoustic microscopes**
- RT acoustic propagation
 - imaging techniques
 - microwave frequencies
 - optical equipment
 - photoacoustic microscopy
 - wave propagation

acoustic nozzles

- RT ∞ nozzles
 - sonic nozzles
 - sound generators

acoustic propagation

- GS transmission
 - . wave propagation
 - . . **acoustic propagation**
 - . . . sound propagation
- RT acoustic microscopes
 - acoustical holography
 - acoustics

- elastic waves
- ∞ propagation
 - whispering gallery modes

acoustic properties

- GS **acoustic properties**
 - . acoustic impedance
 - . acoustic instability
 - . acoustic scattering
 - . . reverberation
 - . acoustic velocity
 - . sound intensity
 - . . zero sound
- RT acoustic frequencies
 - field strength
 - grazing flow
 - Lamb waves
 - mechanical properties
- ∞ physical properties
- ∞ properties
- ∞ resistance
 - sound waves
 - wave dispersion

acoustic radiation

- USE **sound waves**

acoustic resonance

- (added June 1997)
- GS resonance
 - . **acoustic resonance**
- RT acoustic excitation
 - acoustic frequencies
 - acoustics
 - resonant frequencies
 - resonant vibration

acoustic retrofitting

- DEF Modification, especially of aircraft, to effect noise reduction; specifically, the introduction of absorber materials and jet noise silencers.
- GS retrofitting
 - . **acoustic retrofitting**
- RT absorbers (materials)
 - aerodynamic noise
 - aircraft design
 - aircraft noise
 - jet aircraft noise
 - mufflers
 - noise reduction
 - propeller noise
 - vibration isolators

acoustic scattering

- GS acoustic properties
 - . **acoustic scattering**
 - . . reverberation
 - scattering
 - . wave scattering
 - . . **acoustic scattering**
 - . . . reverberation
- RT acoustic imaging
 - acoustic sounding
 - acoustics
 - deep scattering layers
 - reciprocity theorem
 - sodar
 - sound detecting and ranging
 - surface noise interactions
 - underwater acoustics

acoustic simulation

- GS simulation
 - . environment simulation
 - . . **acoustic simulation**
- RT elastic waves
 - flight simulation
 - reverberation chambers

acoustic sounding

- GS sounding
 - . **acoustic sounding**
- RT acoustic scattering
 - acoustics
 - Earth atmosphere
 - meteorology
 - rocket sounding
 - rocket vehicles
 - sounding rockets

- ultrasonic tests
- underground acoustics
- upper atmosphere

acoustic stability

- USE **frequency stability**

acoustic streaming

- DEF Unidirectional flow currents in a fluid that are due to the presence of sound waves.
- RT fluid flow
 - fluid switching elements
 - fragmentation
 - sound waves
 - streamlining

acoustic velocity

- DEF The speed of propagation of sound waves. Used for sonic speed, sound barrier, and sound velocity.
- UF *sonic speed*
 - sound barrier*
 - sound velocity*
- GS acoustic properties
 - . **acoustic velocity**
 - rates (per time)
 - . **acoustic velocity**
 - velocity
 - . **acoustic velocity**
- RT ∞ barriers
 - exhaust velocity
 - Gutenberg zone
 - Mach cones
 - Mach number
 - sonic booms
 - sound pressure
 - subsonic speed
 - supersonic speed
 - transonic speed

acoustic vibrations

- USE **sound waves**

acoustical holography

- UF *sonoholography*
 - sound holography*
- GS imagery
 - . photography
 - . . holography
 - . . . **acoustical holography**
 - imaging techniques
 - . acoustic imaging
 - . . **acoustical holography**
- RT acoustic propagation
 - imaging techniques
 - sound waves
 - wave front reconstruction

acoustics

- DEF The study of sound, including its production, transmission, and effects. Those qualities of an enclosure that together determine its character with respect to distinct hearing. Used for sound.
- UF *sound*
- GS **acoustics**
 - . aeroacoustics
 - . . computational aeroacoustics
 - . bioacoustics
 - . electroacoustics
 - . geometrical acoustics
 - . magnetoacoustics
 - . microsonics
 - . psychoacoustics
 - . underwater acoustics
- RT acoustic attenuation
 - acoustic coupling
 - acoustic excitation
 - acoustic fatigue
 - acoustic frequencies
 - acoustic impedance
 - acoustic propagation
 - acoustic resonance
 - acoustic scattering
 - acoustic sounding
 - anechoic chambers
 - architecture
 - audio tapes
 - auditory perception
 - auditory stimuli

- auditory tasks
 - comfort
 - earphones
 - echoes
 - effective perceived noise levels
 - elastic waves
 - harmonic excitation
 - harmonic generations
 - harmonic oscillation
 - harmonics
 - hum
 - infrasonic frequencies
 - Lamb waves
 - Lame wave equations
 - loudness
 - noise (sound)
 - noise pollution
 - noise propagation
 - noise reduction
 - octaves
 - opacity
 - phonetics
 - power spectra
 - ∞ science
 - simple harmonic motion
 - sonic anemometers
 - sound amplification
 - sound fields
 - sound propagation
 - sound transmission
 - sound waves
 - speech
 - stereophonics
 - thermoacoustic effects
 - ultrasonic cleaning
 - ultrasonic scanners
 - ultrasonics
 - verbal communication
 - vibration
 - vibration damping
 - voice communication
 - zero sound
- acousto-optics**
- RT Bragg cells
 - crystal optics
 - electro-optics
 - geometrical optics
 - imagery
 - light modulators
 - magneto-optics
 - optical properties
 - optical switching
 - ∞ optics
 - photoacoustic microscopy
 - photoacoustic spectroscopy
 - thermoacoustic effects
 - tunable filters
- ACPL (Spacelab)*
- USE **Atmospheric Cloud Physics Lab (Spacelab)**
- acquired immunodeficiency syndrome**
(added August 1991)
- DEF A condition caused by the human immunodeficiency virus (HIV) attacking the human body's T-cells, thereby rendering an infected individual defenseless against diseases.
 - UF *AIDS (disease)*
 - GS diseases
 - . infectious diseases
 - . . viral diseases
 - . . . **acquired immunodeficiency syndrome**
 - signs and symptoms
 - . **acquired immunodeficiency syndrome**
 - RT antibodies
 - hepatitis
 - human immunodeficiency virus
 - immune systems
 - immunology
 - interferon
 - meningitis
 - physiological defenses
 - pneumonia
- vaccines
- acquisition**
- GS **acquisition**
 - . data acquisition
 - . target acquisition
 - RT accumulations
 - collection
 - detection
 - documentation
 - ∞ receiving
 - recognition
- acriflavine**
- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **acriflavine**
 - RT antiseptics
 - dyes
- acrobatics (aircraft)*
- USE **aerobatics**
- acroleins**
- GS aldehydes
 - . **acroleins**
 - RT toxicity and safety hazard
- acronyms*
- USE **abbreviations**
- ACRV*
- USE **Assured Crew Return Vehicle**
- acrylates**
- GS esters
 - . **acrylates**
 - RT resins
- acrylic acid**
- GS acids
 - . carboxylic acids
 - . . **acrylic acid**
 - organic compounds
 - . carboxylic acids
 - . . **acrylic acid**
- acrylic resins**
- UF *methacrylate resins*
 - polyacrylates*
 - GS plastics
 - . synthetic resins
 - . . addition resins
 - . . . **acrylic resins**
 - resins
 - . synthetic resins
 - . . addition resins
 - . . . **acrylic resins**
 - RT latex
 - polyacrylonitrile
 - thermoplastic resins
- acrylonitriles**
- UF *vinyl cyanide*
 - GS nitrogen compounds
 - . nitriles
 - . . **acrylonitriles**
 - . . . polyacrylonitrile
 - organic compounds
 - . nitriles
 - . . **acrylonitriles**
 - . . . polyacrylonitrile
 - RT plastics
- ACTH*
- USE **adrenocorticotropin (ACTH)**
- actinide series**
- DEF The series of elements beginning with actium, Element No. 89, and continuing through lawrencium, Element No. 103.
 - GS chemical elements
 - . **actinide series**
 - . . actinium
 - . . radium
 - . . . radium isotopes
 - radium 226
 - . . thorium
 - . . . thorium isotopes
 - . . transuranium elements
- . . . americium
 - americium isotopes
 - americium 241
 - . . . berkelium
 - . . . californium
 - californium isotopes
 - . . . curium
 - curium isotopes
 - curium 242
 - curium 244
 - . . . einsteinium
 - . . . fermium
 - . . . lawrencium
 - . . . mendelevium
 - . . . neptunium
 - neptunium isotopes
 - . . . nobelium
 - . . . plutonium
 - plutonium isotopes
 - plutonium 238
 - plutonium 239
 - plutonium 240
 - plutonium 241
 - plutonium 244
 - . . . sergenium
 - . . . uranium
 - . . . uranium isotopes
 - uranium 232
 - uranium 233
 - uranium 234
 - uranium 235
 - uranium 238
 - RT radioactive isotopes
 - radioactive materials
 - transition metals
- actinide series compounds**
- GS **actinide series compounds**
 - . californium compounds
 - . curium compounds
 - . einsteinium compounds
 - . neptunium compounds
 - . plutonium compounds
 - . . plutonium fluorides
 - . . plutonium oxides
 - . thorium compounds
 - . . thorium fluorides
 - . . thorium oxides

actinium

- . uranium compounds
- . . uranium carbides
- . . uranium fluorides
- . . uranium oxides
- RT ∞ chemical compounds
- ∞ Group 3B compounds

actinium

- GS chemical elements
- . actinide series
- . . **actinium**
- metals
- . actinide series
- . . **actinium**

actinographs

- USE **actinometers**

actinometers

DEF The general name for instruments used to measure the intensity of radiant energy, particularly that of the sun. Used for actinographs and emissographs.

- UF *actinographs*
- emissographs*
- GS measuring instruments
- . radiation measuring instruments
- . . **actinometers**
- . . . infrared spectrometers
- filter wheel infrared spectrometers
- pyranometers
- radiometers
- Dicke radiometers
- infrared detectors
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- microwave radiometers
- Advanced Microwave Sounding Unit
- passive L-band radiometers
- pressure modulator radiometers
- spectroradiometers
- MISR (radiometry)
- MODIS (radiometry)
- solar spectrometers
- spectroheliographs
- spectrophotometers
- infrared spectrophotometers
- ultraviolet spectrophotometers
- ultraviolet detectors
- ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- ultraviolet spectrophotometers
- x ray detectors
- RT dosimeters
- Fabry-Perot spectrometers
- field intensity meters
- spectrometers

actinomycetes

- GS microorganisms
- . bacteria
- . . **actinomycetes**

actinomycin

- GS drugs
- . antibiotics
- . . **actinomycin**

activated carbon

- GS charcoal
- . **activated carbon**
- RT ∞ absorption
- carbon
- filtration
- hemoperfusion
- water treatment

activated sludge

DEF A semiliquid mass removed from the

liquid flow of sewage and subjected to aeration and aerobic microbial action. The end product is dark to golden brown, partially decomposed, granular and flocculent, and has an earthy odor when fresh.

- GS sludge
- . **activated sludge**
- RT biodegradation
- human wastes
- metabolic wastes
- sewage
- wastes

activation

- RT actuation
- catalysis
- deactivation
- electromagnetic absorption
- excitation
- flotation
- initiation
- ionization potentials
- irradiation
- microwave absorption
- sensitizing
- starting
- stimulation

activation (biology)

- RT activation energy
- ∞ biology
- ∞ cells
- enzymes
- stimulation

activation analysis

DEF A method of chemical analysis, especially for small traces of materials, based on the detection of characteristic radiations following a nuclear bombardment.

- GS **activation analysis**
- . neutron activation analysis
- RT ∞ analyzing

activation energy

- RT activation (biology)
- binding energy
- Damkohler number
- electron energy
- ∞ energy
- heat
- nuclear binding energy
- nuclear capture
- proton energy
- rotons
- surface energy

active control

DEF The automatic activation of various control surface functions in aircraft.

- GS automatic control
- . adaptive control
- . . **active control**
- RT aeroservoelasticity
- aircraft control
- ∞ control
- interactive control
- piezoelectric actuators
- self adaptive control systems
- self alignment
- servomechanisms
- smart structures

active galactic nuclei

- GS galactic nuclei
- . **active galactic nuclei**
- RT active galaxies
- blazars
- galactic radiation
- ∞ nuclei
- quasars
- radio galaxies
- Seyfert galaxies

active galaxies

- GS celestial bodies
- . galaxies
- . . **active galaxies**
- . . . Markarian galaxies
- . . . radio galaxies

- . . . Seyfert galaxies
- RT active galactic nuclei
- blazars
- galactic nuclei
- galactic radiation
- quasars

active glaciers

- USE **glaciers**

Active Magneto Particle Tracer Explorers

- USE **AMPTE (satellites)**

active satellites

DEF Satellites which transmit a signal, in contrast to passive satellites.

- GS artificial satellites
- . **active satellites**
- . . SYNCOM satellites
- . . . Early Bird satellites
- . . . SYNCOM 1 satellite
- . . . SYNCOM 2 satellite
- . . . SYNCOM 3 satellite
- . . . SYNCOM 4 satellite
- RT Advent Project
- Explorer 29 satellite
- Explorer 36 satellite
- geodetic satellites
- GEOS 1 satellite
- GEOS 2 satellite
- GEOS 3 satellite
- navigation satellites
- NAVSTAR satellites
- passive satellites
- synchronous satellites

active sites (chemistry)

(added August 2004)

DEF The reactive parts of a molecule that directly participate in its specific combination with another molecule.

- UF *binding sites*
- catalytic sites*
- reactive centers*
- RT binding energy
- catalytic activity
- chemical bonds
- enzyme inhibitors

active volcanoes

- USE **volcanoes**

∞ activity

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT activity (biology)
- extravehicular activity
- faculae
- intravehicular activity
- radioactivity
- solar activity

activity (biology)

- UF *biological activity*
- RT ∞ activity
- biological effects
- ∞ biology
- catalytic activity

activity cycles (biology)

- GS cycles
- . **activity cycles (biology)**
- RT ∞ biology
- circadian rhythms
- phenology
- photoperiod
- rhythm (biology)
- zeitgebers

ACTS

- SN (ADVANCED COMMUNICATIONS TECHNOLOGY SATELLITE)
- UF *Advanced Communications Technology Sat*
- GS artificial satellites
- . communication satellites
- . . **ACTS**
- RT extremely high frequencies
- microwave transmission

satellite communication

actuation

RT activation
 actuators
 excitation
 initiation
 nutation
 sensitizing
 starting
 stimulation

actuator disks

GS disks (shapes)
 . **actuator disks**
 RT ∞ disks
 ∞ fans
 propellers

actuators

DEF Mechanisms to activate process control equipment, e.g., valves. Used for cartridge actuated devices, hydraulic actuators, and triggers.

UF *cartridge actuated devices*
hydraulic actuators
triggers

GS **actuators**

. piezoelectric actuators

RT actuation
 aeroservoelasticity
 aircraft hydraulic systems
 automatic control valves
 cams
 control valves
 controllers
 ∞ effectors
 electroactive polymers
 explosive devices
 ∞ instruments
 microoptoelectromechanical systems
 missile control
 propellant actuated instruments
 regulators
 servomechanisms
 servomotors
 shape control
 smart materials
 solenoids
 starters
 stepping motors
 torque motors

acuity

DEF The keenness of ability to detect and discriminate.

GS **acuity**

. visual acuity

. . hyperopia

RT adaptation
 discrimination
 frequency response
 perception
 sensitivity
 thresholds (perception)

acylation

GS chemical reactions
 . **acylation**
 . . acetylation
 RT Friedel-Craft reaction

AD/I B

USE **Explorer 25 satellite**

AD/I satellite

USE **Explorer 24 satellite****Ada (programming language)**

DEF A programming language based on PASCAL, originally developed on behalf of the US Department of Defense for use in embedded computer systems. It is named Ada in honor of Augusta Ada Byron, countess of Lovelace, primarily due to the fact that she was the assistant and patron of Charles Babbage and is considered the world's first programmer.

GS languages
 . programming languages
 . . high level languages

. . . **Ada (programming language)**

RT computer programming
 embedded computer systems
 object-oriented programming

AD-A satellite

USE **Explorer 19 satellite****adaptation**

DEF The adjustment, alteration or modification of an organism to fit it more perfectly for existence in its environment.

GS **adaptation**

. acclimatization
 . . altitude acclimatization
 . . cold acclimatization
 . . heat acclimatization
 . desert adaptation
 . retinal adaptation
 . . dark adaptation
 . . light adaptation
 accommodation
 acuity
 correction
 fitting
 hibernation
 homeostasis
 perception
 reaction time
 retraining
 sensitivity
 thresholds (perception)
 vision

RT

adapters

DEF Devices or contrivances used or designed primarily to fit or adjust one thing to another. Devices, appliances or the like used to alter something so as to make it suitable for a use for which it was not originally designed.

GS **adapters**

. multiple docking adapters

RT

connectors
 extensions
 fittings
 joints (junctions)

adaptive controlUF *adaptive control systems*

GS automatic control

. **adaptive control**

. . active control
 . . model reference adaptive control
 . . self adaptive control systems

RT

automata theory

autonomy
 ∞ control
 control theory
 cybernetics
 dynamic control
 feedback control
 feedforward control
 machine learning
 mission adaptive wings
 optimal control
 robot control
 sampled data systems
 self alignment
 smart structures

*adaptive control systems*USE **adaptive control****adaptive filters**

RT bandpass filters
 bandstop filters
 electric filters
 electromagnetic wave filters

∞ filters

IIR filters
 linear filters
 optical filters
 space-time adaptive processing
 tracking filters
 tunable filters

adaptive optics

DEF Real-time optical correction for atmospheric perturbations and other system error sources.

RT anisoplanatism
 atmospheric optics
 computer techniques
 deformable mirrors
 feedback control
 honeycomb mirrors
 imaging techniques
 instrument compensation
 laser guide stars
 optical correction procedure
 optical transfer function
 ∞ optics
 segmented mirrors
 self adaptive control systems

adatoms*(added September 2002)*

DEF Atoms adsorbed on a solid surface. Adatoms and their associated properties are often exploited in the development of microelectronic and nanoelectronic structures.

UF *adsorbed atoms*

GS atoms

. **adatoms**

RT adsorption
 atomic clusters
 chemisorption
 metal surfaces
 molecular electronics
 nanostructures (devices)
 nanotechnology
 surface diffusion

*adders (circuits)*USE **adding circuits****adding circuits**UF *adders (circuits)**binary summators*

GS circuits

. **adding circuits**

computer components

. **adding circuits**

RT accumulators (computers)

binary integration

logic circuits

addition

RT addition theorem

amount

arithmetic

computation

number theory

restoration

addition resins

SN (CARBON CHAIN POLYMERS--FOR HETEROATOM CHAIN POLYMERS, USE POLYETHER RESINS)

GS plastics

. synthetic resins

. . **addition resins**

. . . acrylic resins

. . . vinyl copolymers

resins

. synthetic resins

. . **addition resins**

. . . acrylic resins

. . . vinyl copolymers

RT

crosslinking
 polybutadiene
 polyethylene terephthalate
 polyethylenes
 polyisobutylene
 polypropylene
 polystyrene
 polyvinyl alcohol
 polyvinyl chloride
 synthesis (chemistry)
 synthetic fibers
 vulcanized elastomers

addition theorem

GS number theory

. **addition theorem**

theorems

. **addition theorem**

RT addition

additives

DEF Materials or substances added to

addressing

something else for a specific purpose. Used for doping (additives).

UF *doping (additives)*
GS **additives**

. admixtures
. antifreezes
. antiicing additives
. antiknock additives
. antioxidants
. oil additives
. opacifiers
. plasticizers
. propellant additives
. . . propellant binders
. . . solid rocket binders

RT ∞ agents
alloying
antimisting fuels
binders (materials)
carrier injection
catalysts
coatings
diluent
dopes
doping (materials)
fillers
high energy fuels
inhibitors
interstitials
lubricants
majority carriers
minority carriers
modulation doping
neutralizers
neutron transmutation doping
pigments
preservatives
retardants
solvents
stabilizers (agents)
suppressors
tetrahydrofuran
thickeners (materials)
traveling solvent method
vinyl copolymers

addressing

RT coding
computer programming

adducts

DEF Chemical compounds with weak bonds, e.g., occlusive or Van der Waal bonds.
RT ∞ chemical compounds

Aden

USE **Southern Yemen**

adenines

GS bases (chemical)
. **adenines**
organic compounds
. carbohydrates
. . . glucosides
. . . nucleosides
. . . . **adenines**
. cyclic compounds
. . heterocyclic compounds
. . . purines
. . . . **adenines**
. nucleotides
. . **adenines**
phosphorus compounds
. phosphates
. . **adenines**
RT ribonucleic acids

adenosine diphosphate

UF *ADP*
GS organic compounds
. coenzymes
. . **adenosine diphosphate**
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . **adenosine diphosphate**
. nucleotides
. . adenosines
. . . **adenosine diphosphate**
phosphorus compounds

. phosphates
. . diphosphates
. . . **adenosine diphosphate**

adenosine monophosphate

(added August 2004)
DEF Adenine nucleotide containing one phosphate group.
UF *adenylic acid*
AMP (biochemistry)
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . **adenosine monophosphate**
. nucleotides
. . adenosines
. . . **adenosine monophosphate**
phosphorus compounds
. phosphates
. . **adenosine monophosphate**
RT adenosine triphosphate
cyclic AMP
deoxyribonucleic acid
metabolism

adenosine triphosphate

UF *ATP*
GS organic compounds
. coenzymes
. . **adenosine triphosphate**
. cyclic compounds
. . heterocyclic compounds
. . . adenosines
. . . . **adenosine triphosphate**
. nucleotides
. . adenosines
. . . **adenosine triphosphate**
phosphorus compounds
. phosphates
. . **adenosine triphosphate**
RT adenosine monophosphate
amino acids
myosins

adenosines

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **adenosines**
. . . . adenosine diphosphate
. . . . adenosine monophosphate
. . . . adenosine triphosphate
. . . . cyclic AMP
. nucleotides
. . **adenosines**
. . . adenosine diphosphate
. . . adenosine monophosphate
. . . adenosine triphosphate
. . . cyclic AMP
RT oligonucleotides

adenosinetriphosphatase

(added August 2004)
RT myosins

adenoviruses

GS microorganisms
. viruses
. . **adenoviruses**

adenylic acid

(added December 2004)
USE **adenosine monophosphate**

adequacy

RT quality
validity

adherometers

USE **adhesion tests**

adhesion

GS surface properties
. **adhesion**
. . stiction
RT adhesion tests
adhesive bonding
agglutination
bonding

cold welding
fusion (melting)
interfacial energy
internal pressure
∞ joining
metal bonding
peeling
sealing
spreading
tackiness
traction
wettability

adhesion tests

UF *adherometers*
Fokker bond testers
RT adhesion
bonding
nondestructive tests
∞ tests
wettability

adhesive bonding

GS bonding
. **adhesive bonding**
RT adhesion
agglutination
bonded joints
cementation
fiber pullout
∞ joining
metal bonding
metal-metal bonding
resin bonding
sealing

adhesives

UF *binders (adhesives)*
GS **adhesives**
. glues
. pastes
. tetraethyl orthosilicate
RT agglutination
alkyd resins
binders (materials)
cements
epoxy resins
fasteners
furan resins
joints (junctions)
metal-metal bonding
phenolic epoxy resins
plastic tapes
sealers
seams (joints)
∞ tapes

ADI methods

USE **alternating direction implicit methods**

adiabatic conditions

GS conditions
. **adiabatic conditions**
RT Carnot cycle
compressing
enthalpy
environments
expansion
isentropes
isoenergetic processes
isothermal processes
polytropic processes
temperature
thermal environments
thermodynamic cycles
thermodynamic equilibrium

adiabatic demagnetization cooling

DEF Use of paramagnetic salts cooled to the boiling point of helium in a strong magnetic field, then thermally isolated and removed from the field to demagnetize the salts and attain temperatures of 10(-3) K.
RT magnetic cooling

adiabatic equations

RT ∞ equations
equations of state
heat transmission

- nonadiabatic theory
shock waves
- adiabatic flow**
GS fluid flow
 . **adiabatic flow**
RT stagnation temperature
- adipose tissues**
GS tissues (biology)
 . connective tissue
 . . **adipose tissues**
RT fats
- Adiprene (trademark)**
GS elastomers
 . rubber
 . . synthetic rubbers
 . . . **Adiprene (trademark)**
- Adirondack Mountains (NY)**
GS landforms
 . mountains
 . . **Adirondack Mountains (NY)**
RT New York
- adjoints**
GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **adjoints**
RT data processing
 numerical analysis
- adjusting**
UF *adjustment*
 readjustment
RT alignment
 clearances
 collimation
 correction
 fitting
 focusing
 leveling
 matching
 optical correction procedure
 positioning
 revisions
∞ setting
 smoothing
- adjustment*
USE **adjusting**
- administration*
USE **management**
- admittance*
USE **electrical impedance**
- admixtures**
GS additives
 . **admixtures**
 mixtures
 . **admixtures**
RT accelerating agents
 catalysts
∞ combination
 concretes
 formulations
 ingredients
 mixers
 mortars (material)
 surfactants
- adobe flats*
USE **flats (landforms)**
- ADP**
USE **adenosine diphosphate**
- Adrastea**
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 129,980 kilometers.
GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . **Adrastea**
- RT Jupiter (planet)
- adrenal gland**
GS anatomy
 . glands (anatomy)
 . . endocrine glands
 . . . **adrenal gland**
RT adrenocorticotropin (ACTH)
 epinephrine
 glucocorticoids
- adrenal metabolism**
GS metabolism
 . **adrenal metabolism**
RT aldosterone
 corticosteroids
 cortisone
 hydroxycorticosteroid
- adrenaline*
USE **epinephrine**
- adrenergics**
UF *sympathomimetics*
GS drugs
 . **adrenergics**
RT antiadrenergics
 anticoagulants
 cyclic AMP
- adrenocorticotropin (ACTH)**
UF *ACTH*
GS secretions
 . endocrine secretions
 . . hormones
 . . . pituitary hormones
 **adrenocorticotropin (ACTH)**
RT acids
 adrenal gland
 amino acids
 proteins
- Adriatic Sea**
GS seas
 . Mediterranean Sea
 . . **Adriatic Sea**
RT Italy
 Yugoslavia
- adsorbed atoms*
(added September 2002)
USE **adatoms**
- adsorbents**
DEF Materials which take up gases by adsorption.
GS sorbents
 . **adsorbents**
RT absorbents
 adsorption
 air conditioning equipment
 charcoal
 desiccants
 hemoperfusion
- adsorption**
DEF The adhesion of a thin film of liquid or gas to the surface of a solid substance. The solid does not combine chemically with the adsorbed substance.
GS sorption
 . **adsorption**
 . . chemisorption
RT ∞ absorption
 adatoms
 adsorbents
 adsorptivity
 beneficiation
 bioavailability
 chromatography
 concentrating
 desorption
 diffusion
 electrostatic precipitators
 elution
 gas chromatography
 gas-metal interactions
 Gibbs adsorption equation
 hydrophobicity
∞ separation
- water treatment
- adsorptivity**
GS surface properties
 . **adsorptivity**
RT adsorption
 chemical properties
 chemisorption
 ∞ physical properties
- adults**
(added August 2004)
DEF A person having attained full growth or maturity.
RT children
 demography
 females
 males
 parents
 populations
 youth
- Advanced Airborne Command Post*
USE **E-4A aircraft**
- Advanced Communications Technology Sat*
USE **ACTS**
- Advanced Composition Explorer**
(added December 1999)
DEF Explorer spacecraft (launched August 25, 1997) carrying six high-resolution sensors and three monitoring instruments for sampling low-energy particles of solar origin and high-energy galactic particles. From a vantage point approximately 1/100 of the distance from the Earth to the Sun, the Advanced Composition Explorer (ACE) can perform measurements over a wide range of energy and nuclear mass, under all solar wind flow conditions and during both large and small particle events including solar flares. When reporting space weather ACE can provide an advance warning of geomagnetic storms.
UF *ACE satellite*
 Explorer 71 satellite
GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Advanced Composition Explorer**
RT energetic particles
 galactic cosmic rays
 interplanetary medium
 solar corpuscular radiation
 solar cosmic rays
 solar wind
 space weather
- Advanced EVA Protection Systems*
USE **AEPS**
- Advanced Launch System (STS)**
(added October 1989)
UF *ALS (launch system)*
GS transportation
 . space transportation
 . . space transportation system
 . . . **Advanced Launch System (STS)**
RT heavy lift launch vehicles
 launch vehicle configurations
 launch vehicles
 NASA programs
 NASA space programs
 payload delivery (STS)
 reusable launch vehicles
 Shuttle Derived Vehicles
 space shuttles
 spacecraft design
- Advanced Microwave Sounding Unit**
(added July 1997)
DEF A line-scan instrument on the Advanced TIROS-N (ATN) NOAA K-N series of operational meteorological satellites. The AMSU consists of two functionally independent units, AMSU-A and AMSU-B. The AMSU-A is designed to measure scene radiance in 15 channels, ranging from 23. 8 to 89 GHz, to derive

Advanced Range Instrumentation Aircraft

atmospheric temperature profiles from the Earth surface to about 3 millibar pressure height. The AMSU-B is designed to measure scene radiance in five channels, ranging from 89 GHz to 183 GHz for the computation of atmospheric water vapor profiles.

UF *AMSU (radiometer)*

GS measuring instruments

. microwave sensors

. . . **Advanced Microwave Sounding Unit**

. radiation measuring instruments

. . actinometers

. . . radiometers

. . . . microwave radiometers

. **Advanced Microwave Sounding Unit**

. satellite-borne instruments

. . **Advanced Microwave Sounding Unit**

microwave equipment

. microwave radiometers

. . **Advanced Microwave Sounding Unit**

RT atmospheric moisture

atmospheric sounding

atmospheric temperature

Earth Observing System (EOS)

microwave sounding

NOAA 19 satellite

NOAA satellites

remote sensors

satellite sounding

TIROS N series satellites

Advanced Orbiting Solar Observatory

USE **AOSO**

Advanced Range Instrumentation Aircraft

DEF An EC-135 aircraft configured for reception recording and real-time relay of telemetry data.

RT airborne equipment

∞ aircraft

Apollo project

C-135 aircraft

data acquisition

telemetry

Advanced Range Instrumentation Ship

UF *ARIS instrumentation ship*

GS water vehicles

. ships

. . **Advanced Range Instrumentation Ship**

RT ∞ instruments

manned space flight network

spacecraft tracking

tracking networks

Advanced Recon Electric Spacecraft

UF *ARES (spacecraft)*

GS interplanetary spacecraft

. Mars probes

. . **Advanced Recon Electric Spacecraft**

unmanned spacecraft

. space probes

. . Mars probes

. . . **Advanced Recon Electric Spacecraft**

RT ∞ spacecraft

advanced sodium cooled reactor

UF *ASCR reactor*

GS nuclear reactors

. liquid cooled reactors

. . liquid metal cooled reactors

. . . **advanced sodium cooled reactor**

Advanced Solid Rocket Motor (STS)

(added October 1989)

UF *ASRM (STS)*

GS engines

. rocket engines

. . booster rocket engines

. . . Space Shuttle Boosters

. . . . **Advanced Solid Rocket Motor (STS)**

. . solid propellant rocket engines

. . . Space Shuttle Boosters

. . . . **Advanced Solid Rocket Motor (STS)**

RT Space Shuttle Ascent Stage

space transportation system

advanced tactical fighter

USE **F-22 aircraft**

Advanced Technology Laboratory

DEF An all-pallet payload utilizing the Space Shuttle and the European Spacelab and designed to accommodate 8 to 15 experiments per mission.

GS laboratories

. space laboratories

. . **Advanced Technology Laboratory**

payloads

. Space Shuttle payloads

. . **Advanced Technology Laboratory**

RT Spacelab

Advanced Technology Light Twin aircraft

USE **ATLIT project**

advanced test reactors

UF *ATR reactor*

GS nuclear reactors

. nuclear research and test reactors

. . **advanced test reactors**

Advanced Very High Resolution Radiometer

(added July 1988)

DEF A five channel scanning instrument that quantitatively measures electromagnetic radiation.

UF *AVHRR*

GS measuring instruments

. radiation measuring instruments

. . actinometers

. . . radiometers

. . . . infrared detectors

. infrared radiometers

. **Advanced Very High**

Resolution Radiometer

. . infrared instruments

. . . infrared detectors

. . . . infrared radiometers

. **Advanced Very High**

Resolution Radiometer

. satellite-borne instruments

. . **Advanced Very High Resolution Radiometer**

RT infrared instruments

NOAA 6 satellite

NOAA 7 satellite

NOAA 8 satellite

NOAA 11 satellite

NOAA 12 satellite

remote sensors

TIROS N series satellites

Advanced Vidicon Camera System (AVCS)

UF *AVCS*

GS communication equipment

. **Advanced Vidicon Camera System (AVCS)**

television systems

. **Advanced Vidicon Camera System (AVCS)**

RT ∞ systems

video equipment

vidicons

Advanced X Ray Astrophysics Facility

USE **X Ray Astrophysics Facility**

advancing glaciers

USE **glaciers**

advancing shorelines

USE **beaches**

advection

DEF The process of transport of an atmospheric property solely by the mass motion of the atmosphere; also, the rate of change of the

value of the advected property at a given point.

RT atmospheric circulation

convection

heat transfer

mixing layers (fluids)

Peclet number

Advent Project

GS programs

. projects

. . **Advent Project**

RT active satellites

communication satellites

Courier satellite

Relay satellites

AE-A satellite

USE **Explorer 17 satellite**

AE-B satellite

USE **Explorer 32 satellite**

AE-C satellite

USE **Explorer 51 satellite**

AE-D satellite

USE **Explorer 54 satellite**

AE-E satellite

USE **Explorer 55 satellite**

aeolian tones

RT elastic waves

frequencies

Karman vortex street

noise (sound)

sound waves

wind (meteorology)

aeotropism

GS tropism

. **aeotropism**

RT anisotropy

AEPS

UF *Advanced EVA Protection Systems*

GS support systems

. life support systems

. . emergency life sustaining systems

. . . **AEPS**

. . portable life support systems

. . . **AEPS**

RT Columbus space station

extravehicular activity

lunar bases

Mars landing

oxygen supply equipment

space shuttles

space stations

survival equipment

aeration

RT agitation

beneficiation

blowing

bubbles

corrosion prevention

degassing

dissolved gases

dissolving

entrainment

mixers

mixing

oxygenation

purification

∞ separation

spraying

stirring

suspending (mixing)

water treatment

aerial acrobatics

USE **aerobatics**

aerial explosions

SN (LIMITED TO EXPLOSIONS OCCURRING AT HEIGHTS LESS THAN 50 KM)

UF *air blasts*

GS explosions

. **aerial explosions**

RT blast loads

chemical explosions
nuclear explosions
thermonuclear explosions

aerial imagery
USE **aerial photography**

aerial photography
UF *aerial imagery*
GS imagery
. photography
. . **aerial photography**
RT astronomical photography
change detection
cloud photographs
cloud photography
color photography
Earth observations (from space)
Earth Resources Survey aircraft
forest fire detection
geographic information systems
gray scale
ground truth
ice mapping
image motion compensation
infrared photography
orthophotography
photogeology
photogrammetry
photointerpretation
photomapping
photomaps
pixels
plant stress
rocket-borne photography
satellite-borne photography
sea truth
spaceborne photography
stereophotography
timber inventory
ultraviolet photography

aerial reconnaissance
GS reconnaissance
. **aerial reconnaissance**
. . Airborne Integrated
Reconnaissance System
RT aeromagnetism
change detection
Earth Resources Survey aircraft
ground truth
HS-801 aircraft
infrared radiometers
meteorological flight
photoreconnaissance
reconnaissance aircraft
reconnaissance spacecraft
thermal mapping
unmanned aircraft systems

aerial rudders
GS airfoils
. **aerial rudders**
control surfaces
. rudders
. . **aerial rudders**
RT fins
horizontal tail surfaces
marine rudders
stabilizers (fluid dynamics)
tabs (control surfaces)
tail assemblies

aeroacoustics
GS acoustics
. **aeroacoustics**
. . computational aeroacoustics
RT aerodynamics
∞ aeronautics
aircraft noise
Flowcs Williams-Hawkings equation
flow noise
grazing flow
noise prediction (aircraft)
propeller noise
∞ science
screech tones
space-time CE/SE method

surface noise interactions

aeroassist
DEF Changing orbit size by utilizing aerobraking, aerocapture, or aeromaneuvering.
RT aerobraking
aerocapture
aeromaneuvering
atmospheric entry
interplanetary transfer orbits
transfer orbits

aerobatics
UF *acrobatics (aircraft)*
aerial acrobatics
stunt flying
RT flight control
formation flying
maneuvers

Aerobee rocket vehicle
GS rocket vehicles
. sounding rockets
. . **Aerobee rocket vehicle**

aerobes
RT anaerobes
bacteria
microorganisms
sewage treatment

aerobiology
DEF The study of the distribution of living organisms freely suspended in the atmosphere.
RT air pollution
airborne infection
∞ biology
environment pollution
pollen

aerobraking
DEF Changing orbit size by using the upper atmosphere to create drag.
RT aeroassist
aerocapture
aeromaneuvering
interplanetary transfer orbits
transfer orbits

aerocapture
DEF Making use of the atmosphere of a planet or planetary satellite by capturing the object and reducing the orbit size so that it remains in orbit or lands on the body.
RT aeroassist
aerobraking
aeromaneuvering
atmospheric entry
interplanetary transfer orbits
transfer orbits

aerodontalgia
USE **tooth diseases**

aerodynamic axis
USE **aerodynamic balance**

aerodynamic balance
UF *aerodynamic axis*
aerodynamic center
drag balance
trim (balance)
GS aerodynamic characteristics
. **aerodynamic balance**
balance
. **aerodynamic balance**
RT aircraft stability
dynamic characteristics
horizontal flight
lift drag ratio
mass distribution
spacecraft motion
spacecraft stability
static aerodynamic characteristics
turning flight

aerodynamic brakes
GS brakes (for arresting motion)
. **aerodynamic brakes**
. . ballutes
. . drag chutes

. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
drag devices
. **aerodynamic brakes**
. . ballutes
. . drag chutes
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aircraft brakes
control surfaces
flaperons
flaps (control surfaces)
parachutes
parafoils
retractable equipment
spoilers

aerodynamic buzz
USE **flutter**

aerodynamic center
USE **aerodynamic balance**

aerodynamic characteristics
GS **aerodynamic characteristics**
. aerodynamic balance
. aerodynamic drag
. . supersonic drag
. aerodynamic stability
. interference drag
. lift
. . interference lift
. . jet lift
. . rotor lift
. . zero lift
. static aerodynamic characteristics
RT aerodynamic noise
angle of attack
aspect ratio
∞ characteristics
cross flow
dynamic characteristics
engine airframe integration
flight envelopes
induced drag
rotor body interactions
under surface blowing
unsteady aerodynamics
upper surface blowing
wind tunnel tests

aerodynamic chords
USE **airfoil profiles**
chords (geometry)

aerodynamic coefficients
DEF Any nondimensional coefficients relating to aerodynamic forces or moments, such as a coefficient of drag, a coefficient of lift, etc. Used for lift coefficients.
UF *lift coefficients*
GS coefficients
. **aerodynamic coefficients**
RT ∞ drag coefficients
flow coefficients
flow distortion
force distribution
lift
lift drag ratio
pitching moments
pressure distribution
rolling moments
yawing moments

aerodynamic configurations
SN (LIMITED TO AERODYNAMIC VEHICLE SHAPES--FOR LIFTING OR THRUSTING SURFACES USE AIRFOILS)
GS **aerodynamic configurations**
. body-wing and tail configurations
. body-wing configurations
. . blended-wing-body configurations
. aeroshells

aerodynamic drag

- . canard configurations
- . drooped airfoils
- . waveriders
- . wing nacelle configurations
- RT aircraft configurations
- aircraft design
- airfoils
- blunt bodies
- bodies of revolution
- channel wings
- cones
- ∞ configurations
- control surfaces
- ∞ design
- disks (shapes)
- drag
- engine airframe integration
- fairings
- finned bodies
- half cones
- ∞ hemispheres
- intake systems
- launch vehicle configurations
- lift
- lifting bodies
- missile configurations
- monoplanes
- nacelles
- nose tips
- oblique wings
- propulsion system configurations
- protuberances
- pylon mounting
- Reynolds equation
- ring structures
- rotor body interactions
- satellite configurations
- scale models
- semispan models
- slender bodies
- slender cones
- spacecraft configurations
- spheres
- strakes
- streamlined bodies
- three dimensional bodies
- wedges
- wind tunnel models
- wing roots

aerodynamic drag

- GS aerodynamic characteristics
- . **aerodynamic drag**
- . . . supersonic drag
- aerodynamic forces
- . **aerodynamic drag**
- . . . supersonic drag
- dynamic characteristics
- . drag
- . . friction drag
- . . . **aerodynamic drag**
- supersonic drag
- friction
- . flow resistance
- . . friction drag
- . . . **aerodynamic drag**
- supersonic drag
- . skin friction
- . . friction drag
- . . . **aerodynamic drag**
- supersonic drag

RT

- ballistics
- base pressure
- ∞ drag coefficients
- drag measurement
- drag reduction
- ground effect (aerodynamics)
- hypersonic forces
- induced drag
- lift
- lift drag ratio
- orbit decay
- pressure drag
- ∞ resistance
- satellite drag
- turbulence
- vortex flaps

aerodynamic forces

DEF The force exerted by a moving gas-

eous fluid upon a body completely immersed in it. Used for Glauert coefficient.

UF *Glauert coefficient*

GS **aerodynamic forces**

- . aerodynamic drag
- . . supersonic drag
- . aerodynamic interference
- . aerodynamic loads
- . . blast loads
- . . gust loads
- . hypersonic forces
- . lift
- . . interference lift
- . . jet lift
- . . rotor lift
- . . zero lift
- . wing loading

RT ∞ force

- leading edge thrust
- thrust distribution
- unsteady aerodynamics

aerodynamic heat transfer

- GS transmission
- . heat transmission
- . . heat transfer
- . . . **aerodynamic heat transfer**
- hypersonic heat transfer
- supersonic heat transfer

RT

- ablation
- aerothermodynamics
- turbulent heat transfer

aerodynamic heating

DEF The heating of a body produced by the passage of air or other gases over its surface.

GS heating

- . kinetic heating
- . . **aerodynamic heating**
- . . . shock heating

RT

- ablation
- aerodynamics
- aerothermochemistry
- aerothermodynamics
- atmospheric entry
- boundary layer plasmas
- compressible fluids
- convective heat transfer
- hypersonic reentry
- reentry
- reentry effects
- reentry shielding
- skin friction
- skin temperature (non-biological)
- temperature sensitive paints
- transient heating
- uncontrolled reentry (spacecraft)

aerodynamic interference

- GS aerodynamic forces
- . **aerodynamic interference**

RT

- aerodynamics
- air flow
- aircraft configurations
- aircraft structures
- airfoil profiles
- control surfaces
- ∞ interference
- protuberances
- rotor stator interactions
- turbulent flow
- wing profiles

aerodynamic lift

USE **lift**

aerodynamic loads

- GS aerodynamic forces
- . **aerodynamic loads**
- . . blast loads
- . . gust loads
- loads (forces)
- . dynamic loads
- . . **aerodynamic loads**
- . . . blast loads
- . . . gust loads
- RT axial compression loads
- axial loads
- compression loads
- critical loading

- edge loading
- force distribution
- loading moments
- pressure distribution
- shock loads
- static loads
- structural design criteria
- thrust loads
- transient loads
- vibratory loads
- wing loading

aerodynamic moments

USE **stability derivatives**

aerodynamic noise

UF *boundary layer noise*

- GS elastic waves
- . sound waves
- . . noise (sound)
- . . . flow noise
- **aerodynamic noise**
- blade slap noise
- propeller noise
- screech tones

RT

- acoustic retrofitting
- aerodynamic characteristics
- aeroelasticity
- aircraft noise
- computational aeroacoustics
- Ffowcs Williams-Hawkings equation
- flutter
- jet aircraft noise
- noise measurement
- noise reduction
- panel flutter
- shock waves
- sonic booms
- surface noise interactions

aerodynamic stability

UF *flying platform stability*

- GS aerodynamic characteristics
- . **aerodynamic stability**
- dynamic characteristics
- . dynamic stability
- . . motion stability
- . . . **aerodynamic stability**
- stability
- . dynamic stability
- . . motion stability
- . . . **aerodynamic stability**

RT

- aeroelasticity
- aircraft stability
- airfoil oscillations
- attitude stability
- ballast (mass)
- boundary layer stability
- buffeting
- directional stability
- dynamic tests
- flight envelopes
- flight stability tests
- flow stability
- flutter
- ground resonance
- helicopter performance
- hovering
- lateral stability
- liquid sloshing
- longitudinal stability
- low speed stability
- mass distribution
- pilot induced oscillation
- pressure distribution
- reentry
- Richardson number
- spacecraft motion
- spacecraft stability
- stability augmentation
- static aerodynamic characteristics
- turbulence effects
- unsteady aerodynamics
- vortex avoidance
- wind tunnel stability tests
- wing oscillations
- wing rock

yaw

aerodynamic stalling

- RT aircraft performance
- aircraft spin
- airspeed
- angle of attack
- boundary layer separation
- lift drag ratio
- low speed stability
- rotating stalls
- ∞ stalling
- sweep angle
- zero lift

aerodynamic vehiclesUSE **aircraft****aerodynamics**

DEF The science that deals with the motion of air and other gaseous fluids, and the forces acting on bodies when the bodies move through such fluids, or when such fluids move against or around the bodies. Used for hydroaeromechanics.

- UF *hydroaeromechanics*
- GS mechanics (physics)

- . fluid mechanics
- . fluid dynamics
- . . . gas dynamics
- **aerodynamics**
- aerothermodynamics
- hypersonics
- rotor aerodynamics
- supersonics
- unsteady aerodynamics

- RT aeroacoustics
- aerodynamic heating
- aerodynamic interference
- aeroelasticity
- aeronautical engineering
- ∞ aeronautics
- ∞ aerospace sciences
- ∞ aircraft
- airfoils
- blunt bodies
- bodies of revolution
- boundary layer control
- compressible flow
- control surfaces
- drag
- ∞ dynamics
- ∞ flight
- flight characteristics
- flight mechanics
- ∞ flow
- flow theory
- free wing aircraft
- ground effect (aerodynamics)
- hypersonic flight
- hypersonic flow
- incompressible flow
- inviscid flow
- laminar flow
- lift
- Mach number
- Mach-Zehnder interferometers
- reentry
- ∞ science
- slender bodies
- subsonic flow
- supersonic flow
- thermodynamics
- transonic flow
- turbulent flow
- uniform flow
- unsteady flow
- viscous flow
- wind measurement
- wind tunnels

aeroelastic research wings

DEF Wings that are designed with less than normal stiffness to test devices that suppress flutter.

- GS airfoils
- . wings
- . . **aeroelastic research wings**
- RT aircraft design
- flutter

- flutter analysis
- structural design
- wing oscillations

aeroelasticity

DEF The study of the response of structurally elastic bodies to aerodynamic loads.

- GS mechanical properties
- . elastic properties
- . . **aeroelasticity**
- . . . aeroservoelasticity
- . . . aerothermoelasticity
- RT aerodynamic noise
- aerodynamic stability
- aerodynamics
- aerothermodynamics
- aircraft structures
- airfoil oscillations
- DAST program
- flutter
- influence coefficient
- panel flutter
- rigid wings
- thermoelasticity
- unsteady aerodynamics
- wing loading

aeroembolism

DEF The formation or liberation of gases in the blood vessels of the body, as brought on by a too-rapid change from a high, or relatively high, atmospheric pressure to a lower one.

- GS embolisms
- . **aeroembolism**
- RT altitude sickness
- decompression sickness
- fat embolisms
- stress (physiology)

aerogels

(added June 1990)

- RT foams
- gels
- porous materials
- silica gel
- xerogels

aerogyro helicoptersUSE **XH-51 helicopter****aerology**

DEF The study of the free atmosphere throughout its vertical extent, as distinguished from studies confined to the layer of the atmosphere adjacent to the Earth's surface.

- GS meteorology
- . **aerology**
- RT Atmospheric & Oceanographic Inform Sys
- Global Atmospheric Research Program
- meteorological parameters
- polar meteorology
- sea breeze
- wind (meteorology)

aeromagnetism

- RT aerial reconnaissance
- geomagnetism
- magnetic anomalies
- magnetic surveys
- magnetic variations
- remote sensing

aeromagneto flutterUSE **flutter****aeromaneuvering**

DEF Changing orbit size or plane or both by entering the upper atmosphere to create drag or lift or both.

- RT aeroassist
- aerobraking
- aerocapture
- aeroshells
- atmospheric entry
- interplanetary transfer orbits

transfer orbits

Aeromaneuvering Orbit to Orbit Shuttle

DEF Proposed reusable upper stage for the Space Shuttle superseded by the orbit transfer vehicle. Used for AMOOS.

- UF *AMOOS*
- GS orbit transfer vehicles
- . **Aeromaneuvering Orbit to Orbit Shuttle**
- RT Orbit Maneuvering Engine (Space Shuttle)
- orbital mechanics
- reusable launch vehicles
- space shuttles

aeronautical engineering

- GS aerospace engineering
- . **aeronautical engineering**
- RT aerodynamics
- ∞ aeronautics
- ∞ aircraft
- aircraft design
- aircraft industry
- auxiliary propulsion
- compound helicopters
- ∞ engineering
- functional design specifications
- mechanical engineering
- propulsion
- structural engineering

aeronautical satellites

- GS artificial satellites
- . communication satellites
- . . **aeronautical satellites**
- . . . Aerosat satellites
- RT ∞ aeronautics
- air traffic control
- aircraft approach spacing
- aircraft communication
- ground-air-ground communication
- rescue operations
- satellite networks

∞ aeronautics

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *aviation*
- RT aeroacoustics
- aerodynamics
- aeronautical engineering
- aeronautical satellites
- aerospace engineering
- ∞ aerospace sciences
- air law
- ∞ aircraft
- airports
- avionics
- civil aviation
- ∞ flight
- general aviation aircraft
- human factors engineering
- ∞ military aviation
- ∞ science
- TACT program

aeronomy

DEF The study of the upper regions of the atmosphere where ionization, dissociation, and chemical reactions take place.

- RT airglow
- Alpine meteorology
- atmospheric composition
- atmospheric physics
- auroras
- DIAL satellite
- field aligned currents
- flux transfer events
- geophysics
- magnetosphere-ionosphere coupling
- mesometeorology
- meteorology
- Nozomi Mars Orbiter
- polar cusps

aeroquatic vehicles

upper atmosphere

aerophysics

USE **atmospheric physics**

aeroquatic vehicles

RT aircraft design
attack aircraft
∞ military vehicles
underwater propulsion
underwater vehicles

AEROS satellite

GS artificial satellites
. meteorological satellites
. . **AEROS satellite**
. synchronous satellites
. . **AEROS satellite**

Aerosat satellites

GS artificial satellites
. communication satellites
. . aeronautical satellites
. . . **Aerosat satellites**
. ESA satellites
. . **Aerosat satellites**
. navigation satellites
. . **Aerosat satellites**
. synchronous satellites
. . **Aerosat satellites**
ESA spacecraft
. ESA satellites
. . **Aerosat satellites**
RT European space programs
satellite networks

aeroservoelasticity

(added September 1993)

UF **ASE (aerodynamics)**

GS mechanical properties
. elastic properties
. . aeroelasticity
. . . **aeroservoelasticity**

RT active control
actuators
airfoil oscillations
dynamic control
dynamic response
dynamic structural analysis
flutter
servocontrol
unsteady aerodynamics

aeroshells

(added May 1999)

DEF Aerodynamic structural shells that attach to, or comprise a portion of, the exterior of an aerospace vehicle or space probe; especially such structures that support atmospheric entry, aerobraking, aeroassist, or hypersonic flight.

GS aerodynamic configurations
. **aeroshells**

RT aeromaneuvering
nose cones
reentry vehicles
spacecraft design
spacecraft shielding
spacecraft structures

aerosinusitis

GS diseases
. respiratory diseases
. . **aerosinusitis**

RT aerospace medicine
altitude sickness

aerosols

DEF Dispersions of solid or liquid particles in gaseous media.

GS mixtures
. dispersions
. . colloids
. . . **aerosols**
. . . . fog
. liquid-gas mixtures
. . . **aerosols**
. . . . fog
particles
. **aerosols**
. . fog

RT air pollution
Aitken nuclei
atmospheric effects
atomizing
CALIPSO (Pathfinder satellite)
CloudSat
condensation nuclei
crop dusting
dust
entrainment
environment pollution
environmental surveys
exhaust clouds
fog dispersal
fumes
gas atomization
Glory Mission satellite
MISR (radiometry)
mist
mixers
particulates
photophoresis
pollution transport
radiative forcing
SAGE satellite
smoke
smoke abatement
spraying
thermophoresis

aerospace engineering

UF *space systems engineering*

GS **aerospace engineering**
. aeronautical engineering

RT ∞ aeronautics
∞ aerospace sciences
∞ aircraft
∞ engineering
mechanical engineering
missile design
structural engineering

aerospace environments

SN (EXCLUDES SPACECRAFT
INTRAVEHICULAR ENVIRONMENTS)

UF *space environment*

GS environments
. **aerospace environments**
. . cislunar space
. . deep space
. . . interplanetary space
. . . interstellar space
. . Earth orbital environments

RT ∞ aerospace sciences
argon-oxygen atmospheres
∞ astronautics
bioastronautics
bioprocessing
biosatellites
cosmic rays
Earth atmosphere
electromagnetic radiation
exobiology
extraterrestrial environments
extraterrestrial life
extraterrestrial radiation
extravehicular activity
geophysical fluid flow cells
hazardous material disposal (in space)
helium-oxygen atmospheres
Jupiter atmosphere
life support systems
lunar environment
manned space flight
Mars atmosphere
Neptune atmosphere
panspermia
planetary environments
radiation belts
solar radiation
space exploration
space flight
space habitats
space manufacturing
space weather
space weathering
spaceborne experiments
spacecraft cabin simulators
thermal environments

Uranus atmosphere
vacuum
Venus atmosphere

aerospace industry

GS industries
. **aerospace industry**
. . aircraft industry
RT ∞ aircraft
commercial spacecraft
space commercialization

aerospace medicine

DEF That branch of medicine dealing with the effects of flight through the atmosphere or in space upon the human body and with the prevention or cure of physiological or psychological malfunctions arising from these effects.

UF *space medicine*

GS medical science
. **aerospace medicine**

. . aviation psychology
. . space psychology
RT acceleration stresses (physiology)
aerosinusitis
∞ aerospace sciences
altitude sickness
bioastronautics
biofeedback
∞ biology
biomedical data
Chlorella
closed ecological systems
electrolyte metabolism
fasting
flight fatigue
fluid shifts (biology)
gravitational physiology
gravity perception
head down tilt
head movement
head up tilt
hindlimb suspension
immunosuppression
∞ medicine
mobile quarantine facility
motion sickness
radiology
∞ science
space adaptation syndrome
spacecraft environments
sports medicine
telemedicine
tilt-table test
weightlessness

aerospace planes

GS aerospace vehicles
. **aerospace planes**
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
maneuverable spacecraft
. **aerospace planes**
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
reentry vehicles
. recoverable spacecraft
. reusable spacecraft
. . **aerospace planes**
. . . HOPE aerospace plane
. . . . HOTOL launch vehicle
. . . . VentureStar launch vehicle
. . . . X-30 vehicle
. . . . X-37 vehicle
. . . . X-40A vehicle
soft landing spacecraft
. **aerospace planes**
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle

. . X-40A vehicle
 RT ∞ aircraft
 Astro vehicle
 boostglide vehicles
 Buran space shuttle
 Delta Clipper
 gliders
 hypersonic aircraft
 hypersonic gliders
 launch vehicles
 lifting reentry vehicles
 liquid air cycle engines
 military spacecraft
 National Aerospace Plane Program
 research aircraft
 rocket planes
 Saenger space transportation system
 transatmospheric vehicles
 X-20 aircraft

aerospace safety

DEF The engineering assessment and analysis of systems, subsystems, and functions of spacecraft, missiles, advanced aircraft and ground support in order to identify hazards associated with such systems and to design procedures that eliminate those hazards or determine tolerable safety levels.

GS safety
 . aerospace safety
 RT accident prevention
 aircraft safety
 flight safety
 range safety
 runway incursions
 safety factors
 safety management
 space weather

∞ aerospace sciences

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 UF space sciences
 RT aerodynamics
 ∞ aeronautics
 aerospace engineering
 aerospace environments
 aerospace medicine
 aerospace systems
 astronomy
 Committee on Space Research
 environmental engineering
 extraterrestrial radiation
 International Space Year
 space laboratories

aerospace systems

RT ∞ aerospace sciences
 control systems design
 missile systems
 ∞ systems
 systems engineering

aerospace technology transfer

DEF Technology transfer germane to aircraft and space vehicles, their propulsion, guidance, etc.

GS technology transfer
 . aerospace technology transfer
 RT Canadian space program
 information flow
 reports
 technological forecasting
 technology utilization

aerospace vehicles

DEF Vehicles capable of flight within and outside the sensible atmosphere.

GS aerospace vehicles
 . aerospace planes
 . . HOPE aerospace plane
 . . HOTOL launch vehicle
 . . VentureStar launch vehicle
 . . X-30 vehicle
 . . X-37 vehicle
 . . X-40A vehicle
 . flexible spacecraft
 . X-43 vehicle
 RT ∞ aircraft

commercial spacecraft
 ∞ spacecraft
 transatmospheric vehicles

aerospike engines

(added July 1997)

DEF Rocket engines incorporating a radial in-flow (aerospike) nozzle for altitude compensation. Since the nozzle is open to the ambient atmosphere, the plume compensates for decreasing atmospheric pressure as the vehicle ascends.

GS engines
 . rocket engines
 . . aerospace engines

RT nozzle design
 plug nozzles
 propulsion system configurations
 rocket engine design
 rocket exhaust
 rocket nozzles
 spike nozzles
 VentureStar launch vehicle

aerostatics

GS statics
 . aerostatics
 RT buoyancy
 ∞ dynamics
 ∞ equilibrium
 fluid mechanics
 hydrostatics

aerostats

USE airships

aerothermochemistry

GS environmental chemistry
 . aerothermochemistry
 thermochemistry
 . aerothermochemistry
 RT ablation
 aerodynamic heating
 aerothermodynamics
 atmospheric chemistry
 chemical engineering
 ∞ chemistry
 nozzle flow
 physical chemistry
 pyrometallurgy
 reentry physics
 reentry shielding
 reentry vehicles

aerothermodynamics

DEF The study of aerodynamic phenomena at sufficiently high gas velocities that thermodynamic properties of the gas are important.

GS mechanics (physics)
 . fluid mechanics
 . . fluid dynamics
 . . . gas dynamics
 aerodynamics
 aerothermodynamics
 thermodynamics
 . aerothermodynamics

RT aerodynamic heat transfer
 aerodynamic heating
 aeroelasticity
 aerothermochemistry
 ASSET project
 boundary layer plasmas
 ∞ chemistry
 combustion physics
 ∞ dynamics
 hypersonic heat transfer
 hypersonic reentry
 hypersonics
 Rankine-Hugoniot relation
 reentry
 reentry physics

∞ science
 skin temperature (non-biological)
 supersonics
 thermoelasticity

aerothermoelasticity

DEF The study of the response of elastic structures to the combined effects of aerodynamic heating and loading.

GS mechanical properties
 . elastic properties
 . . aeroelasticity
 . . . aerothermoelasticity
 . . thermoelasticity
 . . . aerothermoelasticity

aerozine

DEF A rocket fuel consisting of a mixture of hydrazine and unsymmetrical dimethylhydrazine (UDMH).

GS propellants
 . rocket propellants
 . . liquid rocket propellants
 . . . aeroxine
 RT dimethylhydrazines
 hydrazines

AFC (control)

USE automatic frequency control

AFCs (control system)

USE automatic flight control

affects

USE effects

afferent nervous systems

GS anatomy
 . nervous system
 . . afferent nervous systems
 RT sensorimotor performance
 ∞ systems

affinity

GS affinity
 . electron affinity
 . negative electron affinity
 RT attraction
 chemical compatibility
 compatibility

Afghanistan

GS nations
 . Afghanistan
 RT Asia

AFM (microscopy)

USE atomic force microscopy

Africa

GS continents
 . Africa
 RT African rift system
 Algeria
 Angola
 Arcomsat
 Benin
 Botswana
 Burkina
 Burundi
 Cameroon
 Cape Verde
 Central African Republic
 Chad
 Congo (Brazzaville)
 Cote d'Ivoire
 Democratic Republic of Congo
 Djibouti
 Egypt
 Ethiopia
 Gabon
 Gambia
 Ghana
 Guinea
 Kalahari Basin (Africa)
 Kenya
 Lesotho
 Liberia
 Libya
 Libyan desert
 Madagascar
 Malawi
 Mali
 Mauritania
 Mauritius
 Middle East
 Morocco
 Mozambique
 Namibia

African rift system

nations
 Niger
 Nigeria
 Red Sea
 Republic of South Africa
 Rwanda
 Sahara Desert (Africa)
 Senegal
 Seychelles
 Sierra Leone
 Somalia
 Spanish Sahara
 Sudan
 Swaziland
 Tanzania
 Togo
 Tunisia
 Uganda
 Zambia
 Zimbabwe

African rift system

GS geological faults
 . **African rift system**
 RT Africa
 ∞ systems

afterbodies

DEF Companion bodies that trail satellites. Sections or pieces of rockets or spacecraft that enter the atmosphere unprotected behind nose cones or other bodies that are protected for entry. Afterparts of vehicles. Used for cylindrical afterbodies and sterns.

UF *cylindrical afterbodies*
sterns
 RT aircraft structures
 base heating
 boattails
 ∞ bodies
 centerbodies
 conical bodies
 cylindrical bodies
 flared bodies
 forebodies
 skirts
 swing tail assemblies
 tail assemblies

afterburners

USE **afterburning**

afterburning

DEF Irregular burning of fuel left in the firing chamber of a rocket after cutoff. The function of an afterburner, a device for augmenting the thrust of a jet engine by burning additional fuel in the uncombined oxygen in the gases from the turbine. Used for afterburners.

UF *afterburners*
 GS combustion
 . **afterburning**
 RT burners
 exhaust systems
 infrared suppression
 internal combustion engines
 J-57 engine
 jet engines
 thrust augmentation

afterglows

DEF Broad, high arches of radiance or glow seen occasionally in the western sky above the highest clouds in deepening twilight, caused by the scattering effect of very fine particles of dust suspended in the upper atmosphere. Also, the transient decay of a plasma after the power has been turned off.

GS **afterglows**
 . helium afterglow
 . oxygen afterglow
 RT atmospheric ionization
 gas discharges
 gas ionization
 light scattering
 luminescence
 phosphorescence
 plasma decay

Swift observatory

afterimages

GS images
 . **afterimages**
 RT critical flicker fusion
 illusions
 psychological effects
 sensory perception
 visual perception

AGB stars

USE **asymptotic giant branch stars**

AGC (control)

USE **automatic gain control**

age determination

USE **chronology**

age factor

RT aging (biology)
 gerontology
 life span

age hardening

USE **precipitation hardening**

Agena A rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena A rocket vehicle**
 RT Discoverer satellites
 Thor Agena launch vehicle

Agena B Ranger Program

GS programs
 . NASA programs
 . . NASA space programs
 . . . Ranger project
 **Agena B Ranger Program**
 . projects
 . . Ranger project
 . . . **Agena B Ranger Program**
 . space programs
 . . NASA space programs
 . . . Ranger project
 **Agena B Ranger Program**
 RT Thor Agena launch vehicle

Agena B rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena B rocket vehicle**
 RT Discoverer satellites
 Echo satellites
 EGO
 Gemini project
 Mariner program
 OAO
 POGO
 Ranger project

Agena C rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena C rocket vehicle**

Agena D rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . Agena rocket vehicles
 . . . **Agena D rocket vehicle**

Agena rocket vehicles

GS rocket vehicles
 . single stage rocket vehicles
 . . **Agena rocket vehicles**
 . . . Agena A rocket vehicle
 . . . Agena B rocket vehicle
 . . . Agena C rocket vehicle
 . . . Agena D rocket vehicle
 RT Atlas Agena B launch vehicle
 Atlas Agena launch vehicles
 Discoverer satellites
 Echo satellites
 Gemini project
 Mariner program

Ranger project
 Thor Agena launch vehicle

∞ agents

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT accelerating agents
 additives
 anticoagulants
 antifouling
 antioxidants
 diluents
 neutralizers
 opacifiers
 oxidizers
 penetrants
 preservatives
 stabilizers (agents)
 surfactants

agglomeration

RT accumulations
 atomic clusters
 cementation
 clumps
 coagulation
 coalescing
 compacting
 crystallization
 densification
 flocculating
 galactic clusters
 lumping
 metal clusters
 micelles
 molecular clusters
 plugging
 precipitation (chemistry)
 ∞ separation
 settling
 sintering
 Virgo galactic cluster

agglutination

GS bonding
 . **agglutination**
 RT adhesion
 adhesive bonding
 adhesives
 cementation
 chemical bonds
 cohesion

aggregates

RT concrete structures
 concretes
 ∞ construction materials
 dolomite (mineral)
 gravels
 lava
 limestone
 micelles
 rocks
 sands
 slags

∞ aging

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT aging (biology)
 aging (materials)
 aging (metallurgy)
 radioactive age determination

aging (biology)

RT age factor
 ∞ aging
 ∞ biology
 geriatrics
 gerontology
 life sciences
 life span
 mortality
 physiology

aging (materials)

GS **aging (materials)**
 . aging (metallurgy)

- RT ∞ aging
hardening (materials)
∞ materials
mechanical properties
microstructure
strain hardening
- aging (metallurgy)**
GS aging (materials)
. **aging (metallurgy)**
RT ∞ aging
hardening (materials)
heat treatment
microstructure
solid solutions
strain hardening
supercooling
time temperature parameter
- agitation**
GS **agitation**
. ultrasonic agitation
RT aeration
blowing
chemical reaction control
coalescing
colloiding
dispersing
disposal
homogenizing
mixers
mixing
∞ separation
settling
shaking
sizing screens
splashing
suspending (mixing)
swirling
turbulent mixing
vortices
water treatment
- agreements**
RT contracts
conventions
insurance (contracts)
subcontracts
- agricultural aircraft**
DEF Light aircraft specially equipped for agricultural applications such as crop dusting.
UF *Snow aerial applicator aircraft S-2B*
Snow S-2 aircraft
GS general aviation aircraft
. **agricultural aircraft**
RT agriculture
∞ aircraft
AN-2 aircraft
crop dusting
light aircraft
swath width
- agriculture**
GS **agriculture**
. aquiculture
. silviculture
RT agricultural aircraft
AgRISTARS project
agroclimatology
agrometeorology
agrophysical units
alfalfa
barley
∞ biology
botany
citrus trees
conservation
corn
crop dusting
crop growth
crop identification
crop inventories
crop vigor
∞ crops
farm crops
farmlands
fruits
genetically modified plants
grasslands
- Great Plains Corridor (North America)
halophiles
hay
hydrocarbon fuel production
hydroponics
irrigation
Large Area Crop Inventory
Experiment
leguminous plants
oats
orchards
plant diseases
plant stress
planting
plants (botany)
plowing
plows
rural areas
rural land use
soil science
sorghum
sugar beets
sugar cane
sunflowers
tomatoes
tractors
vegetation growth
vineyards
- AgRISTARS project**
DEF A multiagency program utilizing Landsat remote sensing data to predict crop yields, land use, and detect pollution. Used for Crop Inventories by Remote Sensing.
UF *Crop Inventories by Remote Sensing*
GS programs
. projects
. . . **AgRISTARS project**
RT agriculture
agrophysical units
crop inventories
farm crops
fresh water
land use
Landsat satellites
meteorological satellites
NASA programs
remote sensors
vegetative index
- agroclimatology**
GS climatology
. **agroclimatology**
RT agriculture
agrometeorology
hydroclimatology
meteorological parameters
meteorology
microclimatology
- agrometeorology**
GS meteorology
. **agrometeorology**
RT agriculture
agroclimatology
hydrometeorology
micrometeorology
thermal resources
tropical meteorology
- agrophysical units**
DEF Geographic areas defined for statistical purposes by AgRISTARS personnel whose boundaries are based on natural rather than political lines for the purpose of comparing similar agricultural regions.
RT agriculture
AgRISTARS project
farmlands
Large Area Crop Inventory
Experiment
- AGT
USE **automated guideway transit vehicles**
- AH-1G helicopter**
DEF US Army designation for the Bell Model 209 Hueycobra attack helicopter powered by a single Avco Lycoming T53-L-13 turboshaft engine.
GS attack aircraft
. **AH-1G helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **AH-1G helicopter**
RT ∞ military aircraft
- AH-1S helicopter**
(added April 1997)
GS attack aircraft
. **AH-1S helicopter**
Bell aircraft
. **AH-1S helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **AH-1S helicopter**
RT ∞ aircraft
∞ military aircraft
- AH-1W helicopter**
(added April 1997)
UF *SuperCobra*
GS attack aircraft
. **AH-1W helicopter**
Bell aircraft
. **AH-1W helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **AH-1W helicopter**
RT ∞ aircraft
∞ military aircraft
- AH-63 helicopter**
GS attack aircraft
. **AH-63 helicopter**
Bell aircraft
. **AH-63 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **AH-63 helicopter**
RT ∞ military aircraft
- AH-64 helicopter**
GS attack aircraft
. **AH-64 helicopter**
Hughes aircraft
. **AH-64 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **AH-64 helicopter**
RT ∞ military aircraft
- ∞ **aids**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT landing aids
navigation aids
visual aids
- AIDS (disease)*
USE **acquired immunodeficiency syndrome**
- aileron**
GS airfoils
. **aileron**
. . . flaperons
. . . spoiler slot ailerons
control surfaces
. **aileron**
. . . flaperons
. . . spoiler slot ailerons
RT elevators (control surfaces)
elevons
lateral control

air

tabs (control surfaces)

AIMP-1
USE **Explorer 33 satellite**

AIMP-2
USE **Explorer 35 satellite**

AIMP-D
USE **Explorer 33 satellite**

AIMP-E
USE **Explorer 35 satellite**

air
DEF The mixture of gases comprising the Earth's atmosphere.
GS gases
. gas mixtures
. . **air**
. . . alveolar air
. . . compressed air
. . . expired air
. . . high temperature air
. . . liquid air
mixtures
. solutions
. . gas mixtures
. . . **air**
. . . . alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
RT air data systems
∞ atmospheres
atmospheric composition
Earth atmosphere
environments
middle atmosphere

air bag restraint devices
GS bags
. **air bag restraint devices**
expandable structures
. inflatable structures
. . **air bag restraint devices**
safety devices
. **air bag restraint devices**
RT accident prevention
accidents
automobiles
collisions
crashes
∞ devices
highways
pneumatic equipment
safety

air bearings
USE **gas bearings**

air blasts
USE **aerial explosions**

air breathing boosters
DEF Boosters which are possible substitutes for rocket engines and which have inlets for oxygen sources for their engines rather than carrying their own oxygen as in a conventional rocket.
RT air breathing engines
booster rocket engines
∞ boosters
rocket-based combined-cycle engines

air breathing engines
GS engines
. **air breathing engines**
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . T-58 engine
. . . . ramjet engines
. integral rocket ramjets
. low volume ramjet engines
. pulsejet engines
. supersonic combustion ramjet engines
. turboramjet engines

. . . . turbojet engines
. Bristol-Siddeley Olympus 593 engine
. Bristol-Siddeley Viper engine
. ducted fan engines
. J-33 engine
. J-34 engine
. J-47 engine
. J-52 engine
. J-57 engine
. J-58 engine
. J-65 engine
. J-69-T-25 engine
. J-71 engine
. J-73 engine
. J-75 engine
. J-79 engine
. J-85 engine
. J-93 engine
. RA-28 engine
. turbofan engines
. Bristol-Siddeley BS 53 engine
. CF-700 engine
. convertible fan-shaft engines
. J-97 engine
. TF-30 engine
. TF-34 engine
. TF-41 engine
. turboprop engines
. T-34 engine
. T-38 engine
. T-53 engine
. T-55 engine
. T-56 engine
. T-63 engine
. T-64 engine
. T-74 engine
. T-76 engine
. T-78 engine
. turboramjet engines
RT air breathing boosters
pulse detonation engines
rocket-based combined-cycle engines

air cargo

UF *air freight*
GS cargo
. **air cargo**
. . air mail
RT airdrops
airfield surface movements
airline operations
baggage
cargo aircraft
ground handling
heavy lift helicopters

air conditioning

DEF The simultaneous control of all, or at least three, of those factors affecting both the physical and chemical conditions of the atmosphere within any structure. These factors include temperature, humidity, motion, distribution, dust, bacteria, odor, and toxic gases.
RT blowers
comfort
condensers (liquefiers)
controlled atmospheres
coolants
coolers
cooling
cooling systems
∞ diffusers
exhaust systems
freon
heat pumps
heating
heating equipment
humidity
infiltration
life support systems
Modular Integrated Utility System
refrigerants
refrigerating
refrigerating machinery
space heating (buildings)
temperature
temperature control
temperature distribution

thermal insulation
∞ treatment
ventilation

air conditioning equipment

RT absorbents
absorbers (equipment)
adsorbents
blowers
compressors
condensers (liquefiers)
coolers
cooling systems
∞ diffusers
∞ equipment
evaporators
∞ fans
heat pumps
heating equipment
oxygen supply equipment
refrigerating machinery

air conductivity

RT atmospheric conductivity
electrical resistivity
thermal conductivity

air cooling

SN (COOLING WITH AIR)
GS cooling
. **air cooling**
RT coolants
coolers
cooling systems
liquid cooling
refrigerating
ventilation

air currents

GS fluid flow
. gas flow
. . air flow
. . . **air currents**
. . . . jet streams (meteorology)
. . . . meridional flow
. . . . vertical air currents
RT atmospheric circulation
barotropic flow
boundary layer flow
boundary layer transition
Brunt-Vaisala frequency
convection clouds
convection currents
∞ currents
ground wind
lee waves
sea breeze
upstream
wind (meteorology)
windpower utilization
zonal flow (meteorology)

air cushion landing systems

DEF Landing systems based on the ground effect principle whereby a stratum of air is utilized as the aircraft ground contacting medium (in place of landing gear).
RT aircraft landing
cushions
ground effect (aerodynamics)
skid landings
∞ systems

air cushion vehicles

USE **ground effect machines**

air data systems

SN (LIMITED TO FLIGHT DATA SYSTEMS)
DEF Sets of aerodynamic and thermodynamic sensors, and a computer which provide flight characteristics such as airspeed, static pressure, air temperature and Mach number.
GS data systems
. **air data systems**
RT air
∞ aircraft
∞ spacecraft
tables (data)

wind tunnel tests

air defense

- GS **air defense**
 - . antimissile defense
 - . SAGE air defense system
- RT antiradiation missiles
 - Ballistic Missile Early Warning System
 - camouflage
 - civil defense
 - deception
- ∞ defense
 - defense program
 - DMSP satellites
 - early warning systems
 - electronic warfare
 - jammers
 - optical countermeasures
 - sabotage
 - space surveillance (ground based)
 - space surveillance (spaceborne)
 - weapons delivery

Air Density Explorer A
USE **Explorer 19 satellite**

Air Density/Injun Explorer B
USE **Explorer 25 satellite**

air drop operations

- RT bailout
 - ballutes
 - cargo
 - delivery
 - free fall
- ∞ operations
 - parachutes
 - parawings

air ducts

- GS ducts
 - . **air ducts**
- RT annular ducts
 - blowers
 - exhaust nozzles
- ∞ fans
 - gas flow
 - ventilators

air filters

- GS cleaners
 - . **air filters**
 - separators
 - . fluid filters
 - . . **air filters**
- RT cooling systems
 - dust collectors
- ∞ filters
 - precipitators
 - ventilation

air flow

- GS fluid flow
 - . gas flow
 - . . **air flow**
 - . . . air currents
 - jet streams (meteorology)
 - meridional flow
 - vertical air currents
- RT aerodynamic interference
 - atmospheric boundary layer
 - barotropic flow
 - Brunt-Vaisala frequency
 - compressible flow
- ∞ currents
 - duct geometry
 - ducted flow
 - streamlining
 - streams
 - ventilation

air freight
USE **air cargo**

air inlets
USE **air intakes**

air intakes

- UF *air inlets*
- GS intake systems

- . **air intakes**
 - . . engine inlets
 - . . hypersonic inlets
 - . . inlet airframe configurations
 - . . supersonic inlets
- RT bypass ratio
 - conical inlets
 - cowlings
 - inlet nozzles
 - inlet temperature
 - internal compression inlets
 - manifolds
 - nacelles
 - nose inlets
 - plenum chambers
 - scoops
 - side inlets
 - superchargers
 - supersonic diffusers
 - ventilation
 - ventilators
- ∞ water intakes

air jets

- GS fluid flow
 - . jet flow
 - . . **air jets**
 - fluid jets
 - . **air jets**
- RT gas flow
 - gas jets
 - jet streams (meteorology)
- ∞ jets
 - vapor jets

air land interactions

- RT atmospheric boundary layer
 - atmospheric circulation
 - Earth cryosphere
 - gas-solid interactions
- ∞ interactions
 - land surface temperature
 - meteorology

air launching

- GS launching
 - . **air launching**
- RT multistage rocket vehicles
 - Pegasus air-launched booster
 - piggyback systems
 - X-34 reusable launch vehicle

air law

- DEF The body of domestic and/or international laws dealing with regulations and liabilities in civil or military aviation.
- GS law (jurisprudence)
 - . international law
 - . . **air law**
- RT ∞ aeronautics
 - airspace
 - civil aviation
 - conventions
 - insurance (contracts)
 - legal liability
 - liabilities
- ∞ military aviation
 - National Airspace Utilization System
 - penalties
 - politics
 - public law
 - regulations
 - space law

air locks

- DEF A stoppage or diminution of flow in a fuel system, hydraulic system, or the like, caused by pockets of air or vapor. Also chambers capable of being hermetically sealed that provide for passage between two places of different pressure as between an altitude chamber and the outside atmosphere.
- GS compartments
 - . **air locks**
 - . . airlock modules
- RT doors
 - egress
 - enclosures
 - hatches
 - ingress (spacecraft passageway)

- ∞ locks
 - pressure chambers
 - seals (stoppers)

air mail

- GS cargo
 - . air cargo
 - . . **air mail**

air masses

- DEF Large widespread volumes of air having particular characteristics of temperature and moisture content that were acquired at its source region and are modified as they move away from their source.
- RT anticyclones
 - atmospheric circulation
 - Brunt-Vaisala frequency
 - cold fronts
 - fronts (meteorology)
 - meteorology
 - synoptic meteorology
 - warm fronts
 - weather forecasting
 - windpower utilization

air navigation

- DEF The art, science, or action of plotting and directing the course of an aircraft through the air from one place to another.
- GS navigation
 - . **air navigation**
 - . . all-weather air navigation
 - . . area navigation
 - . . nap-of-the-earth navigation
 - . . . terrain following
- RT astronavigation
 - boresight error
 - celestial navigation
 - celestial reference systems
 - collision avoidance
- ∞ control
 - dead reckoning
 - digital navigation
 - Doppler navigation
 - flight instruments
 - flight management systems
 - flight paths
 - flight plans
 - flight rules
 - formation flying
 - guidance (motion)
 - hyperbolic navigation
 - inertial navigation
 - instrument flight rules
 - loran
 - loran C
 - loran D
 - National Airspace Utilization System
 - navigation aids
 - Omega Navigation System
 - polar navigation
 - radar navigation
 - radio navigation
 - Shoran
 - solar compasses
 - space navigation
 - Tacan
 - VHF omnirange navigation
 - visual flight

air piracy

- UF *hijacking*
- GS crime
 - . **air piracy**
- RT aircraft safety
 - airport security
 - flight hazards
 - flight safety
 - operational hazards
 - terrorism

air pollution

- DEF The presence of unwanted material in the air. The term "unwanted material" here refers to material in sufficient concentrations, present for a sufficient time, and under circumstances to interfere significantly with comfort, health, or welfare of persons, or with the full use

air purification

and enjoyment of property. Used for atmospheric impurities.

UF *atmospheric impurities*
GS pollution
. environment pollution
. . **air pollution**
. . . global air pollution
. . . indoor air pollution

RT acid rain
aerobiology
aerosols
ashes
atmospheric chemistry
atmospheric composition
atmospheric density
atmospheric effects
biomass burning
chlorofluorocarbons
chlorofluoromethane
clean energy
climate change
combustion products
contamination
diffusion
drops (liquids)
dust
Earth atmosphere
Earth environment
effluents
environment effects
environment protection
environmental chemistry
environmental quality
environmental surveys
environments
exhaust gases
exhaust systems
fallout
flue gases
fly ash
forest fires
Global Air Sampling Program
haze
human wastes
metabolic wastes
middle atmosphere
mixing height
mutagens
nitrous acid
odors
organic peroxides
oxidizers
ozone depletion
particles
particulates
photochemical oxidants
pollen
pollution monitoring
pollution transport
polynuclear organic compounds
radiative forcing
smog
smoke
smoke abatement
soot
temperature inversions
volatile organic compounds
waste disposal
wastes
wind (meteorology)

air purification

GS purification
. **air purification**
RT carbon dioxide concentration
carbon dioxide removal
decontamination
electrostatic precipitators
Hopcalite (trademark)
rebreathing
sterilization
ventilation

air quality

GS quality
. environmental quality
. . **air quality**
RT Earth atmosphere
environments

indoor air pollution
particulates
pollution control
pollution monitoring
volatile organic compounds

air sampling

GS sampling
. **air sampling**
RT electrostatic precipitators
environment pollution
gas analysis
Global Air Sampling Program
indoor air pollution
ozonesondes
particulates
smog

air sea ice interactions

GS gas-liquid interactions
. air water interactions
. . **air sea ice interactions**
RT ∞ interactions
polynyas
sea ice

air sea interactions

USE **air water interactions**

air showers

(added August 1997)
USE **cosmic ray showers**

air sickness

USE **motion sickness**

air slew missiles

DEF Solid propellant rockets utilizing thrust vector control.

GS missiles
. **air slew missiles**
RT maneuverability
 ∞ rockets
solid propellant rocket engines
thrust vector control

air start

UF *engine relight (in-flight)*
in-flight starting
GS starting
. **air start**
RT aircraft control
aircraft engines
engine control
flight tests

air to air missiles

UF *air to air rockets*
GS missiles
. **air to air missiles**
. . Falcon missile
. . Matra missile
. . Sidewinder missiles
. . Sparrow missiles
. . . Sparrow 2 missile
. . . Sparrow 3 missile
RT antiaircraft missiles
ramjet missiles
SIAM missiles
space weapons
surface to air missiles

air to air refueling

GS refueling
. **air to air refueling**
RT tanker aircraft

air to air rockets

USE **air to air missiles**

air to surface missiles

GS missiles
. **air to surface missiles**
. . Bullpup missiles
. . Condor missile
. . Harpoon missile
. . Hound Dog missile
. . Maverick missiles
. . quail missile
. . Shrike missile
RT miss distance

ordnance
surface to air missiles
surface to surface missiles
 ∞ surfaces
weapon systems

air traffic

GS traffic
. **air traffic**
RT aircraft hazards
airline operations
airspace
collision avoidance
flight hazards
flight paths
flight plans
National Airspace Utilization System
National Aviation System

air traffic control

DEF A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

GS ground based control
. **air traffic control**
. . automated en route ATC
. . radar approach control
traffic control
. **air traffic control**
. . automated en route ATC
. . radar approach control
RT aeronautical satellites
airborne radar approach
aircraft approach spacing
aircraft communication
aircraft guidance
aircraft safety
airport surface detection equipment
airport towers
airports
airspace
approach
approach control
approach indicators
attitude control
automated pilot advisory system
automated radar terminal system
Beacon Collision Avoidance System
collision avoidance
collisions
 ∞ control
discrete address beacon system
flight altitude
flight control
flight management systems
flight paths
flight plans
flight rules
flight safety
flight time
ground support equipment
ground-air-ground communication
heliports
instrument flight rules
instrument landing systems
landing
landing aids
landing instruments
landing radar
LOCATES system
microwave landing systems
midair collisions
military air facilities
National Airspace System
National Airspace Utilization System
National Aviation System
navigation aids
 ∞ operations
radar navigation
radio navigation
routes
situational awareness
solar compasses
surveillance radar
takeoff
taxiing
towers
tracking (position)
transponders

vortex advisory system
vortex avoidance

air traffic controllers (personnel)
GS personnel
. **air traffic controllers (personnel)**
RT airport towers
ground based control
landing aids
traffic control

air transportation
DEF The conveyance of cargo and passengers by means of airplanes, helicopters, and other airborne vehicles.
GS transportation
. **air transportation**
RT airline operations
commercial aircraft
commuter aircraft
compound helicopters
general aviation aircraft
marine transportation
National Aviation System
passenger aircraft
rapid transit systems
short haul aircraft
transport aircraft

air water interactions
UF *air sea interactions*
GS gas-liquid interactions
. **air water interactions**
. . air sea ice interactions
RT Atmospheric & Oceanographic Inform Sys
Earth cryosphere
el Nino
gyres
hydrological cycle
∞ interactions
liquid-gas mixtures
liquid-vapor interfaces
Madden-Julian Oscillation
ocean dynamics
ocean models
sea surface temperature
water tunnel tests

airborne equipment
GS onboard equipment
. **airborne equipment**
. . airborne/spaceborne computers
. . Light Airborne Multipurpose System
. . TERCOM
RT Advanced Range Instrumentation Aircraft
airborne radar
aircraft communication
aircraft equipment
Astroplane
automatic landing control
avionics
balloon-borne instruments
cockpit weather information systems
∞ electric equipment
∞ equipment
flight instruments
hydraulic equipment
Kuiper Airborne Observatory
map matching guidance
MATTS (systems)
radar equipment
radio equipment
SOFIA (airborne observatory)
vacuum arc switches

airborne infection
GS diseases
. infectious diseases
. . **airborne infection**
RT aerobiology
parasitic diseases

Airborne Integrated Reconnaissance System
DEF Aerial reconnaissance system incorporating various modes of detection. Used for AIRS (reconnaissance sys).

UF *AIRS (reconnaissance sys)*
GS reconnaissance
. aerial reconnaissance
. . **Airborne Integrated Reconnaissance System**
RT ground truth
photoreconnaissance
∞ systems
targets

airborne lasers
GS onboard equipment
. **airborne lasers**
stimulated emission devices
. lasers
. . **airborne lasers**
RT laser applications
laser ranger/tracker
remote sensors
spaceborne lasers

airborne radar
(added August 1992)
GS radar
. **airborne radar**
. . airborne surveillance radar
RT airborne equipment
clutter
digital radar systems
Doppler radar
radar echoes
radar equipment
radar imagery
radar maps
radar receivers
radar targets
remote sensing
remote sensors
side-looking radar
space based radar
space-time adaptive processing
synthetic aperture radar

airborne radar approach
DEF The use of airborne radar for helicopter approach control -- the radar cursor technique.
GS approach
. **airborne radar approach**
RT air traffic control
aircraft approach spacing
helicopter control
helicopters
landing aids
radar approach control

airborne range and orbit determination
UF *AROD (range-orbit determination)*
GS orbit determination
. **airborne range and orbit determination**
rangefinding
. **airborne range and orbit determination**
RT ∞ measurement
orbits

airborne surveillance radar
GS radar
. airborne radar
. . **airborne surveillance radar**
. . surveillance radar
. . **airborne surveillance radar**
RT aircraft instruments
display devices
onboard equipment

Airborne Warning and Control System
USE **AWACS aircraft**

airborne/spaceborne computers
UF *flight computers*
onboard computers
spacecraft computers
GS data processing equipment
. computers
. . embedded computer systems
. . . **airborne/spaceborne computers**
onboard equipment
. airborne equipment

RT . . **airborne/spaceborne computers**
data processing
flight management systems
highly maneuverable aircraft
minicomputers
onboard data processing
spacecraft components
spacecraft electronic equipment
systems integration

Airbus
USE **European Airbus**

∞ **aircraft**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *aerodynamic vehicles*
RT A-1 aircraft
A-2 aircraft
A-3 aircraft
A-4 aircraft
A-5 aircraft
A-6 aircraft
A-7 aircraft
A-9 aircraft
A-10 aircraft
A-37 aircraft
A-300 aircraft
A-330 aircraft
A-340 aircraft
Advanced Range Instrumentation Aircraft
aerodynamics
aeronautical engineering
∞ aeronautics
aerospace engineering
aerospace industry
aerospace planes
aerospace vehicles
agricultural aircraft
AH-1S helicopter
AH-1W helicopter
air data systems
aircraft accident investigation
aircraft accidents
aircraft antennas
aircraft approach spacing
aircraft brakes
aircraft carriers
aircraft communication
aircraft compartments
aircraft configurations
aircraft construction materials
aircraft control
aircraft design
aircraft detection
aircraft engines
aircraft equipment
aircraft fuel systems
aircraft fuels
aircraft guidance
aircraft hazards
aircraft hydraulic systems
aircraft industry
aircraft instruments
aircraft lights
aircraft maintenance
aircraft maneuvers
aircraft noise
aircraft parts
aircraft performance
aircraft pilots
aircraft production
aircraft production costs
aircraft reliability
aircraft runup
aircraft safety
aircraft specifications
aircraft spin
aircraft stability
aircraft structures
aircraft survivability
aircraft tires
aircraft wakes
airships
Aladin 2 aircraft
Alouette helicopters
Alpha jet aircraft
amphibious aircraft

aircraft

AN-2 aircraft
AN-22 aircraft
AN-24 aircraft
antisubmarine warfare aircraft
Antonov aircraft
Argosy MK-1 aircraft
ASSET gliders
ATLIT project
ATR-72 aircraft
attack aircraft
AVRO 707 aircraft
AWACS aircraft
B-1 aircraft
B-2 aircraft
B-26 aircraft
B-47 aircraft
B-50 aircraft
B-52 aircraft
B-57 aircraft
B-58 aircraft
B-66 aircraft
B-70 aircraft
BAC 111 aircraft
BAC aircraft
balloons
Beagle aircraft
Beech 99 aircraft
Beechcraft 18 aircraft
Beechcraft aircraft
Bell 214A helicopter
Bell aircraft
biplanes
bird-aircraft collisions
Boeing 707 aircraft
Boeing 717 aircraft
Boeing 720 aircraft
Boeing 727 aircraft
Boeing 733 aircraft
Boeing 737 aircraft
Boeing 747 aircraft
Boeing 757 aircraft
Boeing 767 aircraft
Boeing 777 aircraft
Boeing 2707 aircraft
Boeing aircraft
Bolkow aircraft
bomber aircraft
boostglide vehicles
Breguet 940 aircraft
Breguet 941 aircraft
Breguet 1150 aircraft
Breguet aircraft
Buccaneer aircraft
C-1A aircraft
C-2 aircraft
C-5 aircraft
C-8A augmentor wing aircraft
C-9 aircraft
C-15 aircraft
C-17 aircraft
C-33 aircraft
C-35 aircraft
C-46 aircraft
C-47 aircraft
C-54 aircraft
C-118 aircraft
C-119 aircraft
C-121 aircraft
C-123 aircraft
C-124 aircraft
C-130 aircraft
C-131 aircraft
C-133 aircraft
C-135 aircraft
C-140 aircraft
C-141 aircraft
C-160 aircraft
Canadair aircraft
Canberra aircraft
cargo aircraft
ceiling (aircraft capability)
Cessna 172 aircraft
Cessna 205 aircraft
Cessna 402B aircraft
Cessna aircraft
Cessna L-19 aircraft
Chance-Vought aircraft
Chinese aircraft
CL-41 aircraft
CL-44 aircraft
CL-84 aircraft
CL-600 challenger aircraft
CL-823 aircraft
COIN aircraft
Comet 4 aircraft
commercial aircraft
commuter aircraft
compound helicopters
Concorde aircraft
Curtiss-Wright aircraft
CV-340 aircraft
CV-440 aircraft
CV-880 aircraft
CV-990 aircraft
D-558 aircraft
Dassault aircraft
DC 3 aircraft
DC 7 aircraft
DC 8 aircraft
DC 9 aircraft
DC 10 aircraft
de Havilland aircraft
DH 112 aircraft
DH 115 aircraft
DH 121 aircraft
DH 125 aircraft
DHC 2 aircraft
DHC 4 aircraft
DHC 5 aircraft
DO-27 aircraft
DO-28 aircraft
DO-31 aircraft
DO-328 aircraft
Dornier aircraft
Douglas aircraft
drone aircraft
E-2 aircraft
E-3A aircraft
E-4 aircraft
Earth Resources Survey aircraft
EH-101 helicopter
Electra aircraft
electronic aircraft
European Airbus
F-2 aircraft
F-4 aircraft
F-5 aircraft
F-8 aircraft
F-9 aircraft
F-14 aircraft
F-15 aircraft
F-16 aircraft
F-17 aircraft
F-18 aircraft
F-22 aircraft
F-27 aircraft
F-28 transport aircraft
F-84 aircraft
F-86 aircraft
F-89 aircraft
F-94 aircraft
F-100 aircraft
F-101 aircraft
F-102 aircraft
F-104 aircraft
F-105 aircraft
F-106 aircraft
F-111 aircraft
F-117A aircraft
Fairchild-Hiller aircraft
Fairey aircraft
fan in wing aircraft
FD 2 aircraft
Fiat aircraft
fighter aircraft
Firebee 2 target drone aircraft
flight test vehicles
flying platforms
Fokker aircraft
Folding Fin aircraft rocket vehicle
free wing aircraft
FV-12A aircraft
G-1 aircraft
G-91 aircraft
G-95/4 aircraft
G-222 aircraft
GA-5 aircraft
general aviation aircraft
General Dynamics aircraft
GETOL aircraft
gliders
ground effect machines
Grumman aircraft
Gyrodyne aircraft
H-17 helicopter
H-19 helicopter
H-43 helicopter
H-53 helicopter
H-54 helicopter
H-56 helicopter
H-60 Helicopter
H-126 aircraft
Hamburger aircraft
Handley Page aircraft
hang gliders
Harrier aircraft
Hawker Siddeley aircraft
heavy lift helicopters
Heinkel aircraft
helicopters
Helio aircraft
HFB-320 aircraft
HH-65 helicopter
highly maneuverable aircraft
Hiller aircraft
hovercraft ground effect machines
HP-115 aircraft
HS-748 aircraft
HS-801 aircraft
Hughes aircraft
hypersonic aircraft
hypersonic gliders
IL-14 aircraft
IL-62 aircraft
IL-76 aircraft
IL-86 aircraft
IL-96 aircraft
Ilyushin aircraft
inflatable gliders
Jaguar aircraft
JAS-39 aircraft
jet aircraft
jet aircraft noise
jet provost aircraft
Jetstream aircraft
Jindivik target aircraft
Kaman aircraft
Kawasaki aircraft
L-1011 aircraft
L-2000 aircraft
Lear jet aircraft
lifting reentry vehicles
light aircraft
light helicopters
light intratheater transport
light transport aircraft
Ling-Temco-Vought aircraft
Lockheed aircraft
Lockheed model 18 aircraft
∞ low wing aircraft
man powered aircraft
Martin aircraft
McDonnell aircraft
McDonnell Douglas aircraft
MD 11 aircraft
MD 80 aircraft
Mercure aircraft
meteorological research aircraft
MH-262 aircraft
MiG aircraft
Mil aircraft
military air facilities
∞ military aircraft
military helicopters
monoplanes
MRCA aircraft
multiengine vehicles
Mystere 50 aircraft
Navion aircraft
night flights (aircraft)
Nihon aircraft
noise prediction (aircraft)
Nord 1500 aircraft
Nord aircraft
North American aircraft
Northrop aircraft
nuclear propelled aircraft

observation aircraft
onboard equipment
OV-1 aircraft
OV-10 aircraft
P-3 aircraft
P-51 aircraft
P-160 aircraft
P-166 aircraft
P-308 aircraft
P-1127 aircraft
P-1154 aircraft
PA-34 Seneca aircraft
passenger aircraft
PD-808 aircraft
Piaggio aircraft
Piasecki aircraft
pilotless aircraft
Piper aircraft
planetary aerial vehicles
Potez aircraft
powered lift aircraft
propulsion
Questol aircraft
reconnaissance aircraft
remotely piloted vehicles
Republic aircraft
research aircraft
rigid rotor helicopters
rocket planes
rotary wing aircraft
rotor systems research aircraft
Ryan aircraft
S-2 aircraft
S-3 aircraft
S-61 helicopter
S-67 helicopter
SA-321 helicopter
SA-330 helicopter
Saab 37 aircraft
Saab 105 aircraft
Saab aircraft
SC-1 aircraft
SC-5 aircraft
SC-7 aircraft
Schleicher aircraft
Scimitar aircraft
SE-210 aircraft
short haul aircraft
short takeoff aircraft
Siebel aircraft
Sikorsky aircraft
Sikorsky Whirlwind helicopter
single engine aircraft
solar powered aircraft
spanloader aircraft
SR-71 aircraft
submersible aircraft
∞ subsonic aircraft
Sud Aviation aircraft
Sukhoi aircraft
supersonic aircraft
supersonic cruise aircraft research
T-2 aircraft
T-28 aircraft
T-33 aircraft
T-37 aircraft
T-38 aircraft
T-39 aircraft
TACT program
tailless aircraft
tandem rotor helicopters
tandem wing aircraft
tanker aircraft
target drone aircraft
test vehicles
tilt rotor aircraft
Tilt Rotor Research Aircraft Program
tilt wing aircraft
training aircraft
transatmospheric vehicles
transport aircraft
TS-11 aircraft
TSR-2 aircraft
TU-104 aircraft
TU-124 aircraft
TU-134 aircraft
TU-144 aircraft
TU-154 aircraft
TU-204 aircraft

Tupolev aircraft
turbofan aircraft
turboprop aircraft
U-2 aircraft
U-10 aircraft
ultralight aircraft
unidentified flying objects
utility aircraft
V-22 aircraft
V/STOL aircraft
Valiant aircraft
Vampire MK 35 aircraft
VATOL aircraft
VC-10 aircraft
vertical takeoff aircraft
Victor MK-1 aircraft
Viscount aircraft
VJ-101 aircraft
Vulcan aircraft
VZ-2 aircraft
VZ-8 aircraft
water takeoff and landing aircraft
weapons delivery
weather reconnaissance aircraft
Weser aircraft
Westland aircraft
Westland ground effect machines
Westland Whirlwind helicopter
wing nacelle configurations
∞ winged vehicles
X-1 aircraft
X-2 aircraft
X-3 aircraft
X-5 aircraft
X-13 aircraft
X-14 aircraft
X-15 aircraft
X-19 aircraft
X-20 aircraft
X-21 aircraft
X-21A aircraft
X-22 aircraft
X-22A aircraft
X-24 aircraft
X-29 aircraft
X-31 aircraft
X-36 aircraft
XC-142 aircraft
XV-3 aircraft
XV-4 aircraft
XV-5 aircraft
XV-8A aircraft
XV-9A aircraft
XV-11A aircraft
XV-15 aircraft
Yak 40 aircraft
Yakovlev aircraft
YC-14 aircraft
YF-12 aircraft

aircraft accident investigation

GS investigation
. accident investigation
. . **aircraft accident investigation**
RT ∞ aircraft
aviation meteorology
insurance (contracts)

aircraft accidents

GS accidents
. **aircraft accidents**
. . bird-aircraft collisions
RT ∞ aircraft
aircraft safety
aviation meteorology
collisions
crash landing
crashes
crashworthiness
ditching (landing)
emergency landing
flight hazards
flight safety
human factors engineering
insurance (contracts)
malfunctions
midair collisions
pilot error
runway incursions

weather

aircraft antennas

GS antennas
. **aircraft antennas**
RT ∞ aircraft
loop antennas
microwave antennas
missile antennas
protuberances
radar antennas
radio antennas

aircraft approach spacing

GS spacing
. **aircraft approach spacing**
RT aeronautical satellites
air traffic control
airborne radar approach
∞ aircraft
aircraft safety
airspace
approach
approach control
collision avoidance
flight safety
glide paths
ground based control
instrument approach
National Airspace Utilization System
National Aviation System
vortex advisory system
vortex avoidance

aircraft bases

USE **military air facilities**

aircraft brakes

GS brakes (for arresting motion)
. **aircraft brakes**
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aerodynamic brakes
∞ aircraft
antiskid devices
ballutes
drag chutes
drag devices
thrust reversal
towed bodies
wheel brakes

aircraft cabins

USE **aircraft compartments**

aircraft carriers

GS surface vehicles
. **aircraft carriers**
water vehicles
. ships
. . **aircraft carriers**
RT ∞ aircraft
arresting gear
∞ carriers
military air facilities
∞ military aircraft
∞ military vehicles
navy
nuclear powered ships

aircraft communication

DEF The conveyance of information to or from aircraft by radio or other signals.
GS communicating
. **aircraft communication**
telecommunication
. **aircraft communication**
RT aeronautical satellites
air traffic control
airborne equipment
∞ aircraft
approach control
avionics
ground-air-ground communication
radar beacons
radio communication

aircraft compartments

wireless communication

aircraft compartments

- UF *aircraft cabins*
aircraft interiors
- GS compartments
 - . **aircraft compartments**
- RT ∞ aircraft
 - bays (structural units)
 - cabin atmospheres
- ∞ cabins
 - cockpits
 - gondolas
 - pressurized cabins
 - windshields

aircraft configurations

- UF *fixed-wing aircraft*
- GS **aircraft configurations**
 - . drooped airfoils
- RT aerodynamic configurations
 - aerodynamic interference
- ∞ aircraft
 - blended-wing-body configurations
 - compound helicopters
- ∞ configurations
 - control configured vehicles
 - flared bodies
- ∞ flight vehicles
 - joined wings
- ∞ low wing aircraft
 - missile configurations
 - propulsion system configurations
 - spacecraft configurations
 - under surface blowing
 - upper surface blowing
 - wing roots

aircraft construction

- USE **aircraft structures**

aircraft construction materials

- DEF A general term designating the materials used in manufacturing an aircraft.
- GS **aircraft construction materials**
 - . airframe materials
- RT ∞ aircraft
 - airframes
 - aluminum-lithium alloys
 - ceramic matrix composites
 - composite materials
- ∞ construction materials
 - functionally gradient materials
 - fuselages
 - lithium alloys
- ∞ materials
 - materials selection
 - plastic aircraft structures
 - skin (structural member)
 - structural members
 - wings

aircraft control

- DEF To direct the movements of an aircraft with particular reference to changes in attitude and speed.
- UF *flap control*
- GS **aircraft control**
 - . helicopter control
- RT active control
 - air start
- ∞ aircraft
 - attitude control
 - automatic control
 - automatic flight control
- ∞ control
 - control equipment
 - control simulation
 - control stability
 - control sticks
 - controllability
 - DAST program
 - directional control
 - engine control
 - flight control
 - flight envelopes
 - flight instruments
 - fly by light control
 - fly by tube control
 - fly by wire control

ground based control
in-flight simulation
lateral control
longitudinal control
maneuverability
manual control
minor circle turning flight
pilot induced oscillation
radio control
remote control
stability augmentation
turbojet engine control
visual control

aircraft design

DEF The act of conceiving and planning the structure, systems, and performance characteristics of an aircraft vehicle or any other apparatus, machine or contrivance intended to be borne up either by dynamic action of the air upon the object's surfaces, or by the object's own buoyancy.

GS aircraft design

- . helicopter design
- acoustic retrofitting
- aerodynamic configurations
- aeroelastic research wings
- aeronautical engineering
- aeroquatic vehicles

∞ aircraft

- airfoils
 - blended-wing-body configurations
 - channel wings
 - compound helicopters
 - computer aided design
 - control configured vehicles
 - DAST program
- ∞ design
- design optimization
 - engine airframe integration
 - engine design
 - flight tests
 - free wing aircraft
 - induced drag
 - lofting
 - missile design
 - multidisciplinary design optimization
 - product development
 - rotor systems research aircraft
 - shape optimization
 - short haul aircraft
 - streamlining
 - structural design
 - systems engineering
 - Terminal Configured Vehicle Program
 - transatmospheric vehicles
 - vortex sheets
 - weight reduction
 - YF-12 aircraft

aircraft detection

- GS detection
 - . **aircraft detection**

RT ∞ aircraft

- ∞ detectors
 - F-117A aircraft
 - IFF systems (identification)
 - infrared suppression
 - tracking (position)

Aircraft Energy Efficiency program

- USE **ACEE program**

aircraft engines

- UF *aircraft power sources*
- GS engines
 - . **aircraft engines**
 - . . convertible fan-shaft engines
 - . . helicopter engines
 - . . J-52 engine
 - . . J-58 engine
 - . . J-97 engine
 - . . T-34 engine
 - . . T-38 engine
 - . . T-55 engine
 - . . T-63 engine
 - . . T-76 engine
 - . . T-78 engine
 - . . TF-30 engine
 - . . TF-34 engine

- . . TF-41 engine
 - . . variable cycle engines
 - . . variable stream control engines
- RT ACEE program
- air start
- ∞ aircraft
- engine airframe integration
 - gas turbine engines
 - hydrogen engines
 - infrared suppression
 - internal combustion engines
 - jet engines
 - jet propulsion
 - laser propulsion
 - nuclear propulsion
 - piston engines
- ∞ power supplies
- quiet engine program
 - rocket engines
 - rotary engines
 - T-58 engine
 - topping cycle engines
 - turbine engines
 - Wankel engines

aircraft equipment

- GS onboard equipment
 - . **aircraft equipment**
 - . . bombing equipment
 - . . ejection seats
 - . . flying ejection seats
 - . . TERCOM
- RT airborne equipment
 - ∞ aircraft
 - aircraft hydraulic systems
 - aircraft lights
 - aircraft power supplies
 - aircraft tires
 - automatic landing control
 - automatic pilots
 - avionics
 - commonality
 - display devices
 - ∞ equipment
 - flight instruments
 - landing aids
 - landing instruments
 - Light Airborne Multipurpose System
 - navigation aids
 - navigation instruments
 - radio direction finders

aircraft fuel systems

- GS fuel systems
 - . **aircraft fuel systems**
- RT ∞ aircraft
 - fuel pumps
 - fuel tank pressurization
 - fuel tanks
 - fuel valves
- ∞ systems

aircraft fuels

- GS fuels
 - . **aircraft fuels**
- RT ∞ aircraft
 - antimisting fuels
 - automobile fuels
 - hydrocarbon fuels
 - jet engine fuels
 - liquid fuels
 - liquid rocket propellants
 - monopropellants
 - slurry propellants
 - solid propellants
 - tanker aircraft

aircraft guidance

- GS guidance (motion)
 - . **aircraft guidance**
- RT air traffic control
 - ∞ aircraft
 - approach control
 - automated en route ATC
 - collision avoidance
 - ∞ indicators
 - instrument landing systems
 - radar approach control
 - radar navigation
 - radarscopes

- radio navigation
- aircraft hangars*
- USE **hangars**
- aircraft hazards**
- GS hazards
 - . **aircraft hazards**
 - . . runway incursions
- RT air traffic
- ∞ aircraft
 - aircraft icing
 - aviation meteorology
 - bird-aircraft collisions
 - birds
 - collisions
 - crash landing
 - crashes
 - flight hazards
 - flight safety
 - foreign bodies
 - human factors engineering
 - malfunctions
 - midair collisions
 - noise (sound)
 - operational hazards
 - refueling
 - threat evaluation
 - toxic hazards
 - weather
- aircraft hydraulic systems**
- GS hydraulic equipment
 - . **aircraft hydraulic systems**
- RT actuators
- ∞ aircraft
 - aircraft equipment
 - servocontrol
 - servomechanisms
- ∞ systems
- aircraft icing**
- (added August 1991)
- DEF Accumulation of ice on aircraft external surfaces, propellers and engine inlets from freezing rain or flight through inclement weather.
- UF *wing icing*
- GS ice formation
 - . **aircraft icing**
- RT aircraft hazards
- aircraft safety
- aviation meteorology
- deicers
- deicing
- flight conditions
- flight hazards
- flight safety
- ice prevention
- aircraft industry**
- GS industries
 - . aerospace industry
 - . . **aircraft industry**
- RT aeronautical engineering
- ∞ aircraft
 - aircraft production costs
- aircraft instruments**
- DEF Any electronic or mechanically-based instrument or instrument system designed for detecting, measuring, displaying, recording, telemetering, processing, or analyzing different values or quantities encountered in the flight of an aircraft; often supporting the general control of the aircraft.
- GS **aircraft instruments**
 - . approach indicators
 - . automatic pilots
 - . flight recorders
 - . . flight load recorders
 - . rate of climb indicators
- RT airborne surveillance radar
- ∞ aircraft
 - altimeters
 - anemometers
 - attitude indicators
 - automatic flight control
 - avionics
 - compasses
 - display devices
- flight control
- flight instruments
- flight paths
- flight test instruments
- I2S cameras
- indicating instruments
- instrument approach
- instrument landing systems
- ∞ instruments
 - landing aids
 - landing instruments
 - laser altimeters
 - light emitting diodes
- ∞ measurement
 - measuring instruments
 - monitors
 - navigation aids
 - navigation instruments
 - position indicators
 - radar
 - radio altimeters
 - recording instruments
 - speed indicators
 - tachometers
- aircraft interiors*
- USE **aircraft compartments**
- aircraft landing**
- GS landing
 - . **aircraft landing**
- RT air cushion landing systems
- all-weather landing systems
- blind landing
- ceilings (meteorology)
- crashworthiness
- emergency landing
- enhanced vision
- glide landings
- hard landing
- instrument landing systems
- landing aids
- landing mats
- landing radar
- low visibility
- microwave landing systems
- runway alignment
- soft landing
- spacecraft landing
- touchdown
- vertical landing
- vortex avoidance
- water landing
- aircraft launching devices**
- UF *takeoff systems*
- GS launchers
 - . **aircraft launching devices**
 - . . JATO engines
- RT catapults
- aircraft lights**
- GS lighting equipment
 - . luminaires
 - . . **aircraft lights**
- RT ∞ aircraft
 - aircraft equipment
 - beacons
- aircraft maintenance**
- GS maintenance
 - . **aircraft maintenance**
- RT ∞ aircraft
 - checkout
 - flight operations
 - ground support equipment
 - logistics
 - preventive maintenance
- aircraft maneuvers**
- GS maneuvers
 - . **aircraft maneuvers**
- RT ∞ aircraft
 - approach control
 - flight characteristics
 - flight envelopes
 - flight paths
 - formation flying
 - highly maneuverable aircraft
 - maneuverability
- obstacle avoidance
- trajectory optimization
- transition flight
- turning flight
- X-31 aircraft
- aircraft models**
- GS models
 - . **aircraft models**
- RT dynamic models
- mathematical models
- powered models
- scale models
- semispan models
- spacecraft models
- wind tunnel models
- aircraft noise**
- GS elastic waves
 - . sound waves
 - . . noise (sound)
 - . . . **aircraft noise**
 - blade slap noise
 - jet aircraft noise
 - propeller noise
 - sonic booms
- RT acoustic retrofitting
- aeroacoustics
- aerodynamic noise
- ∞ aircraft
 - coaxial nozzles
 - engine noise
 - Ffowcs Williams-Hawkings equation
 - footprints
 - jet aircraft
 - mufflers
 - noise intensity
 - noise measurement
 - noise prediction (aircraft)
 - noise reduction
 - synchrophasing
- aircraft noise prediction*
- USE **noise prediction (aircraft)**
- aircraft parts**
- RT ∞ aircraft
 - airfoils
 - airframes
 - channel wings
 - control surfaces
 - fuselages
 - landing gear
 - oblique wings
 - protuberances
 - swing tail assemblies
 - swing wings
 - tail assemblies
 - wings
- aircraft performance**
- DEF The manner or effectiveness with which an aircraft vehicle or any airborne structure, machine, or contrivance functions while in operation.
- GS **aircraft performance**
 - . helicopter performance
- RT aerodynamic stalling
- ∞ aircraft
 - aircraft spin
 - airspeed
 - controllability
 - Cooper-Harper ratings
 - distance
 - flight characteristics
 - flight envelopes
 - maneuverability
 - minimum drag
 - payloads
- ∞ performance
 - pilot performance
 - pilot ratings
 - specifications
 - takeoff runs
- aircraft pilots**
- UF *aviators*
- copilots*
- jet pilots*
- GS personnel

aircraft power supplies

- . flying personnel
 - . . . pilots (personnel)
 - **aircraft pilots**
 - test pilots
 - . operators (personnel)
 - . . pilots (personnel)
 - . . . **aircraft pilots**
 - test pilots
- RT ∞ aircraft
aviation psychology
flight crews
∞ pilots

aircraft power sources

- USE **aircraft engines**

aircraft power supplies

- DEF Electric power sources for the normal operation of aircraft.
- GS electric power supplies
. **aircraft power supplies**
- RT aircraft equipment
auxiliary power sources
electric generators
∞ power supplies

aircraft production

- UF *fuselage mounting*
- RT ∞ aircraft
costs
equipment specifications
product development
∞ production
production engineering

aircraft production costs

- GS costs
. production costs
. . **aircraft production costs**
- RT ∞ aircraft
aircraft industry
cost estimates
efficiency
∞ engineering
financial management
industries
manufacturing
production engineering
production management
productivity

aircraft reliability

- UF *airworthiness*
airworthiness requirements
- GS reliability
. **aircraft reliability**
- RT ∞ aircraft
certification
circuit reliability
component reliability
helicopter performance
quality control
structural reliability
total quality management
vulnerability

aircraft runup

- DEF Final engine check prior to takeoff.
- GS preflight operations
. **aircraft runup**
- RT ∞ aircraft
engine noise
engine tests
ground tests
jet aircraft noise

aircraft safety

- DEF Techniques used to prevent aircraft failures or accidents; the degree to which an aircraft is free of the risk of malfunction or accidents.
- GS safety
. **aircraft safety**
- RT abort apparatus
aerospace safety
air piracy
air traffic control
∞ aircraft
aircraft accidents
aircraft approach spacing

- aircraft icing
aircraft spin
all-weather landing systems
arresting gear
Beacon Collision Avoidance System
collision avoidance
collisions
crash landing
crashes
crashworthiness
ejection seats
emergency landing
flight hazards
flight safety
flying ejection seats
landing aids
landing radar
microwave landing systems
midair collisions
National Airspace System
navigation aids
runway incursions
safety devices
solar compasses
terrorism
threat evaluation
weather
wheel brakes

aircraft specifications

- GS specifications
. **aircraft specifications**
- RT ∞ aircraft
airspeed
ceiling (aircraft capability)
controllability
distance
flight characteristics
payloads

aircraft spin

- DEF A prolonged stall in fixed-wing aircraft characterized by a sustained spiral descent, usually with the nose down.
- RT aerodynamic stalling
∞ aircraft
aircraft performance
aircraft safety
control stability
controllability
crash landing
flight hazards
flight safety
hazards
maneuvers
spin dynamics

aircraft stability

- DEF The property of an aircraft to maintain its attitude or to resist displacement, and if displaced, to develop forces and moments tending to restore the original condition.
- GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **aircraft stability**
. . . . hovering stability
stability
. dynamic stability
. . motion stability
. . . **aircraft stability**
. . . . hovering stability
- RT aerodynamic balance
aerodynamic stability
∞ aircraft
attitude stability
buffeting
control stability
controllability
counterbalances
directional stability
flight envelopes
horizontal flight
lateral stability
liquid sloshing
longitudinal stability
low speed stability
pilot induced oscillation
static stability
structural stability

- turning flight
upper surface blown flaps
wind tunnel stability tests
wing rock

aircraft structures

- UF *aircraft construction*
- GS **aircraft structures**
. airframes
. fuselages
. plastic aircraft structures
- RT aerodynamic interference
aeroelasticity
afterbodies
∞ aircraft
airfoils
boron-epoxy composites
canard configurations
canopies
centerbodies
channel wings
control surfaces
fairings
forebodies
hulls (structures)
interference fit
leading edge flaps
noses (forebodies)
oblique wings
pylon mounting
shells (structural forms)
spacecraft structures
streamlining
∞ structures
swing tail assemblies
swing wings
tail assemblies
wings

aircraft survivability

- RT ∞ aircraft
combat
∞ construction materials
durability
flight control
helicopters
life (durability)
∞ military aircraft
plastic aircraft structures
reinforced plastics
reliability
spacecraft survivability
survival
survival equipment
vulnerability

aircraft tires

- GS tires
. **aircraft tires**
- RT ∞ aircraft
aircraft equipment
landing gear
vehicle wheels

aircraft wakes

- GS wakes
. **aircraft wakes**
. . helicopter wakes
. . slipstreams
. . . propeller slipstreams
- RT ∞ aircraft
hypersonic wakes
laminar wakes
supersonic wakes
turbulent wakes
vortex advisory system
vortex alleviation

aircrews

- USE **flight crews**

airdrops

- RT air cargo
cargo
delivery
drag chutes
parachutes

- parafoils
- airfield surface movements**
 - RT air cargo
 - airports
 - hangars
 - materials handling
 - mobile lounges
 - runway incursions
 - runways
 - ∞ surfaces
 - taxiing
- airfields*
- USE **airports**
- airfoil characteristics*
- USE **airfoils**
- airfoil fences**
 - GS airfoils
 - . **airfoil fences**
 - RT boundary layer control
 - ∞ fences
 - vortex generators
 - wings
- airfoil oscillations**
 - DEF Periodic motions experienced by airfoils in aerodynamic conditions.
 - GS oscillations
 - . **airfoil oscillations**
 - . . wing oscillations
 - . . . wing rock
 - RT aerodynamic stability
 - aeroelasticity
 - aeroservoelasticity
 - flapping
 - flutter
 - flutter analysis
 - rotary stability
 - structural vibration
 - undamped oscillations
 - vibration
 - vibration mode
- airfoil profiles**
 - UF *aerodynamic chords*
 - airfoil sections*
 - airfoil thickness*
 - Clark Y airfoil*
 - GS **airfoil profiles**
 - . wing profiles
 - . . wing span
 - RT aerodynamic interference
 - airfoils
 - blade tips
 - ∞ cross sections
 - Joukowski transformation
 - Kutta-Joukowski condition
 - Lighthill method
 - nose tips
 - ∞ profiles
 - shape optimization
 - streamlining
 - supercritical airfoils
 - Theodorsen transformation
 - thickness
 - thickness ratio
 - thin airfoils
 - thin wings
 - tips
 - wedges
 - wing tips
 - airfoil sections*
 - USE **airfoil profiles**
 - airfoil thickness*
 - USE **airfoil profiles**
 - airfoils**
 - DEF Structures, pieces, or bodies, originally likened to foils or leaves in being wide and thin, designed to obtain a useful reaction on themselves in their motion through the air. Used for airfoil characteristics.
 - UF *airfoil characteristics*
 - GS **airfoils**
 - . aerial rudders
 - . ailerons
 - . . flaperons
 - . . spoiler slot ailerons
 - . airfoil fences
 - . circulation control airfoils
 - . . circulation control rotors
 - . drooped airfoils
 - . elevators (control surfaces)
 - . elevons
 - . flaps (control surfaces)
 - . . externally blown flaps
 - . . . upper surface blown flaps
 - . . flaperons
 - . . jet flaps
 - . . split flaps
 - . . wing flaps
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - . horizontal tail surfaces
 - . laminar flow airfoils
 - . propeller blades
 - . spoilers
 - . supercritical airfoils
 - . . supercritical wings
 - . supersonic airfoils
 - . tabs (control surfaces)
 - . thin airfoils
 - . . thin wings
 - . . . infinite span wings
 - . wings
 - . . aeroelastic research wings
 - . . cambered wings
 - . . caret wings
 - . . channel wings
 - . . cruciform wings
 - . . fixed wings
 - . . flexible wings
 - . . . parawings
 - . . . GAW-1 airfoil
 - . . . GAW-2 airfoil
 - . . joined wings
 - . . low aspect ratio wings
 - . . . delta wings
 - . . . trapezoidal wings
 - . . mission adaptive wings
 - . . oblique wings
 - . . rigid wings
 - . . rotary wings
 - . . . circulation control rotors
 - . . . lifting rotors
 - . . . bearingless rotors
 - . . . rigid rotors
 - . . . tilting rotors
 - . . . tip driven rotors
 - . . . x wing rotors
 - . . slender wings
 - . . infinite span wings
 - . . supercritical wings
 - . . swept wings
 - . . . swept forward wings
 - trapezoidal wings
 - sweptback wings
 - arrow wings
 - delta wings
 - trapezoidal wings
 - swing wings
 - . . thin wings
 - . . . infinite span wings
 - . . . twisted wings
 - . . uncambered wings
 - . . . ring wings
 - . . . unswept wings
 - . . . infinite span wings
 - . . . rectangular wings
 - . . . ring wings
 - . . . variable sweep wings
 - RT aerodynamic configurations
 - aerodynamics
 - aircraft design
 - aircraft parts
 - aircraft structures
 - airfoil profiles
 - aspect ratio
 - ∞ blades
 - blade-vortex interaction
 - blunt leading edges
 - blunt trailing edges
 - body-wing configurations
 - camber
 - control surfaces
 - deicers
 - deicing
 - fins
 - ∞ foils
 - foils (materials)
 - guide vanes
 - hydrofoils
 - interactional aerodynamics
 - jet vanes
 - leading edge thrust
 - leading edges
 - lift
 - lifting bodies
 - Lighthill method
 - monoplanes
 - rotor blades (turbomachinery)
 - rotors
 - rudders
 - sharp leading edges
 - stabilizers (fluid dynamics)
 - streamlined bodies
 - streamlining
 - tail assemblies
 - trailing edges
 - turbomachine blades
 - vanes
 - waveriders
 - wedges
 - airframe materials**
 - GS aircraft construction materials
 - . **airframe materials**
 - RT airframes
 - aluminum-lithium alloys
 - composite materials
 - ∞ construction materials
 - functionally gradient materials
 - glass fiber reinforced plastics
 - ∞ materials
 - materials selection
 - structural design
 - structural members
 - airframes**
 - DEF The assembled structural and aerodynamic components of an aircraft or rocket vehicle that support the different systems and subsystems integral to the vehicle.
 - GS aircraft structures
 - . **airframes**
 - frames
 - . **airframes**
 - RT aircraft construction materials
 - aircraft parts
 - airframe materials
 - bays (structural units)
 - canopies
 - control surfaces
 - engine airframe integration
 - fins
 - fuselages
 - landing gear
 - missile bodies
 - missile structures
 - nacelles
 - protuberances
 - tail assemblies
 - wing nacelle configurations
 - wings
 - Airgeep aircraft*
 - USE **VZ-8 aircraft**
 - airglow**
 - DEF The quasi-steady radiant emission from the upper atmosphere as distinguished from the sporadic emission of the auroras. Used for atmospheric emission.
 - UF *atmospheric emission*
 - GS atmospheric radiation
 - . sky radiation
 - . . **airglow**
 - . . . geocoronal emissions
 - . . . nightglow
 - . . . twilight glow
 - electromagnetic radiation

airline operations

- . light (visible radiation)
- . . . sky radiation
- . . . **airglow**
- geocoronal emissions
- nightglow
- twilight glow

RT

- aeronomy
- atmospheric ionization
- auroras
- chemiluminescence
- Earth atmosphere
- emission
- Fabry-Perot spectrometers
- light emission
- night sky
- oxygen spectra
- radiative recombination
- Rayleigh scattering
- sky brightness

airline operations

RT

- air cargo
- air traffic
- air transportation
- civil aviation
- commercial aircraft
- operating costs
- operational problems
- ∞ operations
- passengers
- short haul aircraft

airlock modules

DEF Modular chambers capable of being hermetically sealed that provide for passage between two places of different pressure as between an altitude chamber and the outside atmosphere.

GS

- compartments
- . air locks
- . . **airlock modules**
- modules
- . **airlock modules**

RT

- Apollo applications program
- multiple docking adapters
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn workshops
- Skylab 1
- Skylab 2
- Skylab 3
- Skylab 4
- Skylab program
- space station modules
- spacecraft docking modules

airport beacons

GS

- landing aids
- . **airport beacons**
- . . discrete address beacon system
- navigation aids
- . beacons
- . . **airport beacons**
- . . . discrete address beacon system

RT

- radio beacons
- solar compasses

airport lights

GS

- landing aids
- . **airport lights**
- . . runway lights
- lighting equipment
- . luminaires
- . . **airport lights**
- . . . runway lights

RT

- searchlights

airport planning

GS

- planning
- . **airport planning**

RT

- ground support equipment
- heliports
- land use
- sites

airport security

DEF Organization of trained security personnel, surveillance and screening devices, and procedures used for the protection of airport and airline property, aircraft, passengers, employ-

ees, and visitors from injury, air piracy, and other unauthorized acts.

GS

- security
- . **airport security**

RT

- air piracy
- airports
- explosives detection
- ion mobility spectroscopy
- protection
- terrorism
- vulnerability

airport surface detection equipment

UF *ASDE*

RT

- air traffic control
- ∞ equipment
- ground based control
- radar equipment
- runway incursions
- search radar
- ∞ surfaces
- surveillance radar

airport towers

GS

- towers
- . **airport towers**

RT

- air traffic control
- air traffic controllers (personnel)
- airports
- ground based control
- heliports
- landing aids
- traffic control

airports

DEF An area of land or water that is used, or intended to be used, for the landing and takeoff of aircraft, including buildings and facilities, if any.

UF *airfields*

GS

- airports**
- . heliports

RT

- ∞ aeronautics
- air traffic control
- airfield surface movements
- airport security
- airport towers
- ∞ facilities
- hangars
- instrument landing systems
- landing aids
- landing mats
- military air facilities
- mobile lounges
- mooring
- National Airspace System
- navigation aids
- ∞ ports
- runways
- site selection
- ∞ strip

AIRS (reconnaissance sys)

USE **Airborne Integrated Reconnaissance System**

airships

DEF Propelled and steerable dirigibles dependent on gases for flotation. Used for aerostats and dirigibles.

UF *aerostats*
dirigibles

GS

- airships**
- . heavy lift airships

RT

- ∞ aircraft
- balloons
- gondolas
- inflatable structures
- ∞ military aircraft

airspace

DEF The atmosphere above a particular portion of the earth, usually defined by the boundaries of an area on the surface projected perpendicularly upward.

RT

- air law
- air traffic
- air traffic control
- aircraft approach spacing
- boundaries
- collision avoidance

flight paths
National Airspace System
National Airspace Utilization System

airspeed

GS

- rates (per time)
- . **airspeed**
- velocity
- . **airspeed**

RT

- aerodynamic stalling
- aircraft performance
- aircraft specifications
- boundary layer separation
- flight characteristics
- ground speed
- high speed
- low speed
- Mach number
- wind velocity

airworthiness

USE **aircraft reliability**

airworthiness requirements

USE **aircraft reliability**

Airy function

GS

- analysis (mathematics)
- . complex variables
- . . **Airy function**
- functions (mathematics)
- . **Airy function**

RT

- cylindrical bodies
- differential equations
- elastic properties
- harmonic functions
- Poisson ratio
- stress analysis

Aitken nuclei

DEF Microscopic particles in the atmosphere which serve as condensation nuclei for droplet growth during the rapid adiabatic expansion produced by an Aitken dust counter.

GS

- condensation nuclei
- . **Aitken nuclei**

RT

- aerosols
- atmospheric chemistry
- atmospheric composition
- cloud physics
- coagulation
- condensates
- crystal growth
- dust
- ice nuclei
- nucleation
- ∞ nuclei
- supercooling

AJ-10 engine

GS

- engines
- . rocket engines
- . . booster rocket engines
- . . . **AJ-10 engine**
- . . . liquid propellant rocket engines
- . . . **AJ-10 engine**

RT

- tartar missile

AJ-1000 engine

USE **M-1 engine**

Akebono satellite

USE **EXOS-D satellite**

akermanite

DEF A mineral of the melilite group. It is isomorphous with gehlenite.

GS

- calcium compounds
- . calcium carbonates
- . . **akermanite**
- . calcium oxides
- . . **akermanite**
- carbon compounds
- . carbonates
- . . calcium carbonates
- . . . **akermanite**
- chalcogenides
- . oxides
- . . metal oxides
- . . . alkaline earth oxides

- calcium oxides
- **akermanite**
- magnesium oxides
- **akermanite**
- magnesium compounds
- . magnesium oxides
- . . **akermanite**
- minerals
- . **akermanite**
- RT silicates
- silicon compounds
- silicon oxides
- Alabama**
- GS nations
- . United States
- . . **Alabama**
- RT Gulf of Mexico
- Tennessee Valley (AL-KY-TN)
- Aladin 2 aircraft**
- GS transport aircraft
- . **Aladin 2 aircraft**
- V/STOL aircraft
- . short takeoff aircraft
- . . **Aladin 2 aircraft**
- RT ∞ aircraft
- Alais meteorite**
- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- **Alais meteorite**
- chondrites
- carbonaceous chondrites
- **Alais meteorite**
- alanine**
- GS acids
- . amino acids
- . . **alanine**
- . . . phenylalanine
- . . . carboxylic acids
- . . **alanine**
- . . . phenylalanine
- organic compounds
- . amino acids
- . . **alanine**
- . . . phenylalanine
- . . . carboxylic acids
- . . **alanine**
- . . . phenylalanine
- RT proteins
- alarms*
- USE **warning systems**
- Alaska**
- GS nations
- . United States
- . . **Alaska**
- RT Aleutian Islands (US)
- Beaufort Sea (North America)
- Chena River Basin (AK)
- Cook Inlet (AK)
- Gulf of Alaska
- Prince William Sound (AK)
- Wrangell Mountains (AK)
- Albania**
- GS nations
- . **Albania**
- RT Europe
- albedo**
- DEF The ratio of the amount of electromagnetic radiation reflected by a body to the amount incident upon it. It is often expressed as a percentage, as, the albedo of the Earth is 34 percent.
- GS **albedo**
- . cosmic ray albedo
- . Earth albedo
- . lunar albedo
- RT absorptance
- cosmic rays
- Earth radiation budget experiment
- MISR (radiometry)
- optical properties
- planetary radiation
- reflectance
- solar radiation
- surface properties
- Alberta**
- GS nations
- . Canada
- . . **Alberta**
- albinism**
- GS diseases
- . **albinism**
- RT pigments
- skin (anatomy)
- albumins**
- GS biopolymers
- . proteins
- . . **albumins**
- organic compounds
- . proteins
- . . **albumins**
- RT elastin
- alcoholates*
- USE **alkoxides**
- alcohols**
- GS hydroxyl compounds
- . **alcohols**
- . . ethyl alcohol
- . . glycols
- . . isopropyl alcohol
- . . methyl alcohol
- . . phenols
- . . bisphenols
- . . cresols
- . . phloroglucinol
- . . thymol
- . . polyvinyl alcohol
- . . triols
- . . cyanuric acid
- RT alkoxides
- carbohydrates
- gasohol (fuel)
- glycerols
- hydroxyl radicals
- methoxy systems
- organic compounds
- thiols
- aldehydes**
- DEF Carbonyl groups to which a hydrogen atom is attached; the first stage of an alcohol; -CHO.
- GS **aldehydes**
- . acetaldehyde
- . acroleins
- . chloral
- . formaldehyde
- RT acetyl compounds
- furfuryl alcohol
- organic compounds
- retinene
- aldolase**
- GS biopolymers
- . proteins
- . . enzymes
- . . . **aldolase**
- organic compounds
- . proteins
- . . enzymes
- . . . **aldolase**
- RT muscles
- aldosterone**
- GS organic compounds
- . lipids
- . . steroids
- . . . corticosteroids
- **aldosterone**
- secretions
- . endocrine secretions
- . . hormones
- . . . corticosteroids
- **aldosterone**
- RT adrenal metabolism
- electrolyte metabolism
- alertness**
- RT arousal
- attention
- situational awareness
- wakefulness
- Aleutian Islands (US)**
- GS landforms
- . islands
- . . **Aleutian Islands (US)**
- RT Alaska
- archipelagoes
- island arcs
- United States
- alexandrite**
- (added November 1992)
- DEF A transparent variety of chrysoberl that has a grass-green or emerald green color in daylight and wine-red to brownish-red color by transmitted or incandescent artificial light.
- GS aluminum compounds
- . aluminum oxides
- . . **alexandrite**
- . . beryl
- . . . **alexandrite**
- beryllium compounds
- . beryl
- . . **alexandrite**
- . . beryllium oxides
- . . . **alexandrite**
- chalcogenides
- . oxides
- . . metal oxides
- . . . alkaline earth oxides
- beryllium oxides
- **alexandrite**
- aluminum oxides
- **alexandrite**
- minerals
- . beryl
- . . **alexandrite**
- silicon compounds
- . silicates
- . . beryl
- . . . **alexandrite**
- RT laser materials
- alfalfa**
- GS farm crops
- . **alfalfa**
- plants (botany)
- . **alfalfa**
- RT agriculture
- blight
- botany
- crop growth
- crop vigor
- ∞ crops
- curing
- Earth resources
- ∞ food
- grasses
- irrigation
- seeds
- Alfven waves*
- USE **magnetohydrodynamic waves**
- Al/GaAs*
- USE **aluminum gallium arsenides**
- algae**
- DEF Any plants of a group of unicellular and multicellular primitive organisms that include the Chlorella, Scenedesmus, and other genera. Used for algal bloom.
- UF *algal bloom*
- diatoms (unicellular plants)*
- GS plants (botany)
- . **algae**
- . . blue green algae
- . . . anabaena
- . . . Microcystis
- . . . Nostoc
- . . Chlorella
- . . Dunaliella
- . . porphyra

algebra

. . . scenedesmus
RT biochemical oxygen demand
bioconversion
chlorophylls
Euglena
lichens
marine biology
microorganisms
photosynthesis
phytoplankton
plankton
plastids
thermophiles
thermophilic plants
water pollution

algal bloom
USE **algae**

algebra
GS **algebra**
. binomial theorem
. current algebra
. determinants
. group theory
. homomorphisms
. . . automorphisms
. . . monoids
. . . subgroups
. lie groups
. spinor groups
. linear equations
. . Frowcs Williams-Hawkings equation
. linear evolution equations
. . Riccati equation
. linear transformations
. nonlinear equations
. . cubic equations
. . Duffing differential equation
. . Monge-Ampere equation
. . nonlinear evolution equations
. . quadratic equations
. . quartic equations
. polynomials
. binomials
. dyadics
. Hermitian polynomial
. tensors
. stress tensors
. vector spaces
. Banach space
. . Hilbert space
. . . Sobolev space
. matrices (mathematics)
. . adjoints
. . canonical forms
. . eigenvalues
. . eigenvectors
. . Hessian matrices
. . Jordan form
. . stiffness matrix
. . Stokes theorem (vector calculus)
. U spin space
. vectors (mathematics)
. . eigenvectors
. . state vectors
. . vorticity
RT analysis (mathematics)
∞ analyzing
Boolean algebra
coordinates
functions (mathematics)
homotropy
∞ mathematics
Schwartz inequality
∞ science
semimpiirical equations
∞ space
sums
uniqueness theorem

Algeria

GS nations
. **Algeria**
RT Africa

ALGOL

UF *algorithmic oriented language*
GS languages

. programming languages
. . **ALGOL**
RT computer programming
machine oriented languages

Algol engine

GS engines
. rocket engines
. . booster rocket engines
. . . **Algol engine**
. . solid propellant rocket engines
. . . **Algol engine**
RT Blue Scout rocket vehicle
Little Joe 2 launch vehicle
Scout launch vehicle

algorithmic oriented language

USE **ALGOL**

algorithms

DEF Special mathematical procedures for solving a particular type of problem.
GS mathematical logic
. **algorithms**
. . backpropagation (artificial intelligence)
. . genetic algorithms
. . greedy algorithms
. . parsing algorithms
. . simplex method
. . sorting algorithms
RT computer programming
computer programs
computer systems programs
computerized simulation
conjugate gradient method
data conversion routines
differential analyzers
factorization
fuzzy sets
fuzzy systems
Hessian matrices
mean square values
numerical analysis
numerical differentiation
parameterization
robustness (mathematics)
state estimation
systolic arrays

alignment

GS **alignment**
. self alignment
RT adjusting
bearing (direction)
clearances
collimation
correction
directivity
fitting
horizontal orientation
instrument orientation
look angles (electronics)
∞ orientation
ply orientation
polarization (spin alignment)
positioning
vertical orientation

∞ aliphatic compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aliphatic hydrocarbons
amines
fatty acids
molecular chains
organic compounds

aliphatic hydrocarbons

GS organic compounds
. hydrocarbons
. . **aliphatic hydrocarbons**
. . . alkanes
. . . . butanes
. . . . cetane
. . . . ethane
. . . . heptanes
. . . . methane
. . . . nitropropane
. . . . nonanes

. . . . octanes
. . . . paraffins
. ceresin
. pentanes
. neopentane
. . . . propane
. . . alkenes
. . . . butenes
. . . . ethylene
. . . . vinylidene
. . . . hexenes
. . . . propylene
. . . . trienes
. . . alkynes
. . . . acetylene
. . . . oxyacetylene
. . . dienes
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene
. . . carotenoids
RT ∞ aliphatic compounds
terpenes

alkali halides

GS halogen compounds
. halides
. metal halides
. . **alkali halides**
. . . cesium halides
. . . . cesium bromides
. . . . cesium fluorides
. . . . cesium iodides
. . . . potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides
. . . . sodium iodides

∞ alkali metal compounds

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *Group 1A compounds*
RT cesium compounds
∞ chemical compounds
fullerides
lithium compounds
∞ metal compounds
potassium compounds
rubidium compounds
sodium compounds

alkali metals

DEF Metals in group IA of the periodic system; namely, lithium, sodium, potassium, rubidium, cesium, and francium.

GS chemical elements
. **alkali metals**
. cesium
. . cesium isotopes
. . . cesium 133
. . . cesium 134
. . . cesium 137
. . . cesium 144
. cesium vapor
. francium
. lithium
. . liquid lithium
. . lithium isotopes
. . potassium
. . liquid potassium
. . potassium isotopes
. . . potassium 38
. . . potassium 39
. . . potassium 40
. rubidium
. . rubidium isotopes
. . . rubidium 86
. sodium
. . liquid sodium
. . sodium isotopes
. . . sodium 22
. . . sodium 24
. . sodium vapor
metals
. **alkali metals**
. cesium
. . cesium isotopes

- ... cesium 133
 - ... cesium 134
 - ... cesium 137
 - ... cesium 144
 - .. cesium vapor
 - .. francium
 - .. lithium
 - .. liquid lithium
 - .. lithium isotopes
 - .. potassium
 - .. liquid potassium
 - .. potassium isotopes
 - ... potassium 38
 - ... potassium 39
 - ... potassium 40
 - .. rubidium
 - .. rubidium isotopes
 - ... rubidium 86
 - .. sodium
 - .. liquid sodium
 - .. sodium isotopes
 - ... sodium 22
 - ... sodium 24
 - ... sodium vapor
 - RT cesium alloys
 - metal vapors
- alkali vapor lamps**
- DEF Lamps in which light is produced by an electric discharge between electrodes in an alkali vapor at low or high pressures.
 - GS lighting equipment
 - . luminaires
 - . flash lamps
 - . . **alkali vapor lamps**
 - RT lasers
 - luminescence
 - metal vapors
 - rare earth elements
- alkalies**
- UF *caustics*
 - GS bases (chemical)
 - . **alkalies**
 - . lithium hydroxides
 - . potassium hydroxides
 - . sodium hydroxides
 - RT alkalinity
 - carbonates
 - hydroxides
- alkaline batteries**
- GS electric generators
 - . direct power generators
 - . primary batteries
 - . . **alkaline batteries**
 - electrochemical cells
 - . electric batteries
 - . primary batteries
 - . . **alkaline batteries**
 - RT storage batteries
 - thermal batteries
- alkaline earth compounds**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *Group 2A compounds*
 - RT alkaline earth metals
 - alkaline earth oxides
 - barium compounds
 - beryllium compounds
 - calcium compounds
 - ∞ chemical compounds
 - magnesium compounds
 - strontium compounds
 - strontium oxides
- alkaline earth metals**
- GS chemical elements
 - . **alkaline earth metals**
 - . barium isotopes
 - metals
 - . **alkaline earth metals**
 - . barium isotopes
 - RT ∞ alkaline earth compounds
- alkaline earth oxides**
- GS chalcogenides
 - . oxides
 - . metal oxides
- ... **alkaline earth oxides**
 - ... barium oxides
 - ... beryllium oxides
 - ... alexandrite
 - ... calcium oxides
 - ... akermanite
 - ... magnesium oxides
 - ... akermanite
 - ... periclase
 - RT ∞ alkaline earth compounds
- alkalinity**
- DEF The state of being alkaline.
 - RT alkalies
 - bases (chemical)
 - chemical analysis
 - chemical composition
 - pH
 - salinity
 - soil sampling
 - water pollution
 - water quality
- alkaloids**
- GS bases (chemical)
 - . **alkaloids**
 - . atropine
 - . betaines
 - . caffeine
 - . colchicine
 - . ergotamine
 - . hyoscyne
 - . lysergine
 - . morphine
 - . nicotinamide
 - . nicotine
 - . pilocarpine
 - . reserpine
 - . strychnine
 - . troyl compounds
 - nitrogen compounds
 - . **alkaloids**
 - . atropine
 - . betaines
 - . caffeine
 - . colchicine
 - . ergotamine
 - . hyoscyne
 - . lysergine
 - . morphine
 - . nicotinamide
 - . nicotine
 - . pilocarpine
 - . reserpine
 - . strychnine
 - . troyl compounds
 - organic compounds
 - . cyclic compounds
 - . heterocyclic compounds
 - . . **alkaloids**
 - ... atropine
 - ... betaines
 - ... caffeine
 - ... colchicine
 - ... ergotamine
 - ... hyoscyne
 - ... lysergine
 - ... morphine
 - ... nicotinamide
 - ... nicotine
 - ... pilocarpine
 - ... reserpine
 - ... strychnine
 - ... troyl compounds
 - organic compounds
 - . cyclic compounds
 - . heterocyclic compounds
 - ... **alkaloids**
 - ... atropine
 - ... betaines
 - ... caffeine
 - ... colchicine
 - ... ergotamine
 - ... hyoscyne
 - ... lysergine
 - ... morphine
 - ... nicotinamide
 - ... nicotine
 - ... pilocarpine
 - ... reserpine
 - ... strychnine
 - ... troyl compounds
- RT curare
- drugs
- marijuana
- quinoline
- alkalosis**
- RT acidosis
 - hyperventilation
 - pH
 - pH factor
 - toxicity
- alkanes**
- UF *saturated hydrocarbons*
 - GS organic compounds
 - . hydrocarbons
- .. aliphatic hydrocarbons
 - ... **alkanes**
 - ... butanes
 - ... cetane
 - ... ethane
 - ... heptanes
 - ... methane
 - ... nitropropane
 - ... nonanes
 - ... octanes
 - ... paraffins
 - ... ceresin
 - ... pentanes
 - ... neopentane
 - ... propane
 - RT hydrocarbon fuels
 - waxes
- alkenes**
- UF *olefins*
 - GS organic compounds
 - . hydrocarbons
 - . aliphatic hydrocarbons
 - . . **alkenes**
 - ... butenes
 - ... ethylene
 - ... vinylidene
 - ... hexenes
 - ... propylene
 - ... trienes
 - RT alkynes
 - oxetane polymers
 - terpenes
- alkoxides**
- (added January 1995)
 - UF *alcoholates*
 - GS chalcogenides
 - . oxides
 - . . **alkoxides**
 - RT alcohols
 - organometallic compounds
 - sol-gel processes
- alkyd resins**
- GS resins
 - . **alkyd resins**
 - RT adhesives
 - protective coatings
- alkyl compounds**
- GS **alkyl compounds**
 - . alkylidene
 - . cetyl compounds
 - . dibutyl compounds
 - . hexyl compounds
 - . isopropyl nitrate
 - . methyl nitrate
 - . propyl nitrate
 - . tetrabutyls
 - . triethyl compounds
 - . trimethyl compounds
 - RT ∞ chemical compounds
 - organic compounds
- alkylates**
- GS esters
 - . **alkylates**
 - RT alkylation
- alkylation**
- UF *oxyalkylation*
 - GS chemical reactions
 - . **alkylation**
 - RT alkylates
 - Friedel-Craft reaction
 - methylation
 - refining
- alkylferrocene**
- GS iron compounds
 - . ferrocenes
 - . . **alkylferrocene**
 - organometallic compounds
 - . ferrocenes
 - . **alkylferrocene**
- alkylidene**
- GS alkyl compounds

alkynes

. alkylidene

alkynes

- GS organic compounds
 - . hydrocarbons
 - . . . aliphatic hydrocarbons
 - **alkynes**
 - acetylene
 - oxyacetylene
- RT alkenes
 - cyclic AMP
 - cyclic hydrocarbons

all sky photography

- GS imagery
 - . photography
 - . . **all sky photography**
- RT black and white photography
 - cloud photographs
 - cloud photography
 - wide angle lenses

Allegheny Plateau (US)

- GS land
 - . **Allegheny Plateau (US)**
 - landforms
 - . terraces (landforms)
 - . . plateaus
 - . . . **Allegheny Plateau (US)**
- RT Maryland
 - Pennsylvania
 - Virginia
 - West Virginia

Allende meteorite

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . carbonaceous meteorites
 - carbonaceous chondrites
 - **Allende meteorite**
 - . . . chondrites
 - carbonaceous chondrites
 - **Allende meteorite**

allergic diseases

- RT anaphylaxis
 - contact dermatitis
 - immunology

allocations

- UF *assignment*
- GS **allocations**
 - . resource allocation
- RT allowances
 - budgeting
 - commercial energy
 - cost effectiveness
 - distributing
 - ∞ distribution
 - domestic energy
 - economic analysis
 - economic factors
 - engineering management
 - estimates
 - federal budgets
 - financial management
 - industrial energy
 - matrix management
 - procurement management
 - project planning
 - research management
 - revenue
 - transportation energy

allotropy

- RT austenite
 - crystal structure
 - polymorphism

allowances

- RT allocations
 - clearances
- ∞ compensation
 - precision
 - productivity
 - regulations
 - reliability
 - sampling

tolerances (mechanics)

alloxan

- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . pyrimidines
 - **alloxan**
- RT thymidine
 - thymine
 - uracil
 - uric acid

alloying

- RT additives
 - alloys
 - aluminum-lithium alloys
 - bimetals
 - binary alloys
 - eutectic alloys
 - eutectics
 - intermetallics
 - ∞ metallurgy
 - mischmetal
 - powder metallurgy
 - pyrometallurgy
 - quaternary alloys
 - solid solutions
 - ternary alloys

alloys

DEF Substances having metallic properties and being composed of two or more chemical elements of which at least one is an elemental metal.

- GS **alloys**
 - . antimony alloys
 - . . babbitt metal
 - . . arsenic alloys
 - . . barium alloys
 - . . bearing alloys
 - . . binary alloys
 - . . bismuth alloys
 - . . boron alloys
 - . . cadmium alloys
 - . . cast alloys
 - . . cesium alloys
 - . . chromium alloys
 - . . . Astroloy (trademark)
 - . . . chrome steels
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
 - . . cobalt alloys
 - . . . Astroloy (trademark)
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
 - . . constantan
 - . . copper alloys
 - . . . babbitt metal
 - . . . brasses
 - . . . bronzes
 - . . . Manganin (trademark)
 - . . . eutectic alloys
 - . . . gallium alloys
 - . . . germanium alloys
 - . . . gold alloys
 - . . . hafnium alloys
 - . . . heat resistant alloys
 - nimonic alloys
 - refractory metal alloys
 - molybdenum alloys
 - Rene 41
 - Rene 63
 - Rene 77
 - Rene 95
 - . . . niobium alloys
 - . . . osmium alloys
 - . . . rhenium alloys
 - . . . tantalum alloys
 - . . . tungsten alloys
 - . . . Udimet alloys
 - Waspaloy
 - high strength alloys
 - Astroloy (trademark)
 - high strength steels
 - maraging steels

- . indium alloys
- . iridium alloys
- . iron alloys
 - . . steels
 - . . . bainitic steel
 - . . . carbon steels
 - low carbon steels
 - . . . chromium steels
 - Croloy
 - high strength steels
 - maraging steels
 - nickel steels
 - stainless steels
 - austenitic stainless steels
 - ferritic stainless steels
 - martensitic stainless steels
 - . . . Kovar (trademark)
 - . . . lead alloys
 - . . . light alloys
 - aluminum alloys
 - aluminum-lithium alloys
 - beryllium alloys
 - magnesium alloys
 - . . . liquid alloys
 - lithium alloys
 - aluminum-lithium alloys
 - manganese alloys
 - Manganin (trademark)
 - mercury alloys
 - mercury amalgams
 - monotectic alloys
 - mulberry (alloy)
 - nickel alloys
 - Astroloy (trademark)
 - Hastelloy (trademark)
 - Inconel (trademark)
 - kamacite
 - Monel (trademark)
 - Nichrome (trademark)
 - nitinol alloys
 - Rene 41
 - Rene 63
 - Rene 77
 - Rene 95
 - Udimet alloys
 - Waspaloy
 - palladium alloys
 - Permalloys (trademark)
 - platinum alloys
 - plutonium alloys
 - potassium alloys
 - quaternary alloys
 - rare earth alloys
 - erbium alloys
 - gadolinium alloys
 - lanthanum alloys
 - mischmetal
 - neodymium alloys
 - rhodium alloys
 - ruthenium alloys
 - selenium alloys
 - shape memory alloys
 - nitinol alloys
 - silicon alloys
 - silver alloys
 - sodium alloys
 - solders
 - syntectic alloys
 - tellurium alloys
 - ternary alloys
 - Astroloy (trademark)
 - thallium alloys
 - thorium alloys
 - tin alloys
 - babbitt metal
 - titanium alloys
 - nitinol alloys
 - uranium alloys
 - vanadium alloys
 - wrought alloys
 - yttrium alloys
 - zinc alloys
 - zirconium alloys
 - Zircalloys (trademark)
 - Zircaloy 2 (trademark)
 - RT alloying
 - bimetals
 - binary systems (materials)
 - dispersion strengthening

embedded atom method
 eutectic composites
 eutectics
 ferrous metals
 hardeners
 heat treatment
 intermetallics
 Kondo effect
 Laves phases
 liquid phases
 metallography
 metalloids
 ∞ metallurgy
 metals
 mixtures
 oxide dispersion strengthening
 phase diagrams
 powder metallurgy
 precipitates
 rheocasting
 solid solutions
 stress relieving
 ternary systems

alluvium

DEF Soil, the constituents of which have been transported in suspension by flowing water and subsequently deposited by sedimentation.
 GS soils
 . **alluvium**
 RT clays
 deltas
 fans (landforms)
 floods
 gravels
 hydrology
 mud
 rivers
 sands
 sedimentary rocks
 sediments
 streams
 water flow

all-weather air navigation

GS navigation
 . air navigation
 . . **all-weather air navigation**
 RT Doppler navigation
 inertial navigation
 navigation aids
 radar navigation
 radio navigation
 solar compasses
 Tacan

all-weather landing systems

GS landing aids
 . instrument landing systems
 . . **all-weather landing systems**
 RT aircraft landing
 aircraft safety
 flight safety
 low visibility
 ∞ systems

allyl compounds

RT ∞ chemical compounds
 diallyl compounds

almucantar

USE **elevation angle**

Aloha system

DEF A multiple random access communications scheme in which there is a nonfixed allocation of channel capacity, so that the channel is available to any terminal whenever it has a packet ready for transmission.
 GS networks
 . communication networks
 . . **Aloha system**
 telecommunication
 . multiple access
 . . **Aloha system**
 . packet transmission
 . . **Aloha system**
 transmission
 . signal transmission
 . . data transmission

. . . multiple access
 **Aloha system**
 . . . packet transmission
 **Aloha system**
 RT channel capacity
 channel noise
 code division multiple access
 computer networks
 frequency division multiple access
 packets (communication)
 random access
 satellite transmission
 ∞ systems
 time division multiple access
 transmission efficiency
 VSAT (network)

Alouette 1 satellite

UF *S-27 satellite*
 GS artificial satellites
 . Alouette satellites
 . . **Alouette 1 satellite**
 Canadian spacecraft
 . Alouette satellites
 . . **Alouette 1 satellite**
 RT ionospheric sounding

Alouette 2 satellite

GS artificial satellites
 . Alouette satellites
 . . **Alouette 2 satellite**
 . ISIS satellites
 . . **Alouette 2 satellite**
 Canadian spacecraft
 . Alouette satellites
 . . **Alouette 2 satellite**
 RT ionospheric sounding

Alouette 3 helicopter

USE **SE-3160 helicopter**

Alouette B satellite

GS artificial satellites
 . Alouette satellites
 . . **Alouette B satellite**
 Canadian spacecraft
 . Alouette satellites
 . . **Alouette B satellite**
 RT ISIS-X

Alouette helicopters

GS Sud Aviation aircraft
 . **Alouette helicopters**
 . . SA-330 helicopter
 . . SE-3160 helicopter
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **Alouette helicopters**
 SA-330 helicopter
 SE-3160 helicopter
 RT ∞ aircraft

Alouette project

GS programs
 . projects
 . . **Alouette project**
 . space programs
 . . Canadian space program
 . . . **Alouette project**
 RT cosmic noise
 data acquisition
 ionospheric sounding
 ISIS-A

Alouette satellites

GS artificial satellites
 . **Alouette satellites**
 . . Alouette 1 satellite
 . . Alouette 2 satellite
 . . Alouette B satellite
 Canadian spacecraft
 . **Alouette satellites**
 . . Alouette 1 satellite
 . . Alouette 2 satellite
 . . Alouette B satellite
 RT ISIS satellites

alpha decay

DEF The radioactive transformation of a nu-

clide by alpha-particle emission.
 GS decay
 . radioactive decay
 . . **alpha decay**
 nuclear reactions
 . radioactive decay
 . . **alpha decay**
 RT fine structure
 selection rules (nuclear physics)

Alpha jet aircraft

GS attack aircraft
 . fighter aircraft
 . . **Alpha jet aircraft**
 jet aircraft
 . **Alpha jet aircraft**
 training aircraft
 . **Alpha jet aircraft**
 RT ∞ aircraft
 ∞ military aircraft

Alpha Magnetic Spectrometer

(added June 1998)
 UF *AMS (spectrometer)*
 GS measuring instruments
 . spectrometers
 . . **Alpha Magnetic Spectrometer**
 RT antimatter
 Cerenkov counters
 cosmic rays
 dark matter
 International Space Station
 interstellar matter
 magnetic spectroscopy
 space station payloads
 spaceborne astronomy

alpha particles

SN (EMITTED BY NUCLEI)
 DEF Positively charged particles emitted from the nuclei of certain atoms during radioactive disintegration. Used for alpha radiation.
 UF *alpha radiation*
 GS ionizing radiation
 . **alpha particles**
 particles
 . charged particles
 . . energetic particles
 . . . nuclei (nuclear physics)
 **alpha particles**
 . corpuscular radiation
 . . energetic particles
 . . . nuclei (nuclear physics)
 **alpha particles**
 . elementary particles
 . . bosons
 . . . **alpha particles**
 . nuclear particles
 . . bosons
 . . . **alpha particles**
 RT alphas
 corpuscular radiation
 cosmic rays
 deuteron irradiation
 deuterons
 flux density
 helium
 helium ions
 ions
 nuclear radiation
 nucleons
 protons
 ∞ radiation
 radioactivity
 solar wind velocity
 tritons

alpha plasma devices

GS plasma accelerators
 . **alpha plasma devices**
 RT ∞ devices
 Hall accelerators
 magnetohydrodynamics
 plasma physics
 plasmas (physics)

alpha radiation

USE **alpha particles**

alphabets

RT abbreviations

alphanumeric characters

alphanumeric characters
coding
languages
symbols

alphanumeric characters

DEF Characters in a set that contain both letters and digits, but they usually also contain other characters such as punctuation symbols.

GS symbols
. alphanumeric characters
. digits
. . . binary digits
RT alphabets
instruction sets (computers)
light emitting diodes
∞ numbers

alphatrons

GS measuring instruments
. pressure gages
. . . vacuum gages
. . . . ionization gages
. . . . **alphatrons**
vacuum apparatus
. vacuum gages
. . ionization gages
. . . **alphatrons**
RT alpha particles

Alpine meteorology

DEF Wind, precipitation, atmospheric physics, and other climatological phenomena peculiar to the Alps and/or other similar mountainous areas.

GS meteorology
. **Alpine meteorology**
RT aeronomy
clouds (meteorology)
nephanalysis
precipitation (meteorology)
storms (meteorology)
weather
wind (meteorology)

Alps Mountains (Europe)

GS landforms
. mountains
. . **Alps Mountains (Europe)**
RT Austria
Europe
Italy
Switzerland
West Germany

ALS (launch system)

USE **Advanced Launch System (STS)**

ALSEP

USE **Apollo Lunar Surface Experiments Package**

Altair engine

USE **X-248 engine**

Altair Lunar Lander

(added November 2008)

DEF The lunar landing module of the Constellation program. The lander is capable of landing four astronauts on the moon, providing life support and a base for weeklong initial surface exploration missions, and returning the crew to the Orion spacecraft that will return them to Earth.

GS lunar spacecraft
. lunar landing modules
. . **Altair Lunar Lander**
manned spacecraft
. **Altair Lunar Lander**
modules
. spacecraft modules
. . landing modules
. . . lunar landing modules
. . . . **Altair Lunar Lander**
soft landing spacecraft
. landing modules
. . lunar landing modules
. . . **Altair Lunar Lander**
spacecraft components
. spacecraft modules

. . landing modules
. . . lunar landing modules
. . . . **Altair Lunar Lander**
RT Ares 5 cargo launch vehicle
Constellation program
lunar bases
lunar exploration
lunar landing
lunar logistics

alteration

USE **revisions**

alternating current

UF **AC (current)**
GS electric current
. **alternating current**
electricity
. **alternating current**
RT current converters (AC to DC)
direct current
induction motors
inverted converters (DC to AC)
voltage converters (AC to AC)

alternating current generators

USE **AC generators**

alternating direction implicit methods

UF **ADI methods**
GS problem solving
. **alternating direction implicit methods**
RT differential equations
numerical analysis
partial differential equations

alternations

GS variations
. periodic variations
. . **alternations**
RT cycles
intervals
rhythm (biology)

alternatives

RT options
substitutes
variations

alternators (generators)

USE **AC generators**

altimeters

DEF Instruments for measuring height above a reference datum.
GS measuring instruments
. distance measuring equipment
. . **altimeters**
. . . laser altimeters
. . . . radio altimeters
RT aircraft instruments
altimetry
altitude
approach indicators
astrolabes
barometers
flight instruments
hypsonometers
landing instruments
navigation aids
navigation instruments
position indicators
range finders
rate of climb indicators
satellite altimetry

altimetry

GS **altimetry**
. satellite altimetry
RT altimeters
altitude
elevation
geodesy
geoids
radar measurement
topography

altitude

DEF In astronomy, angular displacement

above the horizon. Also height, especially radial distance as measured above a given datum, as average sea level.

GS **altitude**
. flight altitude
. high altitude
. low altitude
. midaltitude
. sea level
RT altimeters
altimetry
apexes
azimuth
distance
elevation
elevation angle
height
position (location)

altitude acclimatization

DEF A physiological adaptation to reduced atmospheric and oxygen pressure.

GS adaptation
. acclimatization
. . **altitude acclimatization**
RT mountain inhabitants

altitude control

RT ∞ control
laser altimeters
lateral control
longitudinal control
spacing

altitude sickness

DEF In general, any sickness brought on by exposure to reduced oxygen tension and barometric pressure.

GS sicknesses
. **altitude sickness**
RT aeroembolism
aerosinusitis
aerospace medicine
decompression sickness

altitude simulation

UF **simulated altitude**
GS simulation
. environment simulation
. . **altitude simulation**
RT computerized simulation
flight simulation
high altitude environments
hypobaric atmospheres
landing simulation
space environment simulation
thermal simulation
training devices
vacuum chambers

altitude tests

GS **altitude tests**
. high altitude tests
RT engine tests
flight tests
full scale tests
high altitude environments
test vehicles
∞ tests

altitude tolerance

GS tolerances (physiology)
. **altitude tolerance**
RT high altitude breathing
high altitude environments
high altitude pressure
hypobaric atmospheres
low pressure

ALU (computer components)

USE **arithmetic and logic units**

alum

GS aluminum compounds
. **alum**
potassium compounds
. **alum**
sulfur compounds
. sulfates

- . . **alum**
- alumina*
- USE **aluminum oxides**
- aluminates**
 - GS aluminum compounds
 - . **aluminates**
 - RT aluminum oxides
 - ∞ oxygen compounds
 - spinel
- aluminides**
 - DEF Intermetallic compounds of aluminum and a transition metal.
 - GS aluminum compounds
 - . **aluminides**
 - . . iron aluminides
 - . . nickel aluminides
 - . . titanium aluminides
 - RT aluminum alloys
 - aluminum coatings
 - heat resistant alloys
 - intermetallics
 - nickel alloys
 - protective coatings
 - titanium alloys
- aluminizing*
- USE **aluminum coatings**
- aluminum**
 - GS chemical elements
 - . **aluminum**
 - . . aluminum isotopes
 - . . . aluminum 26
 - . . . aluminum 27
 - metals
 - . **aluminum**
 - . . aluminum isotopes
 - . . . aluminum 26
 - . . . aluminum 27
 - RT aluminum alloys
 - Boral
 - Borsic (tradename)
 - cryolite
 - dawsonite
 - powdered aluminum
 - reaction bonding
 - sialon
 - sintered aluminum powder
- aluminum 26**
 - GS chemical elements
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 26**
 - . nuclides
 - . . isotopes
 - . . . aluminum isotopes
 - **aluminum 26**
 - metals
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 26**
- aluminum 27**
 - GS chemical elements
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 27**
 - . nuclides
 - . . isotopes
 - . . . aluminum isotopes
 - **aluminum 27**
 - metals
 - . aluminum
 - . . aluminum isotopes
 - . . . **aluminum 27**
- aluminum alloys**
 - GS alloys
 - . light alloys
 - . . **aluminum alloys**
 - . . . aluminum-lithium alloys
 - RT aluminides
 - aluminum
 - bearing alloys
 - friction stir welding
 - gallium alloys
- indium alloys
- iron aluminides
- lamella (metallurgy)
- lithium alloys
- mischmetal
- silicon alloys
- vanadium alloys
- aluminum antimonides**
 - GS aluminum compounds
 - . **aluminum antimonides**
 - antimony compounds
 - . antimonides
 - . . **aluminum antimonides**
- aluminum arsenides**
 - DEF Binary compounds of aluminum with negative, trivalent arsenic.
 - GS aluminum compounds
 - . **aluminum arsenides**
 - . . aluminum gallium arsenides
 - . . indium aluminum arsenides
 - arsenic compounds
 - . arsenides
 - . . **aluminum arsenides**
 - . . . aluminum gallium arsenides
 - . . . indium aluminum arsenides
 - RT semiconductors (materials)
- aluminum borohydrides**
 - GS aluminum compounds
 - . aluminum hydrides
 - . . **aluminum borohydrides**
 - boron compounds
 - . borohydrides
 - . . **aluminum borohydrides**
 - . boron hydrides
 - . . **aluminum borohydrides**
 - hydrogen compounds
 - . hydrides
 - . . borohydrides
 - . . . **aluminum borohydrides**
 - . boron hydrides
 - . . . **aluminum borohydrides**
 - . metal hydrides
 - . . . aluminum hydrides
 - **aluminum borohydrides**
- aluminum boron composites**
 - DEF Structural materials composed of aluminum alloys reinforced with boron fibers (filaments).
 - GS composite materials
 - . boron reinforced materials
 - . . **aluminum boron composites**
 - . metal matrix composites
 - . . **aluminum boron composites**
 - RT boron fibers
 - fiber composites
- aluminum carbides**
 - GS aluminum compounds
 - . **aluminum carbides**
 - carbon compounds
 - . carbides
 - . . **aluminum carbides**
- aluminum chlorides**
 - GS aluminum compounds
 - . **aluminum chlorides**
 - halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **aluminum chlorides**
 - . halides
 - . . chlorides
 - . . . **aluminum chlorides**
 - . metal halides
 - . . . **aluminum chlorides**
- aluminum coatings**
 - UF *aluminizing*
 - GS coatings
 - . metal coatings
 - . . **aluminum coatings**
 - RT aluminides
- aluminum compounds**
 - GS **aluminum compounds**
 - . alum
- . aluminates
- . aluminides
- . . iron aluminides
- . . nickel aluminides
- . . titanium aluminides
- . aluminum antimonides
- . aluminum arsenides
- . . aluminum gallium arsenides
- . . indium aluminum arsenides
- . aluminum carbides
- . aluminum chlorides
- . aluminum fluorides
- . aluminum hydrides
- . . aluminum borohydrides
- . aluminum nitrides
- . aluminum oxides
- . . alexandrite
- . . sapphire
- . aluminum perchlorates
- . aluminum silicates
- . . andesite
- . . feldspars
- . . gehlenite
- . . kaolinite
- . . montmorillonite
- . . pyrophyllite
- . . . plagioclase
- . beryl
- . . alexandrite
- . cordierite
- . cryolite
- . lithium aluminum hydrides
- . muscovite
- . nepheline
- . nephelite
- . organic aluminum compounds
- . spodumene
- . tourmaline
- RT ∞ chemical compounds
- ∞ Group 3A compounds
- ∞ metal compounds
- metal fuels
- metal propellants
- aluminum fluorides**
 - GS aluminum compounds
 - . **aluminum fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **aluminum fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **aluminum fluorides**
 - . metal halides
 - . . . metal fluorides
 - **aluminum fluorides**
- aluminum gallium arsenide lasers**
(added November 1991)
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **aluminum gallium arsenide lasers**
 - . . solid state lasers
 - . . . **aluminum gallium arsenide lasers**
 - stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **aluminum gallium arsenide lasers**
 - . . solid state lasers
 - . . . **aluminum gallium arsenide lasers**
 - RT gallium arsenide lasers
 - injection lasers
 - waveguide lasers
- aluminum gallium arsenides**
 - DEF Compounds exhibiting characteristics suitable for use in laser devices, light-emitting diodes, solar cells, etc. Used for AlGaAs.
 - UF AlGaAs
 - GS aluminum compounds
 - . aluminum arsenides

aluminum graphite composites

. . . aluminum gallium arsenides

arsenic compounds

. arsenides

. . . aluminum arsenides

. . . . **aluminum gallium arsenides**

. . . gallium arsenides

. . . . **aluminum gallium arsenides**

gallium compounds

. gallium arsenides

. . . **aluminum gallium arsenides**

RT MODFETS

negative resistance devices

aluminum graphite composites

DEF Structural materials composed of aluminum alloys reinforced with graphite.

GS composite materials

. metal matrix composites

. . . **aluminum graphite composites**

RT fiber composites

graphite

aluminum hydrides

GS aluminum compounds

. **aluminum hydrides**

. . aluminum borohydrides

hydrogen compounds

. hydrides

. . metal hydrides

. . . **aluminum hydrides**

. . . . aluminum borohydrides

aluminum isotopes

GS chemical elements

. aluminum

. . **aluminum isotopes**

. . . aluminum 26

. . . aluminum 27

. nuclides

. . isotopes

. . . **aluminum isotopes**

. . . . aluminum 26

. . . . aluminum 27

metals

. aluminum

. . **aluminum isotopes**

. . . aluminum 26

. . . aluminum 27

aluminum nitrides

GS aluminum compounds

. **aluminum nitrides**

nitrogen compounds

. nitrides

. . metal nitrides

. . . **aluminum nitrides**

aluminum oxides

UF *alumina*

corundum

GS aluminum compounds

. **aluminum oxides**

. . alexandrite

. . sapphire

chalcogenides

. oxides

. . metal oxides

. . . **aluminum oxides**

. . . . alexandrite

. . . . sapphire

RT

abrasives

aluminates

bauxite

energy absorption films

gehlenite

kaolinite

nanocomposites

plagioclase

pyrophyllite

ruby

thermites

aluminum perchlorates

GS aluminum compounds

. **aluminum perchlorates**

halogen compounds

. chlorine compounds

. . perchlorates

. . . aluminum perchlorates

aluminum silicates

GS aluminum compounds

. **aluminum silicates**

. . andesite

. . feldspars

. . gehlenite

. . kaolinite

. . montmorillonite

. . pyrophyllite

. . . plagioclase

silicon compounds

. silicates

. . **aluminum silicates**

. . . andesite

. . . feldspars

. . . gehlenite

. . . kaolinite

. . . montmorillonite

. . . pyrophyllite

. . . . plagioclase

RT minerals

mullites

aluminum-lithium alloys

(added August 1991)

DEF Light alloys consisting primarily of aluminum and lithium.

GS alloys

. light alloys

. . aluminum alloys

. . . **aluminum-lithium alloys**

. . lithium alloys

. . . **aluminum-lithium alloys**

RT aircraft construction materials

airframe materials

alloying

copper alloys

high strength alloys

magnesium alloys

alveolar air

DEF The respiratory air in the alveoli (air sacs) deep within the lungs.

GS gases

. gas mixtures

. . air

. . . **alveolar air**

mixtures

. solutions

. . gas mixtures

. . . air

. . . . **alveolar air**

RT exhalation

expired air

lungs

alveoli

DEF The terminal air sacs deep within the lungs.

GS anatomy

. respiratory system

. . lungs

. . . **alveoli**

RT lung morphology

pulmonary circulation

pulmonary functions

respiration

AM (modulation)

USE **amplitude modulation**

AM-1 (EOS) spacecraft

(added June 1999)

USE **Terra spacecraft**

amalgams

USE **mercury amalgams**

Amalthea

DEF Innermost satellite of Jupiter.

GS celestial bodies

. natural satellites

. . Jupiter satellites

. . . **Amalthea**

RT Jupiter (planet)

solar system

Amazon region (South America)

GS regions

. tropical regions

. . . **Amazon region (South America)**

RT

Brazil

forests

river basins

rivers

Amberlite (trademark)

RT asbestos

thermal insulation

ambience

RT acoustic measurement

environmental monitoring

environments

noise (sound)

pollution monitoring

ambient temperature

DEF Temperature of surrounding medium.

Used for environmental temperature.

UF *environmental temperature*

GS temperature

. **ambient temperature**

RT atmospheric temperature

operating temperature

room temperature

satellite temperature

ambiguity

RT intelligibility

positioning

ambipolar diffusion

GS diffusion

. **ambipolar diffusion**

RT electron diffusion

electron mobility

ionic diffusion

ionic mobility

plasma diffusion

ambit

USE **field theory (physics)**

ambulances

RT medical services

∞ military vehicles

safety devices

American Indians

RT anthropology

culture (social sciences)

ethnic factors

minorities

races (anthropology)

americium

GS chemical elements

. actinide series

. . transuranium elements

. . . **americium**

. . . . americium isotopes

. americium 241

. nuclides

. . isotopes

. . . radioactive isotopes

. . . . transuranium elements

. **americium**

. americium isotopes

. americium 241

metals

. actinide series

. . transuranium elements

. . . **americium**

. . . . americium isotopes

. americium 241

americium 241

GS chemical elements

. actinide series

. . transuranium elements

. . . americium

. . . . americium isotopes

. **americium 241**

. nuclides

. . isotopes

- . . . radioactive isotopes
- transuranium elements
- americium
- americium isotopes
- **americium 241**
- metals
- . actinide series
- . . transuranium elements
- . . . americium
- americium isotopes
- **americium 241**
- americium isotopes**
- GS chemical elements
- . actinide series
- . . transuranium elements
- . . . americium
- **americium isotopes**
- americium 241
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- transuranium elements
- americium
- **americium isotopes**
- americium 241
- metals
- . actinide series
- . . transuranium elements
- . . . americium
- **americium isotopes**
- americium 241
- amidase**
- GS biopolymers
- . proteins
- . . enzymes
- . . . **amidase**
- organic compounds
- . proteins
- . . enzymes
- . . . **amidase**
- RT amino acids
- amides**
- GS nitrogen compounds
- . **amides**
- . . acetanilide
- . . acetazolamide
- . . carbamides
- . . cyanamides
- . . formhydroxamic acid
- . . nicotinamide
- . . oxamic acids
- . . polyimides
- . . . bismaleimide
- . . . Kapton (trademark)
- . . succinimides
- . . ureas
- . . . difluorourea
- . . . thioureas
- . . . thiuronium
- RT imides
- phthalimides
- amines**
- GS organic compounds
- . **amines**
- . . aminophylline
- . . amphetamines
- . . . methamphetamine
- . . aniline
- . . catecholamine
- . . . epinephrine
- . . . norepinephrine
- . . cysteamine
- . . diamines
- . . . ethylenediamine
- . . . guanidines
- guanethidine
- triaminoguanidinium azide
- . . difluorourea
- . . dimenhydrinate
- . . dimethylhydrazines
- . . diphenyl hydantoin
- . . ergotamine
- . . fluoroamines
- . . . nitrofluoroamines
- . . . trifluoroamine oxide
- . . gallamine triethiodide
- . . hexamethylenetetramine
- . . histidine
- . . hydroxylamine sulfate
- . . hyoscine
- . . mecamylamine
- . . melamine
- . . methylene diamine
- . . monoethanolamine (MEA)
- . . nitroamines
- . . nitrosamine
- . . promethazine
- . . tetrafluorohydrazine
- . . tetryl
- . . thiuronium
- . . trinitramine
- . . tryptamines
- . . . melatonin
- . . . serotonin
- . . . acetylcholine
- RT ∞ aliphatic compounds
- histamines
- hydrazines
- hydrocarbon fuels
- imines
- Lewis base
- nitrosyls
- phenolic epoxy resins
- rhodamine
- amino acids**
- GS acids
- . **amino acids**
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . cysteine
- . . dopa
- . . folic acid
- . . glutamic acid
- . . glutamine
- . . glycine
- . . hippuric acid
- . . histidine
- . . leucine
- . . . norleucine
- . . lysine
- . . melanoidin
- . . methionine
- . . thyroxine
- . . tryptophan
- . . tyrosine
- organic compounds
- . **amino acids**
- . . alanine
- . . . phenylalanine
- . . aspartic acid
- . . cysteine
- . . dopa
- . . folic acid
- . . glutamic acid
- . . glutamine
- . . glycine
- . . hippuric acid
- . . histidine
- . . leucine
- . . . norleucine
- . . lysine
- . . melanoidin
- . . methionine
- . . thyroxine
- . . tryptophan
- . . tyrosine
- RT adenosine triphosphate
- adrenocorticotropin (ACTH)
- amidase
- aspartates
- cyclic AMP
- cysteamine
- lipids
- peptides
- polypeptides
- protoproteins
- synthetic food
- uridylic acid
- zwitterions
- amino radical**
- GS hydrogen compounds
- . hydrides
- . . nitrogen hydrides
- . . . **amino radical**
- nitrogen compounds
- . nitrogen hydrides
- . . **amino radical**
- radicals
- . **amino radical**
- RT ammonia
- anions
- free radicals
- molecular ions
- reaction kinetics
- aminophylline**
- GS diuretics
- . **aminophylline**
- drugs
- . **aminophylline**
- organic compounds
- . amines
- . . **aminophylline**
- RT stimulants
- ammeters**
- DEF An instrument for measuring the magnitude of an electric current.
- GS measuring instruments
- . **ammeters**
- . . micromillimeters
- . . . thermoelement ammeters
- RT coulometers
- electric current
- electrical measurement
- galvanometers
- voltmeters
- ammines**
- RT ammonia
- ∞ chemical compounds
- copper
- intermetallics
- ∞ metal compounds
- ammonia**
- GS gases
- . **ammonia**
- . . liquid ammonia
- inorganic compounds
- . **ammonia**
- . . liquid ammonia
- nitrogen compounds
- . **ammonia**
- . . liquid ammonia
- RT absorption cooling
- amino radical
- ammines
- ammonium compounds
- ammonolysis
- atmospheric energy sources
- cultivation
- fertilizers
- Kjeldahl method
- nitrogen hydrides
- refrigerants
- ammonium bromides**
- GS ammonium compounds
- . **ammonium bromides**
- halogen compounds
- . bromine compounds
- . . bromides
- . . . **ammonium bromides**
- . . halides
- . . bromides
- . . . **ammonium bromides**
- ammonium chlorides**
- GS ammonium compounds
- . **ammonium chlorides**
- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **ammonium chlorides**
- . . halides
- . . chlorides
- . . . **ammonium chlorides**
- ammonium compounds**
- GS **ammonium compounds**
- . ammonium bromides

ammonium nitrates

- . ammonium chlorides
 - . ammonium nitrates
 - . ammonium perchlorates
 - . ammonium phosphates
 - . ammonium picrates
 - . ammonium sulfates
 - . hydroxylammonium perchlorates
- RT ammonia
- ∞ chemical compounds
- hexamethonium

ammonium nitrates

- GS ammonium compounds
- . **ammonium nitrates**
 - nitrogen compounds
 - . nitrates
 - . . inorganic nitrates
 - . . . **ammonium nitrates**
- RT cultivation
- fertilizers

ammonium perchlorates

- GS ammonium compounds
- . **ammonium perchlorates**
 - halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **ammonium perchlorates**
- RT solid rocket propellants

ammonium phosphates

- GS ammonium compounds
- . **ammonium phosphates**
 - phosphorus compounds
 - . phosphates
 - . . **ammonium phosphates**

ammonium picrates

- GS ammonium compounds
- . **ammonium picrates**
 - nitrogen compounds
 - . nitro compounds
 - . . picrates
 - . . . **ammonium picrates**
- RT explosives

ammonium sulfates

- GS ammonium compounds
- . **ammonium sulfates**
 - sulfur compounds
 - . sulfates
 - . . **ammonium sulfates**

ammonolysis

- GS chemical reactions
- . **ammonolysis**
 - decomposition
 - . **ammonolysis**
- RT ammonia
- cracking (chemical engineering)
- hydrolysis

ammunition

- GS **ammunition**
- . incendiary ammunition
- RT blanks
- bombs (ordnance)
- case bonded propellants
- explosive devices
- explosives
- fuses (ordnance)
- grenades
- guns (ordnance)
- igniters
- magazines (supply chambers)
- mines (ordnance)
- missiles
- ordnance
- projectiles
- propellants
- pyrotechnics
- ∞ rockets
- shaped charges
- ∞ shot
- torpedoes
- ∞ tracers
- warheads

weapons

amobarbital

- GS acids
- . **amobarbital**
- RT central nervous system depressants

amoeba

- GS animals
- . protozoa
 - . . **amoeba**
 - . . . pelomyxa
 - microorganisms
 - . protozoa
 - . . **amoeba**
 - . . . pelomyxa
- RT parasitic diseases

AMOOS

USE **Aeromaneuvering Orbit to Orbit Shuttle**

Amor asteroid

- DEF One group of Earth-approaching asteroids with orbits between the planets Mars and Jupiter. Used for Minor Planet 1221.
- UF *Minor Planet 1221*
- GS celestial bodies
- . asteroids
 - . . **Amor asteroid**
- RT asteroid belts
- astronomy
- Jupiter (planet)
- Mars (planet)
- planetary orbits
- solar system

amorphous materials

- GS **amorphous materials**
- . amorphous silicon
- RT asphalt
- carbon nitrides
- crystallinity
- glass
- graphoepitaxy
- grout
- ∞ materials
- spin glass

amorphous semiconductors

- GS semiconductors (materials)
- . **amorphous semiconductors**
 - . . amorphous silicon
- RT semiconducting films

amorphous silicon

- GS amorphous materials
- . **amorphous silicon**
 - chemical elements
 - . metalloids
 - . . silicon
 - . . . **amorphous silicon**
 - semiconductors (materials)
 - . amorphous semiconductors
 - . . **amorphous silicon**
- RT diamond films
- photovoltaic cells
- semiconducting films
- silicon films
- silicon junctions
- solar cells
- thin films

amount

- UF *quantity*
- RT addition
- sums
- value

AMP (biochemistry)

(added December 2004)

USE **adenosine monophosphate**

amperage

USE **electric current**

amphetamines

- GS organic compounds
- . amines
 - . . **amphetamines**
 - . . . methamphetamine

RT central nervous system stimulants

amphibia

- GS animals
- . vertebrates
 - . . **amphibia**
 - . . . frogs
- RT poikilothermia

amphibious aircraft

- GS amphibious vehicles
- . **amphibious aircraft**
- RT ∞ aircraft
- seaplanes
- water takeoff and landing aircraft

amphibious vehicles

- GS **amphibious vehicles**
- . amphibious aircraft
- RT boats
- ∞ military vehicles
- seaplanes
- ships
- surface vehicles
- ∞ vehicles
- water vehicles

amphiboles

- DEF A group of dark, rock-forming, ferromagnesian silicate minerals closely related in crystal form and composition.
- GS minerals
- . **amphiboles**
- RT calcium silicates
- silicates

Amphitrite asteroid

- GS celestial bodies
- . asteroids
 - . . **Amphitrite asteroid**
- RT asteroid belts
- Galileo project

amplidynes

- GS electric generators
- . rotating generators
 - . . **amplidynes**
- RT amplifiers
- electric motors
- power amplifiers
- servomotors

amplification

- UF *amplification factor*
- gain (amplification)*
- intensification*
- GS **amplification**
- . antenna gain
 - . high gain
 - . power gain
 - . sound amplification
 - . wave amplification
- RT amplifiers
- amplitudes
- dynamic characteristics
- dynamic range
- dynamic response
- fluid amplifiers
- fluidics
- magnification
- positive feedback
- sensitivity
- stability
- transfer functions
- transient response

amplification factor

USE **amplification**

amplifier design

- RT amplifiers
- computer aided design
- ∞ design
- logic design
- operational amplifiers
- product development
- traveling wave amplifiers

amplifiers

DEF Devices which enable an input signal

to control a source of power whose output is an enlarged reproduction of the essential characteristics of the signal. Used for electronic amplifiers.

- UF *electronic amplifiers*
- GS **amplifiers**
 - . beam plasma amplifiers
 - . broadband amplifiers
 - . carcinotrons
 - . current amplifiers
 - . . . photomultiplier tubes
 - . . . frequency modulation photomultipliers
 - . differential amplifiers
 - . distributed amplifiers
 - . feedback amplifiers
 - . fluid amplifiers
 - . . jet amplifiers
 - . intermediate frequency amplifiers
 - . light amplifiers
 - . limiter amplifiers
 - . linear amplifiers
 - . magnetic amplifiers
 - . magnetostatic amplifiers
 - . microwave amplifiers
 - . . . crossed field amplifiers
 - . . . cyclotron resonance devices
 - . . . planotrons
 - . cascode devices
 - . operational amplifiers
 - . parametric amplifiers
 - . postamplifiers
 - . power amplifiers
 - . preamplifiers
 - . push-pull amplifiers
 - . quantum amplifiers
 - . servoamplifiers
 - . transistor amplifiers
 - . traveling wave amplifiers
 - . voltage amplifiers
- RT **amplidyne**
 - amplification
 - amplifier design
- ∞ boosters
- capacitors
- circuits
- dynamic range
- ∞ electric cells
- electric choppers
- image intensifiers
- intensifiers
- klystrons
- laser cavities
- lasers
- linear circuits
- masers
- modulators
- multivibrators
- oscillators
- receivers
- repeaters
- solid state devices
- stimulated emission devices
- transformers
- traveling wave masers

amplitrons (trademark)

USE **planotrons**

amplitude distribution analysis

- UF *amplitude probability analysis*
- GS statistical analysis
 - . **amplitude distribution analysis**
- RT photopeak
 - pulse amplitude
 - signal to noise ratios
 - signatures

amplitude modulation

DEF In general, modulation in which the amplitude of a wave is the characteristic subject to variation.

- UF *AM (modulation)*
- GS coding
 - . signal encoding
 - . . **amplitude modulation**
 - . . . quadrature amplitude modulation modulation
 - . **amplitude modulation**
 - . . quadrature amplitude modulation

- RT Bragg cells
 - demodulation
 - demodulators
 - frequency modulation
 - light modulation
 - modulators
 - P.A.C.M. telemetry
 - phase modulation
 - pulse modulation
 - single sideband transmission

amplitude probability analysis

USE **amplitude distribution analysis**

amplitudes

DEF The maximum value of the displacement of a wave or other periodic phenomenon from a reference position. Also, angular distance north or south of the prime vertical; the arc of the horizon, or the angle at the zenith between the prime vertical and a vertical circle, measured north or south from the prime vertical to the vertical circle.

- GS **amplitudes**
 - . pulse amplitude
 - . scattering amplitude
- RT amplification
 - cycles
 - dimensions
 - displacement
 - frequencies
 - ∞ intensity
 - level (quantity)
 - magnitude
 - oscillations
 - phase deviation
 - picosecond pulses
 - pulses
 - standing wave ratios
 - vibration

ampoules

DEF Glass containers designed to be filled and sealed by fusion of the glass neck.

- RT ∞ containers
 - laboratory equipment
 - vacuum systems

AMPS (satellite payload)

- UF *Atmospheric and Magnetospheric Payload*
- GS *plasmas-in-space payload*
 - measuring instruments
 - . satellite-borne instruments
 - . . **AMPS (satellite payload)**
 - payloads
 - . Spacelab payloads
 - . . **AMPS (satellite payload)**
- RT instrument packages

AMPTE (satellites)

- SN (ACTIVE MAGNETOSPHERIC PARTICLE TRACER EXPLORERS)
- UF *Active Magneto Particle Tracer Explorers*
- GS artificial satellites
 - . scientific satellites
 - . . **AMPTE (satellites)**
- RT Earth magnetosphere
 - European space programs
 - satellite-borne instruments
 - solar wind
 - space plasmas
 - spaceborne experiments

AMS (spectrometer)

(added June 1998)

USE **Alpha Magnetic Spectrometer**

AMSU (radiometer)

(added July 1997)

USE **Advanced Microwave Sounding Unit**

AMTV

USE **automated mixed traffic vehicles**

AN-2 aircraft

- GS Antonov aircraft
 - . **AN-2 aircraft**
 - biplanes

- . **AN-2 aircraft**
- transport aircraft
- . **AN-2 aircraft**
- RT agricultural aircraft
- ∞ aircraft

AN-22 aircraft

- UF *Antheus aircraft*
- Antonov AN-22 aircraft*
- Cock aircraft*
- GS Antonov aircraft
 - . **AN-22 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **AN-22 aircraft**
 - monoplanes
 - . **AN-22 aircraft**
 - transport aircraft
 - . **AN-22 aircraft**
- RT ∞ aircraft
 - passenger aircraft

AN-24 aircraft

- UF *Antonov AN-24 aircraft*
- Coke aircraft*
- GS Antonov aircraft
 - . **AN-24 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **AN-24 aircraft**
 - monoplanes
 - . **AN-24 aircraft**
 - transport aircraft
 - . **AN-24 aircraft**
- RT ∞ aircraft
 - passenger aircraft

anabaena

- GS plants (botany)
 - . algae
 - . . blue green algae
 - . . . **anabaena**
 - . . . thermophilic plants
 - . . blue green algae
 - . . . **anabaena**

anaerobes

- RT aerobes
 - bacteria
 - microorganisms
 - sewage treatment

analgesia

- RT anesthesia
 - drugs
 - pain

analog circuits

- GS circuits
 - . **analog circuits**
- RT data converters
 - operational amplifiers
 - rheoelectrical simulation

analog computers

DEF Computers that work on the principle of measuring, as distinguished from counting, in which the input data is analogous to a measurement continuum such as linear lengths, voltages, or resistances which can be manipulated by the computer.

- GS data processing equipment
 - . computers
 - . . **analog computers**
 - . . . EAI 680 computer
 - . . . Honeywell 600/6000 computer
 - . . . SIGMA 5 computer
 - . . . Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
- RT differential amplifiers
 - differential analyzers
 - digital computers
 - discriminators
 - functional integration
 - hybrid computers
 - missile control

analog data

- operational amplifiers
- resolvers
- signal analyzers
- spectral resolution

analog data

- RT binary data
- ∞ data
 - data converters
 - data processing
 - digital data
- ∞ measurement
 - video compression
 - video data

analog simulation

- GS models
 - mathematical models
 - analog simulation**
- simulation
 - computerized simulation
 - analog simulation**
- RT computer systems simulation
- digital simulation
- flight simulation
- rheoelectrical simulation
- systems simulation

analog to digital converters

DEF Devices for converting non-digital information into digits. Used for digitizers.

- UF *digitizers*
- GS data converters
 - analog to digital converters**
- RT coders
- coding
- ∞ converters
 - data acquisition
 - digital computers
 - digital electronics
 - digital systems
 - digital to analog converters
 - Illiac 3 computer
 - Illiac 4 computer
 - peripheral equipment (computers)
 - plotting

analogies

- UF *similarities*
- GS **analogies**
 - Earth analogs
 - hydraulic analogies
- RT comparison
- homology
- simulation

analogous

- RT models
- simulators

analysis

USE **analyzing**

analysis (mathematics)

DEF That part of the field of mathematics which arises from the calculus and which deals primarily with functions.

- GS **analysis (mathematics)**
 - aperiodic functions
 - calculus
 - continuity (mathematics)
 - differential calculus
 - Fourier-Bessel transformations
 - Graeff calculus
 - integral calculus
 - limits (mathematics)
 - series (mathematics)
 - asymptotic series
 - Campbell-Hausdorff series
 - cosine series
 - Fourier series
 - Pade approximation
 - power series
 - Taylor series
 - MacLaurin series
 - progressions
 - Prony series
 - sine series
 - vector analysis
 - collinearity

- coplanarity
- curl (vectors)
- vorticity
- combinatorial analysis
- binomial coefficients
- combinations (mathematics)
- factorials
- partitions (mathematics)
- permutations
- complex variables
- Airy function
- analytic functions
 - entire functions
 - Bessel functions
 - Hankel functions
 - Cauchy integral formula
 - conformal mapping
 - conjugates
 - conjugate points
 - exponential functions
 - logarithms
 - gamma function
 - harmonic functions
 - hyperbolic functions
 - hypergeometric functions
 - Laguerre functions
 - Legendre functions
 - Liouville theorem
 - Mathieu function
 - meromorphic functions
 - elliptic functions
 - rational functions
 - nonholonomic equations
 - orthogonal functions
 - Walsh function
 - Schwarz-Christoffel transformation
 - singularity (mathematics)
 - naked singularities
 - spherical harmonics
 - dependent variables
 - Fourier analysis
 - Fourier series
 - function space
 - Banach space
 - Hilbert space
 - Sobolev space
 - functional analysis
 - Banach space
 - Hilbert space
 - Sobolev space
 - convolution integrals
 - harmonic analysis
 - tesseral harmonics
 - zonal harmonics
 - integral equations
 - Fredholm equations
 - J integral
 - singular integral equations
 - Volterra equations
 - Wiener Hopf equations
 - integral transformations
 - Fourier transformation
 - fast Fourier transformations
 - Fourier-Bessel transformations
 - Hilbert transformation
 - Laplace transformation
 - half planes
 - half spaces
 - Hill determinant
 - numerical analysis
 - approximation
 - Born approximation
 - Born-Oppenheimer approximation
 - Chebyshev approximation
 - Eddington approximation
 - essentially non-oscillatory schemes
 - finite difference theory
 - finite difference time domain method
 - finite element method
 - Hartree approximation
 - least squares method
 - mean square values
 - Milne method
 - multigrad methods
 - Newton methods
 - Newton-Raphson method
 - boundary element method

- discretization (mathematics)
- numerical differentiation
- Oseen approximation
- Pade approximation
- particle in cell technique
- Pohlhausen method
- predictor-corrector methods
- Rayleigh-Ritz method
- relaxation method (mathematics)
- Reynolds averaging
- Ritz averaging method
- Schwartz method
- Sommerfeld approximation
- TVD schemes
- upwind schemes (mathematics)
- vortex in cell technique
- Trefftz method
- computational mechanics
- meshfree methods
- boundary integral method
- computational astrophysics
- computational chemistry
- computational electromagnetics
- computational fluid dynamics
- difference equations
- error analysis
- finite volume method
- Godunov method
- flux difference splitting
- flux vector splitting
- Glimm method
- Graeff calculus
- interpolation
- iteration
- conjugate gradient method
- iterative solution
- Newton methods
- Newton-Raphson method
- predictor-corrector methods
- Monte Carlo method
- nomographs
- numerical integration
- Runge-Kutta method
- computational aeroacoustics
- direct numerical simulation
- space-time CE/SE method
- truncation errors
- Pfaff equation
- phase-space integral
- real variables
- Abel function
- asymptotes
- Bessel functions
- Hankel functions
- Bethe-Salpeter equation
- calculus of variations
- composite functions
- delta function
- differential equations
- Blasius equation
- Chandrasekhar equation
- cosine series
- Duffing differential equation
- Falkner-Skan equation
- hyperbolic differential equations
- Lame wave equations
- partial differential equations
- biharmonic equations
- Burger equation
- Cauchy-Riemann equations
- elliptic differential equations
- Monge-Ampere equation
- Euler-Cauchy equations
- Fowcs Williams-Hawkings equation
- Fokker-Planck equation
- Gauss equation
- Helmholtz vorticity equation
- Liouville equations
- parabolic differential equations
- Poisson equation
- vlasov equations
- Riccati equation
- vorticity equations
- Helmholtz vorticity equation
- Einstein equations
- existence theorems
- extremum values
- limits (mathematics)

- . . . maxima
- . . . minima
- Cramer-Rao bounds
- . . . Fourier-Bessel transformations
- . . . Green's functions
- . . . hyperbolic functions
- . . . hyperplanes
- . . . Jacobi integral
- . . . Jacobi matrix method
- . . . kernel functions
- . . . Liapunov functions
- . . . linear equations
- Flowcs Williams-Hawkins equation
- linear evolution equations
- Riccati equation
- . . . Lipschitz condition
- . . . measure and integration
- binary integration
- Borel sets
- functional integration
- integral calculus
- J integral
- Lebesgue theorem
- numerical integration
- Runge-Kutta method
- Stieltjes integral
- weighting functions
- . . . Neumann problem
- . . . nonlinear equations
- cubic equations
- Duffing differential equation
- Monge-Ampere equation
- nonlinear evolution equations
- quadratic equations
- quartic equations
- numerical differentiation
- periodic functions
- trigonometric functions
- cosine series
- sine series
- tangents
- series (mathematics)
- asymptotic series
- Campbell-Hausdorff series
- cosine series
- Fourier series
- Pade approximation
- power series
- Taylor series
- MacLaurin series
- progressions
- Prony series
- sine series
- . . . Sturm-Liouville theory
- . . . vector analysis
- collinearity
- coplanarity
- curl (vectors)
- vorticity
- . . . Weierstrass functions
- . . . Whittaker functions
- . . . frequency domain analysis
- . . . time domain analysis
- . . . finite difference time domain method
- RT algebra
- ∞ analyzing
- ∞ applications of mathematics
- ∞ discontinuity
- ∞ equilibrium equations
- ∞ geometry
- ∞ mathematics
- ∞ monotone functions
- ∞ space
- ∞ trees (mathematics)
- ∞ vector spaces
- ∞ Venn diagrams

analysis of variance

DEF A systematic statistical procedure for determining the sources and the magnitudes of the errors present in a measurement process, and for assessing the significance of differences between materials, processes, or test methods under study.

- GS statistical analysis
- . variance (statistics)
- . . **analysis of variance**

RT ∞ variance

analytic functions

- UF *holomorphism*
- GS analysis (mathematics)
- . complex variables
- . . **analytic functions**
- . . . entire functions
- . . . functions (mathematics)
- . . **analytic functions**
- . . . entire functions
- RT Cauchy-Riemann equations
- isoperimetric problem
- nonholonomic equations
- power series

analytic geometry

- GS geometry
- . Euclidean geometry
- . . **analytic geometry**
- . . . catenaries
- . . . circumferences
- . . . conics
- ellipses
- hyperbolas
- parabolas
- cycloids
- epicycloids
- loci
- . . . Mercator projection
- quadrants
- S curves
- Gompertz curves
- spheroids
- oblate spheroids
- prolate spheroids
- tangents
- toruses
- trigonometry
- RT annuli
- asymptotes
- calculus
- coordinates
- curves (geometry)
- ∞ cylinders
- descriptive geometry
- differential geometry
- polytopes
- projective geometry

analytical chemistry

- RT chemical analysis
- ∞ chemistry
- inorganic chemistry
- qualitative analysis
- quantitative analysis
- volumetric analysis

analyzers

- SN (EXCLUDES DEVICES FOR PERFORMING MATHEMATICAL ANALYSIS)
- GS measuring instruments
- . **analyzers**
- . . engine analyzers
- . . signal analyzers
- RT controllers
- ∞ detectors
- monitors
- selectors
- ∞ test equipment

∞ **analyzing**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *analysis*
- RT *instrumental analysis*
- activation analysis
- algebra
- analysis (mathematics)
- chemical analysis
- combinatorial analysis
- cost analysis
- creep analysis
- design analysis
- diagnosis
- differential geometry
- duality principle
- error analysis
- evaluation

- examination
- failure analysis
- figure of merit
- forecasting
- management analysis
- multivariate statistical analysis
- network analysis
- numerical analysis
- photointerpretation
- postflight analysis
- prediction analysis techniques
- preflight analysis
- reliability analysis
- sensitivity analysis
- signal analysis
- signature analysis
- spectrum analysis
- statistical analysis
- stress analysis
- structural analysis
- systems analysis
- terrain analysis
- thermal analysis
- training analysis
- trajectory analysis
- trend analysis
- weight analysis
- x ray analysis

anaphylaxis

- GS sensitivity
- . **anaphylaxis**
- RT allergic diseases
- antigens
- immunology
- sensitizing

anastigmatism

- RT optometry
- vision

anatase

- UF *octahedrite*
- GS chalcogenides
- . oxides
- . . metal oxides
- . . . titanium oxides
- **anatase**
- minerals
- . **anatase**
- titanium compounds
- . titanium oxides
- . . **anatase**
- RT pigments
- rutile

anatomy

- SN (LIMITED TO ANIMAL ANATOMY)
- GS **anatomy**
- . abdomen
- . chest
- . . breast
- . . . mammary glands
- . . circulatory system
- . . cardiovascular system
- . . . blood vessels
- arteries
- aorta
- arterioles
- capillaries (anatomy)
- glomerulus
- veins
- . . . heart
- cardiac auricles
- cardiac ventricles
- epicardium
- heart conduction system
- myocardium
- . . digestive system
- . . . esophagus
- . . gastrointestinal system
- . . . appendix (anatomy)
- intestines
- rectum
- stomach
- mouth
- lips (anatomy)
- . . pancreas
- . . salivary glands
- . . teeth

anchors (fasteners)

- . . tongue
- . face (anatomy)
- . . chin
- . . forehead
- . . mouth
- . . . lips (anatomy)
- . . nose (anatomy)
- . genitourinary system
- . . bladder
- . . kidneys
- . . . glomerulus
- . . reproductive systems
- . . . sex glands
- gonads
- ovaries
- testes
- . . . prostate gland
- . . . uterus
- . glands (anatomy)
- . . endocrine glands
- . . . adrenal gland
- . . . gonads
- ovaries
- testes
- . . . hypothalamus
- . . . pancreas
- . . . parathyroid gland
- . . . pineal gland
- . . . pituitary gland
- . . . thymus gland
- . . . thyroid gland
- . . mammary glands
- . . salivary glands
- . . sebaceous glands
- . . sex glands
- . . . gonads
- ovaries
- testes
- . . . prostate gland
- . head (anatomy)
- . . skull
- . . . cranium
- intracranial cavity
- . . . mastoids
- . human body
- . . limbs (anatomy)
- . . arm (anatomy)
- . . . elbow (anatomy)
- . . . forearm
- . . hand (anatomy)
- . . . fingers
- . . leg (anatomy)
- . . . feet (anatomy)
- . . . knee (anatomy)
- . . . thigh
- . . liver
- . lumbar region
- . musculoskeletal system
- . . bones
- . . . femur
- . . . pelvis
- . . . scapula
- . . . skull
- cranium
- intracranial cavity
- mastoids
- . . . spine
- vertebrae
- . . . sternum
- . . . tibia
- . . . ulna
- . . joints (anatomy)
- . . . elbow (anatomy)
- . . . knee (anatomy)
- . . . wrist
- . . muscles
- . . . constrictors
- . . . diaphragm (anatomy)
- . . . flexors
- . . . myocardium
- . . . skeletal muscle
- . . . smooth muscle
- . . . tendons
- . . cartilage
- . neck (anatomy)
- . nervous system
- . . afferent nervous systems
- . . autonomic nervous system
- . . . sympathetic nervous system

- . . central nervous system
- . . . brain
- brain stem
- cerebellum
- cerebral ventricles
- cerebrum
- cerebral cortex
- occipital lobes
- diencephalon
- hypothalamus
- pineal gland
- thalamus
- hippocampus
- . . . spinal cord
- . . efferent nervous systems
- . . nerves
- . . . ganglia
- . . . myelin sheath
- . . . nerve fibers
- . . . oculomotor nerves
- . . peripheral nervous system
- . . peritoneum
- . . pleurae
- . . respiratory system
- . . bronchi
- . . diaphragm (anatomy)
- . . larynx
- . . . glottis
- . . . vocal cords
- . . lungs
- . . . alveoli
- . . nose (anatomy)
- . . paranasal sinuses
- . . pharynx
- . . trachea
- . . sciatic region
- . . sense organs
- . . . chemoreceptors
- . . ear
- . . . eardrums
- . . . eustachian tubes
- . . . labyrinth
- cochlea
- Corti organ
- otolith organs
- semicircular canals
- vestibules
- . . . middle ear
- . . eye (anatomy)
- . . . choroid membranes
- . . . conjunctiva
- . . . cornea
- . . . oculomotor nerves
- . . . pupils
- . . . retina
- fovea
- . . . gravireceptors
- . . . otolith organs
- . . baroreceptors
- . . mechanoreceptors
- . . photoreceptors
- . . proprioceptors
- . . thermoreceptors
- . skin (anatomy)
- . . epidermis
- . . immune systems
- . . thorax
- . . torso
- . . lymphatic system
- . . . spleen
- . . . thymus gland

RT

- appendages
- bifurcation (biology)
- biodynamics
- ∞ biology
- ∞ cells (biology)
- ∞ differentiation
- differentiation (biology)
- dorsal sections
- epithelium
- exoskeletons
- hepatitis
- morphology
- organs
- posterior sections
- tissues (biology)
- vestibular nystagmus

viscera

anchors (fasteners)

GS fasteners

- . **anchors (fasteners)**

RT ∞ bands

- bolts
- brackets
- clips
- couplings
- guy wires
- holders
- mooring
- nuts (fasteners)
- screws
- straps
- studs (structural members)
- tetherlines

Andes Mountains (South America)

GS landforms

- . mountains
- . . **Andes Mountains (South America)**

RT South America

andesite

DEF Volcanic rock composed essentially of andesine and one or more mafic constituents.

GS aluminum compounds

- . aluminum silicates
- . . **andesite**
- rocks
- . **andesite**
- silicon compounds
- . silicates
- . . aluminum silicates
- . . . **andesite**

RT feldspars

- igneous rocks
- minerals
- soils

Andorra

GS nations

- . **Andorra**

RT Europe

- France
- Pyrenees Mountains (Europe)
- Spain

∞ Andromeda

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT Andromeda Constellation

- Andromeda Galaxy

Andromeda Constellation

GS constellations

- . **Andromeda Constellation**

RT ∞ Andromeda

- Andromeda Galaxy

Andromeda Galaxy

GS celestial bodies

- . galaxies
- . . spiral galaxies
- . . . **Andromeda Galaxy**

RT ∞ Andromeda

- Andromeda Constellation
- local group (astronomy)

anechoic chambers

DEF Enclosures especially designed with boundaries that absorb sufficiently well the sound incident thereon to create an essentially field-free condition in the frequency ranges of interest.

GS compartments

- . test chambers
- . . **anechoic chambers**
- test facilities
- . **anechoic chambers**

RT acoustic attenuation

- acoustic measurement
- acoustics
- ∞ chambers

- zero sound
- anelasticity**
 GS mechanical properties
 . elastic properties
 . . **anelasticity**
 RT creep properties
 internal friction
 modulus of elasticity
 stress relaxation
- anemias**
 GS diseases
 . **anemias**
 RT blood
 blood cell count
 blood cells
 hematocrit ratio
 hemoglobin
 ischemia
 occupational diseases
- anemometers**
 DEF Instruments used to measure the speed of air currents, usually measured from the rotation of wind driven cups or from wind pressure through a tube pointed into the wind.
 GS measuring instruments
 . **anemometers**
 . . drag force anemometers
 . . hot-film anemometers
 . . hot-wire anemometers
 . . laser anemometers
 . . sonic anemometers
 RT aircraft instruments
 flow measurement
 meteorological instruments
 speed indicators
 velocity measurement
 wind (meteorology)
 wind measurement
 wind vanes
 wind velocity
 wind velocity measurement
- anemometry*
 USE **velocity measurement**
- anesthesia**
 GS **anesthesia**
 . electroanesthesia
 RT analgesia
 hypnosis
 sensory perception
 unconsciousness
- anesthesiology**
 GS medical science
 . **anesthesiology**
 RT chloroform
 clinical medicine
 depressants
 diagnosis
 drugs
 pharmacology
- anesthetics**
 GS drugs
 . **anesthetics**
 . . chloroform
 . . cyclopropane
 . . methyl chloride
 . . novocain
 RT ethers
- angels (radar)**
 DEF Echos of false radar targets caused by atmospheric inhomogeneity, atmospheric refraction, insects, birds, or unknown phenomena.
 GS echoes
 . radar echoes
 . . **angels (radar)**
 RT glint
 radar cross sections
 radio echoes
- angina pectoris**
 GS diseases
 . heart diseases
 . . **angina pectoris**
- RT anoxia
 arteriosclerosis
 coronary artery disease
 emotional factors
 heart function
 heart rate
 myocardium
 physical exercise
 stress (physiology)
- angiogenesis**
(added June 2004)
 DEF The development of new blood vessels.
 UF *neovascularization*
 RT blood vessels
 cardiovascular system
 ∞ development
 growth
 hematopoietic system
- angiography**
 GS imagery
 . radiography
 . . **angiography**
 RT brain
 cardiology
 cardiovascular system
- angiosperms**
 RT grains (food)
 nuts (fruits)
 plants (botany)
 vegetables
- angiotensins**
(added August 2004)
 DEF Oligopeptides ranging in size from angiotensin precursors with 14 amino acids to the active vasoconstrictor angiotensin II with 8 amino acids, or their analogs or derivatives. The amino acid content varies with the species and changes in that content produce antagonistic or inactive compounds.
 GS organic compounds
 . peptides
 . . polypeptides
 . . . **angiotensins**
 RT neurotransmitters
 renin
 vasoconstriction
 vasoconstrictor drugs
- angle of attack**
 DEF The angle between a reference line fixed with respect to an airframe and a line in the direction of movement of the body.
 GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **angle of attack**
 zero angle of attack
 RT aerodynamic characteristics
 aerodynamic stalling
 ∞ attack
 boundary layer separation
 lift
 sweep angle
 wing rock
- angles (geometry)**
 DEF The inclination to each other of two intersecting lines, measured by the arc of a circle intercepted between the two lines forming the angle, the center of the circle being the point of intersection.
 GS geometry
 . Euclidean geometry
 . . **angles (geometry)**
 . . . angle of attack
 zero angle of attack
 . . . Bragg angle
 . . . Brewster angle
 . . . dihedral angle
 . . . elevation angle
 . . . look angles (electronics)
 . . . look angles (tracking)
 . . . sweep angle
 sweepback
 leading edge sweep
- RT angular resolution
 apsides
 azimuth
 complements (mathematics)
 corners
 elongation
 goniometers
 ∞ grade
 gradients
 grazing incidence
 incidence
 obliqueness
 phase shift
 photogoniometers
 pitch (inclination)
 ∞ profiles
 protractors
 reciprocal theorems
 slopes
 triangulation
 trigonometry
- Angola**
 GS nations
 . **Angola**
 RT Africa
- angular acceleration**
 DEF The rate of change of angular velocity.
 GS rates (per time)
 . acceleration (physics)
 . . **angular acceleration**
 RT ∞ acceleration
 acceleration measurement
 centrifugal force
 centripetal force
 deceleration
 rotation
 spin reduction
 transverse acceleration
 yo-yo devices
- angular correlation**
 GS correlation
 . **angular correlation**
 RT data correlation
 MATTS (systems)
 view effects
- angular distribution**
 GS distribution (property)
 . **angular distribution**
 RT electron density profiles
 elementary particle interactions
 flux density
 force distribution
 mass distribution
 moment distribution
 nuclear scattering
 star distribution
- angular momentum**
 GS momentum
 . **angular momentum**
 RT classical mechanics
 Clebsch-Gordan coefficients
 electron spin
 kinetics
 moments of inertia
 particle spin
 quantum numbers
 quantum theory
 quenching (atomic physics)
 Racah coefficient
 Regge poles
 spin
 spin tests
 stellar rotation
 transverse momentum
 Wigner coefficient
- angular motion*
 USE **angular velocity**
- angular resolution**
 DEF Specifically, the ability of a radar to distinguish between two targets solely by the measurement of angles.
 GS resolution
 . **angular resolution**

angular velocity

- RT accuracy
- angles (geometry)
- high resolution
- ∞ optics
- radar resolution

angular velocity

DEF The change of angle per unit time; specifically, in celestial mechanics, the change in angle of the radius vector per unit time. Used for angular motion.

- UF *angular motion*
- GS rates (per time)
 - . **angular velocity**
 - velocity
 - . **angular velocity**
- RT gyration
 - orbital velocity
 - proper motion
 - revolving
 - rotation
 - rotor speed
 - Sagnac effect
 - tachometers
 - tip speed

anhydrides

- GS chalcogenides
 - . oxides
 - . . . **anhydrides**
 - . . . peroxides
 - inorganic peroxides
 - hydrogen peroxide
 - organic peroxides
 - potassium peroxides
 - sodium peroxides
- RT acids
- bases (chemical)

Anik 1

- UF *Anik A*
Telesat Canada A
- GS artificial satellites
 - . synchronous satellites
 - . . Anik satellites
 - . . . **Anik 1**
 - Canadian spacecraft
 - . Anik satellites
 - . . **Anik 1**
- RT Canada
 - Canadian space program
 - Delta launch vehicle
 - international cooperation

Anik 2

- UF *Anik B*
Telesat Canada B
- GS artificial satellites
 - . synchronous satellites
 - . . Anik satellites
 - . . . **Anik 2**
 - Canadian spacecraft
 - . Anik satellites
 - . . **Anik 2**
- RT Canada
 - Canadian space program
 - Delta launch vehicle
 - international cooperation

Anik 3

- UF *Anik C*
Telesat Canada 3
Telesat Canada C
- GS artificial satellites
 - . synchronous satellites
 - . . Anik satellites
 - . . . **Anik 3**
 - Canadian spacecraft
 - . Anik satellites
 - . . **Anik 3**
- RT Canada
 - Canadian space program

international cooperation

Anik A
USE **Anik 1**

Anik B
USE **Anik 2**

Anik C
USE **Anik 3**

Anik satellites

DEF A series of geostationary communication satellites operated by Telesat which is partly owned by the Canadian government and partly owned by private enterprise. The name "Anik" is derived from an Eskimo word meaning "brother." It was so designated because of its partial use in the Far North.

- GS artificial satellites
 - . synchronous satellites
 - . . **Anik satellites**
 - . . . Anik 1
 - . . . Anik 2
 - . . . Anik 3
 - Canadian spacecraft
 - . **Anik satellites**
 - . . Anik 1
 - . . Anik 2
 - . . Anik 3

RT Canadian space program
Delta launch vehicle
international cooperation

aniline

- GS organic compounds
 - . amines
 - . . **aniline**
- RT dyes

animal models

(added July 2008)

DEF Non-human animals, selected because of specific characteristics, for use in experimental research, teaching, or testing.

- GS models
 - . **animal models**
 - . . knockout mice
- RT animals
 - bioassay
 - bioastronautics
 - cytology
 - diseases
 - in vivo methods and tests
 - mice
 - pathology
 - rats

animals

- UF *fauna*
metazoa
- GS **animals**
 - . homeotherms
 - . invertebrates
 - . . arthropods
 - . . . artemia
 - . . . crabs
 - . . . insects
 - bees
 - bollworms
 - chironomus flies
 - cockroaches
 - Coleoptera
 - beetles
 - tribolia
 - boll weevils
 - crickets
 - Drosophila
 - fireflies
 - grasshoppers
 - locusts
 - moths
 - silkworms
 - spiders
 - . . . mollusks
 - . . . cephalopods
 - octopuses
 - . . . snails
 - . . Rotifera
 - . . sea urchins

- . . worms
- . . . flatworms
- . . livestock
- . . poikilothermia
- . . protozoa
- . . amoeba
- . . . pelomyxa
- . . Flagellata
- . . . Euglena
- . . . trypanosome
- . . paramecia
- . . vertebrates
- . . . amphibia
- . . . frogs
- . . . birds
- chickens
- pigeons
- turkeys
- waterfowl
- . . . fishes
- schools (fish)
- . . . sharks
- . . mammals
- . . . bats
- . . . bears
- . . . cats
- . . . cattle
- calves
- deer
- caribous
- . . . goats
- . . . horses
- . . . marine mammals
- dolphins
- manatees
- porpoises
- seals (animals)
- whales
- . . . moles
- . . . primates
- apes
- chimpanzees
- baboons
- human beings
- monkeys
- . . . rodents
- guinea pigs
- hamsters
- mice
- jerboas
- knockout mice
- pocket mice
- rabbits
- rats
- squirrels
- ground squirrels
- . . . dogs
- . . . sheep
- . . . swine
- . . . wolves
- . . reptiles
- . . lizards
- . . snakes
- . . turtles
- . . wildlife
- . . zooplankton
- RT animal models
- ∞ biology
- biomass
- carbon cycle
- census
- endangered species
- food chain
- grazing
- habitats
- heterotrophs
- larvae
- microorganisms
- organisms
- parasites
- plankton
- plants (botany)
- predators
- viability
- wildlife radiolocation
- ∞ zoology

animation

- GS arts

- . graphic arts
- . . . **animation**
- computer animation
- RT cinematography
- motion pictures
- anions**
- GS ions
- . negative ions
- . . . **anions**
- RT amino radical
- anodes
- cations
- cell anodes
- electrode materials
- electron affinity
- ionic mobility
- anisole**
- GS ethers
- . **anisole**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . **anisole**
- anisoplanatism**
- (added May 1999)
- DEF In adaptive optics (AO) systems, a performance-degrading effect that arises whenever light from the wave-front sensor beacon and light from the target object sample different volumes of optical turbulence. This effect results in an increased value of the aperture-averaged residual phase variance after AO compensation, which causes an exponential decrease in system performance.
- RT aberration
- adaptive optics
- atmospheric correction
- atmospheric optics
- image resolution
- optical correction procedure
- phase error
- telescopes
- anisotropic fluids**
- GS media
- . anisotropic media
- . . **anisotropic fluids**
- RT anisotropy
- ∞ fluids
- invariant imbeddings
- isotropy
- liquid crystals
- Newtonian fluids
- anisotropic media**
- GS media
- . **anisotropic media**
- . . anisotropic fluids
- RT anisotropy
- birefringence
- birefringent coatings
- functionally gradient materials
- homogeneity
- isotropic media
- ∞ materials
- polarization (waves)
- anisotropic plates**
- UF *nonisotropic plates*
- GS structural members
- . plates (structural members)
- . . **anisotropic plates**
- RT cantilever plates
- end plates
- perforated plates
- reinforced plates
- anisotropic shells**
- GS shells (structural forms)
- . **anisotropic shells**
- RT corrugated shells
- elastic shells
- reinforced shells
- anisotropy**
- DEF Having different properties in different directions. Used for nonisotropy, onisotropy, photothermotropism, and thermotropism.
- UF *nonisotropy*
- anisotropy*
- photothermotropism*
- thermotropism*
- GS **anisotropy**
- . plastic anisotropy
- . . elastic anisotropy
- RT aeolotropism
- anisotropic fluids
- anisotropic media
- birefringence
- crystal structure
- crystals
- directivity
- isotropy
- mechanical properties
- metallography
- polarization (spin alignment)
- polarization (waves)
- spatial distribution
- Sunyaev-Zeldovich effect
- Anna hurricane**
- GS storms
- . storms (meteorology)
- . . cyclones
- . . . hurricanes
- **Anna hurricane**
- . . tropical storms
- . . . hurricanes
- **Anna hurricane**
- ANNA satellites**
- GS artificial satellites
- . geodetic satellites
- . . **ANNA satellites**
- RT Explorer 29 satellite
- Explorer 36 satellite
- GEOS 1 satellite
- GEOS 2 satellite
- GEOS 3 satellite
- annealing**
- DEF Application of heat energy to a material cooling at a suitable rate to relieve stresses, change certain properties, improve machinability, or for realignment of atoms in a distorted lattice as caused, for example, by radiation damage.
- GS heat treatment
- . **annealing**
- . . laser annealing
- . . . pulse heating
- RT combustion synthesis
- graphitization
- hardening (materials)
- heating
- normalizing (heat treatment)
- recrystallization
- simulated annealing
- softening
- stress relieving
- tempering
- annihilation reactions**
- GS **annihilation reactions**
- . positron annihilation
- RT antiparticles
- electron-positron pairs
- high energy interactions
- matter-antimatter propulsion
- photons
- proton-antiproton interactions
- proton-proton reactions
- annotations**
- RT abstracts
- information
- summaries
- annual variations**
- UF *interannual variations*
- seasonal variations*
- GS variations
- . periodic variations
- . . **annual variations**
- RT atmospheric circulation
- brown wave effect
- cycles
- green wave effect
- intraseasonal variations
- Madden-Julian Oscillation
- magnetic variations
- meteorological parameters
- meteorology
- monsoons
- quasi-biennial oscillation
- seasons
- temporal distribution
- weather
- wind variations
- zonal flow (meteorology)
- annular core pulse reactors**
- GS nuclear reactors
- . **annular core pulse reactors**
- RT ∞ nuclear energy
- nuclear fuel elements
- nuclear fuels
- reactor cores
- reactor design
- reactor materials
- reactor physics
- reactor safety
- reactor technology
- ∞ reactors
- annular ducts**
- DEF Ring-shaped openings for the passage of fluids (gases, etc.) designed for optimum aerodynamic flow properties for the application involved.
- GS ducts
- . **annular ducts**
- RT air ducts
- duct geometry
- ducted bodies
- fluid flow
- intake systems
- nose inlets
- openings
- orifices
- vents
- annular flow**
- GS fluid flow
- . axisymmetric flow
- . . **annular flow**
- RT annuli
- axial flow
- channel flow
- coaxial flow
- Couette flow
- ∞ flow
- flow geometry
- heat transmission
- nozzle flow
- one dimensional flow
- turbulent flow
- annular nozzles**
- RT annuli
- coaxial flow
- conical nozzles
- exhaust nozzles
- inlet nozzles
- ∞ nozzles
- plug nozzles
- rocket nozzles
- shrouded nozzles
- spray nozzles
- annular plates**
- GS structural members
- . plates (structural members)
- . . **annular plates**
- RT annuli
- circular plates
- flat plates
- annular suspension and pointing system**
- DEF In the Shuttle era, high accuracy pointing and stabilization of an experiment payload.
- GS pointing control systems
- . **annular suspension and pointing system**
- RT magnetic suspension
- payloads
- space shuttles

annuli

space transportation system
Spacelab
Spacelab payloads
∞ systems

annuli

RT analytic geometry
annular flow
annular nozzles
annular plates
flow measurement
∞ rings

anodes

DEF The positive poles or electrodes of electron emitters, such as electron tubes or electric cells.

GS electrodes
. **anodes**
. . cell anodes
. . shell anodes
. . tube anodes
RT accumulators
anions
cathodes
electrode materials
multi-anode microchannel arrays

anodic coatings

GS coatings
. inorganic coatings
. . **anodic coatings**
. protective coatings
. . **anodic coatings**
RT anodizing
cathodic coatings
electrode materials
oxides

anodic stripping

DEF The removal of metal coatings.

RT cladding
coating
debonding (materials)
delaminating
metal coatings
plating
removal
∞ stripping

anodizing

DEF An electrolytic oxidation process in which the surface of a metal, when anodic, is converted to a coating having desirable protective, decorative, or functional properties.

GS coating
. **anodizing**
deposition
. **anodizing**
RT anodic coatings
passivity
protective coatings
surface treatment

anolytes

GS conductors
. electrolytes
. . **anolytes**
RT catholytes
cell anodes

anomalies

DEF In general, deviations from the norm.

GS **anomalies**
. geothermal anomalies
. gravity anomalies
. magnetic anomalies
. . geomagnetic hollow
RT anomalous temperature zones
Southern Oscillation

anomalous temperature zones

RT anomalies
geysers
stratospheric warming
temperature measurement
temperature measuring instruments
temperature scales

temperature sensors

anorthosite

DEF A group of essentially monomineralic plutonic igneous rocks composed almost entirely of plagioclase feldspar.

GS rocks
. igneous rocks
. . **anorthosite**
RT feldspars
gabbro
soils

anoxia

DEF A complete lack of oxygen available for physiological use within the body.

RT angina pectoris
asphyxia
hypoxia
stress (physiology)

ANS

USE **Astronomical Netherlands Satellite**

Antarctic environment

USE **ice environments**

Antarctic Ocean

GS oceans
. **Antarctic Ocean**
RT Antarctic regions

Antarctic regions

DEF The areas surrounding and including the continent of Antarctica. Used for Antarctica.

UF *Antarctica*
GS regions
. polar regions
. . **Antarctic regions**
. . . McMurdo sound
. . . Ross ice shelf
. remote regions
. . **Antarctic regions**
. . . McMurdo sound
. . . Ross ice shelf
Southern Hemisphere
. **Antarctic regions**
. . McMurdo sound
. . Ross ice shelf
RT Antarctic Ocean
climatology
continents
land ice
ozone depletion
polar caps
polynyas
Total Ozone Mapping Spectrometer

Antarctica

USE **Antarctic regions**

Antares rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . **Antares rocket vehicle**
. sounding rockets
. . **Antares rocket vehicle**
RT atmospheric ionization
solid propellant rocket engines
X-254 engine

Antelope missile

GS missiles
. **Antelope missile**

antenna arrays

DEF Systems of antennas coupled together to obtain directional effects, or to increase sensitivity.

GS arrays
. **antenna arrays**
. . linear arrays
. . . endfire arrays
. . . . Yagi antennas
. . . multispectral linear arrays
. . steerable antennas
. . . inertialless steerable antennas
. . turnstile antennas
RT antennas
beamforming

Cobra Dane (radar)
dipole antennas
directional antennas
log periodic antennas
microwave antennas
patch antennas
phased arrays
retroreflection
space based radar
Very Large Array (VLA)
Very Long Baseline Array (VLBA)

antenna components

GS **antenna components**
. antenna couplers
. . duplexers
. . directional couplers
. antenna feeds
. parasitic elements (antennas)
. . directors (antenna elements)
RT communication equipment
∞ components
couplers
electronic equipment
∞ spinners

antenna couplers

GS antenna components
. **antenna couplers**
. . duplexers
. . directional couplers
couplers
. **antenna couplers**
. . duplexers
. . directional couplers
RT antennas
couples
coupling
coupling circuits
energy transfer
impedance matching
microwave coupling
transmission lines

antenna design

RT antennas
backlobes
Cassegrain antennas
delta antennas
∞ design
dipole antennas
gravitational wave antennas
Gregorian antennas
helical antennas
horn antennas
lens antennas
∞ lobes
log periodic antennas
maypole antennas
microstrip antennas
monopole antennas
parabolic antennas
parasitic elements (antennas)
patch antennas
pencil beams
plasma antennas
product development
rhombic antennas
sidelobes
slot antennas
space technology experiments
spiral antennas
Yagi antennas

antenna feeds

GS antenna components
. **antenna feeds**
RT Gregorian antennas
reflector antennas
strip transmission lines
transmission lines
waveguides

antenna fields

USE **antenna radiation patterns**

antenna gain

(added June 1998)

GS amplification
. **antenna gain**

RT antennas
 automatic gain control
 directional antennas
 effectiveness
 high gain
 signal reception

antenna radiation patterns
 UF *antenna fields*
 GS distribution (property)
 . radiation distribution
 . . **antenna radiation patterns**
 . . . sidelobes

RT antennas
 backfire antennas
 backlobes
 beam steering
 beamforming
 cylindrical antennas
 directional antennas
 ∞ fans
 far fields
 field theory (physics)
 footprints
 Fresnel region
 Gregorian antennas
 ∞ lobes
 near fields
 parasitic elements (antennas)
 pencil beams
 plasma antennas
 ∞ radiation
 reflector antennas
 rosette shapes
 Schelkunoff principle
 Sommerfeld approximation
 support interference
 synthetic arrays

antennas
 DEF Conductors or systems of conductors for radiating or receiving radio waves.
 GS **antennas**
 . aircraft antennas
 . backfire antennas
 . Cassegrain antennas
 . cylindrical antennas
 . delta antennas
 . directional antennas
 . . dipole antennas
 . . helical antennas
 . . horn antennas
 . . lens antennas
 . . log periodic antennas
 . . loop antennas
 . . radar antennas
 . . . radant
 . . reflector antennas
 . . . parabolic antennas
 . . . two reflector antennas
 . . rhombic antennas
 . . slot antennas
 . . steerable antennas
 . . . inertialess steerable antennas
 . . Yagi antennas
 . furlable antennas
 . gravitational wave antennas
 . . LIGO (observatory)
 . . LISA (observatory)
 . Gregorian antennas
 . high resolution coverage antennas
 . hoop column antennas
 . maypole antennas
 . microstrip antennas
 . missile antennas
 . monopulse antennas
 . multibeam antennas
 . multiple beam interval scanners
 . omnidirectional antennas
 . . monopole antennas
 . . . whip antennas
 . . turnstile antennas
 . parasitic elements (antennas)
 . . directors (antenna elements)
 . plasma antennas
 . radio antennas
 . . microwave antennas
 . . . horn antennas
 . . . lens antennas

. . . rectennas
 . . . spacetennas
 . satellite antennas
 . Schwarzschild antennas
 . spacecraft antennas
 . spherical antennas
 . spiral antennas
 . . log spiral antennas
 . waveguide antennas
 . . horn antennas
 . patch antennas

RT antenna arrays
 antenna couplers
 antenna design
 antenna gain
 antenna radiation patterns
 arrays
 conductors
 corners
 current sheets
 electromagnetic radiation
 folding structures
 inflatable space structures
 near fields
 radiation hardening
 ∞ radiators
 radio equipment
 radio telescopes
 reflectors
 slewing
 space technology experiments
 telecommunication
 telescopes
 towers
 transmitters

Antheus aircraft
 USE **AN-22 aircraft**

anthracene
 GS organic compounds
 . cyclic compounds
 . . cyclic hydrocarbons
 . . . **anthracene**
 . hydrocarbons
 . . cyclic hydrocarbons
 . . . **anthracene**

RT anthraquinones
 phenanthrene

anthracite
 DEF Coal of the highest metamorphic rank, in which fixed-carbon content is between 92 percent and 98 percent (on a dry, mineral-matter-free basis). It is hard and black, and has a semimetallic luster and semiconchoidal fracture. Anthracite ignites with difficulty and burns with a short blue flame, without smoke. Used for hard coal.

UF *hard coal*
 GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . fossil fuels
 coal
 **anthracite**
 resources
 . Earth resources
 . . fossil fuels
 . . . coal
 **anthracite**
 rocks
 . sedimentary rocks
 . . carbonaceous rocks
 . . . coal
 **anthracite**
 RT mineral exploration
 mining

anthraquinones
 GS ketones
 . **anthraquinones**

RT anthracene
 dyes

anthropology
 DEF The study of the interrelations of biological, cultural, geographical, and historical aspects of man.
 RT aborigines

American Indians
 anthropometry
 archaeology
 artifacts
 case histories
 cities
 culture (social sciences)
 Eskimos
 human beings
 minorities
 museums
 race factors
 races (anthropology)
 ∞ science
 social factors
 sociology

anthropometry
 GS bioengineering
 . biometrics
 . . body measurement (biology)
 . . . **anthropometry**

RT anthropology
 body size (biology)
 ∞ engineering
 human factors engineering

antiadrenergics
 GS drugs
 . **antiadrenergics**

RT adrenergics

anti-aircraft missiles
 GS missiles
 . **anti-aircraft missiles**
 . . BOMARC missiles
 . . . BOMARC A missile
 . . . BOMARC B missile
 . . Falcon missile
 . . Mauler missile
 . . Nike-Ajax missile
 . . Nike-Hercules missile
 . . Redeye missile
 . . SIAM missiles
 . . Sidewinder missiles
 . . tartar missile
 . . terrier missile

RT air to air missiles
 antimissile missiles
 Nike missiles
 ramjet missiles
 surface to air missiles

antibiotics
 GS drugs
 . **antibiotics**
 . . actinomycin
 . . penicillin
 . . pleurotin
 . . streptomycin
 . . tetracyclines

RT anti-infectives and antibacterials
 microorganisms
 steroids

antibodies
 GS **antibodies**
 . gamma globulin

RT acquired immunodeficiency syndrome
 antisera
 biocompatibility
 human immunodeficiency virus
 immune systems
 immunology
 immunosuppression
 inoculum
 lymphatic system
 physiological defenses
 vaccines

anticholinergics
 UF *cholinergic blocking agents*
 GS drugs
 . cholinergics
 . . **anticholinergics**

RT curare

antichlones
 DEF Geologic formations characterized by folds, the core of which contain stratigraphically

anticoagulants

older rocks; they convex upward. Used for anticlinoria.

- UF *anticlinoria*
- RT domes (geology)
- geosynclines
- ∞ layers
- strata
- stratification
- stratigraphy
- synclines

anticlinoria

USE **anticlines**

anticoagulants

- RT adrenergics
- ∞ agents
- heparins
- preservatives
- stabilizers (agents)

anticoincidence detectors

(added August 2000)

DEF Detectors and related systems that differentiate ambient background noise from signals of interest by identifying unwanted input signals that co-occur in time with other signals. Often used with gamma-ray detection systems.

- UF *anticoincidence shields*
- RT background radiation
- coincidence circuits
- comparators
- counting circuits
- ∞ detectors
- discriminators
- gamma ray spectrometers
- hodoscopes
- particle telescopes
- proportional counters
- radiation counters
- scintillation counters
- signal detectors
- trigger circuits

anticoincidence shields

(added August 2000)

USE **anticoincidence detectors**

anticonvulsants

- GS drugs
- . **anticonvulsants**
- RT hexamethonium

anticyclones

- RT air masses
- atmospheric pressure
- cyclones
- high pressure
- meteorology
- synoptic meteorology

antidetection technology

(added November 2001)

USE **stealth technology**

antidiuretics

- GS drugs
- . **antidiuretics**
- RT urine

antidotes

- GS drugs
- . **antidotes**
- RT inhibitors

antiemetics and antinauseants

- GS drugs
- . **antiemetics and antinauseants**
- RT nausea

antiferroelectricity

- GS electrical properties
- . **antiferroelectricity**
- RT dielectric properties
- ferroelectricity
- hysteresis
- ∞ polarization

antiferromagnetism

- GS magnetic properties
- . **antiferromagnetism**

- RT ferromagnetism
- hysteresis
- Ising model
- magnetic switching
- magnons
- neel temperature
- paramagnetism

antifouling

DEF Measures taken to prevent corrosion or the accumulation of organic or other residues or growths on operating mechanisms, especially in underwater environments.

- GS fouling
- . **antifouling**
- RT ∞ agents
- cleaning
- contamination
- corrosion prevention
- inhibitors
- sterilization

antifreezes

- GS additives
- . **antifreezes**
- RT antiicing additives
- freezing

antifriction bearings

- GS bearings
- . **antifriction bearings**
- . . ball bearings
- . . roller bearings
- . . . needle bearings
- RT friction reduction
- gas bearings
- journal bearings
- rolling contact loads
- thrust bearings

antigens

- RT anaphylaxis
- biocompatibility
- immune systems
- immunoassay
- immunology
- inoculum
- physiological defenses
- radioimmunoassay
- Rhesus factor
- vaccines

antigravity

DEF A hypothetical effect that would arise from cancellation by some energy field of the effect of the gravitational field of the earth or other body.

- RT gravitation
- microgravity

Antigua and Barbuda

(added February 1989)

- GS landforms
- . islands
- . . West Indies
- . . . **Antigua and Barbuda**
- nations
- . **Antigua and Barbuda**
- RT Caribbean region

antihistaminics

- GS drugs
- . **antihistaminics**
- . . dimenhydrinate
- . . diphenyl hydantoin
- . . promethazine
- RT decongestants
- histamines

antihypertensive agents

- GS drugs
- . **antihypertensive agents**
- RT reserpine

antiicing additives

- GS additives
- . **antiicing additives**
- RT antifreezes
- deicers
- deicing

- fuel contamination
- ice prevention
- inhibitors
- propellant additives
- retardants

antimicrobials and antibacterials

- GS drugs
- . **antimicrobials and antibacterials**
- RT antibiotics
- antiseptics
- bactericides
- contamination
- fungicides

antiknock additives

- GS additives
- . **antiknock additives**
- RT automobile fuels
- gasoline
- ∞ octane
- octanes
- retardants

antimatter

- GS **antimatter**
- . antiparticles
- . . antineutrinos
- . . antinucleons
- . . antiprotons
- . . positrons
- RT Alpha Magnetic Spectrometer
- degenerate matter
- matter (physics)
- matter-antimatter propulsion
- negative matter

antimissile defense

- SN (PROTECTION AGAINST MISSILE ATTACK)
- GS air defense
- . **antimissile defense**
- RT antiradiation missiles
- civil defense
- ∞ defense
- defense industry
- defense program
- military technology
- missile defense
- missiles
- optical countermeasures
- Safeguard system
- Sentinel system
- space surveillance (ground based)
- space surveillance (spaceborne)

antimissile missiles

- GS missiles
- . **antimissile missiles**
- . . Mauler missile
- . . Nike-Zeus missile
- . . Spartan missile
- . . Sprint missile
- RT antiaircraft missiles
- ballistic missiles
- infrared tracking
- missile defense
- Nike missiles
- Nike X systems
- Sentinel system
- SIAM missiles
- space weapons
- surface to air missiles

antimisting fuels

- DEF Fuels which have an additive to reduce misting and thus create safer fuels.
- GS fuels
- . chemical fuels
- . . liquid fuels
- . . . **antimisting fuels**
- RT additives
- aircraft fuels
- flame retardants
- jet engine fuels
- kerosene

antimonides

- GS antimony compounds
- . **antimonides**

- . . aluminum antimonides
 - . . cadmium antimonides
 - . . cesium antimonides
 - . . gallium antimonides
 - . . germanium antimonides
 - . . indium antimonides
 - . . zinc antimonides
- antimony**
- GS chemical elements
 - . metalloids
 - . . **antimony**
 - RT metals
- antimony alloys**
- GS alloys
 - . **antimony alloys**
 - . . babbitt metal
 - RT bismuth alloys
 - mulberry (alloy)
- antimony compounds**
- GS **antimony compounds**
 - . antimonides
 - . . aluminum antimonides
 - . . cadmium antimonides
 - . . cesium antimonides
 - . . gallium antimonides
 - . . germanium antimonides
 - . . indium antimonides
 - . . zinc antimonides
 - . . antimony fluorides
 - RT ∞ chemical compounds
 - ∞ Group 5A compounds
 - ∞ metal compounds
- antimony fluorides**
- GS antimony compounds
 - . **antimony fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **antimony fluorides**
 - . halides
 - . . fluorides
 - . . . **antimony fluorides**
- antimony isotopes**
- GS chemical elements
 - . metalloids
 - . . **antimony isotopes**
 - . nuclides
 - . . isotopes
 - . . . **antimony isotopes**
 - metals
 - . **antimony isotopes**
- antineutrinos**
- GS antimatter
 - . antiparticles
 - . . **antineutrinos**
 - particles
 - . elementary particles
 - . . antiparticles
 - . . . **antineutrinos**
 - . . fermions
 - . . . leptons
 - **antineutrinos**
 - . nuclear particles
 - . . antiparticles
 - . . . **antineutrinos**
 - RT charged particles
 - neutrinos
- antinodes**
- DEF Either of the two points on an orbit where a line in the orbit plane, perpendicular to the line of nodes and passing through the focus intersects the orbit. Also a point, line, or surface in a standing wave where some characteristic of the wave field has maximum amplitude.
 - RT nodes (standing waves)
 - rarefaction
 - resonant frequencies
 - standing waves
 - vibration
 - wavelengths
- antinucleons**
- GS antimatter
- . antiparticles
 - . . **antinucleons**
 - particles
 - . elementary particles
 - . . antiparticles
 - . . . **antinucleons**
 - . nuclear particles
 - . . antiparticles
 - . . . **antinucleons**
 - nucleons
- antioxidants**
- DEF Compounding ingredients used to retard deterioration caused by oxidation.
 - GS additives
 - . **antioxidants**
 - RT ∞ agents
 - corrosion prevention
 - corrosion resistance
 - inhibitors
 - melatonin
 - preservatives
 - propellant additives
 - retardants
 - stabilizers (agents)
- antiparticles**
- DEF Particles with a charge of opposite signs to the same particles in normal matter.
 - GS antimatter
 - . **antiparticles**
 - . . antineutrinos
 - . . antinucleons
 - . . antiprotons
 - . . positrons
 - particles
 - . elementary particles
 - . . **antiparticles**
 - . . . antineutrinos
 - . . . antinucleons
 - . . . antiprotons
 - . . . positrons
 - . nuclear particles
 - . . **antiparticles**
 - . . . antineutrinos
 - . . . antinucleons
 - . . . antiprotons
 - . . . positrons
 - RT annihilation reactions
 - charged particles
 - hyperons
 - Pomeranchuk theorem
 - positron annihilation
- antiphase boundaries**
- (added March 1998)
 - UF *antiphase domains*
 - APB (materials)
 - GS boundaries
 - . **antiphase boundaries**
 - RT binary alloys
 - crystal dislocations
 - crystal lattices
 - crystal structure
 - grain boundaries
 - interfacial energy
 - intermetallics
 - microstructure
 - order-disorder transformations
 - solid solutions
 - solid-solid interfaces
 - superlattices
 - ternary alloys
- antiphase domains*
- (added March 1998)
 - USE **antiphase boundaries**
- antipodes**
- DEF Anything exactly opposite to something else. Particularly, that point on the Earth 180 deg. from a given place.
 - RT apsides
 - ionospheric propagation
 - propagation modes
 - radio transmission
 - zenith
- antiprotons**
- GS antimatter
- . antiparticles
 - . . **antiprotons**
 - particles
 - . charged particles
 - . . **antiprotons**
 - . elementary particles
 - . . antiparticles
 - . . . **antiprotons**
 - . nuclear particles
 - . . antiparticles
 - . . . **antiprotons**
 - nuclear particles
 - . . antiparticles
 - . . . **antiprotons**
 - proton-antiproton interactions
 - protons
- antiquities**
- DEF Man-made objects or surviving parts or fragments from the past.
 - RT artifacts
 - tools
 - weapons
- antiradar coatings**
- GS absorbers (materials)
 - . radar absorbers
 - . . **antiradar coatings**
 - coatings
 - . **antiradar coatings**
 - countermeasures
 - . electronic countermeasures
 - . . **antiradar coatings**
 - RT electronic warfare
 - inorganic coatings
 - metal coatings
 - plastic coatings
 - ∞ ram
 - stealth technology
- antiradiation drugs**
- UF *radioprotective agents*
 - GS drugs
 - . **antiradiation drugs**
 - . . cysteamine
 - RT nuclear medicine
 - pharmacology
 - radiation protection
 - radiation sickness
 - radiobiology
 - radiopathology
- antiradiation missiles**
- DEF Missiles that attack radiating targets such as radar transmitters, etc.
 - GS missiles
 - . **antiradiation missiles**
 - RT air defense
 - antimissile defense
 - countermeasures
 - digital radar systems
 - military technology
 - missile defense
 - remote control
- antireflection coatings**
- DEF Thin dielectric or metallic films applied to an optical surface to reduce the reflectance and thereby increase the transmittance. Note: The ideal value of the reactive index of a single layered film is the square root of the product of the refractive indices on either side of the film, the ideal optical thickness being one quarter of a wavelength.
 - GS coatings
 - . **antireflection coatings**
 - RT lens design
 - optical coatings
 - optical reflection
 - optical thickness
 - solar cells
- antiseptics**
- UF *disinfectants*
 - RT acriflavine
 - antiinfectives and antibacterials
 - bactericides
 - chemical sterilization
 - chemotherapy
 - cleaning
 - decontamination
 - environmental control
 - fumigation

antiserums

infectious diseases
 purification
 sterilization

antiserums

RT antibodies
 immunology
 serums
 vaccines

antiship missiles

GS missiles
 . **antiship missiles**
 RT cruise missiles
 sea launching
 ships
 submarines
 weapon systems

antiship warfare

GS warfare
 . **antiship warfare**
 RT missiles
 sea launching
 ships
 submarines
 warheads
 weapons

antisite defects

(added July 1997)

DEF Point defects occurring in crystalline compounds where an atom of one atomic species occupies an atomic site that is allocated to a different atomic species (e.g., in GaAs, an arsenic atom may sit on a site allocated to a gallium atom). If the nearest neighbor sites are occupied with the correct species for their sites (e.g., an arsenic antisite atom surrounded by arsenic atoms), the antisite atom is then bonded to four like atoms (rather than four Ga atoms). Such a configuration is not electrically neutral, but acts as a double donor. An "antisite pair" occurs if two adjacent atoms have simply been interchanged.

GS defects
 . crystal defects
 . . point defects
 . . . **antisite defects**
 RT donor materials
 gallium arsenides
 interstitials
 semiconductors (materials)
 vacancies (crystal defects)

antiskid devices

RT aircraft brakes
 arresting gear
 automobiles
 brakes (for arresting motion)
 ∞ devices
 landing aids
 safety devices
 trucks
 wheel brakes

antistatic devices

USE **static dischargers**

antisubmarine warfare

GS warfare
 . **antisubmarine warfare**
 RT ASROC engine
 military technology
 sonobuoys
 submarines
 torpedoes
 underwater explosions
 underwater trajectories

antisubmarine warfare aircraft

GS **antisubmarine warfare aircraft**
 . Breguet 1150 aircraft
 . CL-84 aircraft
 . P-3 aircraft
 . S-2 aircraft
 . S-3 aircraft
 . SH-3 helicopter
 . SH-4 helicopter
 RT ∞ aircraft

attack aircraft
 bomber aircraft
 drone aircraft
 H-25 helicopter
 ∞ military aircraft
 observation aircraft
 P-531 helicopter
 reconnaissance aircraft
 S-61 helicopter
 submersible aircraft
 V/STOL aircraft
 water takeoff and landing aircraft

antisymmetry

RT asymmetry
 chirality
 symmetry

antitank missiles

GS missiles
 . surface to surface missiles
 . . **antitank missiles**
 . . . Shillelagh missiles
 . . . tow missiles

Antonov aircraft

GS **Antonov aircraft**
 . AN-2 aircraft
 . AN-22 aircraft
 . AN-24 aircraft
 RT ∞ aircraft

Antonov AN-22 aircraft

USE **AN-22 aircraft**

Antonov AN-24 aircraft

USE **AN-24 aircraft**

anvil clouds

GS clouds (meteorology)
 . convection clouds
 . . cumulonimbus clouds
 . . . **anvil clouds**
 . . . cumulus clouds
 . . . **anvil clouds**
 RT atmospheric moisture
 climatology
 cloud cover
 fog
 meteorology
 nephanalysis
 precipitation (meteorology)
 thunderstorms
 weather

anvils

RT compressing
 tools

anxiety

DEF Nervous or fear reaction to a perception of danger.
 RT detachment
 fear
 fear of flying
 phobias
 stress (biology)
 Taylor manifest anxiety scale

AO-1 aircraft

USE **OV-1 aircraft**

AOIPS

USE **Atmospheric & Oceanographic Inform Sys**

aorta

GS anatomy
 . circulatory system
 . . cardiovascular system
 . . . blood vessels
 arteries
 **aorta**
 RT heart

AOSO

UF *Advanced Orbiting Solar Observatory*
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **AOSO**

. scientific satellites
 . . astronomical satellites
 . . . OSO
 **AOSO**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **AOSO**
 . . solar observatories
 . . . OSO
 **AOSO**
 . geophysical observatories
 . . OSO
 . . . **AOSO**
 RT sun

Apache rocket vehicle

GS rocket vehicles
 . sounding rockets
 . . **Apache rocket vehicle**
 RT sondes

apatites

USE **calcium phosphates minerals**

APB (materials)

(added March 1998)
 USE **antiphase boundaries**

aperiodic functions

GS analysis (mathematics)
 . **aperiodic functions**
 functions (mathematics)
 . **aperiodic functions**
 RT complex variables
 real variables

apertures

GS openings
 . **apertures**
 . . irises (mechanical apertures)
 . . numerical aperture
 . . synthetic apertures
 RT apodization
 cavities
 doors
 gates (openings)
 infrared windows
 louvers
 orifices
 outlets
 pinhole cameras
 ports (openings)
 slits
 synthetic arrays
 vents
 VSAT (network)
 windows (apertures)

apes

GS animals
 . vertebrates
 . . mammals
 . . . primates
 **apes**
 chimpanzees

apexes

UF *vertices*
 RT altitude
 aphelions
 apogees
 maxima
 orbits
 ∞ peaks
 plateaus
 trajectories
 zenith

aphelions

GS apsides
 . **aphelions**
 RT apexes
 elliptical orbits
 orbits
 perihelions

- solar orbits
- API (computers)
(added June 2003)
USE **application programming interface**
- APL (programming language)**
DEF "A Programming Language" is a high level interactive computer language primarily designed for mathematical applications. It was developed by Kenneth Iverson in 1962. It is characterized by extensive operators and array handling capability. NASA Goddard was one of the first users and was instrumental in introducing APL to the computer community.
GS languages
. programming languages
. . . **APL (programming language)**
RT computer programming
- apnea
USE **respiration**
- apodization**
(added October 2002)
DEF The elimination or smoothing of sharp discontinuities in an image, electrical signal, or mathematical function; as in the modification of lens design to reduce diffraction fringes, or the mathematical processing of interferograms to suppress sidelobes.
RT apertures
Bragg gratings
gratings (spectra)
imaging techniques
optical filters
sidelobe reduction
wave diffraction
- apogee boost motors**
UF *ABM*
apogee kick motors
GS engines
. rocket engines
. . booster rocket engines
. . . **apogee boost motors**
. . solid propellant rocket engines
. . . **apogee boost motors**
RT ∞ boosters
motors
- apogee kick motors*
USE **apogee boost motors**
- apogees**
DEF Those orbital points farthest from the Earth, when the Earth is the center of attraction.
GS apsides
. **apogees**
RT apexes
Earth orbits
elliptical orbits
orbits
perigees
- Apollo 5 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 5 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
lunar spacecraft
moon-Earth trajectories
- Apollo 6 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 6 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
- lunar launch
Lunar Module
lunar spacecraft
moon-Earth trajectories
- Apollo 7 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 7 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 8 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 8 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 9 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 9 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
- Apollo 10 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 10 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 11 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 11 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 12 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 12 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
- manned spacecraft
moon-Earth trajectories
- Apollo 13 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 13 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 14 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 14 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 15 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 15 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
SIM
- Apollo 16 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 16 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo 17 flight**
GS space flight
. manned space flight
. . Apollo flights
. . . **Apollo 17 flight**
RT Earth-Moon trajectories
lunar exploration
Lunar Exploration System for Apollo
lunar flight
lunar landing
lunar launch
Lunar Module
manned spacecraft
moon-Earth trajectories
- Apollo applications program**
GS programs
. NASA programs
. . NASA space programs
. . . **Apollo applications program**
. space programs
. . NASA space programs
. . . **Apollo applications program**
RT AAP 1 mission
AAP 2 mission
AAP 3 mission

Apollo asteroids

- AAP 4 mission
- airlock modules
- Earth Resources Program
- Earth Resources Survey Program
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn project
- Saturn workshops
- Skylab program

Apollo asteroids

DEF Earth grazing asteroids in orbits between Mars and Jupiter, and crossing the Earth's orbit. This group contains 19 known asteroids.

- GS celestial bodies
 - . asteroids
 - . . **Apollo asteroids**
- RT asteroid belts
- astronomy
- Chiron
- Earth orbits
- Jupiter (planet)
- Mars (planet)
- planetary orbits
- solar system

Apollo extension system

- RT exobiology
- extravehicular activity
- lunar landing modules
- manned space flight
- NASA programs
- orbital workshops
- ∞ systems

Apollo flights

- GS space flight
 - . manned space flight
 - . . **Apollo flights**
 - . . . Apollo 5 flight
 - . . . Apollo 6 flight
 - . . . Apollo 7 flight
 - . . . Apollo 8 flight
 - . . . Apollo 9 flight
 - . . . Apollo 10 flight
 - . . . Apollo 11 flight
 - . . . Apollo 12 flight
 - . . . Apollo 13 flight
 - . . . Apollo 14 flight
 - . . . Apollo 15 flight
 - . . . Apollo 16 flight
 - . . . Apollo 17 flight
- RT Skylab program

Apollo lunar experiment module

- GS lunar spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - . . lunar landing modules
 - . . Lunar Module
 - . . . **Apollo lunar experiment module**
 - maneuverable spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - manned spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - . Lunar Module
 - . . **Apollo lunar experiment module**
 - modules
 - . spacecraft modules
 - . . landing modules
 - . . . lunar landing modules
 - Lunar Module
 - **Apollo lunar experiment module**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Apollo spacecraft
 - . . . **Apollo lunar experiment module**
 - soft landing spacecraft
 - . Apollo spacecraft
 - . . **Apollo lunar experiment module**
 - . landing modules
 - . . lunar landing modules
 - . . . Lunar Module

- **Apollo lunar experiment module**
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . lunar landing modules
- Lunar Module
- **Apollo lunar experiment module**
- RT lunar exploration
- lunar landing

Apollo Lunar Surface Experiments Package

- UF *ALSEP*
- GS packages
 - . instrument packages
 - . . **Apollo Lunar Surface Experiments Package**
- RT ∞ instruments
- lunar exploration
- lunar retroreflectors
- payloads
- ∞ surfaces

Apollo project

- GS programs
 - . lunar programs
 - . . **Apollo project**
 - . NASA programs
 - . . NASA space programs
 - . . . **Apollo project**
 - . projects
 - . . **Apollo project**
 - . space programs
 - . . NASA space programs
 - . . . **Apollo project**
- RT AAP 1 mission
- AAP 2 mission
- AAP 3 mission
- AAP 4 mission
- Advanced Range Instrumentation Aircraft
- command service modules
- LSSM
- lunar exploration
- Lunar Exploration System for Apollo
- lunar mobile laboratories
- lunar probes
- manned spacecraft
- Marquardt R4D engine
- Mercury project
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn launch vehicles
- Saturn workshops
- SIM
- site data processors
- Skylab program
- soft landing spacecraft

Apollo short stack

- RT spacecraft configurations

Apollo Soyuz test project

- UF *ASTP*
- GS programs
- . projects
- . . **Apollo Soyuz test project**
- RT international cooperation
- international relations
- manned spacecraft
- rendezvous
- Soyuz spacecraft
- space flight
- space missions
- space programs
- space rendezvous
- spacecrew transfer
- U.S.S.R. space program

Apollo spacecraft

- GS lunar spacecraft
 - . **Apollo spacecraft**
 - . . Apollo lunar experiment module
 - maneuverable spacecraft
 - . **Apollo spacecraft**
 - . . Apollo lunar experiment module
 - manned spacecraft
 - . **Apollo spacecraft**
 - . . Apollo lunar experiment module

- reentry vehicles
- . recoverable spacecraft
- . . **Apollo spacecraft**
- . . . Apollo lunar experiment module
- soft landing spacecraft
- . **Apollo spacecraft**
- . . Apollo lunar experiment module
- RT command modules
- landing modules
- Lunar Module
- Lunar Module 5
- Lunar Module 7
- manned orbital laboratories
- Saturn project
- service modules
- Skylab program
- unified S band

Apollo telescope mount

- GS telescopes
 - . manned orbital telescopes
 - . . **Apollo telescope mount**
- RT Skylab program

apoptosis

(added October 2000)

DEF One of the two mechanisms by which cell death occurs (the other being the pathological process of NECROSIS). Apoptosis is the mechanism responsible for the physiological deletion of cells and appears to be intrinsically programmed. It is characterized by distinctive morphologic changes in the nucleus and cytoplasm, chromatin cleavage at regularly spaced sites, and the endonucleolytic cleavage of genomic DNA at internucleosomal sites. This mode of cell death serves as a balance to mitosis in regulating the size of animal tissues and in mediating pathological processes associated with tumor growth.

- UF *programmed cell death*
- GS physiological effects
- . **apoptosis**
- RT biological effects
- cells (biology)
- cytology
- death
- deoxyribonucleic acid
- necrosis
- radiation effects

Appalachian Mountains (North America)

- GS landforms
 - . mountains
 - . . **Appalachian Mountains (North America)**
- RT North America

apparatus

- USE equipment

appearance

- RT imagery
- quality
- visibility

appendages

- GS **appendages**
 - . arm (anatomy)
 - . . elbow (anatomy)
 - . . forearm
 - . . hand (anatomy)
 - . . fingers
 - . . leg (anatomy)
 - . . feet (anatomy)
 - . . knee (anatomy)
 - . . thigh
- RT anatomy
- human body
- limbs (anatomy)

appendix (anatomy)

- GS anatomy
 - . digestive system
 - . . gastrointestinal system
 - . . . **appendix (anatomy)**

RT intestines

application

USE **utilization**

application programming interface

(added June 2003)

DEF An interface between a software or hardware system and an application program which allows the application program to communicate with, and to access services from the software or hardware system

UF *API (computers)*

RT computer systems programs

application specific integrated circuits

(added May 1989)

UF *ASIC*

custom integrated circuits

GS circuits

. integrated circuits

.. **application specific integrated circuits**

RT chips (electronics)

large scale integration

systems-on-a-chip

very large scale integration

Applications Explorer Satellites

GS artificial satellites

. scientific satellites

.. Explorer satellites

... **Applications Explorer Satellites**

RT Heat Capacity Mapping Mission

∞ **applications of mathematics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

UF *mathematical analysis*

RT analysis (mathematics)

approximation

combinatorial analysis

computation

dimensional analysis

dynamic programming

econometrics

error analysis

finite element method

fractals

functions (mathematics)

information theory

Kalman-Schmidt filtering

linear programming

mathematical models

nonlinear programming

numerical analysis

operational calculus

operations research

optimization

parameterization

probability theory

statistical analysis

stochastic processes

time series analysis

applications programs (computers)

DEF Software designed to fulfill specific needs of a user; for example, software for navigation, payroll, or process control.

GS computer programs

. **applications programs (computers)**

.. NASTRAN

.. spreadsheets

.. web services

RT computers

software development tools

Applications Technology Satellites

USE **ATS**

approach

GS **approach**

. airborne radar approach

. instrument approach

RT air traffic control

aircraft approach spacing

arrivals

descent

flight paths

flight plans

ground based control

guidance (motion)

landing

landing aids

passageways

touchdown

approach and landing tests (STS)

DEF A series of flight maneuvers involving the Space Shuttle.

RT evaluation

horizontal spacecraft landing

landing

manned spacecraft

space shuttles

space transportation system

spacecraft landing

∞ tests

touchdown

approach control

DEF The control process which delivers aircraft to the final approach course or landing system properly spaced for their landing.

GS **approach control**

. radar approach control

RT air traffic control

aircraft approach spacing

aircraft communication

aircraft guidance

aircraft maneuvers

automated en route ATC

collision avoidance

∞ control

flight paths

glide paths

ground based control

instrument approach

instrument flight rules

instrument landing systems

landing aids

landing radar

microwave landing systems

night flights (aircraft)

runway lights

tracking (position)

traffic control

visual control

approach indicators

GS aircraft instruments

. **approach indicators**

display devices

. **approach indicators**

flight instruments

. **approach indicators**

landing aids

. landing instruments

.. **approach indicators**

measuring instruments

. indicating instruments

.. **approach indicators**

RT air traffic control

altimeters

blind landing

glide paths

instrument approach

instrument landing systems

microwave scanning beam landing system

navigation aids

radar approach control

solar compasses

speed indicators

appropriations

RT budgeting

cost estimates

federal budgets

grants

approximation

UF *approximation methods*

nominal values

truncation (mathematics)

GS analysis (mathematics)

. numerical analysis

.. **approximation**

... Born approximation

... Born-Oppenheimer approximation

... Chebyshev approximation

... Eddington approximation

... essentially non-oscillatory

schemes

... finite difference theory

... finite difference time domain

method

... finite element method

... Hartree approximation

... least squares method

... mean square values

... Milne method

... multigrid methods

... Newton methods

... Newton-Raphson method

... boundary element method

... discretization (mathematics)

... numerical differentiation

... Oseen approximation

... Pade approximation

... particle in cell technique

... Pohlhausen method

... predictor-corrector methods

... Rayleigh-Ritz method

... relaxation method (mathematics)

... Reynolds averaging

... Ritz averaging method

... Schwartz method

... Sommerfeld approximation

... TVD schemes

... upwind schemes (mathematics)

... vortex in cell technique

... Trefftz method

... computational mechanics

... meshfree methods

RT ∞ applications of mathematics

censored data (mathematics)

difference equations

∞ equations

form factors

Glauber theory

Godunov method

∞ methodology

minimax technique

numerical stability

problem solving

∞ relationships

spline functions

static models

statistical analysis

approximation methods

USE **approximation**

apsidal angles

USE **apsides**

apsides

UF *apsidal angles*

GS **apsides**

. aphelions

. apogees

. perigees

. perihelions

. perilunes

RT angles (geometry)

antipodes

elliptical orbits

orbital elements

orbital mechanics

APT (picture transmission)

USE **automatic picture transmission**

aptitude

GS abilities

. **aptitude**

RT learning

personnel selection

Aqua spacecraft

(added May 2005)

DEF Second in a series of EOS (Earth Observing System) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. Aqua studies the Earth's water cycle, including evaporation from the oceans, water vapor in the atmosphere,

Aquarid meteoroids

clouds, precipitation, soil moisture, sea ice, land ice, and snow cover on the land and ice. The spacecraft carries six instruments: the Atmospheric Infrared Sounder (AIRS), the Advanced Microwave Sounding Unit (AMSU-A), the Humidity Sounder for Brazil (HSB), the Advanced Microwave Scanning Radiometer for EOS (AMSR-E), the Moderate Resolution Imaging Spectroradiometer (MODIS), and Clouds and the Earth's Radiant Energy System (CERES).

UF *EOS PM (satellite)*
GS artificial satellites
. scientific satellites
. . **Aqua spacecraft**
Earth Observing System (EOS)
. **Aqua spacecraft**
RT Aura spacecraft
CALIPSO (Pathfinder satellite)
CERES (experiment)
CloudSat
data products
Earth observations (from space)
MODIS (radiometry)
remote sensing
Terra spacecraft

Aquarid meteoroids

GS celestial bodies
. meteoroid showers
. . **Aquarid meteoroids**
. meteoroids
. . **Aquarid meteoroids**
RT Orionid meteoroids

aquatic plants

DEF Plants growing in or on water.
GS plants (botany)
. **aquatic plants**
. . phytoplankton
RT aquaculture
hydroponics
marine biology

aqueous solutions

GS mixtures
. solutions
. . **aqueous solutions**
RT hydrates
solvation

aquiculture

DEF The cultivation (breeding, raising, and harvesting) of fish, mollusks, shellfish, and/or other aquatic life as sources of food.

GS agriculture
. **aquiculture**
RT aquatic plants
fisheries
fishes
hydroponics
marine biology
marine environments
marine resources
marine technology
∞ nutrients
tidal flats

aquifers

DEF Bodies of rock that contain sufficient saturated permeable material to conduct ground water and to yield economically significant quantities of ground water to wells and springs.

GS resources
. Earth resources
. . water resources
. . . **aquifers**
RT fresh water
gravels
ground water
hydrogeology
hydrology
hydrothermal systems
lakes
limnology
oases
permeability
ponds
porosity
rain
sands

springs (water)
streams
water
water tables
wells

Arabian commercial satellite
USE **Arcomsat**

Arabian Sea

GS seas
. **Arabian Sea**
RT Indian Ocean

Arabsat

GS artificial satellites
. **Arabsat**
RT international cooperation
Saudi Arabian space program

aragonite

DEF A white, yellowish, or gray orthorhombic mineral, that contains calcium carbonate.
GS calcium compounds
. calcium carbonates
. . **aragonite**
carbon compounds
. carbonates
. . calcium carbonates
. . . **aragonite**
minerals
. **aragonite**
silicon compounds
. silicates
. . **aragonite**
RT calcite

aramid fiber composites

(added May 1992)

SN (ARAMID FIBER UTILIZATION IN COMPOSITES. FOR PROPERTIES OF ARAMID FIBERS THEMSELVES USE 'ARAMID FIBERS'.)
GS composite materials
. fiber composites
. . **aramid fiber composites**
RT aramid fibers
epoxy matrix composites
Kevlar (trademark)
metal matrix composites
polyamide resins
polymer matrix composites
reinforced plastics
whisker composites

aramid fibers

(added May 1992)

SN (PROPERTIES OF ARAMID FIBERS THEMSELVES. FOR ARAMID FIBER UTILIZATION IN COMPOSITES USE 'ARAMID FIBER COMPOSITES'.)
GS fibers
. reinforcing fibers
. . **aramid fibers**
. . . Kevlar (trademark)
. synthetic fibers
. . **aramid fibers**
. . . Kevlar (trademark)
RT aramid fiber composites
composite materials
epoxy matrix composites
fiber composites
fiber orientation
fiber strength
lay-up
plastics
polyamide resins
reinforced plastics
reinforcing materials
resin matrix composites

arc chambers

RT ∞ chambers
electric arcs
plasma generators
thrust chambers

arc clouds

GS clouds (meteorology)
. convection clouds
. . **arc clouds**
RT cyclogenesis

fronts (meteorology)
mesoscale phenomena
meteorology
observation aircraft
satellite observation
thunderstorms

arc discharges

GS electric current
. electric discharges
. . **arc discharges**
RT electric arcs

arc generators

RT electric arcs
electric generators
electrostatic generators
∞ generators
∞ induction
inductors
plasma generators
spark gaps
spark plugs
voltage generators

arc heating

UF *Gerdien arc heaters*
GS heating
. **arc heating**
RT gas heating
image furnaces
plasma heating
resistance heating
Saha equations

arc jet engines

DEF Electrothermal rocket engines that produce thrust by expanding a hot gas in an appropriate nozzle to a high velocity. The propellant is heated to a higher temperature than can be obtained through combustion processes resulting in higher exhaust velocities and better propellant efficiency.

GS engines
. rocket engines
. . electric rocket engines
. . . electrothermal engines
. . . . **arc jet engines**
. . . . pulsed jet engines
RT electric propulsion
electrostatic engines
magnetoplasmadynamic thrusters
plasma engines
resistojet engines

arc lamps

GS lighting equipment
. luminaires
. . **arc lamps**
RT carbon arcs
light sources
mercury arcs
searchlights
xenon lamps

arc melting

GS phase transformations
. melting
. . **arc melting**
RT drop transfer
electroslag refining
vacuum melting
zone melting

arc spraying

UF *plasma arc spraying*
GS spraying
. **arc spraying**
RT metal spraying

arc welding

GS welding
. fusion welding
. . electric welding
. . . **arc welding**
. . . . gas tungsten arc welding
. . . . plasma arc welding
RT electron beam welding
heat affected zone
pressure welding

- spot welds
sputtering
- Arcas rocket vehicles**
GS rocket vehicles
. single stage rocket vehicles
. . . **Arcas rocket vehicles**
. sounding rockets
. . . **Arcas rocket vehicles**
RT radiosondes
solid propellant rocket engines
∞ vehicles
- archaeobacteria**
DEF Organisms belonging to the taxonomic kingdom of the same name which are characterized by distinct t- and r-RNAs, the absence of peptidoglycan cell walls and their possible replacement by a proteinaceous coat, ether-linked lipids from phytanyl chains, and occurrence in unusually harsh habitats, e.g., methane, halide and thermoacidic environments. These hardy bacteria are significant in the study of the origin of life.
GS microorganisms
. bacteria
. . . **archaeobacteria**
RT bacteriology
biological evolution
paleobiology
paleontology
- archaeology**
RT anthropology
cultural resources
fossils
ground penetrating radar
paleomagnetism
- archaeomagnetism*
(added April 1999)
USE **paleomagnetism**
- arches**
RT perforated shells
rigid structures
shells (structural forms)
trusses
- archipelagoes**
DEF Seas or areas in seas that contain numerous islands; also the island groups themselves.
RT Aleutian Islands (US)
islands
landforms
seas
Spitsbergen (Norway)
Virgin Islands
- architecture**
RT acoustics
buildings
construction
∞ construction materials
human factors engineering
illuminating
plant design
Starsite program
structural design
∞ structures
- architecture (computers)**
DEF The design of system and logic organization and information flow relationships in a computer rather than the circuit and component features.
UF *computer architecture*
GS **architecture (computers)**
. service oriented architecture
RT client server systems
computer components
computer design
concurrent processing
Connection Machine
distributed memory
distributed processing
hypercube multiprocessors
local area networks
logic circuits
- logic design
massively parallel processors
memory (computers)
MIMD (computers)
modularity
multidisciplinary design optimization
programmable logic devices
relational data bases
RISC processors
SIMD (computers)
software development tools
supercomputers
systolic arrays
transputers
very large scale integration
- Arcomsat**
UF *Arabian commercial satellite*
GS artificial satellites
. communication satellites
. . . **Arcomsat**
RT Africa
international cooperation
Saudi Arabian space program
Symphonie satellites
synchronous satellites
- Arcon rocket vehicle**
GS rocket vehicles
. **Arcon rocket vehicle**
RT ∞ vehicles
- ∞ **arcs**
SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW))
RT auroral arcs
curves (geometry)
electric arcs
island arcs
magnetic annular arc
plasma jets
red arcs
- Arctic environments*
USE **ice environments**
- Arctic Ocean**
GS oceans
. **Arctic Ocean**
RT Barents Sea
Beaufort Sea (North America)
Greenland
polynyas
Spitsbergen (Norway)
- Arctic regions**
GS Northern Hemisphere
. **Arctic regions**
. . . subarctic regions
regions
. polar regions
. . . **Arctic regions**
. . . subarctic regions
. remote regions
. . . **Arctic regions**
. . . subarctic regions
RT Chukchi Sea
climatology
geography
muskegs
nunataks
ozone depletion
polar caps
Siberia
tundra
- area**
RT ∞ cross sections
geometry
integral calculus
line of sight
∞ sectors
∞ surfaces
volume
- area navigation**
DEF A method of navigation that permits aircraft operation on any desired course within the coverage of station-referenced navigation signals or within the limits of self-contained system capability.
GS navigation
. air navigation
. . . **area navigation**
RT flight paths
ground tracks
- Arend-Roland comet**
GS celestial bodies
. comets
. . . **Arend-Roland comet**
RT solar system
- Ares 1 first stage**
(added November 2006)
DEF A single, five-segment reusable solid rocket booster derived from the Space Shuttle Program's reusable solid rocket motor.
GS launch vehicles
. Ares 1 launch vehicle
. . . **Ares 1 first stage**
rocket vehicles
. multistage rocket vehicles
. . . Ares 1 launch vehicle
. . . . **Ares 1 first stage**
RT booster rocket engines
- Ares 1 launch vehicle**
(added November 2006)
DEF An in-line, two-stage rocket configuration topped by the Orion crew exploration vehicle, a service module, and a launch abort system.
GS launch vehicles
. **Ares 1 launch vehicle**
. . . Ares 1 first stage
. . . Ares 1 upper stage
rocket vehicles
. multistage rocket vehicles
. . . **Ares 1 launch vehicle**
. . . . Ares 1 first stage
. . . . Ares 1 upper stage
RT Ares 5 cargo launch vehicle
Constellation program
Crew Exploration Vehicle
- Ares 1 upper stage**
(added November 2006)
DEF Second stage of the Ares 1 launch vehicle incorporating a J-2X liquid oxygen/hydrogen main engine.
GS launch vehicles
. Ares 1 launch vehicle
. . . **Ares 1 upper stage**
rocket vehicles
. multistage rocket vehicles
. . . Ares 1 launch vehicle
. . . . **Ares 1 upper stage**
RT Crew Exploration Vehicle
J-2 engine
upper stage rocket engines
- Ares 5 cargo launch vehicle**
(added November 2006)
DEF A two-stage heavy-lift launch vehicle comprised of a first stage having two five-segment reusable rocket boosters and a single liquid-fueled core propulsion booster; and an upper stage (Earth Departure Stage) propelled by a J-2X main engine.
GS launch vehicles
. heavy lift launch vehicles
. . . **Ares 5 cargo launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . . **Ares 5 cargo launch vehicle**
RT Altair Lunar Lander
Ares 1 launch vehicle
booster rocket engines
Constellation program
J-2 engine
- ARES (spacecraft)*
USE **Advanced Recon Electric Spacecraft**
- Argentina**
GS nations
. **Argentina**

Argentine space program

RT Argentine space program
South America

Argentine space program
(added May 1989)

GS programs
. space programs
. . **Argentine space program**

RT Argentina

Argo rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
. . **Argo rocket vehicles**

RT Honest John rocket vehicle
Javelin rocket vehicle
Nike-Ajax missile
solid propellant rocket engines
sounding rockets
∞ vehicles

argon

GS chemical elements
. rare gases
. . **argon**
. . . argon isotopes
gases
. rare gases
. . **argon**
. . . argon isotopes

RT radiation trapping

argon isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **argon isotopes**
. rare gases
. . argon
. . . **argon isotopes**
gases
. rare gases
. . argon
. . . **argon isotopes**

argon lasers

GS stimulated emission devices
. lasers
. . **argon lasers**

RT chemical lasers
continuous wave lasers
gas masers
infrared lasers
Mach-Zehnder interferometers
molecular oscillations
pulsed lasers
Q switched lasers
stimulated emission

argon plasma

GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **argon plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **argon plasma**

RT helium plasma
hydrogen plasma
oxygen plasma

argon-oxygen atmospheres

GS controlled atmospheres
. **argon-oxygen atmospheres**

RT aerospace environments
∞ atmospheres
∞ breathing
gas mixtures
portable life support systems
underwater breathing apparatus

Argos system

GS networks
. satellite networks
. . **Argos system**

RT data collection platforms
data transmission
ocean data acquisitions systems

satellite doppler positioning

Argosy MK-1 aircraft

GS Hawker Siddeley aircraft
. **Argosy MK-1 aircraft**
jet aircraft
. turboprop aircraft
. . **Argosy MK-1 aircraft**
monoplanes
. **Argosy MK-1 aircraft**
transport aircraft
. **Argosy MK-1 aircraft**

RT ∞ aircraft

arguments (mathematics)

USE **independent variables**

Argus project

GS programs
. projects
. . **Argus project**

RT thermonuclear explosions

Ariane 4 launch vehicle
(added April 1995)

GS launch vehicles
. Ariane launch vehicle
. . **Ariane 4 launch vehicle**

RT European space programs
space commercialization

Ariane 5 launch vehicle
(added April 1995)

GS launch vehicles
. Ariane launch vehicle
. . **Ariane 5 launch vehicle**

RT Automated Transfer Vehicle
European space programs
space commercialization

Ariane launch vehicle

GS launch vehicles
. **Ariane launch vehicle**
. . Ariane 4 launch vehicle
. . Ariane 5 launch vehicle

RT Eldo launch vehicle
Europa launch vehicles
European Space Agency
European space programs
Geosari project

arid lands

GS land
. **arid lands**

RT barren land
Death Valley (CA)
desertification
desertline
deserts
drought
Earth environment
Earth resources
equatorial regions
Gobi desert
Mojave Desert (CA)
oases
Sahara Desert (Africa)
soils
steppes
wadis

Ariel

DEF A satellite of Uranus orbiting at a mean distance of 192,000 kilometers.

GS celestial bodies
. natural satellites
. . icy satellites
. . . **Ariel**
. . Uranus satellites
. . . **Ariel**

RT Uranus (planet)

Ariel 1 satellite

UF *S-51 satellite*

GS artificial satellites
. Ariel satellites
. . **Ariel 1 satellite**

Ariel 2 satellite

UF *S-52 satellite*

GS artificial satellites
. Ariel satellites
. . **Ariel 2 satellite**

Ariel 3 satellite

GS artificial satellites
. Ariel satellites
. . **Ariel 3 satellite**

Ariel 4 satellite

GS artificial satellites
. Ariel satellites
. . **Ariel 4 satellite**
scientific satellites
. . UK satellites
. . . **Ariel 4 satellite**

RT ionospheric electron density
ionospheric sounding

Ariel 5 satellite

DEF One in a series of artificial satellites launched for Britain by the United States.

GS artificial satellites
. Ariel satellites
. . **Ariel 5 satellite**
scientific satellites
. . UK satellites
. . . **Ariel 5 satellite**

Ariel satellites

GS artificial satellites
. **Ariel satellites**
. . Ariel 1 satellite
. . Ariel 2 satellite
. . Ariel 3 satellite
. . Ariel 4 satellite
. . Ariel 5 satellite

RT geophysical satellites
Thor Delta launch vehicle

Aries constellation

GS constellations
. **Aries constellation**

RT celestial bodies
celestial sphere
stars

Aries sounding rocket

DEF The largest in terms of weight and volume of the sounding rockets. It has a 44 inch payload capacity.

GS rocket vehicles
. sounding rockets
. . **Aries sounding rocket**

Arietid meteoroids

GS celestial bodies
. meteoroid showers
. . **Arietid meteoroids**
. meteoroids
. . **Arietid meteoroids**

ARIP (impact prediction)

USE **computerized simulation impact prediction**

ARIS instrumentation ship

USE **Advanced Range Instrumentation Ship**

arithmetic

GS number theory
. **arithmetic**
. . double precision arithmetic
. . fixed point arithmetic
. . floating point arithmetic

RT addition
calculators
computation
dividing (mathematics)
exponents
integers
multiplication
subtraction
sums

arithmetic and logic units

UF *ALU (computer components) logic units*

GS computer components
. central processing units

- . . arithmetic and logic units
 RT computers
 double precision arithmetic
 logic circuits
- Arizona**
 GS nations
 . United States
 . . **Arizona**
 RT Colorado Plateau (US)
 Colorado River (North America)
 Grand Canyon (AZ)
 Phoenix (AZ)
 Phoenix quadrangle (AZ)
- Arkansas**
 GS nations
 . United States
 . . **Arkansas**
- arm (anatomy)**
 GS anatomy
 . limbs (anatomy)
 . . **arm (anatomy)**
 . . . elbow (anatomy)
 . . . forearm
 appendages
 . **arm (anatomy)**
 . . elbow (anatomy)
 . . forearm
 RT humerus
 scapula
 ulna
 wrist
- ARMA (mathematics)*
 (added October 1997)
 USE **autoregressive moving average**
- armatures**
 RT commutators
 electric generators
 electric motors
 electric relays
 induction motors
 ∞ rotating electrical machines
 rotors
- armed forces**
 GS **armed forces**
 . armed forces (foreign)
 . armed forces (United States)
 . navy
 RT ∞ military aircraft
 ∞ military aviation
 military spacecraft
 ∞ military vehicles
 tanks (combat vehicles)
- armed forces (foreign)**
 GS armed forces
 . **armed forces (foreign)**
 RT disarmament
 enemy personnel
 ∞ military aircraft
 military technology
 ∞ military vehicles
 weapons
- armed forces (United States)**
 GS armed forces
 . **armed forces (United States)**
 RT defense program
 disarmament
 ∞ military aircraft
 military technology
 ∞ military vehicles
 weapons
 weapons industry
- Armenia**
 (added August 1993)
 GS nations
 . **Armenia**
 RT Asia
 Europe
- armor**
 RT helmets
 metal plates
- ordnance
 protective clothing
 shielding
- arms (robotics)*
 USE **robot arms**
- Army-Navy instrumentation program**
 GS programs
 . **Army-Navy instrumentation program**
 RT logistics
 military technology
- AROD (range-orbit determination)*
 USE **airborne range and orbit determination**
- ∞ **aromatic compounds**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *aryl compounds*
 RT ∞ chemical compounds
 chloroaromatics
 furfuryl alcohol
 hydrocarbons
 methylidyne
 organic compounds
 polycyclic aromatic hydrocarbons
- Aroos meteorite**
 GS celestial bodies
 . meteorites
 . . iron meteorites
 . . . **Aroos meteorite**
- arousal**
 RT alertness
 electroencephalography
 ∞ stimuli
- ARPA computer network**
 DEF The "Advanced Research Projects Agency" of the Department of Defense nationwide computer network incorporating digital communication between large numbers of dissimilar computers as well as direct access to programs, data, storage, etc. shared by all terminals.
 GS networks
 . communication networks
 . . internets
 . . . **ARPA computer network**
 . computer networks
 . . internets
 . . . **ARPA computer network**
 RT computer techniques
 queueing theory
 satellite communication
 spacecraft communication
 switching circuits
 telecommunication
 VSAT (network)
- ARQ (communication)*
 USE **automatic repeat request**
- arrays**
 GS **arrays**
 . antenna arrays
 . . linear arrays
 . . . endfire arrays
 Yagi antennas
 . . . multispectral linear arrays
 . . steerable antennas
 . . . inertialess steerable antennas
 . . turnstile antennas
 . large aperture seismic array
 . laser arrays
 . multi-anode microchannel arrays
 . phased arrays
 . solar arrays
 . . solar blankets
 . synthetic arrays
 . systolic arrays
 RT antennas
 focal plane devices
 matrices (mathematics)
 photomasks
 pushbroom sensor modes
- ranking
 ∞ statistics
- ∞ **arresters**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT arresting gear
 blocking
 brakes (for arresting motion)
 gaps
 lightning
- arresting gear**
 GS landing aids
 . **arresting gear**
 safety devices
 . **arresting gear**
 RT abort apparatus
 aircraft carriers
 aircraft safety
 antiskid devices
 ∞ arresters
 ∞ barriers
 brakes (for arresting motion)
 crash landing
 ∞ gear
- arrhythmia**
 DEF Absence of rhythm, as, for example, in heart beat.
 GS rates (per time)
 . heart rate
 . . **arrhythmia**
- arrivals**
 RT approach
 landing
- arrow wings**
 DEF Aircraft wings of V-shaped planform, either tapering or of constant chord, suggesting a stylized arrowhead.
 GS airfoils
 . wings
 . . swept wings
 . . . sweptback wings
 **arrow wings**
 planforms
 . wing planforms
 . . sweptback wings
 . . . **arrow wings**
 RT caret wings
 delta wings
 variable sweep wings
- arroyos**
 GS landforms
 . **arroyos**
 RT canyons
 drainage patterns
 erosion
 limnology
 rain impact damage
 water
 water currents
 water erosion
- arsenates**
 GS arsenic compounds
 . **arsenates**
 RT arsenides
 ∞ oxygen compounds
- arsenic**
 GS chemical elements
 . metalloids
 . . **arsenic**
 . . . arsenic isotopes
 RT metals
- arsenic alloys**
 GS alloys
 . **arsenic alloys**
 RT metalloids
- arsenic compounds**
 GS **arsenic compounds**
 . arsenates
 . arsenides
 . . aluminum arsenides

arsenic isotopes

- . . . aluminum gallium arsenides
- . . . indium aluminum arsenides
- . . . gallium arsenides
- . . . aluminum gallium arsenides
- . . . indium gallium arsenides
- . . . indium arsenides
- . . . indium aluminum arsenides
- . . . indium gallium arsenides
- . . . proustite

RT ∞ chemical compounds
∞ Group 5A compounds

arsenic isotopes

GS chemical elements
. metalloids
. arsenic
. . . **arsenic isotopes**
. nuclides
. isotopes
. . . **arsenic isotopes**

RT metals
radioactive isotopes

arsenides

GS arsenic compounds
. **arsenides**
. . . aluminum arsenides
. . . aluminum gallium arsenides
. . . indium aluminum arsenides
. . . gallium arsenides
. . . aluminum gallium arsenides
. . . indium gallium arsenides
. . . indium arsenides
. . . indium aluminum arsenides
. . . indium gallium arsenides
. . . proustite

RT arsenates
intermetallics

artemia

GS animals
. invertebrates
. . . arthropods
. . . **artemia**

arteries

GS anatomy
. circulatory system
. . . cardiovascular system
. . . blood vessels
. . . . **arteries**
. aorta
. arterioles

RT arteriosclerosis
bifurcation (biology)
carotid sinus body
carotid sinus reflex
phonoarteriography
sphygmography
veins

arterioles

(added August 2004)
DEF The smallest divisions of the arteries located between the muscular arteries and the capillaries.

GS anatomy
. circulatory system
. . . cardiovascular system
. . . blood vessels
. . . . arteries
. **arterioles**

RT arteriosclerosis
bifurcation (biology)
capillaries (anatomy)

arteriosclerosis

UF *atherosclerosis*
GS diseases
. **arteriosclerosis**

RT angina pectoris
arteries
arterioles
cholesterol
circulatory system
coronary artery disease
myocardial infarction

arthritis

GS diseases

. **arthritis**

RT bones
calcification
joints (anatomy)
rheumatic diseases

arthropods

GS animals
. invertebrates
. . . **arthropods**
. . . artemia
. . . crabs
. . . insects
. . . . bees
. . . . bollworms
. . . . chironomus flies
. . . . cockroaches
. . . . Coleoptera
. . . . beetles
. tribolia
. boll weevils
. . . . crickets
. . . . Drosophila
. . . . fireflies
. . . . grasshoppers
. . . . locusts
. . . . moths
. . . . silkworms
. . . spiders

RT exoskeletons
larvae

articulation (speech)

GS speech
. **articulation (speech)**

RT languages
speech defects

artifacts

RT anthropology
antiquities
culture (social sciences)
museums

artificial cardiac pacemaker

GS medical equipment
. **artificial cardiac pacemaker**

RT biotechnology
blood circulation
cardiology
circulatory system
heart
heart conduction system
pulmonary circulation

artificial clouds

GS clouds (meteorology)
. **artificial clouds**
. . . chemical clouds
. . . barium ion clouds

RT weather modification

artificial ears

GS medical equipment
. prosthetic devices
. . . **artificial ears**

RT ear

artificial gravity

DEF A simulated gravity established within a space vehicle by rotation or acceleration.

GS gravitation
. **artificial gravity**

RT acceleration stresses (physiology)
∞ astronautics
environmental control
gravity gradient satellites
human centrifuges
life support systems
lower body negative pressure
rotating environments
spin dynamics
weightlessness

artificial harbors

GS waterways
. harbors
. . . **artificial harbors**

RT cargo ships
deepwater terminals

dredging
marine technology
oceanography
offshore docking
offshore platforms
ship terminals
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

artificial heart valves

GS medical equipment
. **artificial heart valves**
valves
. heart valves
. . . **artificial heart valves**

RT biotechnology
blood circulation
blood pumps
heart
heart implantation

artificial intelligence

DEF A discipline concerned with the development of computer and extended-robotic systems that can exhibit intelligent action. May also be defined as a subfield of computer science concerned with concepts and methods of symbolic inference by a computer and the symbolic representation of the knowledge to be used in making inferences.

UF *machine recognition*
GS intelligence

. artificial intelligence

RT automata theory
backpropagation (artificial intelligence)
belief networks
bionics
character recognition
cognition
computer vision
computers
decision support systems
depersonalization
expert systems
genetic algorithms
hypertext
information processing (biology)
intellect
knowledge based systems
knowledge bases (artificial intelligence)
knowledge representation
∞ logic
logic programming
machine learning
natural language processing
perception
pilot support systems
predicate calculus
predicate logic
Prolog (programming language)
robotics
robots
self organizing systems
theorem proving
voice data processing

artificial radiation belts

GS particles
. charged particles
. . . magnetically trapped particles
. . . radiation belts
. . . . **artificial radiation belts**
. corpuscular radiation
. . . radiation belts
. . . **artificial radiation belts**
. . . trapped particles
. . . magnetically trapped particles
. . . radiation belts
. . . . **artificial radiation belts**

RT inner radiation belt
nuclear explosions
outer radiation belt

- ∞ radiation
- artificial respiration
- USE **resuscitation**
- artificial satellites**
- DEF Man-made satellites.
- GS **artificial satellites**
 - . active satellites
 - . . . SYNCOM satellites
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . Alouette satellites
 - . . Alouette 1 satellite
 - . . Alouette 2 satellite
 - . . Alouette B satellite
 - . Arabsat
 - . Ariel satellites
 - . . Ariel 1 satellite
 - . . Ariel 2 satellite
 - . . Ariel 3 satellite
 - . . Ariel 4 satellite
 - . . Ariel 5 satellite
 - . BESS (satellite)
 - . biosatellites
 - . . Biosatellite 1
 - . . Biosatellite 2
 - . . Biosatellite 3
 - . . Orbiting Frog Otolith
 - . . Sputnik 2 satellite
 - . communication satellites
 - . . ACTS
 - . . aeronautical satellites
 - . . . Aerosat satellites
 - . . Arcomsat
 - . . Communications Technology Satellite
 - . . . ComStar C
 - . . . NATO 3B satellite
 - . . ComStar satellites
 - . . direct broadcast satellites
 - . . European Communications Satellite
 - . . Intelsat satellites
 - . . low frequency transionospheric satellites
 - . . L-Sat
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . Molniya satellites
 - . . MSAT
 - . . Palapa satellites
 - . . . Palapa 2 satellite
 - . . Raduga satellite
 - . . RCA Satcom satellites
 - . . Relay satellites
 - . . . Relay 1 satellite
 - . . . Relay 2 satellite
 - . . Symphonie satellites
 - . . SYNCOM satellites
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . . TDR satellites
 - . . Westar satellites
 - . . COSPAS
 - . . Courier satellite
 - . . Diademe satellites
 - . . Discoverer satellites
 - . . Dodge satellite
 - . . EROS (satellites)
 - . . ESA satellites
 - . . . Aerosat satellites
 - . . . COS-B satellite
 - . . . ERS-1 (ESA satellite)
 - . . . ERS-2 (esa satellite)
 - . . . ESRO 1 satellite
 - . . . ESRO 2 satellite
 - . . . ESRO 4 satellite
 - . . European Communications Satellite
 - . . Exosat satellite
 - . . GEOS satellites (ESA)
 - . . HEOS satellites
 - . . . HEOS A satellite
 - . . . HEOS B satellite
 - . . Hipparcos satellite
 - . . Infrared Space Observatory (ISO)
 - . . L-Sat
 - . . Magellan ultraviolet astronomy satellite
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . METEOSAT satellite
 - . . OTS (ESA)
 - . . TD satellites
 - . . . TD-1 satellite
 - . . Envisat-1 satellite
 - . . XMM-Newton telescope
 - . . European 1 spacecraft
 - . . evasive satellites
 - . . French satellites
 - . . D-1 satellite
 - . . D-2 satellites
 - . . EOLE satellites
 - . . FR-1 satellite
 - . . GEOLE satellites
 - . . PEOLE satellites
 - . . Poseidon satellite
 - . . SPOT (French satellite)
 - . . SRET satellites
 - . . . SRET 1 satellite
 - . . . SRET 2 satellite
 - . . geodetic satellites
 - . . ANNA satellites
 - . . Explorer 29 satellite
 - . . Explorer 36 satellite
 - . . GEOLE satellites
 - . . GEOS 1 satellite
 - . . GEOS 2 satellite
 - . . GEOS 3 satellite
 - . . Geosat satellites
 - . . LARGOS satellite
 - . . PAGEOS satellite
 - . . Vanguard 1 satellite
 - . . geophysical satellites
 - . . . Cosmos satellites
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . Intercosmos satellites
 - . . Explorer 6 satellite
 - . . Explorer 10 satellite
 - . . Explorer 12 satellite
 - . . Explorer 45 satellite
 - . . OGO
 - . . . EGO
 - . . . OGO-3
 - . . . OGO-5
 - . . . OGO-A
 - . . . POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - . . OSO
 - . . . AOSO
 - . . . OSO-1
 - . . . OSO-2
 - . . . OSO-3
 - . . . OSO-4
 - . . . OSO-5
 - . . . OSO-6
 - . . . OSO-7
 - . . . OSO-8
 - . . . OSO-C
 - . . Polar/GGS spacecraft
 - . . Radiation and Meteoroid satellite
 - . . Sputnik 3 satellite
 - . . Vanguard 3 satellite
 - . . Wind/GGS spacecraft
 - . . GEOS-D satellite
 - . . gravity gradient satellites
 - . . . ATS
 - ATS 1
 - ATS 2
 - ATS 3
 - ATS 4
 - ATS 5
 - ATS 6
 - ATS 7
 - ATS 8
 - . . ORBIS CAL satellite
 - . . GREB satellites
 - . . Helios satellites
 - . . Helios 1
 - . . Helios 2
 - . . Helios A
 - . . Helios B
 - . . Injun satellites
 - . . Explorer 25 satellite
 - . . Injun 1 satellite
 - . . Injun 3 satellite
 - . . Injun 4 satellite
 - . . INMARSAT satellites
 - . . Inspector satellite
 - . . IRIS satellites
 - . . ISIS satellites
 - . . Alouette 2 satellite
 - . . ISIS-A
 - . . ISIS-B
 - . . ISIS-X
 - . . Landsat satellites
 - . . Landsat 1
 - . . Landsat 2
 - . . Landsat 3
 - . . Landsat 4
 - . . Landsat 5
 - . . Landsat 6
 - . . Landsat 7
 - . . Landsat E
 - . . Landsat F
 - . . Lincoln Experimental Satellites
 - . . lunar satellites
 - . . . Explorer 18 satellite
 - . . . Explorer 28 satellite
 - . . IMP
 - . . Lunar Orbiter
 - . . . Lunar Orbiter 1
 - . . . Lunar Orbiter 2
 - . . . Lunar Orbiter 3
 - . . . Lunar Orbiter 4
 - . . . Lunar Orbiter 5
 - . . LCROSS (satellite)
 - . . Lunar Prospector
 - . . Lunar Reconnaissance Orbiter
 - . . orbiting lunar stations
 - . . Mapsat
 - . . Marisat satellites
 - . . Marisat 1 satellite
 - . . maritime satellites
 - . . ERS-1 (ESA satellite)
 - . . Marecs maritime satellites
 - . . Marots (ESA)
 - . . meteorological satellites
 - . . AEROS satellite
 - . . Cosmos 144 satellite
 - . . D-2 satellites
 - . . DMSP satellites
 - . . Elektron satellites
 - . . . Elektron 1 satellite
 - . . . Elektron 2 satellite
 - . . . Elektron 4 satellite
 - . . EOLE satellites
 - . . ESSA satellites
 - . . . ESSA 1 satellite
 - . . . ESSA 2 satellite
 - . . . ESSA 3 satellite
 - . . . ESSA 4 satellite
 - . . . ESSA 5 satellite
 - . . . ESSA 6 satellite
 - . . . ESSA 7 satellite
 - . . . ESSA 8 satellite
 - . . . ESSA 9 satellite

artificial satellites

- .. Explorer 9 satellite
- .. Explorer 17 satellite
- .. Explorer 19 satellite
- .. GEOLE satellites
- .. GOES satellites
 - ... GOES 1
 - ... GOES 2
 - ... GOES 3
 - ... GOES 4
 - ... GOES 5
 - ... GOES 6
 - ... GOES 7
 - ... GOES 8
 - ... GOES 9
 - ... GOES 10
 - ... GOES 13
- .. METEOSAT satellite
- .. Nimbus satellites
 - ... Nimbus 1 satellite
 - ... Nimbus 2 satellite
 - ... Nimbus 3 satellite
 - ... Nimbus 4 satellite
 - ... Nimbus 5 satellite
 - ... Nimbus 6 satellite
 - ... Nimbus 7 satellite
- .. NOAA satellites
 - ... NOAA 2 satellite
 - ... NOAA 3 satellite
 - ... NOAA 4 satellite
 - ... NOAA 5 satellite
 - ... NOAA 6 satellite
 - ... NOAA 7 satellite
 - ... NOAA 8 satellite
 - ... NOAA 9 satellite
 - ... NOAA 10 satellite
 - ... NOAA 11 satellite
 - ... NOAA 12 satellite
 - ... NOAA 14 satellite
 - ... NOAA 19 satellite
- .. San Marco satellites
 - ... San Marco 1 satellite
 - ... San Marco 2 satellite
 - ... San Marco 3 satellite
- .. SEOCS (satellite)
- .. SIRS B satellite
- .. Sputnik 1 satellite
- .. Sputnik 2 satellite
- .. Sputnik 3 satellite
- .. SRET satellites
 - ... SRET 1 satellite
 - ... SRET 2 satellite
- .. Synchronous Earth Observatory satellite
 - ... SMS 1
 - ... SMS 2
- .. Synchronous Meteorological Satellite
 - ... SMS 1
 - ... SMS 2
- .. TIROS satellites
 - ... ITOS satellites
 - ITOS 1
 - ITOS 2
 - ITOS 3
 - ITOS 4
 - ... TIROS 1 satellite
 - ... TIROS 2 satellite
 - ... TIROS 3 satellite
 - ... TIROS 4 satellite
 - ... TIROS 5 satellite
 - ... TIROS 6 satellite
 - ... TIROS 7 satellite
 - ... TIROS 8 satellite
 - ... TIROS 9 satellite
 - ... TIROS 10 satellite
 - ... TIROS M
 - ... TIROS N series satellites
 - NOAA 6 satellite
- .. NPOESS
- .. TRMM satellite
- .. Vanguard 2 satellite
- .. Midas satellites
 - ... Midas 2 satellite
 - ... Midas 3 satellite
 - ... Midas 4 satellite
 - ... Midas 5 satellite
 - ... Midas 6 satellite
 - ... Midas 7 satellite
- .. Multispectral Resource Sampler
- .. navigation satellites
 - ... Aerosat satellites
 - ... Explorer 22 satellite
 - ... navigation technology satellites
 - ... NAVSTAR satellites
 - ... Nova satellites
 - ... Refsat
 - ... Transit Attitude Control satellite
 - ... Transit satellites
- .. orbital workshops
 - ... Saturn workshops
 - Saturn 1 workshop
 - Saturn 5 workshop
 - ... Skylab 1
 - ... Skylab 2
 - ... Skylab 3
 - ... Skylab 4
- .. PAS
- .. passive satellites
 - ... Beacon satellites
 - Beacon Explorer A
 - Explorer 22 satellite
 - ... Echo satellites
 - Echo 1 satellite
 - Echo 2 satellite
 - ... LAGEOS (satellite)
 - ... PAGEOS satellite
 - ... Pegasus satellites
 - ... Polytot satellites
 - ... ROSAT mission
 - ... SAGE satellite
 - ... Samos
 - ... SarSat
- .. scientific satellites
 - ... AMPTE (satellites)
 - ... astronomical satellites
 - Astronomical Netherlands Satellite
 - Gamma Ray Observatory
 - Ginga satellite
 - HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - HEAO 4
 - Hubble Space Telescope
 - Infrared Astronomy Satellite
 - Infrared Space Observatory (ISO)
 - IUE
 - Large Deployable Reflector
 - Magellan ultraviolet astronomy satellite
 - OAO
 - OAO 1
 - OAO 2
 - OAO 3
 - OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - Quasat
 - SAS
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
 - Constellation-X
 - Fermi Gamma-ray Space Telescope
 - James Webb Space Telescope
 - Kepler mission
 - LISA (observatory)
 - Space Infrared Telescope Facility
 - Spartan satellites
 - Submillimeter Wave Astronomy Satellite
 - Swift observatory
 - Tenma satellite
 - Wide-field Infrared Survey Explorer
 - X Ray Astrophysics Facility
 - XMM-Newton telescope

- .. ATS
- ... ATS 1
- ... ATS 2
- ... ATS 3
- ... ATS 4
- ... ATS 5
- ... ATS 6
- ... ATS 7
- ... ATS 8
- .. Azur satellite
- .. Cannonball 2 satellite
- .. CRRES (satellite)
- .. DIAL satellite
- .. Environmental Research Satellites
- ... ERS 17
- ... ERS 18
- .. Intasat satellite
- .. EXOS satellites
- ... EXOS-A satellite
- ... EXOS-B satellite
- ... EXOS-C satellite
- ... EXOS-D satellite
- .. Exosat satellite
- .. Explorer satellites
- ... Applications Explorer Satellites
- ... Cosmic Background Explorer satellite
 - Dual Air Density Explorer
 - Dynamics Explorer satellites
 - Dynamics Explorer 1 satellite
 - Dynamics Explorer 2 satellite
 - ... Explorer 1 satellite
 - ... Explorer 2 satellite
 - ... Explorer 3 satellite
 - ... Explorer 4 satellite
 - ... Explorer 5 satellite
 - ... Explorer 6 satellite
 - ... Explorer 7 satellite
 - ... Explorer 8 satellite
 - ... Explorer 9 satellite
 - ... Explorer 10 satellite
 - ... Explorer 11 satellite
 - ... Explorer 12 satellite
 - ... Explorer 14 satellite
 - ... Explorer 15 satellite
 - ... Explorer 16 satellite
 - ... Explorer 17 satellite
 - ... Explorer 18 satellite
 - ... Explorer 19 satellite
 - ... Explorer 20 satellite
 - ... Explorer 21 satellite
 - ... Explorer 22 satellite
 - ... Explorer 23 satellite
 - ... Explorer 24 satellite
 - ... Explorer 25 satellite
 - ... Explorer 26 satellite
 - ... Explorer 27 satellite
 - ... Explorer 28 satellite
 - ... Explorer 29 satellite
 - ... Explorer 30 satellite
 - ... Explorer 31 satellite
 - ... Explorer 32 satellite
 - ... Explorer 33 satellite
 - ... Explorer 34 satellite
 - ... Explorer 35 satellite
 - ... Explorer 36 satellite
 - ... Explorer 37 satellite
 - ... Explorer 38 satellite
 - ... Explorer 39 satellite
 - ... Explorer 40 satellite
 - ... Explorer 41 satellite
 - ... Explorer 43 satellite
 - ... Explorer 44 satellite
 - ... Explorer 45 satellite
 - ... Explorer 46 satellite
 - ... Explorer 47 satellite
 - ... Explorer 48 satellite
 - ... Explorer 49 satellite
 - ... Explorer 50 satellite
 - ... Explorer 51 satellite
 - ... Explorer 52 satellite
 - ... Explorer 53 satellite
 - ... Explorer 54 satellite
 - ... Explorer 55 satellite
 - ... Extreme Ultraviolet Explorer satellite
 - ... Far UV Spectroscopic Explorer
 - ... IMP

- . . . International Magnetospheric Explorer
- . . . International Sun Earth Explorers
- . . . International Sun Earth Explorer 1
- . . . International Sun Earth Explorer 2
- . . . International Sun Earth Explorer 3
- . . . Advanced Composition Explorer
- . . . IMAGE satellite
- . . . Micrometeoroid Explorer satellites
- . . . Radio Astronomy Explorer satellite
- . . . Solar Mesosphere Explorer
- . . . Submillimeter Wave Astronomy Satellite
- . . . Transition Region and Coronal Explorer
- . . . Uhuru satellite
- . . . X Ray Timing Explorer
- . . . Geopotential Research Mission
- . . . Hawkeye satellites
- . . . Long Duration Exposure Facility
- . . . LZEEBE satellite
- . . . MagSat satellites
- . . . MagSat 1 satellite
- . . . Magsat A satellite
- . . . MagSat B satellite
- . . . ORBIS
- . . . ORBIS CAL satellite
- . . . OV-1 satellites
- . . . OV-2 satellites
- . . . OV-3 satellites
- . . . OV-4 satellites
- . . . OV-5 satellites
- . . . SCATHA satellite
- . . . small scientific satellites
- . . . Submillimeter Wave Astronomy Satellite
- . . . Transition Region and Coronal Explorer
- . . . UK satellites
- . . . Ariel 4 satellite
- . . . Ariel 5 satellite
- . . . Miranda satellite
- . . . UK 4 satellite
- . . . Aqua spacecraft
- . . . Aura spacecraft
- . . . CALIPSO (Pathfinder satellite)
- . . . CloudSat
- . . . Glory Mission satellite
- . . . Ice, Cloud and Land Elevation Satellite
- . . . Orbiting Carbon Observatory (OCO)
- . . . Polar/GGS spacecraft
- . . . QuikSCAT satellite
- . . . TRMM satellite
- . . . Upper Atmosphere Research Satellite (UARS)
- . . . Wind/GGS spacecraft
- . . . SCORE satellite
- . . . SEASAT satellites
- . . . SEASAT 1
- . . . SEASAT-B satellite
- . . . Shuttle pallet satellites
- . . . Skynet satellites
- . . . Snapshot satellite
- . . . solar power satellites
- . . . Solar Radiation 1 satellite
- . . . Solar Radiation 3 satellite
- . . . Soviet satellites
- . . . Cosmos 782 satellite
- . . . Cosmos 936 satellite
- . . . Cosmos satellites
- . . . Cosmos 2 satellite
- . . . Cosmos 3 satellite
- . . . Cosmos 5 satellite
- . . . Cosmos 6 satellite
- . . . Cosmos 14 satellite
- . . . Cosmos 44 satellite
- . . . Cosmos 54 satellite
- . . . Cosmos 71 satellite
- . . . Cosmos 110 satellite
- . . . Cosmos 137 satellite
- . . . Cosmos 144 satellite
- . . . Cosmos 149 satellite
- . . . Cosmos 166 satellite
- . . . Cosmos 186 satellite
- . . . Cosmos 188 satellite
- . . . Cosmos 206 satellite
- . . . Cosmos 213 satellite
- . . . Cosmos 224 satellite
- . . . Cosmos 225 satellite
- . . . Cosmos 381 satellite
- . . . Cosmos 954 satellite
- . . . Cosmos 1129 satellite
- . . . Intercosmos satellites
- . . . Granat satellite
- . . . Molniya satellites
- . . . Prognoz satellites
- . . . Proton satellites
- . . . Proton 1 satellite
- . . . Proton 2 satellite
- . . . Proton 3 satellite
- . . . Proton 4 satellite
- . . . Raduga satellite
- . . . Sputnik satellites
- . . . Sputnik 1 satellite
- . . . Sputnik 2 satellite
- . . . Sputnik 3 satellite
- . . . Sputnik 4 satellite
- . . . Sputnik 5 satellite
- . . . Venera satellites
- . . . Venera 2 satellite
- . . . Venera 3 satellite
- . . . Venera 4 satellite
- . . . Venera 5 satellite
- . . . Venera 6 satellite
- . . . Venera 7 satellite
- . . . Venera 8 satellite
- . . . Venera 9 satellite
- . . . Venera 10 satellite
- . . . Venera 11 satellite
- . . . Venera 12 satellite
- . . . space stations
- . . . Automatic Universal Orbiting Stations
- . . . Columbus space station
- . . . Halo Orbit space station
- . . . International Space Station
- . . . man tended free flyers
- . . . Mir space station
- . . . orbiting lunar stations
- . . . Salyut space station
- . . . Skylab 1
- . . . Skylab 2
- . . . Skylab 3
- . . . Skylab 4
- . . . Space Operations Center (NASA)
- . . . Space Station Freedom
- . . . space station polar platforms
- . . . synchronous satellites
- . . . AEROS satellite
- . . . Aerosat satellites
- . . . Anik satellites
- . . . Anik 1
- . . . Anik 2
- . . . Anik 3
- . . . GOES satellites
- . . . GOES 1
- . . . GOES 2
- . . . GOES 3
- . . . GOES 4
- . . . GOES 5
- . . . GOES 6
- . . . GOES 7
- . . . GOES 8
- . . . GOES 9
- . . . GOES 10
- . . . GOES 13
- . . . Miranda satellite
- . . . SIRIO satellite
- . . . StormSat satellite
- . . . Synchronous Earth Observatory satellite
- . . . SMS 1
- . . . SMS 2
- . . . Synchronous Meteorological Satellite
- . . . SMS 1
- . . . SMS 2
- . . . SYNCOM satellites
- . . . Early Bird satellites
- . . . SYNCOM 1 satellite
- . . . SYNCOM 2 satellite
- . . . SYNCOM 3 satellite
- . . . SYNCOM 4 satellite
- . . . TD satellites
- . . . TD-1 satellite
- . . . Telstar satellites
- . . . Telstar 1 satellite
- . . . Telstar 2 satellite
- . . . tethered satellites
- . . . Vanguard satellites
- . . . Vanguard 1 satellite
- . . . Vanguard 2 satellite
- . . . Vanguard 3 satellite
- . . . Engineering Test Satellites
- . . . microsattelites
- . . . nanosatellites
- . . . Terra spacecraft
- . . . Vela satellites
- RT flexible spacecraft
- inflatable spacecraft
- interplanetary spacecraft
- lunar orbits
- lunar spacecraft
- maneuverable spacecraft
- manned spacecraft
- military spacecraft
- National Oceanic Satellite System
- natural satellites
- observatories
- orbits
- reconnaissance spacecraft
- satellite sounding
- ∞ satellites
- space capsules
- space laboratories
- Telstar project
- unmanned spacecraft
- artillery**
- GS weapons
- . guns (ordnance)
- . . **artillery**
- . . . howitzers
- . . . precision guided projectiles
- RT gun launchers
- gunnery training
- missiles
- rifles
- Sabot projectiles
- artillery fire**
- RT ∞ barrages
- gunfire
- arts**
- GS **arts**
- . graphic arts
- . . animation
- . . . computer animation
- RT creativity
- music
- Aryabhata*
- USE **Indian spacecraft**
- aryl compounds*
- USE **aromatic compounds**
- ASA
- USE **acetylsalicylic acid**
- asbestos**
- GS minerals
- . **asbestos**
- RT Amberlite (trademark)
- electrical insulation
- insulation
- nonflammable materials
- serpentine
- thermal insulation
- ascent**
- GS **ascent**
- . climbing flight
- RT balloons
- descent
- Lunar Module Ascent Stage
- takeoff
- ascent propulsion systems**
- GS propulsion
- . **ascent propulsion systems**

ascent trajectories

propulsion system configurations
 . **ascent propulsion systems**
 RT Lunar Module
 missiles
 propellants
 rocket propellants
 space flight
 Space Shuttle Ascent Stage
 ∞ systems

ascent trajectories

GS trajectories
 . **ascent trajectories**
 RT ballistic trajectories
 climbing flight
 coasting flight
 descent trajectories
 flight mechanics
 guidance (motion)
 injection guidance
 lofting
 Lunar Module Ascent Stage
 midcourse trajectories
 missile trajectories
 orbit insertion
 parabolic flight
 post boost propulsion system
 rendezvous trajectories
 spacecraft trajectories

ascorbic acid

UF *vitamin C*
 GS acids
 . **ascorbic acid**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **ascorbic acid**
 vitamins
 . **ascorbic acid**

ascorbic acid metabolism

GS metabolism
 . **ascorbic acid metabolism**
 RT vitamins

ASCR reactor

USE **advanced sodium cooled reactor**

ASDE

USE **airport surface detection equipment**

ASE (aerodynamics)

USE **aeroservoelasticity**

ashes

GS **ashes**
 . fly ash
 RT air pollution
 coal
 combustion products
 cultivation
 fertilizers
 fire damage
 forest fires
 lignite
 reaction products
 residues

Asia

GS continents
 . **Asia**
 RT Afghanistan
 Armenia
 Azerbaijan
 Bangladesh
 Brunei
 Burma
 Cambodia
 China
 Commonwealth of Independent States
 Georgia (Eurasia)
 Himalayas
 Hong Kong
 India
 Iran
 Iraq
 Israel

Japan
 Kazakhstan
 Kuwait
 Kyrgyzstan
 Laos
 Lebanon
 Malaysia
 Middle East
 Mongolia
 nations
 Nepal
 North Korea
 Pakistan
 Papua New Guinea
 Qatar
 Red Sea
 Russian Federation
 Saudi Arabia
 Sea of Japan
 Siberia
 Sikkim
 Singapore
 South Korea
 Southeast Asia
 Southern Yemen
 Sri Lanka
 Syria
 Taiwan
 Tajikistan
 Thailand
 Tibet
 tundra
 Turkmenistan
 U.S.S.R.
 Uzbekistan
 Vietnam
 Yemen

ASIC

USE **application specific integrated circuits**

aspartates

GS biopolymers
 . proteins
 . . **aspartates**
 esters
 . **aspartates**
 organic compounds
 . proteins
 . . **aspartates**
 RT amino acids
 aspartic acid

aspartic acid

GS acids
 . amino acids
 . . **aspartic acid**
 . carboxylic acids
 . . **aspartic acid**
 organic compounds
 . amino acids
 . . **aspartic acid**
 . carboxylic acids
 . . **aspartic acid**
 RT aspartates
 peptides

aspect ratio

DEF In general, the ratio of one dimension to another. In aeronautics, the ratio of the square of the span of an airfoil to the total airfoil area, or the ratio of its span to its mean chord.

UF *slenderness ratio*
 GS ratios

. **aspect ratio**
 . . fineness ratio
 . . high aspect ratio
 . . low aspect ratio
 . . thickness ratio

RT aerodynamic characteristics
 airfoils
 dimensional analysis
 dimensional stability
 lift
 ∞ span
 structural stability

wings

Aspergillus

GS plants (botany)
 . fungi
 . . **Aspergillus**
 RT infectious diseases
 ∞ mold

asphalt

DEF A dark brown to black cementitious material, in which the predominating constituents are bitumens which occur in nature or are obtained in petroleum processing.

GS products
 . petroleum products
 . . **asphalt**
 RT amorphous materials
 pavements
 pitch (material)
 tars

asphaltenes

DEF Components of bitumens that are soluble in carbon disulphide but not in paraffin naphtha, constitute the solid dispersed particles of the bitumens, and consist of high molecular weight hydrocarbons.

RT coal
 coal derived liquids
 coal liquefaction
 hydrogenation

aspheres

USE **aspheric optics**

aspheric optics

(added June 1995)

DEF Lenses whose surfaces are custom tuned to specific applications, thereby correcting aberrations in an optical system.

UF *aspheres*
asymmetrical optics
nonspherical optics

GS lenses
 . **aspheric optics**
 RT asphericity
 laser fusion
 lens design
 optical materials
 ∞ optics

asphericity

RT aberration
 aspheric optics
 geometrical optics
 ∞ optics
 refraction
 spheres

asphyxia

RT anoxia
 respiration
 signs and symptoms

aspiration

USE **vacuum**

ASRM (STS)

USE **Advanced Solid Rocket Motor (STS)**

ASROC engine

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **ASROC engine**
 RT antisubmarine warfare
 torpedoes

Assateague Island (MD-VA)

GS landforms
 . islands
 . . **Assateague Island (MD-VA)**
 RT Atlantic Ocean
 Maryland

- Virginia
- RT space shuttles
- ∞ processing
- assaulting*
- USE **attacking (assaulting)**
- assaying**
- RT chemical analysis
immunoassay
lab-on-a-chip devices
Mars surface samples
particulate sampling
radioimmunoassay
sampling
- assembler routines**
- GS computer programming
. **assembler routines**
computer programs
. computer systems programs
. . **assembler routines**
- RT compilers
disk operating system (DOS)
operating systems (computers)
- assemblies**
- GS **assemblies**
. subassemblies
. tail assemblies
. . horizontal tail surfaces
. . sweptback tail surfaces
. . swing tail assemblies
. . T tail surfaces
. . trapezoidal tail surfaces
- RT accumulations
assembling
∞ assembly
collocation
∞ components
fabrication
mosaics
strings
- assembling**
- GS **assembling**
. orbital assembly
. self assembly
- RT assemblies
∞ assembly
∞ attachment
clean rooms
collection
construction
fabrication
fitting
installing
∞ joining
mounting
preparation
rigging
space manufacturing
- ∞ **assembly**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT assemblies
assembling
collocation
self assembly
- Assembly language**
- GS languages
. programming languages
. . **Assembly language**
. . . autocoders
. . . COMPASS (programming language)
. . . MAP (programming language)
- RT computer programming
computer programs
computer systems programs
machine oriented languages
- Assess program**
- UF *Spacelab simulation flights*
- GS programs
. NASA programs
. . **Assess program**
- assessments**
- GS **assessments**
. damage assessment
. risk assessment
. technology assessment
- RT evaluation
pilot ratings
ratings
revenue
value
- ASSET gliders**
- GS gliders
. **ASSET gliders**
- RT ∞ aircraft
hypersonic gliders
lifting reentry vehicles
- ASSET project**
- GS programs
. projects
. . **ASSET project**
- RT aerothermodynamics
environmental tests
- assignment*
- USE **allocations**
- assimilation**
- RT dispersing
distributing
∞ distribution
material absorption
- association reactions**
- DEF Gas phase chemical processes in which two molecular species A and B react to form a larger molecule AB. In astrophysics these processes are involved in the "condensation" of small gaseous molecules into larger species.
- GS chemical reactions
. **association reactions**
gas-gas interactions
. **association reactions**
- RT astrophysics
chemical equilibrium
condensing
endothermic reactions
exothermic reactions
interstellar chemistry
molecular gases
molecular interactions
oxidation
photochemical reactions
photooxidation
reaction kinetics
vapor phases
- associations*
- USE **organizations**
- associative memory**
- (*added December 1999*)
- DEF A method or device for data storage in which data is identified by a part or properties of its content, rather than by an address or relative position.
- UF *associative storage*
content-addressable memory
- GS memory (computers)
. **associative memory**
- RT associative processing (computers)
computer storage devices
neural nets
optical memory (data storage)
- associative processing (computers)**
- DEF Byte-variable computer processing with multifield search, arithmetic, and logic capability.
- GS data processing
. **associative processing (computers)**
- RT associative memory
digital computers
multiprocessing (computers)
parallel processing (computers)
pipelining (computers)
- associative storage*
- (*added December 1999*)
- USE **associative memory**
- assumptions**
- RT hypotheses
inference
risk
simplification
∞ theories
- assurance**
- RT insurance (contracts)
quality control
redundancy
reliability
- Assured Crew Return Vehicle**
- (*added September 1995*)
- DEF An aerospace vehicle designed to return space station crews to Earth quickly (less than 24 hours) in the event of crew illness/injury, space station catastrophe/failure, or transportation element catastrophe/failure.
- UF *ACRV*
- GS recovery vehicles
. **Assured Crew Return Vehicle**
- RT emergency life sustaining systems
escape capsules
International Space Station
lifeboats
rescue operations
return to Earth space flight
safety management
Soyuz spacecraft
survival equipment
X-38 crew return vehicle
- astatine**
- GS chemical elements
. halogens
. . **astatine**
metals
. **astatine**
- astatine isotopes**
- GS chemical elements
. nuclides
. . isotopes
. . . radioactive isotopes
. . . . **astatine isotopes**
metals
. **astatine isotopes**
- ASTEC solar turboelectric generator**
- GS auxiliary power sources
. solar auxiliary power units
. . **ASTEC solar turboelectric generator**
electric generators
. rotating generators
. . turbogenerators
. . . **ASTEC solar turboelectric generator**
solar generators
. solar auxiliary power units
. . . **ASTEC solar turboelectric generator**
turbomachinery
. turbogenerators
. . **ASTEC solar turboelectric generator**
- RT Rankine cycle
sun
thermoelectric generators
- asteroid belts**
- DEF The location of the orbits of most of the minor planets (estimated at a half million asteroids) between Mars and Jupiter; about 2000 asteroids have been assigned numbers and names.
- GS celestial bodies
. **asteroid belts**
. . Toro asteroid
- RT Amor asteroid
Amphitrite asteroid
Apollo asteroids

asteroid capture

- asteroid collisions
- asteroids
- ∞ belts
- ∞ Ceres asteroid
- Chiron
- Gaspra asteroid
- Icarus asteroid
- Ida asteroid
- meteorite parent bodies
- meteoroids
- Quaoar
- regions
- solar system
- space debris
- Toutatis asteroid
- Vesta asteroid

asteroid capture

DEF The transfer of an asteroid or comet from the influence of a planet into that of another planet or neutral satellite.

RT asteroids
celestial bodies
containment
enclosures
payloads
retaining
solar system

asteroid collisions

(added July 1997)

GS collisions
. **asteroid collisions**

RT asteroid belts
asteroid detection
cometary collisions
craters
Earth (planet)
hypervelocity impact
meteorite collisions
near Earth objects

asteroid detection

(added July 1997)

GS detection
. **asteroid detection**

RT asteroid collisions
asteroids
sky surveys (astronomy)
space observations (from Earth)
space surveillance (ground based)
stellar occultation

asteroid missions

DEF Space missions for the study of asteroids and related celestial bodies.

GS space missions
. **asteroid missions**
.. Comet Rendezvous Asteroid Flyby Mission
.. Near Earth Asteroid Rendezvous Mission
.. Rosetta mission

RT asteroids
Clementine spacecraft
Deep Space 1 Mission
flyby missions
interplanetary flight

∞ missions
New Horizons mission
space exploration

asteroids

DEF Small celestial bodies revolving around the sun, most having orbits between those of Mars and Jupiter.

UF *minor planets*

GS celestial bodies
. **asteroids**
.. Amor asteroid
.. Amphitrite asteroid
.. Apollo asteroids
.. Ceres asteroid
.. Chiron
.. EROS asteroid
.. Gaspra asteroid
.. Icarus asteroid
.. Ida asteroid
.. Quaoar
.. Toro asteroid

.. Toutatis asteroid
.. Trojan asteroids
.. Vesta asteroid

RT asteroid belts
asteroid capture
asteroid detection
asteroid missions
dwarf planets
Kuiper belt
meteorite parent bodies
meteoroids
near Earth objects
solar system
space debris
trans-Neptunian objects

asteroseismology

(added March 2001)

DEF Study of stellar oscillations as a means to probing the internal structure and dynamics of stars.

UF *stellar seismology*

GS seismology
. **asteroseismology**
.. helioseismology

RT astrometry
astronomical photometry
astrophysics
starquakes
stellar evolution
stellar interiors
stellar oscillations
stellar physics

asthenopia

GS diseases
. eye diseases
.. **asthenopia**

RT fatigue (biology)

asthenosphere

(added August 1994)

DEF Layer or shell of the Earth below the lithosphere which is weak and in which isostatic adjustments take place, magmas may be generated, and seismic waves are strongly attenuated.

RT boundary layers
Earth mantle
Earth planetary structure
lithosphere
planetary structure
seismology
tectonics

asthma

GS diseases
. respiratory diseases
.. **asthma**

astigmatism

DEF A defect of an optical system in consequence of which rays from a point fail to meet in a focal point resulting in a blurred and imperfect image.

GS diseases
. eye diseases
.. **astigmatism**

RT distortion
focusing
geometrical optics
haplosopes
lenses

∞ optics
refraction
stigmatism

ASTP

USE **Apollo Soyuz test project**

astrionics

DEF Astronautical electronics, particularly the development and use of electronic equipment and systems for space vehicles and platforms.

RT ∞ astronautics
avionics
∞ control
∞ electronics
guidance (motion)

satellite communication
single event upsets
spacecraft communication
spacecraft electronic equipment
spacecraft instruments

∞ test equipment

Astro missions (STS)

GS payloads
. Space Shuttle payloads
.. **Astro missions (STS)**

RT ∞ missions
spaceborne astronomy
spaceborne telescopes
Spacelab payloads

Astro vehicle

SN (EXCLUDES STS)

GS maneuverable spacecraft
. **Astro vehicle**
manned spacecraft
. **Astro vehicle**
reentry vehicles
. recoverable spacecraft
.. **Astro vehicle**
soft landing spacecraft
. **Astro vehicle**

RT aerospace planes
boostglide vehicles
ferry spacecraft
lifting reentry vehicles

∞ spacecraft

Astrobee 1500 rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
.. Astrobee rocket vehicles
... **Astrobee 1500 rocket vehicle**
. sounding rockets
.. Astrobee rocket vehicles
... **Astrobee 1500 rocket vehicle**

RT solid propellant rocket engines

Astrobee rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
.. **Astrobee rocket vehicles**
... Astrobee 1500 rocket vehicle
. sounding rockets
.. **Astrobee rocket vehicles**
... Astrobee 1500 rocket vehicle

RT Genie rocket vehicle
solid propellant rocket engines

∞ vehicles

astrobiology

USE **exobiology**

astrodynamics

DEF The practical application of celestial mechanics, astrobballistics, propulsion theory, and allied fields to the problem of planning and directing the trajectories of space vehicles.

GS mechanics (physics)
. classical mechanics
.. space mechanics
... **astrodynamics**

RT ∞ astronautics
astronomical observatories
celestial bodies
celestial mechanics

∞ dynamics
interplanetary flight
orbital mechanics
orbital resonances (celestial mechanics)

∞ science
space exploration
space flight
space navigation

∞ spacecraft
trajectory analysis

astrography

SN (EXCLUDES ASTRONOMICAL PHOTOGRAPHY)

RT astronomical maps
mapping

planetary mapping

Astroguide Navigation System
 GS navigation
 . celestial navigation
 . . **Astroguide Navigation System**
 . inertial navigation
 . . **Astroguide Navigation System**
 RT inertial coordinates
 star trackers
 ∞ systems

astrolabes
 DEF Instruments designed to observe the positions and measure the altitudes of celestial bodies.
 GS measuring instruments
 . indicating instruments
 . . **astrolabes**
 RT altimeters
 astrometry
 astronomical observatories
 astronomy
 celestial bodies
 position (location)
 position errors
 solar position
 star distribution
 star trackers
 stars

Astroloy (trademark)
 GS alloys
 . chromium alloys
 . . **Astroloy (trademark)**
 . cobalt alloys
 . . **Astroloy (trademark)**
 . high strength alloys
 . . **Astroloy (trademark)**
 . nickel alloys
 . . **Astroloy (trademark)**
 . ternary alloys
 . . **Astroloy (trademark)**

astromasts
 USE **longerons**

astrometry
 RT asteroseismology
 astrolabes
 astronomical maps
 astronomical photography
 astronomical polarimetry
 astronomy
 double stars
 Hipparcos satellite
 ∞ measurement
 parallax
 planet detection
 proper motion
 solar diameter
 stellar parallax

Astron thermonuclear reactor
 GS nuclear reactors
 . **Astron thermonuclear reactor**
 RT relativistic plasmas
 thermonuclear power generation
 thermonuclear reactions

astronaut locomotion
 GS locomotion
 . **astronaut locomotion**
 RT extravehicular activity
 extravehicular mobility units
 intravehicular activity
 life support systems
 man operated propulsion systems
 manned maneuvering units
 orbital workers

astronaut maneuvering equipment
 GS **astronaut maneuvering equipment**
 . manned maneuvering units
 RT Crew Equipment Translation Aid (ISS)
 extravehicular activity
 extravehicular mobility units
 human factors engineering
 IMLSS
 intravehicular activity

self maneuvering units
 walking machines

astronaut performance
 GS human performance
 . **astronaut performance**
 . . blackout prevention
 RT confinement
 confining
 human factors engineering
 intravehicular activity
 man machine systems
 operator performance
 ∞ performance
 physiological factors
 pilot performance
 psychological factors
 space psychology
 spacecraft performance
 weightlessness

astronaut training
 GS education
 . flight training
 . . space flight training
 . . . **astronaut training**
 learning
 . **astronaut training**
 RT ejection training
 pilot training
 space maintenance
 space psychology
 training simulators

∞ **astronautics**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF The science of space flight including the design, construction, and operation of spacecraft.
 RT aerospace environments
 artificial gravity
 astronics
 astrodynamics
 astronauts
 astronomy
 auxiliary propulsion
 avionics
 bioastronautics
 Biosatellite 3
 cosmonauts
 Earth-Venus trajectories
 human factors engineering
 lunar bases
 propulsion
 soft landing
 space exploration
 space flight
 space maintenance
 space navigation
 spacecraft docking
 weightlessness

astronauts
 GS personnel
 . flying personnel
 . . **astronauts**
 . . . orbital workers
 RT ∞ astronautics
 awards
 cosmonauts
 crew experiment stations
 crew observation stations
 crew workstations
 crews
 pilots (personnel)
 spacecrews

astronavigation
 GS navigation
 . celestial navigation
 . . **astronavigation**
 RT air navigation
 interplanetary navigation
 interstellar travel
 radio navigation
 space navigation

astronomical catalogs
 UF *star catalogs*

GS documents
 . catalogs (publications)
 . . **astronomical catalogs**
 RT ∞ catalogs
 classifications
 ephemerides
 northern sky
 sky surveys (astronomy)
 Southern sky
 tables (data)

astronomical coordinates
 DEF Coordinates defining a point on the surface of the Earth, or of the geoid, in which the local direction of gravity is used as a reference.
 GS coordinates
 . **astronomical coordinates**
 RT azimuth
 celestial reference systems
 cylindrical coordinates
 geocentric coordinates
 northern sky
 planetocentric coordinates
 planispheres
 polar coordinates
 proper motion
 reference stars
 solar longitude
 spherical coordinates

astronomical interferometry
 (added June 1993)
 GS interferometry
 . **astronomical interferometry**
 RT astronomy
 etalons
 infrared interferometers
 interferometers
 LIGO (observatory)
 LISA (observatory)
 planet detection
 radio astronomy
 Sagnac effect
 space observations (from Earth)
 spaceborne astronomy
 very long base interferometry

astronomical maps
 GS maps
 . **astronomical maps**
 . . planispheres
 RT astrography
 astrometry
 celestial reference systems
 celestial sphere
 lunar maps

astronomical models
 UF *orreries*
 GS models
 . **astronomical models**
 . . density wave model
 . . stellar models
 RT big bang cosmology
 corotation
 cosmology
 Earth analogs
 mathematical models
 molecular clouds
 planetariums
 Reissner-Nordstrom solution
 solar neutrinos
 solar oscillations
 stellar oscillations

Astronomical Netherlands Satellite
 UF *ANS*
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **Astronomical Netherlands Satellite**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **Astronomical Netherlands Satellite**
 RT Netherlands

astronomical observatories

Netherlands space program

astronomical observatories

- GS observatories
 - . **astronomical observatories**
 - . . astronomical satellites
 - . . . Astronomical Netherlands Satellite
 - . . . Gamma Ray Observatory
 - . . . Ginga satellite
 - . . . HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - HEAO 4
 - . . . Hubble Space Telescope
 - . . . Infrared Astronomy Satellite
 - . . . Infrared Space Observatory (ISO)
 - . . . IUE
 - . . . Large Deployable Reflector
 - . . . Magellan ultraviolet astronomy satellite
 - . . . OAO
 - OAO 1
 - OAO 2
 - OAO 3
 - . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - . . . Quasat
 - . . . SAS
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
 - . . . Constellation-X
 - . . . Fermi Gamma-ray Space Telescope
 - . . . James Webb Space Telescope
 - . . . Kepler mission
 - . . . LISA (observatory)
 - . . . Space Infrared Telescope Facility
 - . . . Spartan satellites
 - . . . Submillimeter Wave Astronomy Satellite
 - . . . Swift observatory
 - . . . Tenma satellite
 - . . . Wide-field Infrared Survey Explorer
 - . . . X Ray Astrophysics Facility
 - . . . XMM-Newton telescope
 - . . . Astrolane
 - . . . ROSAT mission
 - . . . SOFIA (airborne observatory)
 - . . . solar observatories
 - . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - . . . Pinhole Occulter Facility
 - . . . STEREO (observatory)
 - . . . European Southern Observatory
 - . . . LIGO (observatory)
- RT astrodynamics
- astrolabes
- astronomy
- celestial bodies
- geophysical observatories
- honeycomb mirrors
- Jodrell Bank Observatory
- lunar observatories
- Next Generation Space Telescope project
- northern sky

- observation scheduling
- radio astronomy
- seeing (astronomy)
- segmented mirrors
- Southern sky
- spaceborne telescopes
- telescopes

astronomical photography

- GS imagery
- . photography
- . . **astronomical photography**
- RT aerial photography
- astrometry
- astronomy
- atmospheric windows
- Baker-Nunn camera
- black and white photography
- coronagraphs
- diffraction limited cameras
- electro-optical photography
- faint object camera
- infrared astronomy
- infrared photography
- Lallemand cameras
- lunar photographs
- lunar photography
- reference stars
- rocket-borne photography
- satellite-borne photography
- Schmidt cameras
- Southern sky
- spaceborne photography
- spaceborne telescopes

astronomical photometry

- GS optical measurement
- . photometry
- . . **astronomical photometry**
- . . . stellar spectrophotometry
- RT asteroseismology
- atmospheric windows
- blinking
- cometary atmospheres
- DIAL satellite
- infrared photometry
- Kepler mission
- planet detection
- spectrophotometry
- superhumps (astronomy)
- telephotometry

astronomical polarimetry

- (added July 1991)
- DEF The measurement of electromagnetic radiation from celestial bodies by polarimeters.
- GS optical measurement
- . polarimetry
- . . **astronomical polarimetry**
- RT astrometry
- astronomy
- polarimeters

astronomical satellites

- GS artificial satellites
- . scientific satellites
- . . **astronomical satellites**
- . . . Astronomical Netherlands Satellite
- . . . Gamma Ray Observatory
- . . . Ginga satellite
- . . . HEAO
- HEAO 1
- HEAO 2
- HEAO 3
- HEAO 4
- . . . Hubble Space Telescope
- . . . Infrared Astronomy Satellite
- . . . Infrared Space Observatory (ISO)
- . . . IUE
- . . . Large Deployable Reflector
- . . . Magellan ultraviolet astronomy satellite
- . . . OAO
- OAO 1
- OAO 2
- OAO 3
- . . . OSO
- AOSO
- OSO-1
- OSO-2
- OSO-3
- OSO-4
- OSO-5
- OSO-6
- OSO-7
- OSO-8
- OSO-C

- . . . OSO-2
- . . . OSO-3
- . . . OSO-4
- . . . OSO-5
- . . . OSO-6
- . . . OSO-7
- . . . OSO-8
- . . . OSO-C
- . . . Quasat
- . . . SAS
- Explorer 53 satellite
- . . . SAS-1
- . . . SAS-2
- . . . SAS-3
- . . . Constellation-X
- . . . Fermi Gamma-ray Space Telescope
- . . . James Webb Space Telescope
- . . . Kepler mission
- . . . LISA (observatory)
- . . . Space Infrared Telescope Facility
- . . . Spartan satellites
- . . . Submillimeter Wave Astronomy Satellite
- . . . Swift observatory
- . . . Tenma satellite
- . . . Wide-field Infrared Survey Explorer
- . . . X Ray Astrophysics Facility
- . . . XMM-Newton telescope
- observatories
- . astronomical observatories
- . . **astronomical satellites**
- . . . Astronomical Netherlands Satellite
- . . . Gamma Ray Observatory
- . . . Ginga satellite
- . . . HEAO
- HEAO 1
- HEAO 2
- HEAO 3
- HEAO 4
- . . . Hubble Space Telescope
- . . . Infrared Astronomy Satellite
- . . . Infrared Space Observatory (ISO)
- . . . IUE
- . . . Large Deployable Reflector
- . . . Magellan ultraviolet astronomy satellite
- . . . OAO
- OAO 1
- OAO 2
- OAO 3
- . . . OSO
- AOSO
- OSO-1
- OSO-2
- OSO-3
- OSO-4
- OSO-5
- OSO-6
- OSO-7
- OSO-8
- OSO-C
- . . . Quasat
- . . . SAS
- Explorer 53 satellite
- . . . SAS-1
- . . . SAS-2
- . . . SAS-3
- . . . Constellation-X
- . . . Fermi Gamma-ray Space Telescope
- . . . James Webb Space Telescope
- . . . Kepler mission
- . . . LISA (observatory)
- . . . Space Infrared Telescope Facility
- . . . Spartan satellites
- . . . Submillimeter Wave Astronomy Satellite
- . . . Swift observatory
- . . . Tenma satellite
- . . . Wide-field Infrared Survey Explorer
- . . . X Ray Astrophysics Facility
- . . . XMM-Newton telescope
- RT ROSAT mission

spaceborne astronomy

astronomical spectroscopy
 GS spectroscopy
 . **astronomical spectroscopy**
 . . stellar spectrophotometry
 RT astronomy
 blue shift
 continuous spectra
 electromagnetic spectra
 infrared spectroscopy
 Kuiper Airborne Observatory
 laboratory astrophysics
 organic solids
 radial velocity
 radiation spectra
 radio astronomy
 radio spectroscopy
 Raman spectroscopy
 solar spectra
 Southern sky
 spectra
 spectroscopic telescopes
 stellar spectra
 ultraviolet spectroscopy
 visible spectrum
 x ray spectroscopy

astronomical telescopes
 USE **telescopes**

astronomy
 DEF The science that treats of the location, magnitudes, motions, and constitution of celestial bodies and structures. Used for celestial observation.
 UF *celestial observation*
 GS **astronomy**
 . gamma ray astronomy
 . infrared astronomy
 . radar astronomy
 . radio astronomy
 . spaceborne astronomy
 . ultraviolet astronomy
 . x ray astronomy
 RT ∞ aerospace sciences
 Amor asteroid
 Apollo asteroids
 astrolabes
 astrometry
 ∞ astronautics
 astronomical interferometry
 astronomical observatories
 astronomical photography
 astronomical polarimetry
 astronomical spectroscopy
 astrophysics
 celestial bodies
 celestial mechanics
 Earth limb
 halos
 infrared sources (astronomy)
 infrared telescopes
 mass to light ratios
 meteoroid showers
 missing mass (astrophysics)
 ∞ physical sciences
 relic radiation
 ∞ science
 seeing (astronomy)
 selenology
 sidereal time
 sky surveys (astronomy)
 solar neighborhood
 solar parallax
 Southern sky
 spaceborne telescopes
 stellar magnitude
 stellar models
 stellar oscillations
 telescopes

astrophysics
 DEF Study of the physical characteristics and processes associated with celestial bodies and interstellar space. The application of the laws of physics to the study of the celestial bodies and astronomical phenomena such as luminosity, size, mass, density, temperature,

and chemical composition. Used for geoastronomy.

UF *geoastronomy*
 GS **astrophysics**
 . computational astrophysics
 . nuclear astrophysics
 . stellar physics
 . . solar physics
 . laboratory astrophysics
 RT accretion disks
 association reactions
 asteroseismology
 astronomy
 brightness distribution
 brightness temperature
 celestial bodies
 celestial mechanics
 cosmology
 dark energy
 degenerate matter
 dense plasmas
 disk galaxies
 galactic evolution
 gamma ray astronomy
 geophysics
 grand unified theory
 gravitational binding energy
 gravitational collapse
 gravitational instability
 helioseismology
 interstellar extinction
 magnetic field configurations
 mass to light ratios
 Michelson interferometers
 missing mass (astrophysics)
 naked singularities
 Orion nebula
 ∞ physics
 planetary rotation
 radio interferometers
 radio jets (astronomy)
 relic radiation
 ∞ science
 solar neutrinos
 Spartan satellites
 spin temperature
 star formation
 stellar cores
 stellar envelopes
 stellar evolution
 stellar interiors
 stellar oscillations
 theoretical physics
 Wolf-Rayet stars
 X Ray Astrophysics Facility
 x ray binaries

Astroplane
 SN (LIMITED TO THE EUROPEAN AIRBORNE ASTRONOMICAL OBSERVATORY)
 GS observatories
 . astronomical observatories
 . . **Astroplane**
 RT airborne equipment
 infrared telescopes

asymmetrical optics
 USE **aspheric optics**

asymmetry
 UF *dissymmetry*
 RT antisymmetry
 deviation
 distortion
 eccentricity
 shapes
 skewness
 symmetry
 variations

asymptotes
 GS analysis (mathematics)
 . real variables
 . . **asymptotes**
 functions (mathematics)
 . **asymptotes**
 RT analytic geometry
 asymptotic properties
 asymptotic series
 calculus

numerical analysis

asymptotic giant branch stars
 UF *AGB stars*
 GS celestial bodies
 . stars
 . . giant stars
 . . . **asymptotic giant branch stars**
 RT carbon stars
 color-magnitude diagram
 Hertzsprung-Russell diagram
 late stars
 M stars
 Mira variables
 red giant stars
 S stars
 stellar evolution
 stellar mass ejection

asymptotic methods
 GS problem solving
 . **asymptotic methods**
 RT asymptotic properties
 iterative solution
 learning curves
 ∞ methodology

asymptotic properties
 DEF Properties of any mathematical relation or corresponding physical system characterized by an approach to a given value as an expression, containing a variable, tends to infinity.
 RT asymptotes

asymptotic methods
 asymptotic series
 attractors (mathematics)
 differential equations
 integral equations
 mathematical models
 normality

asymptotic series
 GS analysis (mathematics)
 . calculus
 . . series (mathematics)
 . . . **asymptotic series**
 . real variables
 . . series (mathematics)
 . . . **asymptotic series**
 RT asymptotes
 asymptotic properties
 series expansion

asynchronous motors
 GS electromechanical devices
 . electric motors
 . . **asynchronous motors**
 motors
 . electric motors
 . . **asynchronous motors**
 RT induction motors
 synchronous motors

asynchronous transfer mode
(added January 1997)
 UF *ATM (data transmission)*
 RT broadband
 channels (data transmission)
 communication networks
 data transfer (computers)
 data transmission
 optical switching
 packet switching
 packet transmission

ATARS
 USE **automatic traffic advisory and resolution**

ataxia
 GS diseases
 . **ataxia**
 RT muscles

ataxite
 GS rocks
 . **ataxite**
 RT breccia

Atchafalaya River Basin (LA)

soils

Atchafalaya River Basin (LA)
GS landforms
. structural basins
. river basins
. . . **Atchafalaya River Basin (LA)**
RT Louisiana
rivers

atelectasis
DEF Collapsed or airless state of all or part of the lung.
GS diseases
. **atelectasis**
RT lungs

ATF
USE **F-22 aircraft**

Athena rocket vehicle
GS rocket vehicles
. multistage rocket vehicles
. . . **Athena rocket vehicle**
RT BE-3 engine
reentry vehicles
solid propellant rocket engines

atherosclerosis
USE **arteriosclerosis**

athletes
RT competition
physical exercise
physical fitness
sports medicine

athodyds
USE **ramjet engines**

Atlanta (GA)
GS cities
. **Atlanta (GA)**
RT Georgia

Atlantic aircraft
USE **Breguet 1150 aircraft**

Atlantic Ocean
GS oceans
. **Atlantic Ocean**
RT Assateague Island (MD-VA)
Azores
Bermuda
Block Island Sound (RI)
Cape Hatteras (NC)
Cape Verde
Delaware Bay (US)
English Channel
GARP Atlantic Tropical Experiment
Gulf Stream
Lesser Antilles
Lomonosov current
Long Island (NY)
mid-ocean ridges
Outer Banks (NC)
Sargasso Sea
Wallops Island
West Indies

Atlantis (orbiter)
UF *Space Shuttle Orbiter 104*
GS manned spacecraft
. space shuttles
. . . Space Shuttle orbiters
. . . **Atlantis (orbiter)**
reentry vehicles
. recoverable spacecraft
. . . reusable spacecraft
. . . . space shuttles
. . . . Space Shuttle orbiters
. . . . **Atlantis (orbiter)**
RT manned space flight
Space Shuttle mission 51-H
Space Shuttle mission 51-J
Space Shuttle mission 61-B
∞ spacecraft

Atlas Able 5 launch vehicle
GS launch vehicles
. Atlas launch vehicles

. . . **Atlas Able 5 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . . Atlas launch vehicles
. . . **Atlas Able 5 launch vehicle**
RT lunar probes
space probes

Atlas Agena B launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . **Atlas Agena B launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas Agena B launch vehicle**
RT Agena rocket vehicles
Mariner 2 space probe
Midas satellites
Ranger 4 lunar probe
Ranger lunar probes

Atlas Agena launch vehicles
GS launch vehicles
. Atlas launch vehicles
. . **Atlas Agena launch vehicles**
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas Agena launch vehicles**
RT Agena rocket vehicles
Environmental Research Satellites
ERS 17
ERS 18
Mariner 5 space probe
Mariner 6 space probe
Mariner program
OGO-A
∞ vehicles

Atlas Centaur launch vehicle
GS launch vehicles
. Atlas launch vehicles
. . **Atlas Centaur launch vehicle**
Centaur launch vehicle
. . **Atlas Centaur launch vehicle**
rocket vehicles
. Centaur launch vehicle
. . **Atlas Centaur launch vehicle**
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas Centaur launch vehicle**
RT Centaur project
OAO 1
OAO 2
OAO 3
RL-10 engines
Space Shuttle upper stage A
Surveyor 1 lunar probe
Surveyor 2 lunar probe
Surveyor 3 lunar probe
Surveyor 4 lunar probe
Surveyor 5 lunar probe
Surveyor 6 lunar probe
Surveyor 7 lunar probe
Surveyor project

Atlas D ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas D ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas D ICBM**
RT Centaur launch vehicle
Standard Launch Vehicles
Vega launch vehicle

Atlas E ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas E ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM

. . . . **Atlas E ICBM**

Atlas F ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas F ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Atlas ICBM
. . . . **Atlas F ICBM**

Atlas ICBM
GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . **Atlas ICBM**
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. surface to surface missiles
. . intercontinental ballistic missiles
. . . **Atlas ICBM**
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
RT MA-2 engine
MA-3 engine

Atlas launch vehicles
UF *SM-65 missile*
GS launch vehicles
. **Atlas launch vehicles**
. . Atlas Able 5 launch vehicle
. . Atlas Agena B launch vehicle
. . Atlas Agena launch vehicles
. . Atlas Centaur launch vehicle
. . Atlas SLV-3 launch vehicle
rocket vehicles
. multistage rocket vehicles
. . **Atlas launch vehicles**
. . . Atlas Able 5 launch vehicle
. . . Atlas Agena B launch vehicle
. . . Atlas Agena launch vehicles
. . . Atlas Centaur launch vehicle
. . . Atlas SLV-3 launch vehicle
RT EGO
Gemini project
MA-5 engine
Mariner program
Mercury flights
Mercury MA-1 flight
Mercury MA-2 flight
Mercury MA-3 flight
Mercury MA-4 flight
Mercury MA-5 flight
Mercury MA-6 flight
Mercury MA-7 flight
Mercury MA-8 flight
Mercury MA-9 flight
Mercury project
Nomad launch vehicle
OAO
orbital rendezvous
Ranger project
∞ vehicles

Atlas SLV-3 launch vehicle
UF *standard launch vehicle 3*
GS launch vehicles
. Atlas launch vehicles
. . **Atlas SLV-3 launch vehicle**
. Standard Launch Vehicles
. . **Atlas SLV-3 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Atlas launch vehicles
. . . **Atlas SLV-3 launch vehicle**
. Standard Launch Vehicles
. . **Atlas SLV-3 launch vehicle**
RT liquid propellant rocket engines
MA-5 engine

ATLIT project
UF *Advanced Technology Light Twin aircraft*
GS programs
. NASA programs
. . **ATLIT project**

- . projects
- . . **ATLIT project**
- RT ∞ aircraft
 - GAW-1 airfoil
 - PA-34 Seneca aircraft
- ATM (data transmission)
 - (added January 1997)
 - USE **asynchronous transfer mode**
- Atmosphere Explorer A
 - USE **Explorer 17 satellite**
- Atmosphere Explorer B
 - USE **Explorer 32 satellite**
- Atmosphere Explorer C
 - USE **Explorer 51 satellite**
- Atmosphere Explorer D
 - USE **Explorer 54 satellite**
- Atmosphere Explorer E
 - USE **Explorer 55 satellite**
- ∞ **atmospheres**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF (1) The mixture of gases surrounding the Earth or filling the habitable volume or a spacecraft. (2) The pressure exerted by a column of mercury 760 mm high at 1G, equal to 101.329 kilopascals.
 - RT air
 - argon-oxygen atmospheres
 - atmospheric pressure
 - cabin atmospheres
 - cometary atmospheres
 - controlled atmospheres
 - Earth atmosphere
 - environments
 - equatorial atmosphere
 - gas mixtures
 - gases
 - helium-oxygen atmospheres
 - hypobaric atmospheres
 - life support systems
 - meteorology
 - middle atmosphere
 - Neptune atmosphere
 - neutral atmospheres
 - nongray atmospheres
 - nongray gas
 - planetary atmospheres
 - planetary ionospheres
 - primitive Earth atmosphere
 - satellite atmospheres
 - solar atmosphere
 - stellar atmospheres
 - Uranus atmosphere

Atmospheric & Oceanographic Inform Sys

- SN (ATMOSPHERIC & OCEANOGRAPHIC INFORMATION SYSTEMS)
- DEF A data system designed primarily for the interactive manipulation of meteorological satellite images. Capabilities include displaying, analyzing, storing, and manipulating digital data in the field of meteorology and Earth resources. Used for AOIPS.
- UF **AOIPS**
- GS information systems
 - . **Atmospheric & Oceanographic Inform Sys**
- RT aerology
 - air water interactions
 - data processing
 - data systems
 - imagery
 - isotherms
 - meteorological parameters
 - meteorology
 - minicomputers
 - oceanographic parameters
 - oceanography
 - ∞ systems

- weather
- atmospheric absorption
 - USE **atmospheric attenuation**
- Atmospheric and Magnetospheric Payload
 - USE **AMPS (satellite payload)**

- atmospheric attenuation**
 - UF *atmospheric absorption*
 - GS attenuation
 - . **atmospheric attenuation**
 - . . auroral absorption
 - RT acoustic attenuation
 - atmospheric lasers
 - cosmic ray albedo
 - electromagnetic absorption
 - electromagnetic scattering
 - electromagnetic wave transmission
 - infrared absorption
 - microwave absorption
 - molecular absorption
 - planetary atmospheres
 - radar attenuation
 - radar transmission
 - radiation absorption
 - radio attenuation
 - radio transmission
 - shock wave attenuation
 - shock wave propagation
 - thermal absorption
 - transmission
 - vegetative index
 - wave attenuation
 - wave propagation

atmospheric boundary layer

- GS boundary layers
 - . **atmospheric boundary layer**
- RT air flow
 - air land interactions
 - boundary layer flow
 - Ekman layer
 - ∞ layers
 - mixing layers (fluids)
 - planetary boundary layer
 - primitive equations

atmospheric chemistry

- DEF Study of the production, transport, modification, and removal of atmospheric constituents in the troposphere and stratosphere.
- GS environmental chemistry
 - . **atmospheric chemistry**
- RT acid rain
 - aerothermochemistry
 - air pollution
 - Aitken nuclei
 - atmospheric effects
 - ∞ chemistry
 - formyl ions
 - middle atmosphere
 - nitrous acid
 - photochemical oxidants
 - photochemical reactions
 - physical chemistry
 - satellite atmospheres

atmospheric circulation

- DEF Global or hemispheric air movements which can be treated by equations of motion in contrast to atmospheric diffusion which is small random movement not amenable to treatment by these equations. Used for wind circulation.
- UF *wind circulation*
- GS circulation
 - . **atmospheric circulation**
 - . . zonal flow (meteorology)
- RT advection
 - air currents
 - air land interactions
 - air masses
 - annual variations
 - Atmospheric General Circulation Experiment
 - Atmospheric General Circulation Models
 - baroclinic instability
 - Brunt-Vaisala frequency
 - circulation distribution

- circumpolar westerlies
- climatology
- convection cells
- cyclogenesis
- Earth atmosphere
- ground wind
- horizontal distribution
- intertropical convergent zones
- intraseasonal variations
- jet streams (meteorology)
- Kelvin waves
- Madden-Julian Oscillation
- meridional flow
- middle atmosphere
- mixing height
- monsoons
- planetary meteorology
- planetary waves
- pollution transport
- quasi-biennial oscillation
- sea breeze
- Southern Oscillation
- superrotation
- tornadoes
- TRMM satellite
- tropical storms
- turbopause
- typhoons
- upwelling water
- vertical air currents
- vorticity
- wind (meteorology)
- wind direction
- wind profiles
- windpower utilization

Atmospheric Cloud Physics Lab (Spacelab)

- DEF A NASA Spacelab mission involving cloud physics experiments in zero gravity environment. Also known as ACPL. Used for ACPL (Spacelab) and zero-g ACPL (Spacelab).
- UF *ACPL (Spacelab)*
 - zero-g ACPL (Spacelab)*
- GS laboratories
 - . space laboratories
 - . . **Atmospheric Cloud Physics Lab (Spacelab)**
 - payloads
 - . Spacelab payloads
 - . . **Atmospheric Cloud Physics Lab (Spacelab)**
- RT cloud physics
 - meteorological parameters
 - nephelanalysis
 - spacecraft instruments

atmospheric composition

- GS composition (property)
 - . **atmospheric composition**
 - . . atmospheric moisture
 - . . ionospheric composition
- RT aeronomy
 - air
 - air pollution
 - Aitken nuclei
 - carbon dioxide concentration
 - chemical composition
 - climate change
 - Earth atmosphere
 - electron density (concentration)
 - equatorial atmosphere
 - Gaia hypothesis
 - gas composition
 - horizontal distribution
 - in situ measurement
 - isotope ratios
 - LACATE (experiment)
 - middle atmosphere
 - mixing ratios
 - moisture content
 - Orbiting Carbon Observatory (OCO)
 - ozone depletion
 - particulates
 - planetary atmospheres
 - primitive Earth atmosphere
 - radio occultation
 - radioactive contaminants
 - satellite atmospheres
 - Saturn atmosphere

atmospheric conductivity

Solar Mesosphere Explorer
Titan

atmospheric conditions
USE **meteorology**

atmospheric conductivity
GS transport properties
. **atmospheric conductivity**
. . ionospheric conductivity
RT air conductivity
∞ conductivity
electrical resistivity
thermal conductivity

atmospheric correction
DEF Removal of the effects of the intervening atmosphere from satellite imagery.
GS correction
. **atmospheric correction**
RT anisoplanatism
atmospheric effects
clouds (meteorology)
geometric rectification (imagery)
image classification
image processing
infrared radiometers
radiative transfer
satellite imagery
spatial resolution

atmospheric density
GS density (mass/volume)
. **atmospheric density**
RT air pollution
Boltzmann distribution
∞ density
density (number/volume)
electron density (concentration)
humidity
ion density (concentration)
magnetospheric electron density
magnetospheric ion density
magnetospheric proton density
meteorology
particle density (concentration)
planetary atmospheres
plasma density
proton density (concentration)
space density

atmospheric diffusion
GS diffusion
. **atmospheric diffusion**
RT Boltzmann distribution
molecular diffusion
pollution transport
radio scattering
turbulent diffusion

atmospheric effects
RT aerosols
air pollution
atmospheric chemistry
atmospheric correction
∞ effects
erosion
exposure
rusting
seeing (astronomy)
soil erosion
turbulence
vegetative index
wind effects
wind erosion

atmospheric electricity
DEF Electrical phenomena, regarded collectively, which occur in the Earth's atmosphere. Also the study of electrical processes occurring within the atmosphere.
GS electricity
. **atmospheric electricity**
. . ionospheric currents
. . . Birkeland currents
. . . electrojets
. . . . auroral electrojets
. . . . equatorial electrojet
. . . Pedersen currents
RT atmospheric

ball lightning
cloud physics
dust storms
Earth atmosphere
electric corona
electron density profiles
elves
field aligned currents
lightning
lightning suppression
primitive Earth atmosphere
ring currents
sprites (atmospheric physics)
static electricity
telluric currents

atmospheric emission
USE **airglow**

atmospheric energy sources
RT ammonia
atmospheric heat budget
atmospheric heating
atmospheric physics
energy budgets
∞ energy sources
ethyl alcohol
planetary atmospheres

atmospheric entry
DEF The penetration of any planetary atmosphere by any object from outer space; specifically, the penetration of the Earth's atmosphere by a manned or unmanned capsule or spacecraft. Used for planetary entry.
UF *planetary entry*
GS **atmospheric entry**
. reentry
. . hyperbolic reentry
. . hypersonic reentry
. . . uncontrolled reentry (spacecraft)
. . manned reentry
. . spacecraft reentry
. . . uncontrolled reentry (spacecraft)
RT ablation
aeroassist
aerocapture
aerodynamic heating
aeromaneuvering
bolides
descent trajectories
Earth atmosphere
∞ entry
entry guidance (STS)
falling
Galileo project
gas guns
orbit decay
space flight
spacecraft breakup

atmospheric entry simulation
GS simulation
. **atmospheric entry simulation**
RT environment simulation
flight simulators
landing simulation
space environment simulation

Atmospheric General Circulation Experiment
DEF Model experiment of the Earth's atmospheric circulation as proposed for a Spacelab flight on which a liquid contained between two concentric spheres is subjected to rotation. The thermal driving force will be a stable radial temperature gradient and an unstable latitudinal gradient.
GS payloads
. Space Shuttle payloads
. . **Atmospheric General Circulation Experiment**
. . Spacelab payloads
. . **Atmospheric General Circulation Experiment**
RT atmospheric circulation
Atmospheric General Circulation Models
Earth atmosphere

space transportation system

Atmospheric General Circulation Models
(added March 1989)
GS models
. atmospheric models
. . **Atmospheric General Circulation Models**
RT atmospheric circulation
Atmospheric General Circulation Experiment
climatology
long range weather forecasting
numerical weather forecasting

atmospheric heat budget
GS energy budgets
. heat budget
. . **atmospheric heat budget**
RT atmospheric energy sources
Earth radiation budget
greenhouse effect
heat balance
heat transfer
stratospheric warming

atmospheric heating
SN (EXCLUDES AERODYNAMIC HEATING)
GS heating
. **atmospheric heating**
. . global warming
. . stratospheric warming
RT atmospheric energy sources
bolides
radiative forcing

atmospheric impurities
USE **air pollution**

atmospheric ionization
UF *meteoritic ionization*
GS ionization
. gas ionization
. . **atmospheric ionization**
. . . auroral ionization
RT afterglows
airglow
Antares rocket vehicle
Earth ionosphere
electron density profiles
elves
photoionization
plasmasphere
radio meteors
riometers
sprites (atmospheric physics)

atmospheric lasers
DEF The theoretical phenomena whereby the upper atmosphere is used as the lasing medium.
GS stimulated emission devices
. lasers
. . **atmospheric lasers**
RT atmospheric attenuation
atmospheric optics
atmospheric scattering
laser outputs
TEA lasers

atmospheric loading
USE **pollution transport**

atmospheric models
GS models
. **atmospheric models**
. . Atmospheric General Circulation Models
. . reference atmospheres
RT baroclinic instability
Chapman-Ferraro problem
climate models
environment models
environment simulation
horizontal distribution
intra-seasonal variations
large eddy simulation
Madden-Julian Oscillation
mathematical models
numerical weather forecasting

ocean models
primitive Earth atmosphere
solar oscillations
stellar oscillations
Venus clouds
weather forecasting

atmospheric moisture

GS composition (property)
. atmospheric composition
. . . **atmospheric moisture**
. concentration (composition)
. . . moisture content
. . . . **atmospheric moisture**
moisture
. **atmospheric moisture**
RT acid rain
Advanced Microwave Sounding Unit
anvil clouds
cap clouds
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
dew point
humidity
hydrometeors
mixing ratios
precipitation (meteorology)
psychrometers
water vapor

atmospheric noise

USE **atmospherics**

atmospheric optics

DEF The study of the optical characteristics of the atmosphere and of the optical phenomena produced by the atmosphere's suspensoids and hydrometeors. It embraces the study of refraction, reflection, diffraction, scattering, and polarization of light, but is not commonly regarded as including the study of any other kinds of radiation.

RT adaptive optics
anisoplanatism
atmospheric lasers
clarity
haze
infrared absorption
light transmission
opacity
∞ optics
seeing (astronomy)
thermal lensing
transparence
vegetative index

atmospheric physics

UF *aerophysics*
GS **atmospheric physics**
. cloud physics
RT aeronomy
atmospheric energy sources
Brunt-Vaisala frequency
dust storms
Earth sciences
International Magnetospheric Study
magnetosphere-ionosphere coupling
meteorology
neutral sheets
∞ physics
planetary meteorology
satellite atmospheres
∞ science
secular variations
turbopause

atmospheric pressure

DEF The pressure at any point in an atmosphere due solely to the weight of the atmospheric gases above the point concerned. Used for barometric pressure.

UF *barometric pressure*
GS pressure
. **atmospheric pressure**
RT anticyclones
∞ atmospheres
cyclogenesis
cyclones
gas pressure

geopotential height
high altitude pressure
isobars (pressure)
isostatic pressure
meteorological parameters
pressure gradients
radio occultation
Southern Oscillation
weather

atmospheric radiation

DEF Infrared radiation emitted by or being propagated through the atmosphere.

GS **atmospheric radiation**
. auroras
. . . auroral arcs
. . . . red arcs
. . . radio auroras
. dawn chorus
. ionospheric noise
. . whistlers
. sky radiation
. . airglow
. . . geocoronal emissions
. . . nightglow
. . . twilight glow
. . . dayglow
. . . elves
. . sprites (atmospheric physics)
. stratosphere radiation
. tropospheric radiation
RT CLARREO (observatory)
corpuscular radiation
Earth radiation budget
electromagnetic radiation
extraterrestrial radiation
greenhouse effect
ionospheric heating
light (visible radiation)
∞ radiation
radiative forcing
∞ rays
secondary cosmic rays
terrestrial radiation
VLF emission recorders

atmospheric refraction

DEF Refraction resulting when a ray of radiant energy passes obliquely through an atmosphere.

GS refraction
. **atmospheric refraction**
. . radio wave refraction
RT electromagnetic radiation
light transmission
refractivity
solar radiation
wave dispersion

atmospheric scattering

GS scattering
. wave scattering
. . . **atmospheric scattering**
. . . . tropospheric scattering
RT atmospheric lasers
circumsolar radiation
diffraction
diffusion
electromagnetic scattering
halos
light scattering
microwave scattering
radio scattering
signal fading
vegetative index

atmospheric seeing

USE **seeing (astronomy)**

atmospheric shells

USE **atmospheric stratification**

atmospheric sounding

DEF Measurement of atmospheric phenomena generally with instruments carried aloft by spacecraft, rockets, etc.

GS sounding
. **atmospheric sounding**
RT Advanced Microwave Sounding Unit
balloon sounding

differential absorption lidar
in situ measurement
ionospheric sounding
NOAA 19 satellite
NPOESS
rocket sounding
satellite sounding
sodar
visible infrared spin scan radiometer

atmospheric stratification

DEF The presence of strata or layers in the Earth's atmosphere. Used for atmospheric shells.

UF *atmospheric shells*
GS stratification
. **atmospheric stratification**
RT Brunt-Vaisala frequency
mixing layers (fluids)
plasma layers
surface layers

atmospheric temperature

GS temperature
. **atmospheric temperature**
. . auroral temperature
. . ionospheric temperature
RT Advanced Microwave Sounding Unit
ambient temperature
climate change
Gaia hypothesis
gas temperature
global warming
isotherms
LACATE (experiment)
land surface temperature
meteorological parameters
planetary atmospheres
planetary temperature
quasi-biennial oscillation
radiative forcing
radio occultation
sound detecting and ranging
stratospheric warming
subzero temperature
temperature gradients
temperature inversions
thermal resources
weather

atmospheric tides

DEF Defined in analogy to the oceanic tide as an atmospheric motion on a worldwide scale, in which vertical accelerations are neglected (but compressibility is taken into account).

GS tides
. **atmospheric tides**
RT Earth tides
lunar tides

atmospheric turbulence

GS turbulence
. **atmospheric turbulence**
. . clear air turbulence
. . gusts
. . low level turbulence
RT aviation meteorology
dissipation
gust loads
homogeneous turbulence
isotropic turbulence
laminar flow
meteorological parameters
meteorology
seeing (astronomy)
sodar
tephigrams
turbopause
turbulent diffusion
turbulent flow
wind variations

atmospheric windows

DEF Wavelength intervals at which the atmosphere transmits the most electromagnetic radiation.

RT astronomical photography

atmospherics

astronomical photometry

atmospherics

DEF The radiofrequency electromagnetic radiations originating, principally, in the irregular surges of charge in thunderstorm lightning discharges. Atmospherics are heard as a quasi-steady background of crackling noise (static) in ordinary amplitude modulated radio receivers. Used for atmospheric noise and sferics.

UF *atmospheric noise sferics*

GS electromagnetic interference
. radio frequency interference
. . . electromagnetic noise

. . . . **atmospherics**

. ionospherics

. dawn chorus

. hiss

. sudden enhancement of
atmospherics

. whistlers

RT atmospheric electricity
blackout (propagation)
electromagnetic compatibility
radio meteorology
radio waves
static electricity
thunderstorms
VLF emission recorders

atoll reefs

USE **coral reefs**

atolls

DEF Coral reefs appearing in plan view as roughly circular (though sometimes elliptical or horseshoe-shaped), and surmounted by a chain or ring of closely spaced low coral inlets that encircle a shallow lagoon in which there is no pre-existing land or islands of non-coral origin; the reefs are surrounded by deep water of the open sea, either oceanic or continental shelves. Atolls range in diameter from 1 km to more than 130 km, and are especially common today in the western and central Pacific Ocean. Atoll is derived from the native name in the Maldive Islands (Indian Ocean) which are typical examples of this structure.

GS landforms

. islands

. . **atolls**

RT coral reefs
lagoons
reefs

atom concentration

GS composition (property)
. concentration (composition)

. . **atom concentration**

RT chemical composition

∞ density

electron density (concentration)

flux density

gas composition

gas density

ion density (concentration)

ionospheric composition

plasma composition

plasma density

proton density (concentration)

atom optics

(added January 2002)

DEF Field of study addressing the manipulation of atomic beams in a way that is analogous to the manipulation of light by conventional optics. Reflection, diffraction, and focusing of the atoms is typically carried out through interaction with lasers tuned to the atomic resonances.

RT atomic beams
beam interactions
Bose-Einstein condensates
electron optics
four-wave mixing
ion optics
laser cooling
∞ optics

quantum optics

atomic batteries

USE **radioisotope batteries**

atomic beams

GS beams (radiation)

. particle beams

. . **atomic beams**

RT atom optics

ion beams

molecular beams

neutral atoms

neutral beams

neutron beams

particle diffusion

rarefied gas dynamics

atomic bombs

USE **fission weapons**

atomic clocks

DEF Timekeeping devices controlled by the frequency of the natural vibrations of certain atoms.

GS measuring instruments

. time measuring instruments

. . clocks

. . . **atomic clocks**

RT autonomous spacecraft clocks

chronometers

clock paradox

frequency standards

gas masers

masers

molecular beams

time measurement

atomic clusters

(added January 1994)

RT adatoms

agglomeration

chemisorption

clumps

∞ clusters

fullerenes

metal clusters

molecular clusters

nucleation

atomic collisions

GS atomic interactions

. **atomic collisions**

collisions

. **atomic collisions**

RT ∞ absorption

atomizing

autoionization

∞ cross sections

elastic scattering

electron scattering

∞ interactions

ionic collisions

ionization

molecular collisions

particle collisions

recoil ions

recombination reactions

scattering

atomic energy

USE **nuclear energy**

atomic energy levels

UF *triplet excitation*

triplet state

GS level (quantity)

. energy levels

. . **atomic energy levels**

RT atomic interactions

excitation

ground state

Landau factor

laser cooling

line spectra

spontaneous emission

atomic excitations

GS excitation

. **atomic excitations**

RT energy levels

Heisenberg theory

ionization

molecular excitation

particle collisions

resonance fluorescence

atomic explosions

USE **nuclear explosions**

atomic force microscopy

(added February 1994)

DEF A form of microscopy that allows the imaging of general surface morphology and surface atomic structure by the measurement of the atomic forces acting on a sharply pointed probe as it is moved across the surface of a specimen.

UF *AFM (microscopy)*

GS microscopy

. **atomic force microscopy**

RT atomic structure

crystal surfaces

interatomic forces

microstructure

nanofabrication

nanoidentation

surface properties

thin films

atomic gases

USE **monatomic gases**

atomic interactions

GS **atomic interactions**

. atomic collisions

RT atomic energy levels

∞ interactions

ion atom interactions

molecular structure

quantum mechanics

atomic layer deposition

(added August 2009)

USE **atomic layer epitaxy**

atomic layer epitaxy

(added June 1997)

UF *atomic layer deposition*

GS growth

. crystal growth

. . epitaxy

. . . **atomic layer epitaxy**

RT molecular beam epitaxy

thin films

vapor deposition

vapor phase epitaxy

atomic mass

USE **atomic weights**

atomic mobilities

GS mobility

. **atomic mobilities**

RT electron mobility

hole mobility

ionic mobility

self diffusion (solid state)

atomic physics

RT Hartree-Fock-Slater method

∞ physics

resonance fluorescence

∞ science

atomic recombination

GS chemical reactions

. **atomic recombination**

. . oxygen recombination

recombination reactions

. **atomic recombination**

. . oxygen recombination

RT deionization

dissociation

emission spectra

ion recombination

radiative recombination

atomic spectra

GS spectra

- . **atomic spectra**
- RT Balmer series
- Lyman alpha radiation
- Lyman beta radiation
- Lyman spectra
- Paschen series
- Rydberg series
- atomic structure**
- SN (THIS TERM WAS USED FOR "ELECTRONIC STRUCTURE" PRIOR TO MAY 1999)
- RT atomic force microscopy
- atoms
- constitution
- crystal lattices
- density functional theory
- electronic structure
- elementary particles
- energy levels
- fine structure
- gravitons
- Hartree approximation
- hyperfine structure
- interatomic forces
- isoelectronic sequence
- melts (crystal growth)
- molecular structure
- nuclear chemistry
- nuclear models
- nuclear physics
- octets
- order-disorder transformations
- particle precipitation
- Pauli exclusion principle
- polywater
- ∞ structures
- Thomas-Fermi model
- atomic theory**
- GS **atomic theory**
- . Heisenberg theory
- RT electron transitions
- ground state
- Landau factor
- ∞ nuclear energy
- quantum theory
- ∞ theories
- atomic weights**
- DEF The weight of an atom according to a scale of atomic weight units, awu, valued as one-twelfth the mass of the carbon atom. Used for atomic mass.
- UF *atomic mass*
- GS weight (mass)
- . **atomic weights**
- RT ∞ weight
- atomization**
- USE **atomizing**
- atomizers**
- RT atomizing
- evaporators
- grinding mills
- ∞ nozzles
- sprayers
- atomizing**
- UF *atomization*
- GS **atomizing**
- . gas atomization
- . liquid atomization
- RT aerosols
- atomic collisions
- atomizers
- colloidal generators
- colloiding
- comminution
- disintegration
- flaking
- grinding (comminution)
- grinding mills
- metal powder
- spraying
- atoms**
- GS **atoms**
- . adatoms
- . helium atoms
- . hot atoms
- . hydrogen atoms
- . metastable atoms
- . neutral atoms
- . nitrogen atoms
- . oxygen atoms
- . recoil atoms
- RT atomic structure
- chemical elements
- ∞ elements
- free radicals
- ions
- isomers
- isotope separation
- isotopes
- molecules
- monatomic molecules
- nuclei (nuclear physics)
- polyatomic molecules
- positive ions
- positronium
- ATP
- USE **adenosine triphosphate**
- ATR reactor
- USE **advanced test reactors**
- ATR-72 aircraft**
- (added September 1994)
- GS jet aircraft
- . turboprop aircraft
- . . **ATR-72 aircraft**
- passenger aircraft
- . commuter aircraft
- . . **ATR-72 aircraft**
- RT ∞ aircraft
- atrophy**
- RT biological effects
- degeneration
- deterioration
- glucocorticoids
- hindlimb suspension
- nutritional requirements
- physical exercise
- tissues (biology)
- atropine**
- GS bases (chemical)
- . alkaloids
- . . **atropine**
- drugs
- . stimulants
- . . **atropine**
- nitrogen compounds
- . alkaloids
- . . **atropine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **atropine**
- ATS
- UF *Applications Technology Satellites*
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . ATS 1
- . . . ATS 2
- . . . ATS 3
- . . . ATS 4
- . . . ATS 5
- . . . ATS 6
- . . . ATS 7
- . . . ATS 8
- . . . scientific satellites
- . . . **ATS**
- ATS 1
- ATS 2
- ATS 3
- ATS 4
- ATS 5
- ATS 6
- ATS 7
- ATS 8
- RT communication satellites
- Early Bird satellites
- meteorological satellites
- navigation satellites
- NAVSTAR satellites
- ATS 1**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 1**
- . . . scientific satellites
- . . . **ATS**
- **ATS 1**
- ATS 2**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 2**
- . . . scientific satellites
- . . . **ATS**
- **ATS 2**
- ATS 3**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 3**
- . . . scientific satellites
- . . . **ATS**
- **ATS 3**
- ATS 4**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 4**
- . . . scientific satellites
- . . . **ATS**
- **ATS 4**
- ATS 5**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 5**
- . . . scientific satellites
- . . . **ATS**
- **ATS 5**
- ATS 6**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 6**
- . . . scientific satellites
- . . . **ATS**
- **ATS 6**
- RT HET experiment
- ATS 7**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 7**
- . . . scientific satellites
- . . . **ATS**
- **ATS 7**
- ATS 8**
- GS artificial satellites
- . gravity gradient satellites
- . . **ATS**
- . . . **ATS 8**
- . . . scientific satellites
- . . . **ATS**
- **ATS 8**
- ∞ **attachment**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *reattachment*
- RT assembling
- Coanda effect
- electron attachment
- mounting

attack

reattached flow

attachments

USE **accessories**

∞ attack

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT angle of attack
attacking (assaulting)
chemical attack

attack aircraft

GS **attack aircraft**

. A-1 aircraft
. A-7 aircraft
. A-9 aircraft
. A-10 aircraft
. A-37 aircraft
. AH-1G helicopter
. AH-63 helicopter
. AH-64 helicopter
. bomber aircraft
. . A-2 aircraft
. . A-3 aircraft
. . A-4 aircraft
. . A-5 aircraft
. . A-6 aircraft
. . B-1 aircraft
. . B-2 aircraft
. . B-26 aircraft
. . B-47 aircraft
. . B-50 aircraft
. . B-52 aircraft
. . B-57 aircraft
. . B-58 aircraft
. . B-66 aircraft
. . B-70 aircraft
. . F-111 aircraft
. . Shackleton bomber
. . Valiant aircraft
. . Victor MK-1 aircraft
. . Vulcan aircraft
. Breguet 1150 aircraft
. Buccaneer aircraft
. CL-41 aircraft
. COIN aircraft
. . F-5 aircraft
. . OV-10 aircraft
. DH 115 aircraft
. fighter aircraft
. . Alpha jet aircraft
. . DH 112 aircraft
. . F-2 aircraft
. . F-4 aircraft
. . F-5 aircraft
. . F-8 aircraft
. . F-9 aircraft
. . F-14 aircraft
. . F-15 aircraft
. . F-16 aircraft
. . F-17 aircraft
. . F-18 aircraft
. . F-20 aircraft
. . F-22 aircraft
. . F-84 aircraft
. . F-86 aircraft
. . F-89 aircraft
. . F-94 aircraft
. . F-100 aircraft
. . F-101 aircraft
. . F-102 aircraft
. . F-104 aircraft
. . F-105 aircraft
. . F-106 aircraft
. . F-117A aircraft
. . FV-12A aircraft
. . G-91 aircraft
. . G-95/4 aircraft
. . GA-5 aircraft
. . Harrier aircraft
. . Jaguar aircraft
. . JAS-39 aircraft
. . jet provost aircraft
. . MiG aircraft
. . Mirage aircraft
. . . Mirage 3 aircraft
. . P-51 aircraft
. . P-1127 aircraft

. . P-1154 aircraft
. . Saab 37 aircraft
. . Scimitar aircraft
. . Vampire MK 35 aircraft
. . YF-12 aircraft
. AH-1S helicopter
. AH-1W helicopter
. P-308 aircraft
. T-2 aircraft
. TSR-2 aircraft
RT aeroquatic vehicles
∞ aircraft
antisubmarine warfare aircraft
jet aircraft
∞ military aircraft
military helicopters
MRCA aircraft
supersonic aircraft
terrain following
V/STOL aircraft

attacking (assaulting)

UF *assaulting*
GS **violence**
. **attacking (assaulting)**
RT ∞ attack
∞ military aircraft
tactics
warfare

attention

RT alertness
consciousness

attenuation

DEF Reducing in intensity.
GS **attenuation**
. atmospheric attenuation
. . auroral absorption
. microwave attenuation
. sidelobe reduction
. wave attenuation
. . acoustic attenuation
. . . shock wave attenuation
. . radar attenuation
. . radio attenuation
RT ∞ absorption
attenuators
∞ conduction
damping
diffraction
dilution
dissipation
electromagnetic absorption
electromagnetic wave transmission
elimination
fading
impingement
∞ inhibition
internal friction
light (visible radiation)
mechanical impedance
∞ propagation
∞ reduction
retarding
shielding
signal fading
signal to noise ratios
sound propagation
sound transmission
spatial filtering
transmission
transmission loss
transmitters
vibration damping
wave degradation
wave diffraction
wave dispersion
wave propagation

attenuation coefficients

DEF A measure of the space rate of attenuation of any transmitted electromagnetic radiation.
GS **coefficients**
. **attenuation coefficients**
RT diffusion coefficient
flow coefficients
impedance
opacity

reflectance
scattering coefficients
transmission efficiency
transmittance

attenuators

DEF Devices for measuring attenuation. They are usually calibrated in dB (decibels).
GS **attenuators**
. resistors
. . potentiometers (resistors)
. . printed resistors
. . thermistors
RT ∞ absorbers
absorbers (materials)
attenuation
baffles
deflectors
∞ diffusers
electromagnetic wave filters
equalizers (circuits)
∞ filters
insulators
inverters
isolators
mufflers
power limiters
radiation shielding
reflectors
shielding
silencers
suppressors

attitude (inclination)

DEF The position or orientation of an aircraft, spacecraft, etc., either in motion or at rest, as determined by the relationship between its axes and some reference line or plane or some fixed system of reference axes. Used for spatial orientation, tilt, and tilting.
UF *spatial orientation*
tilt
tilting
GS **attitude (inclination)**
. pitch (inclination)
. roll
. satellite orientation
. yaw
RT horizontal orientation
instrument orientation
misalignment
∞ motion
∞ orientation
∞ position
∞ space orientation
stability augmentation
tiltmeters
vertical orientation

attitude control

DEF The regulation of the attitude of an aircraft, spacecraft, etc. Also a device or system that automatically regulates and corrects attitude, especially of a pilotless vehicle.
GS **attitude control**
. directional control
. . thrust vector control
. lateral control
. longitudinal control
. satellite attitude control
RT air traffic control
aircraft control
automatic control
cold gas
∞ control
control moment gyroscopes
flight control
guidance sensors
helicopter control
horizon scanners
magnetic control
manual control
Miranda satellite
missile control
orbital lifetime
reaction wheels
remote control
rocket engine control
satellite control
solar sensors

- spacecraft control
spacing
spin stabilization
star trackers
thrust control
trajectory control
visual control
- attitude gyros**
DEF Gyro-operated flight instruments that indicate the attitude of an aircraft or spacecraft with respect to a reference coordinate system throughout 360 degrees of rotation about each axis of the craft.
GS gyroscopes
. **attitude gyros**
. . gyro horizons
RT control moment gyroscopes
sea keeping
- attitude indicators**
UF *helicopter attitude indicators*
yawmeters
GS flight instruments
. **attitude indicators**
. . gyro horizons
measuring instruments
. indicating instruments
. . **attitude indicators**
. . . gyro horizons
navigation aids
. navigation instruments
. . **attitude indicators**
. . . gyro horizons
RT aircraft instruments
control moment gyroscopes
flight control
- attitude stability**
UF *satellite attitude disturbance*
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **attitude stability**
. . . . directional stability
. gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
stability
. dynamic stability
. . motion stability
. . . **attitude stability**
. . . . directional stability
. gyroscopic stability
. . . . lateral stability
. . . . longitudinal stability
RT aerodynamic stability
aircraft stability
Discos (satellite attitude control)
hovering stability
low speed stability
satellite attitude control
spacecraft motion
spacecraft stability
tumbling motion
- attraction**
RT affinity
field theory (physics)
 ∞ force
gravitational fields
- attractors (mathematics)**
(added June 1997)
GS **attractors (mathematics)**
. strange attractors
RT asymptotic properties
chaos
dynamical systems
nonlinear systems
stochastic processes
trajectories
- attributes*
USE **properties**
- attrition (materials)*
USE **comminution**
- audio data**
DEF Useful information at audio signal frequency.
- RT audio frequencies
 ∞ data
data transmission
- audio equipment**
GS **audio equipment**
. earphones
. loudspeakers
. microphones
RT audio visual equipment
 ∞ equipment
monaural signals
- audio frequencies**
SN (APPROXIMATELY 20 TO 20,000 HZ)
DEF Frequencies corresponding to normally audible sound waves.
GS frequencies
. acoustic frequencies
. . **audio frequencies**
. . . quefrequencies
RT acoustic measurement
audio data
audio signals
auditory perception
cepstral analysis
extremely low frequencies
monaural signals
noise pollution
radio frequencies
sound generators
sound transmission
sound waves
very low frequencies
voice
- audio signals**
DEF Signals with a bandwidth of less than 20 kilohertz.
RT audio frequencies
auditory signals
signal processing
signal transmission
 ∞ signals
- audio tapes**
(added February 1992)
RT acoustics
audio visual material
information
magnetic tapes
 ∞ tapes
video tapes
- audio visual equipment**
(added September 1993)
RT audio equipment
display devices
multimedia
training devices
video equipment
visual aids
- audio visual material**
(added September 1993)
RT audio tapes
multimedia
visual aids
- audiology**
RT audiometry
auditory fatigue
auditory perception
hearing
- audiometry**
DEF The testing and measurement of hearing at various levels.
RT acoustic measurement
audiology
auditory defects
auditory fatigue
auditory perception
auditory stimuli
hearing
masking
 ∞ measurement
- thresholds (perception)
- auditory defects**
UF *deafness*
hearing loss
GS defects
. **auditory defects**
RT audiometry
bioacoustics
disabilities
losses
- auditory fatigue**
GS fatigue (biology)
. **auditory fatigue**
RT audiology
audiometry
hearing
noise threshold
- auditory perception**
UF *sound perception*
GS perception
. sensory perception
. . **auditory perception**
RT acoustics
audio frequencies
audiology
audiometry
auditory sensation areas
binaural hearing
ear
earphones
monaural signals
noise threshold
psychoacoustics
sensitivity
sound localization
sound waves
speech
thresholds (perception)
Weber test
- auditory sensation areas**
DEF In acoustics, the frequency region enclosed by the curves defining the threshold of pain and the threshold of audibility.
RT auditory perception
auditory stimuli
bioacoustics
thresholds (perception)
- auditory signals**
UF *chimes*
RT audio signals
bells
cues
horns
monaural signals
psychoacoustics
signal mixing
 ∞ signals
warning
warning systems
- auditory stimuli**
GS stimulation
. **auditory stimuli**
RT acoustics
audiometry
auditory sensation areas
noise (sound)
noise intensity
sound generators
sound intensity
 ∞ stimuli
thresholds (perception)
- auditory tasks**
GS tasks
. **auditory tasks**
RT acoustics
hearing
noise (sound)
- aufeis (ice)**
DEF Icing of ground or river water in Arctic areas with continuous permafrost on which the water has continued to flow.
RT ice

Auger effect

melting
permafrost
rivers

Auger effect

DEF The nonradiative transition of an atom from an excited electronic energy state to a lower state with the emission of an electron. The term usually refers to the x ray region of energy states. The final state corresponds to one higher degree of ionization than does the initial state. The effect is an alternative process to the transition to a lower state having the same degree of ionization with the emission of an x ray photon, and thus is analogous to the internal conversion of a nuclear transmission.

RT cosmic ray showers
∞ effects
electron transitions
Langmuir turbulence

Auger showers

(added August 1997)

USE cosmic ray showers

Auger spectroscopy

GS spectroscopy
. **Auger spectroscopy**
RT chemical analysis
electron transitions
spectroscopic analysis
thermites

augmentation

UF *enhancement*
GS **augmentation**
. stability augmentation
. thrust augmentation
RT increasing
spatial filtering

AUOS

USE **Automatic Universal Orbiting Stations**

Aura spacecraft

(added May 2005)

DEF The third of a series of Earth Observing System (EOS) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. Aura studies the Earth's ozone, air quality and climate, and is designed exclusively to conduct research on the composition, chemistry and dynamics of the Earth's upper and lower atmosphere employing multiple instruments on a single satellite. The spacecraft carries four instruments: the High Resolution Dynamics Limb Sounder (HIRDLS), the Microwave Limb Sounder (MLS), Ozone Monitoring Instrument (OMI), and the Tropospheric Emission Spectrometer (TES).

GS artificial satellites
. scientific satellites
. **Aura spacecraft**
Earth Observing System (EOS)
. **Aura spacecraft**
RT Aqua spacecraft
CALIPSO (Pathfinder satellite)
CloudSat
data products
Earth observations (from space)
remote sensing
Terra spacecraft

Auriga constellation

GS constellations
. **Auriga constellation**
RT Zeta Aurigae star

Aurora 7

GS manned spacecraft
. Mercury spacecraft
. **Aurora 7**
reentry vehicles
. recoverable spacecraft
. Mercury spacecraft
. **Aurora 7**
soft landing spacecraft
. Mercury spacecraft

. **Aurora 7**
space capsules
. Mercury spacecraft
. **Aurora 7**
RT Mercury MA-7 flight

auroral absorption

GS attenuation
. atmospheric attenuation
. **auroral absorption**
energy absorption
. radiation absorption
. electromagnetic absorption
. **auroral absorption**
RT ∞ absorption
light emission
riometers

auroral activity

USE **auroras**

auroral arcs

GS atmospheric radiation
. auroras
. **auroral arcs**
. red arcs
RT ∞ arcs

auroral echoes

GS echoes
. **auroral echoes**
RT radar echoes
radio echoes

auroral electrojets

GS electric current
. ionospheric currents
. electrojets
. **auroral electrojets**
electricity
. atmospheric electricity
. ionospheric currents
. electrojets
. **auroral electrojets**
RT Birkeland currents
equatorial electrojet
telluric currents

auroral ionization

GS ionization
. gas ionization
. atmospheric ionization
. **auroral ionization**
RT auroras
excitation
light emission
photoionization
red arcs

auroral irradiation

GS irradiation
. **auroral irradiation**
RT auroras
electron irradiation
excitation
ion irradiation
photoionization

auroral spectroscopy

GS spectroscopy
. **auroral spectroscopy**
RT channel multipliers
Fabry-Perot spectrometers
light emission
optical emission spectroscopy
spectroscopic analysis
visible spectrum

auroral temperature

GS temperature
. atmospheric temperature
. **auroral temperature**
RT auroras
ion temperature
ionospheric temperature

auroral zones

DEF Roughly circular bands around either geomagnetic pole above which there is a maximum of auroral activity. The zones lie about 10

deg. to 15 deg. of geomagnetic latitude from the geomagnetic poles.

GS regions
. **auroral zones**

RT auroras
Birkeland currents
IMAGE satellite
magnetic poles
Pedersen currents
polar radio blackout
polar regions

auroras

DEF Sporadic radiant emissions from the upper atmosphere over middle and high latitudes. Used for auroral activity and polar auroras.

UF *auroral activity*
polar auroras
GS atmospheric radiation
. **auroras**
. auroral arcs
. red arcs
. radio auroras
RT aeronomy
airglow
auroral ionization
auroral irradiation
auroral temperature
auroral zones
dawn chorus
Earth atmosphere
electron precipitation
ESRO 4 satellite
Juno mission
light emission
magnetic disturbances
night sky
Polar/GGS spacecraft
proton precipitation
sky brightness
solar activity
x rays

ausforming

GS forming techniques
. hot working
. **ausforming**
metal working
. **ausforming**
RT forging
∞ rolling

austenite

DEF A solid solution of carbon in gamma-iron.
RT allotropy
ferrites
iron alloys
martensite
martensitic transformation
microstructure
steels

austenitic stainless steels

DEF Steels having at room temperature a microstructure consisting, at least predominantly, of austenite. Their austenitic microstructure is attained above all by alloying conditions, e.g., manganese and nickel.

GS alloys
. iron alloys
. steels
. stainless steels
. **austenitic stainless steels**
RT martensitic stainless steels
time temperature parameter

Austin comet

(added May 1991)
GS celestial bodies
. comets
. **Austin comet**

Australia

GS continents
. **Australia**
nations
. **Australia**
RT Australian space program

Papua New Guinea
Tasmania
Torres Strait

Australian space program
(added February 1989)
GS programs
. space programs
. . **Australian space program**

RT Australia

australites
GS celestial bodies
. meteorites
. . stony meteorites
. . . tektites
. . . . **australites**

RT bediasites

Austria
GS nations
. **Austria**

RT Alps Mountains (Europe)
Austrian space program
Central Europe
Europe

Austrian space program
(added October 1990)
GS programs
. space programs
. . European space programs
. . . **Austrian space program**

RT Austria

autocatalysis
GS catalysis
. **autocatalysis**

RT abiogenesis
catalytic activity
reaction kinetics

autoclaves
RT autoclaving
chemical reactors

∞ containers
pressure vessels

autoclaving
RT autoclaves
curing
heating
leaching
powder metallurgy

autocoders
GS languages
. programming languages
. . Assembly language
. . . **autocoders**

RT compilers
computer programming
computer systems programs
machine oriented languages

autocollimators
USE **collimators**

autocorrelation
DEF In statistics, the simple linear internal correlation of members of a time series (ordered in time or other domains).
GS correlation
. **autocorrelation**

RT cross correlation
data correlation
Fourier analysis
periodic variations
time series analysis

autodynes
GS circuits
. **autodynes**
oscillators
. **autodynes**

RT ∞ detectors
frequency control
heterodyning
signal analyzers
signal detection
signal detectors

vacuum tube oscillators

autogyros
GS V/STOL aircraft
. rotary wing aircraft
. . **autogyros**
. . . Avian 2/180 autogiro

autoignition
(added April 1997)
USE **spontaneous combustion**

autoionization
GS dissociation
. **autoionization**
ionization
. **autoionization**

RT atomic collisions
many electron effects

autokinesis
GS perception
. sensory perception
. . proprioception
. . . **autokinesis**
. . visual perception
. . . space perception
. . . . **autokinesis**

automata theory
RT adaptive control
artificial intelligence

∞ automation
bionics
cellular automata
computers
cybernetics
depersonalization
heuristic methods
information theory
machine learning
model reference adaptive control
robotics
robots
self adaptive control systems

∞ theories
Turing machines

automated en route ATC
DEF An air traffic control technology which allows computers to make decisions about conflict resolution, the generation of clearances, and their automatic transmission, with the operator standing by to take over in an emergency.
GS ground based control
. air traffic control
. . **automated en route ATC**
traffic control
. air traffic control
. . **automated en route ATC**

RT aircraft guidance
approach control
automated pilot advisory system
flight control
ground-air-ground communication
microwave landing systems

automated guideway transit vehicles
DEF A system of a large number of captive vehicles traveling at relatively close headways on an exclusive guideway controlled by a computer. Used for AGT.
UF **AGT**

GS surface vehicles
. automated transit vehicles
. . **automated guideway transit vehicles**

RT automated mixed traffic vehicles
conveyors
passengers
rail transportation
rapid transit systems
transportation
urban transportation

∞ vehicles

automated mixed traffic vehicles
DEF Low speed, surface vehicles automatically operated and controlled in a pedestrian environment by following a buried wire in the

roadways sensing obstacles and stopping at predetermined spots for passenger exit and entry. Used for AMTV.
UF **AMTV**

GS research vehicles
. **automated mixed traffic vehicles**
surface vehicles
. motor vehicles
. . **automated mixed traffic vehicles**

RT automated guideway transit vehicles
passengers
urban transportation

∞ vehicles

automated pilot advisory system
DEF An airport advisory system and an air traffic advisory system designed to improve airport and air traffic advisories at high density uncontrolled airports.
RT air traffic control
automated en route ATC
automatic traffic advisory and resolution

∞ systems

automated radar terminal system
DEF Radar tracking system for use in a terminal area. Primary and secondary radar targets are detected and data for the two are correlated for transmission to a central computer.
RT air traffic control
radar equipment
radar tracking

∞ systems

Automated Transfer Vehicle
(added December 1995)
RT Ariane 5 launch vehicle
cargo spacecraft
Columbus space station
rendezvous guidance
space logistics

∞ vehicles

automated transit vehicles
GS surface vehicles
. **automated transit vehicles**
. . automated guideway transit vehicles

RT conveyors
electric motor vehicles
passengers
rail transportation
rapid transit systems
transportation
urban transportation

∞ vehicles

automatic control
DEF Control of devices and equipment, including aerospace vehicles by automatic means. Used for self regulating.
UF *self regulating*

GS **automatic control**
. adaptive control
. . active control
. . model reference adaptive control
. . self adaptive control systems
. automatic flight control
. . automatic landing control
. automatic frequency control
. automatic gain control
. dynamic control
. feedback control
. . cascade control
. feedforward control
. numerical control
. off-on control
. optimal control
. . H-2 control
. . H-infinity control
. . linear quadratic Gaussian control
. . time optimal control
. proportional control
. sequential control

RT aircraft control
attitude control

∞ automation
autonomous docking

automatic control valves

combustion control
 ∞ control
 control equipment
 control systems design
 controllers
 depersonalization
 directional control
 dynamic characteristics
 electric control
 electronic aircraft
 electronic control
 engine control
 environmental control
 flight control
 ground based control
 guidance (motion)
 helicopter control
 hydraulic control
 ∞ instruments
 jet control
 landing instruments
 lateral control
 longitudinal control
 manual control
 measuring instruments
 missile control
 negative feedback
 optical control
 pneumatic control
 radio control
 real time operation
 recording instruments
 reentry guidance
 regulators
 relief valves
 remote control
 robotics
 rocket engine control
 sampled data systems
 satellite attitude control
 satellite control
 satellite guidance
 self absorption
 self alignment
 servocontrol
 servomechanisms
 servomotors
 spacecraft control
 spacecraft guidance
 speed control
 stability augmentation
 temperature control
 Terminal Configured Vehicle Program
 thermostats
 thrust vector control
 tracking problem
 transfer functions
 turbojet engine control

automatic control valves

GS control equipment
 . regulators
 . . **automatic control valves**
 . . . pressure regulators
 . . . relief valves
 valves
 . **automatic control valves**
 . . pressure regulators
 . . relief valves

RT actuators

∞ control
 dampers (valves)
 dynamic characteristics
 fluid amplifiers
 fluid switching elements
 gas valves
 hydraulic equipment
 pneumatic control
 servomechanisms
 solenoid valves
 temperature control

automatic data processing

USE **data processing**

automatic flight control

UF *AFCS (control system)*
 GS automatic control
 . **automatic flight control**
 . . automatic landing control

flight control
 . **automatic flight control**
 . . automatic landing control
 RT aircraft control
 aircraft instruments
 autonomous navigation
 ∞ control
 distance measuring equipment
 flight management systems
 highly maneuverable aircraft
 missile control
 navigation
 navigation aids
 radar navigation
 radio navigation
 solar compasses
 Terminal Configured Vehicle Program
 thrust vector control

automatic frequency control

DEF An arrangement whereby the frequency of an oscillator is automatically maintained within specified limits. Used for AFC (control).

UF *AFC (control)*
 GS automatic control
 . **automatic frequency control**
 frequency control
 . **automatic frequency control**

RT ∞ control
 feedback control
 frequency modulation
 oscillators
 tuning

automatic gain control

DEF A process by which gain is automatically adjusted as a function of input or other specified parameter. Used for AGC (control).

UF *AGC (control)*
 GS automatic control
 . **automatic gain control**

RT antenna gain
 ∞ control
 feedback control
 tuning

automatic indexing

(added April 2000)

USE **indexing (information science)**

automatic landing control

GS automatic control
 . automatic flight control
 . . **automatic landing control**
 flight control
 . automatic flight control
 . . **automatic landing control**
 RT airborne equipment
 aircraft equipment
 blind landing
 distance measuring equipment
 flight management systems
 instrument landing systems
 microwave landing systems
 Terminal Configured Vehicle Program

automatic pattern recognition

USE **pattern recognition**

automatic picture transmission

UF *APT (picture transmission)*
 GS telecommunication
 . communication
 . . facsimile communication
 . . . **automatic picture transmission**
 transmission
 . signal transmission
 . . data transmission
 . . . **automatic picture transmission**
 RT television transmission
 wave propagation

automatic pilots

DEF Equipment which automatically stabilizes the attitude of a vehicle about its pitch, roll, and yaw axes. Used for autopilots.

UF *autopilots*
 GS aircraft instruments
 . **automatic pilots**

flight instruments
 . **automatic pilots**
 RT aircraft equipment
 flight control
 gyroscopes
 highly maneuverable aircraft
 homing
 landing aids
 navigation aids
 pilot support systems
 ∞ pilots
 radio altimeters
 solar compasses

automatic repeat query

USE **automatic repeat request**

automatic repeat request

(added August 1991)

DEF A request from a receiving device to retransmit the most recent block of data.

UF *ARQ (communication)*
automatic repeat query
automatic request for retransmission

RT data transmission
 error correcting codes
 error signals
 message processing
 messages
 packet transmission
 telecommunication

automatic request for retransmission

USE **automatic repeat request**

automatic rocket impact predictors

USE **computerized simulation**
impact prediction

automatic test equipment

RT ∞ equipment
 measuring instruments
 self tests
 sneak circuit analysis
 ∞ test equipment

automatic traffic advisory and resolution

SN (AUTOMATIC TRAFFIC ADVISORY AND RESOLUTION SERVICE)
 DEF Ground based collision avoidance system using the surveillance and data link capabilities of the discrete address beacon system (DABS). Used for ATARS.

UF *ATARS*
 RT automated pilot advisory system
 collision avoidance
 ground based control
 navigation aids
 resolution
 ∞ systems

automatic typewriters

UF *Flexowriters (trademark)*
 GS typewriters
 . **automatic typewriters**
 RT consoles
 display devices
 printers (data processing)
 punched tapes

Automatic Universal Orbiting Stations

(added September 1994)

UF *AUOS*
 GS artificial satellites
 . space stations
 . . **Automatic Universal Orbiting Stations**
 stations
 . space stations
 . . **Automatic Universal Orbiting Stations**

RT ∞ platforms
 Russian Federation
 spacecraft environments
 U.S.S.R. space program

automatic weather stations

DEF Weather stations at which the services of observers are not required. They are usually equipped with telemetric apparatus.

GS stations

. weather stations
 . . **automatic weather stations**
 RT data acquisition
 data collection platforms
 instrument packages
 meteorological services
 ocean data acquisitions systems
 remote sensors
 weather data recorders

∞ **automation**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *instrumental analysis*
 RT automata theory
 automatic control
 command and control
 computer vision
 computers
 control systems design
 controllers
 cybernetics
 data processing
 depersonalization
 fail-safe systems
 feedback control
 feedforward control
 information theory
 man machine systems
 materials handling
 mechanization
 numerical control
 office automation
 remote control
 robotics
 self erecting devices
 self repairing devices
 servomechanisms
 systems engineering
 tooling

automobile accidents
 GS accidents
 . **automobile accidents**
 RT accident investigation
 accident prevention
 safety devices

automobile engines
 RT external combustion engines
 internal combustion engines
 piston engines
 rotary engines
 Stirling engines
 turbine engines
 Wankel engines

automobile fuels
 GS fuels
 . **automobile fuels**
 RT aircraft fuels
 antiknock additives
 diesel fuels
 gasoline
 hydrocarbon fuels
 internal combustion engines
 liquid fuels
 synthane

automobiles
 UF *jeeps*
 GS surface vehicles
 . motor vehicles
 . . **automobiles**
 . . . electric automobiles
 RT air bag restraint devices
 antiskid devices
 chassis
 electric hybrid vehicles
 electric motor vehicles
 fuel systems
 hydrogen engines
 ignition systems
 lubrication systems
 ∞ military vehicles
 trailers
 trucks

∞ vehicles

automorphisms
 GS algebra
 . group theory
 . . homomorphisms
 . . . **automorphisms**

autonomic nervous system
 GS anatomy
 . nervous system
 . . **autonomic nervous system**
 . . . sympathetic nervous system
 RT involuntary actions
 ∞ systems

autonomous docking
 (added May 2005)
 DEF Automatic, self-controlled docking enabled through the use of specialized hardware, sensors, and algorithms for navigation, guidance, and positioning.
 GS maneuvers
 . docking
 . . **autonomous docking**
 RT automatic control
 autonomous navigation
 interception
 mooring
 orbital rendezvous
 rendezvous guidance
 space rendezvous
 space stations
 spacecraft docking
 spacecraft guidance
 terminal guidance
 unmanned spacecraft

autonomous navigation
 GS navigation
 . **autonomous navigation**
 RT automatic flight control
 autonomous docking
 celestial navigation
 Deep Space 1 Mission
 navigation aids
 navigation instruments
 satellite navigation systems
 space navigation
 spacecraft guidance
 unmanned ground vehicles

autonomous spacecraft clocks
 DEF Standard Time scale instruments aboard spacecraft with provisions for synchronization with existing satellite-based system (global positioning system, for example).
 GS measuring instruments
 . time measuring instruments
 . . clocks
 . . . **autonomous spacecraft clocks**
 RT atomic clocks
 Global Positioning System
 spacecraft instruments
 TDR satellites

autonomy
 RT adaptive control
 command and control
 ∞ commands
 ∞ direction
 equations of motion
 management
 model reference adaptive control
 self adaptive control systems

autopilots
 USE **automatic pilots**

autopsies
 RT dissection
 pathology

autoradiography
 DEF A technique that uses x ray film to visualize radioactively labeled molecules or fragments of molecules used in analyzing the length and number of DNA fragments separated by gel electrophoresis.
 GS imagery

. photography
 . . **autoradiography**
 . radiography
 . . **autoradiography**
 RT black and white photography

autoregressive moving average
 (added October 1997)
 UF *ARMA (mathematics)*
 GS average
 . **autoregressive moving average**
 RT autoregressive processes
 estimating
 IIR filters
 regression analysis
 stochastic processes
 time series analysis

autoregressive processes
 RT autoregressive moving average
 factor analysis
 ∞ processes
 regression analysis
 statistical analysis

autorotation
 DEF A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.
 UF *windmilling*
 GS gyration
 . rotation
 . . **autorotation**
 RT rotary wing aircraft
 rotouchutes

autotrophs
 DEF Organisms capable of synthesizing organic nutrients directly from simple inorganic substances such as carbon dioxide and inorganic nitrogen.
 GS **autotrophs**
 . hydrogenomonas
 RT heterotrophs

autumn
 DEF The season of the year between summer and winter. Its beginning is marked by the autumnal equinox and its end by the winter solstice.
 GS seasons
 . **autumn**
 RT spring (season)
 summer
 winter

auxiliary equipment (computers)
 USE **peripheral equipment (computers)**

auxiliary power sources
 GS **auxiliary power sources**
 . chemical auxiliary power units
 . nuclear auxiliary power units
 . . SNAP
 . . . fission electric cells
 . . . SNAP 2
 . . . SNAP 4
 . . . SNAP 8
 . . . SNAP 10A
 . . . SNAP 1
 . . . SNAP 3
 . . . SNAP 7
 . . . SNAP 9A
 . . . SNAP 11
 . . . SNAP 13
 . . . SNAP 15
 . . . SNAP 17
 . . . SNAP 19
 . . . SNAP 21
 . . . SNAP 23
 . . . SNAP 27
 . . . SNAP 29
 . . . SNAP 50
 . . space power reactors
 . . . fission electric cells
 . . . SNAP 2
 . . . SNAP 4
 . . . SNAP 8
 . . . SNAP 10A
 . . . SNAP 50

auxiliary propulsion

- . . . space power unit reactors
- . solar auxiliary power units
- . . . ASTEC solar turboelectric generator
- RT aircraft power supplies
- direct power generators
- electric batteries
- electric generators
- ∞ electric power
- electric power supplies
- ∞ energy sources
- ground support equipment
- ∞ power supplies
- spacecraft power supplies
- voltage converters (AC to AC)
- voltage converters (DC to DC)

auxiliary propulsion

- GS propulsion
- . **auxiliary propulsion**
- RT aeronautical engineering
- ∞ astronautics
- engines
- hydrogen oxygen engines
- Marquardt R4D engine
- missiles
- propellants
- propulsion system configurations
- rocket propellants
- space flight
- space shuttles
- space station propulsion
- ∞ spacecraft
- thrust

auxins

- (added August 2004)
- DEF Plant hormones which promote tissue growth through cell elongation rather than multiplication.
- GS plant growth regulators
- . **auxins**
- RT gravitropism
- plant physiology
- plant roots
- plants (botany)

AV-8A aircraft

- USE **Harrier aircraft**

AV-8B aircraft

- USE **Harrier aircraft**

availability

- GS **availability**
- . bioavailability
- abundance
- energy policy
- reserves
- resources
- RT

avalanche diodes

- DEF A solid state device that takes advantage of avalanche multiplication of the photocurrent.
- UF *IMPATT diodes*
- TRAPATT diodes*
- Zener diodes*
- GS electronic equipment
- . diodes
- . . . semiconductor diodes
- **avalanche diodes**
- cryosar
- . solid state devices
- . . . semiconductor devices
- **avalanche diodes**
- cryosar
- rectifiers
- . **avalanche diodes**
- . . cryosar
- RT Barritt diodes
- ion implantation
- negative conductance
- TRAPATT devices
- voltage regulators

avalanches

- GS **avalanches**
- . electron avalanche
- . Townsend avalanche

- RT Earth movements
- electric discharges
- ion production rates
- ionizing radiation

AVCS

- USE **Advanced Vidicon Camera System (AVCS)**

average

- GS **average**
- . autoregressive moving average
- . mean
- RT distribution moments
- median (statistics)
- mode (statistics)
- normality
- norms
- quality control
- Reynolds averaging

AVHRR

- USE **Advanced Very High Resolution Radiometer**

Avian 2/180 autogiro

- GS research vehicles
- . research aircraft
- . . **Avian 2/180 autogiro**
- V/STOL aircraft
- . rotary wing aircraft
- . . autogyros
- . . . **Avian 2/180 autogiro**

aviation

- USE **aeronautics**

aviation meteorology

- DEF Weather conditions and meteorological studies pertaining to aeronautics.
- GS meteorology
- . **aviation meteorology**
- RT aircraft accident investigation
- aircraft accidents
- aircraft hazards
- aircraft icing
- atmospheric turbulence
- civil aviation
- clear air turbulence
- downbursts
- flight conditions
- flight hazards
- flight safety
- fog
- meteorological parameters
- meteorological services
- microbursts (meteorology)
- ∞ military aviation
- nowcasting
- numerical weather forecasting
- runway conditions
- wind shear

aviation psychology

- GS medical science
- . aerospace medicine
- . . **aviation psychology**
- psychology
- . **aviation psychology**
- RT aircraft pilots
- military psychology
- pilot training
- psychological effects
- psychological factors
- space psychology

aviators

- USE **aircraft pilots**

avionics

- DEF The use of electronics in all its forms in airborne or aerospace vehicles.
- RT ∞ aeronautics
- airborne equipment
- aircraft communication
- aircraft equipment
- aircraft instruments
- astrionics
- ∞ astronautics
- ∞ control

- ∞ electronics
- flat panel displays
- flight management systems
- guidance (motion)
- head-up displays
- modularity
- pilot support systems
- self tests
- single event upsets
- systems integration
- ∞ test equipment
- video landmark acquisition and tracking

avoidance

- GS **avoidance**
- . collision avoidance
- . . Beacon Collision Avoidance System
- . vortex avoidance
- RT accident prevention
- hazards
- traffic
- traffic control
- warning systems

AVRO 698 aircraft

- USE **Vulcan aircraft**

AVRO 707 aircraft

- GS Hawker Siddeley aircraft
- . **AVRO 707 aircraft**
- jet aircraft
- . **AVRO 707 aircraft**
- monoplanes
- . **AVRO 707 aircraft**
- research vehicles
- . research aircraft
- . . **AVRO 707 aircraft**
- tailless aircraft
- . **AVRO 707 aircraft**
- RT ∞ aircraft
- delta wings
- Vulcan aircraft

AVRO Whitworth HS-748 aircraft

- USE **HS-748 aircraft**

AWACS aircraft

- UF *Airborne Warning and Control System*
- GS **AWACS aircraft**
- . E-2 aircraft
- . E-3A aircraft
- . E-4 aircraft
- RT ∞ aircraft
- Boeing aircraft
- command and control
- early warning systems
- Grumman aircraft
- ∞ military aircraft
- military technology

awards

- SN (EXCLUDES CONTACTS & GRANTS)
- DEF Distinctions that are bestowed upon a person or persons due to their special contributions to a field.
- RT astronauts
- biography
- engineers
- scientists

AXAF

- USE **X Ray Astrophysics Facility**

axes (coordinates)

- USE **coordinates**

axes (reference lines)

- GS **axes (reference lines)**
- . axes of rotation
- . . Earth axis
- RT coordinates

axes of rotation

- GS axes (reference lines)
- . **axes of rotation**
- . . Earth axis
- RT bodies of revolution
- rotating bodies
- rotation

- shafts (machine elements)
symmetrical bodies
- axial compression loads**
GS loads (forces)
. axial loads
. . **axial compression loads**
. compression loads
. . **axial compression loads**
RT aerodynamic loads
compressing
dynamic loads
shock loads
static loads
structural design criteria
thrust loads
- axial compressors*
USE **turbocompressors**
- axial flow**
GS fluid flow
. **axial flow**
RT annular flow
axisymmetric flow
coaxial flow
coaxial nozzles
counterflow
discharge coefficient
flow geometry
one dimensional flow
radial flow
three dimensional flow
two dimensional flow
- axial flow compressors*
USE **turbocompressors**
- axial flow pumps**
GS pumps
. **axial flow pumps**
. . turbine pumps
RT centrifugal pumps
fuel pumps
- axial flow turbines**
GS turbomachinery
. turbines
. . **axial flow turbines**
RT gas turbine engines
gas turbines
steam turbines
- axial loads**
GS loads (forces)
. **axial loads**
. . axial compression loads
RT aerodynamic loads
compression loads
dynamic loads
static loads
structural design criteria
thrust loads
- axial modes**
DEF Regimes of vibration along a given axis.
GS modes
. **axial modes**
RT combustion stability
laser modes
propellant combustion
rocket engines
- axial strain**
DEF Linear strain in a plane parallel to the longitudinal axis of the specimen. Used for axisymmetric deformation and uniaxial strain.
UF *axisymmetric deformation*
uniaxial strain
GS deformation
. **axial strain**
RT elastic deformation
Euler-Bernoulli beams
stress-strain diagrams
- structural strain
- axial stress**
GS stresses
. **axial stress**
RT tensile stress
- axioms**
UF *postulates*
GS mathematical logic
. **axioms**
RT knowledge
 ∞ logic
 ∞ mathematics
- axisymmetric bodies**
GS symmetrical bodies
. **axisymmetric bodies**
. . power law bodies
RT blunt bodies
 ∞ bodies
bodies of revolution
conical bodies
ducted bodies
lenticular bodies
missile bodies
slender bodies
slender cones
streamlined bodies
- axisymmetric deformation*
USE **axial strain**
- axisymmetric flow**
GS fluid flow
. **axisymmetric flow**
. . annular flow
. . Karman-Bodewadt flow
RT axial flow
coaxial flow
conical flow
Couette flow
Crocco method
cylindrical waves
flow geometry
helical flow
three dimensional boundary layer
- axisymmetry*
USE **symmetry**
- axles*
USE **shafts (machine elements)**
- axons**
GS cells (biology)
. neurons
. . **axons**
RT myelin sheath
nerve fibers
neurotransmitters
- azeotropes**
RT binary mixtures
mixtures
solutions
- Azerbaijan**
(added August 1993)
GS nations
. **Azerbaijan**
RT Asia
Europe
- azides (inorganic)**
GS nitrogen compounds
. **azides (inorganic)**
. . hydrogen azides
. . sodium azides
- azides (organic)**
GS nitrogen compounds
. **azides (organic)**
. . sodium azides
. . triaminoguanidinium azide
- RT explosives
- azimuth**
DEF Horizontal direction or bearing. Used for solar azimuth.
UF *solar azimuth*
RT altitude
angles (geometry)
astronomical coordinates
bearing (direction)
celestial reference systems
 ∞ direction
elevation angle
look angles (tracking)
navigation
 ∞ orientation
position (location)
- azines**
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azines**
. . . . cyanurates
. . . . cyanuric acid
. . . . meclizine
. . . . methylene blue
. . . . phenothiazines
pyrazines
. **azines**
. . cyanurates
. . cyanuric acid
. . meclizine
. . methylene blue
. . phenothiazines
RT dyes
- azo compounds**
GS nitrogen compounds
. **azo compounds**
. . HMX
. . RDX
RT ∞ chemical compounds
dyes
- azoles**
DEF Compounds that contain a five-membered heterocyclic ring containing one or more nitrogen atoms.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azoles**
. . . . acetazolamide
. . . . oxazole
. . . . pyrroles
. . . . carbazoles
- Azores**
(added July 1991)
GS landforms
. islands
. . **Azores**
nations
. Portugal
. . **Azores**
RT Atlantic Ocean
- Azotobacter**
GS microorganisms
. bacteria
. . **Azotobacter**
- azulene**
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **azulene**
terpenes
. **azulene**
- Azur satellite**
GS artificial satellites
. scientific satellites
. . **Azur satellite**
RT European space programs
international cooperation
West Germany

B

B stars

- UF *helium stars*
- GS celestial bodies
 - . stars
 - . . early stars
 - . . . hot stars
 - **B stars**
 - shell stars
 - Sigma Orionis
- RT blue stars
 - Herbig-Haro objects
 - limb brightening
 - limb darkening
 - peculiar stars
 - Population I stars
 - stellar composition
 - Wolf-Rayet stars

B-1 aircraft

- GS attack aircraft
 - . bomber aircraft
 - . . **B-1 aircraft**
 - jet aircraft
 - . **B-1 aircraft**
 - North American aircraft
 - . **B-1 aircraft**
- RT ∞ aircraft
 - bombing equipment
 - bombs (ordnance)
 - combat
 - ∞ military aircraft
 - multiengine vehicles
 - warfare
 - ∞ winged vehicles

B-2 aircraft

- (added September 1992)
- UF *stealth bomber*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-2 aircraft**
 - jet aircraft
 - . **B-2 aircraft**
- RT ∞ aircraft
 - ∞ military aircraft
 - stealth technology
 - X-36 aircraft

B-26 aircraft

- UF *Invader aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-26 aircraft**
 - Martin aircraft
 - . **B-26 aircraft**
 - monoplanes
 - . **B-26 aircraft**
- RT ∞ aircraft

B-47 aircraft

- UF *FB-47 aircraft*
- Stratojet aircraft*
- XB-47 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-47 aircraft**
 - Boeing aircraft
 - . **B-47 aircraft**
 - jet aircraft
 - . **B-47 aircraft**
 - monoplanes
 - . **B-47 aircraft**
- RT ∞ aircraft

B-50 aircraft

- UF *FB-50 aircraft*
- superfortress aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-50 aircraft**
 - Boeing aircraft
 - . **B-50 aircraft**
 - monoplanes
 - . **B-50 aircraft**
- RT ∞ aircraft

B-52 aircraft

- UF *Stratofortress aircraft*
- GS attack aircraft

- . bomber aircraft
- . . **B-52 aircraft**
- Boeing aircraft
- . **B-52 aircraft**
- jet aircraft
- . **B-52 aircraft**
- monoplanes
- . **B-52 aircraft**
- RT ∞ aircraft
- Pegasus air-launched booster
- turbofan engines

B-57 aircraft

- UF *Canberra bomber*
- RB-57 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-57 aircraft**
 - jet aircraft
 - . **B-57 aircraft**
 - Martin aircraft
 - . **B-57 aircraft**
 - monoplanes
 - . **B-57 aircraft**
- RT ∞ aircraft
- Canberra aircraft

B-58 aircraft

- UF *Hustler aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-58 aircraft**
 - General Dynamics aircraft
 - . **B-58 aircraft**
 - jet aircraft
 - . **B-58 aircraft**
 - monoplanes
 - . **B-58 aircraft**
 - supersonic aircraft
 - . **B-58 aircraft**
 - tailless aircraft
 - . **B-58 aircraft**
- RT ∞ aircraft

B-66 aircraft

- UF *Destroyer aircraft*
- RB-66 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-66 aircraft**
 - jet aircraft
 - . **B-66 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **B-66 aircraft**
 - monoplanes
 - . **B-66 aircraft**
- RT ∞ aircraft

B-70 aircraft

- UF *Valkyrie aircraft*
- XB-70 aircraft*
- GS attack aircraft
 - . bomber aircraft
 - . . **B-70 aircraft**
 - jet aircraft
 - . **B-70 aircraft**
 - monoplanes
 - . **B-70 aircraft**
 - North American aircraft
 - . **B-70 aircraft**
 - research vehicles
 - . research aircraft
 - . . **B-70 aircraft**
 - supersonic aircraft
 - . **B-70 aircraft**
- RT ∞ aircraft

B-103 aircraft

- USE **Buccaneer aircraft**

babbitt metal

- DEF Any of the white alloys composed primarily of tin or lead and of lesser amounts of antimony, copper, and other metals, and used for bearings.
- GS alloys
 - . antimony alloys
 - . . **babbitt metal**

- . copper alloys
- . . **babbitt metal**
- . tin alloys
- . . **babbitt metal**
- RT bearing alloys

baboons

- GS animals
 - . vertebrates
 - . . mammals
 - . . . primates
 - **baboons**

BAC 111 aircraft

- GS BAC aircraft
 - . **BAC 111 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **BAC 111 aircraft**
 - monoplanes
 - . **BAC 111 aircraft**
 - passenger aircraft
 - . **BAC 111 aircraft**
 - transport aircraft
 - . **BAC 111 aircraft**
- RT ∞ aircraft

BAC aircraft

- UF *British Aircraft Corp aircraft*
- GS **BAC aircraft**
 - . BAC 111 aircraft
 - . Canberra aircraft
 - . H-126 aircraft
 - . jet provost aircraft
 - . Scimitar aircraft
 - . TSR-2 aircraft
 - . Valiant aircraft
 - . VC-10 aircraft
 - . Viscount aircraft
- RT ∞ aircraft

BAC TSR 2 aircraft

- USE **TSR-2 aircraft**

Bacillus

- SN (RESTRICTED TO MEMBERS OF THE GENUS BACILLUS; DOES NOT INCLUDE GENERAL MORPHOLOGICAL CLASSIFICATIONS)
- GS microorganisms
 - . bacteria
 - . . **Bacillus**
 - . . . stearothermophilus

back injuries

- GS injuries
 - . **back injuries**
- RT spinal cord injuries
- whiplash injuries

backfire

- RT combustion
 - deflagration
 - explosions
 - fires
 - flame deflectors
 - flame propagation
 - flashback

backfire antennas

- DEF Antennas consisting of radiating feeds, reflector elements, and reflecting surfaces such that the antennas function as open resonators, with radiation from the open end of the resonator.
- GS antennas
 - . **backfire antennas**
- RT antenna radiation patterns
 - dipole antennas
 - endfire arrays
 - microwave antennas
 - radio antennas

background noise

- DEF In recording and reproducing, the total system noise independent of whether or not a signal is present. The signal is not to be included as part of the noise. In receivers, the noise in the absence of signal modulation on the carrier.
- RT channel noise

cosmic noise
 elastic waves
 electromagnetic noise
 ionospheric noise
 ∞ noise
 noise (sound)
 noise measurement
 noise spectra
 noise threshold
 ∞ radiation
 random noise
 ∞ rays
 signal to noise ratios
 squelch circuits

background radiation

GS **background radiation**
 . cosmic microwave background radiation
 RT anticoincidence detectors
 big bang cosmology
 continuous radiation
 corpuscular radiation
 Cosmic Background Explorer satellite
 cosmic noise
 electromagnetic noise
 extraterrestrial radiation
 high altitude tests
 ionospheric noise
 ∞ radiation
 relic radiation
 sky radiation

backings

USE **backups**

backlobes

DEF Radiation lobes whose axes make angles of approximately 180 degrees with respect to the axes of the major lobes of the antennas. By extension radiation lobes in the half-space opposed to the direction of peak activity.

RT antenna design
 antenna radiation patterns
 directional antennas
 ∞ lobes

backpropagation (artificial intelligence)

(added December 2001)

DEF A learning algorithm which minimizes the error function of perceptron neural nets by comparing the actual and desired outputs and adjusting the weights of each neuron layer.

GS mathematical logic
 . algorithms
 . . **backpropagation (artificial intelligence)**
 RT artificial intelligence
 computer techniques
 error analysis
 least squares method
 machine learning
 neural nets
 optimization

backscattering

DEF Scattering of radiation in a direction having a component opposite its original direction of propagation.

GS scattering
 . **backscattering**
 RT differential absorption lidar
 forward scattering
 laser plasma interactions
 microwave signatures
 nuclear scattering
 scatter propagation

backshores

USE **beaches**

backups

DEF Items kept available to replace items which fail to perform satisfactorily. Items under development intended to perform the same general functions another item also under development performs. Used for backings.

UF *backings*
 RT redundant components

reserves
 welding

backward differencing

DEF A method of solving a parabolic problem for approximating a time derivative in terms of a previous time step.

RT differential equations
 numerical stability
 problem solving

backward facing steps

DEF A step structure which faces an oncoming flow. Used for rearward facing steps.

UF *rearward facing steps*
 RT boundary layer flow
 flow geometry
 fluid boundaries
 forward facing steps
 reattached flow
 recirculative fluid flow
 stairsteps
 ∞ steps

backward wave tubes

GS electron tubes
 . vacuum tubes
 . . microwave tubes
 . . . traveling wave tubes
 **backward wave tubes**
 helitrons
 microwave equipment
 . microwave tubes
 . . traveling wave tubes
 . . . **backward wave tubes**
 helitrons
 RT beam currents
 electron transfer
 microwave oscillators

backward waves

DEF In traveling wave tubes, waves whose group velocity is opposite to the direction of electron-stream motion.

RT elastic waves
 electromagnetic radiation
 solitary waves
 transmission lines
 traveling wave tubes
 traveling waves

backwash

SN (EXCLUDES PROCESSES OF BACKWASHING)
 UF *sidewash*
 RT boundary layer stability
 downwash
 slipstreams
 Strouhal number
 turbulence
 wakes

bacteria

GS microorganisms
 . **bacteria**
 . . actinomycetes
 . . archaeobacteria
 . . Azotobacter
 . . Bacillus
 . . . stearothermophilus
 . . Clostridium
 . . . Clostridium botulinum
 . . Escherichia
 . . hydrogenomonas
 . . Klebsiella
 . . nitrobacter
 . . pseudomonas
 . . salmonella
 . . sarcina
 . . serratia
 . . staphylococcus
 . . streptococcus
 . . streptomycetes
 RT aerobes
 anaerobes
 bacteriology
 biofilms
 biological weapons
 blight
 colonies

eukaryotes
 gnotobiotics
 invertebrates
 panspermia
 pathogens
 prokaryotes
 saprophytes
 waste treatment

bacterial diseases

SN (EXCLUDES PLANT DISEASES)
 GS diseases
 . infectious diseases
 . . **bacterial diseases**
 . . . cholera
 . . . diphtheria
 . . . keratitis
 . . . syphilis
 . . . tuberculosis
 . . . typhoid
 . . . typhus
 RT Clostridium
 conjunctivitis
 dermatitis
 encephalitis
 meningitis
 nephritis
 pneumonia

bactericides

DEF Agents that destroy microorganisms. Also known as germicides. Used for germicides.

UF *germicides*
 RT antiinfectives and antibacterials
 antiseptics
 chemical sterilization
 ethylene oxide
 fumigation
 sterilization

bacteriology

GS microbiology
 . **bacteriology**
 RT archaeobacteria
 bacteria
 biochemistry
 ∞ biology
 Clostridium botulinum
 colonies
 endotoxins
 gnotobiotics
 vaccines

bacteriophages

GS microorganisms
 . viruses
 . . **bacteriophages**
 RT interferon

badlands

DEF Intricately stream-dissected topography, characterized by a very fine drainage network with high drainage densities (77 to 747 miles per square mile) and short steep slopes with narrow interflues. Badlands develop on the surface with little or no vegetative cover, overlying unconsolidated or poorly cemented clays or silts, sometimes with soluble minerals such as gypsum or halite. They may also be induced in humid areas by removal of the vegetative cover through overgrazing, or by air pollution from sulfide smelting. The term was first applied to an area in western South Dakota, which was called "mauvaises terres" by the early French fur traders.

GS land
 . **badlands**
 RT barren land
 topography

baffles

DEF Plates that regulate the flow of a fluid, e.g., a heat exchanger, boiler flue, or automotive muffler.

RT attenuators
 ∞ barriers
 blast deflectors
 conical flow
 damping
 deflectors

baggage

- ∞ diffusers
- diverters
- dividers
- ducts
- flame deflectors
- liquid sloshing
- louvers
- mixers
- mufflers
- panels
- reflectors
- shielding
- suppressors

baggage

- GS cargo
 - . **baggage**
- RT air cargo
- bags
- ground handling

bags

- GS **bags**
 - . air bag restraint devices
 - . gas bags
- RT baggage
- ∞ containers
- packages

Bahamas

- GS landforms
 - . islands
 - . . West Indies
 - . . . **Bahamas**
 - nations
 - . **Bahamas**
- RT Caribbean region

Bahrain

- GS landforms
 - . islands
 - . . **Bahrain**
 - nations
 - . **Bahrain**

bailout

- RT air drop operations
- ejection
- ejection injuries
- ejection seats
- ejection training
- escape (abandonment)
- escape systems
- flying ejection seats
- jettison systems
- jettisoning
- parachute descent
- parafoils

bainite

DEF Metastable microstructure or microstructures resulting from the transformation of austenite at temperatures between those which produce pearlite and martensite.

- RT bainitic steel
- iron alloys
- microstructure
- steels

bainitic steel

- GS alloys
 - . iron alloys
 - . . steels
 - . . . **bainitic steel**
- RT bainite

Baja California

USE **Lower California (Mexico)**

bajadas

USE **fans (landforms)**

Bakelite (trademark)

- RT ceramics
- resins

thermosetting resins

bakeout

USE **degassing**

Baker-Nunn camera

- GS optical equipment
 - . cameras
 - . . **Baker-Nunn camera**
 - photographic equipment
 - . cameras
 - . . **Baker-Nunn camera**
- RT astronomical photography
- Schmidt cameras

baking

- SN (EXCLUDES FOOD PROCESSING)
- GS heating
 - . **baking**
- RT casting
- degassing
- drying
- heat treatment
- ovens
- roasting
- sterilization

balance

- GS **balance**
 - . aerodynamic balance
 - . heat balance
 - . material balance
 - . . water balance
- RT compensators
- ∞ equilibrium
- ∞ mass balance
- mass distribution
- weight indicators

balance equations

USE **equations**

balanced amplifiers

USE **push-pull amplifiers**

balancing

- RT eccentricity
- ∞ equilibrium
- flywheels
- man machine systems
- stabilization

Baldwin-Lomax turbulence model

(added May 1997)

- GS models
 - . mathematical models
 - . . turbulence models
 - . . . **Baldwin-Lomax turbulence model**
- RT computational fluid dynamics
- eddy viscosity
- flow equations
- turbulent boundary layer
- turbulent flow

ball bearings

- GS bearings
 - . antifriction bearings
 - . . **ball bearings**
- RT balls
- elastohydrodynamics
- needle bearings
- roller bearings
- thrust bearings

ball lightning

DEF A relatively rare form of lightning, consisting of a reddish, luminous ball, of the order of one foot in diameter, which may move rapidly along solid objects or remain floating in midair. Hissing noises emanate from such balls, and they sometimes explode noisily but may also appear noiselessly.

- GS electric current
 - . electric discharges
 - . . lightning
 - . . . **ball lightning**

RT atmospheric electricity

∞ ballast

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ballast (mass)
- ballasts (impedances)

ballast (mass)

- RT aerodynamic stability
- ∞ ballast
 - buoyancy
 - counterbalances
 - floating
 - floats
 - hydrodynamics
 - loads (forces)
 - mass distribution
 - stability
 - static loads

ballasts (impedances)

DEF Devices that by means of inductance, capacitance, or resistance, singly or in combination, limit the lamp current of fluorescent or mercury lamps to the required value for proper operation, and where necessary provide the required starting voltage and current amd. in ballasts for rapid-start lamps provide low-voltage cathode heating.

- RT ∞ ballast
 - capacitors
 - inductors
 - luminaires
 - resistors
 - transformers

ballistic cameras

DEF Ground-based cameras using multiple exposures on the same plate to record the trajectories of rockets.

- GS optical equipment
 - . cameras
 - . . **ballistic cameras**
 - photographic equipment
 - . cameras
 - . . **ballistic cameras**
- RT ground support equipment
- high speed cameras
- optical tracking
- rangefinding
- stroboscopes
- trajectory measurement

ballistic missile decoys

- GS countermeasures
 - . **ballistic missile decoys**
 - decoys
 - . **ballistic missile decoys**
- RT missile defense
- reentry decoys

Ballistic Missile Early Warning System

- UF **BMEWS**
- GS warning systems
 - . early warning systems
 - . . **Ballistic Missile Early Warning System**
- RT air defense
- military technology
- radar tracking
- ∞ systems

ballistic missile submarines

- GS water vehicles
 - . ships
 - . . submarines
 - . . . **ballistic missile submarines**
 - . underwater vehicles
 - . . submarines
 - . . . **ballistic missile submarines**
- RT fleet ballistic missiles
- missile launchers
- mobile missile launchers
- navy
- Poseidon missiles

- sea launching
- ballistic missiles**
 SN (GUIDED ONLY DURING INITIAL POWERED PHASE)
 DEF Missiles designed to operate primarily in accordance with the laws of ballistics.
 GS missiles
 . **ballistic missiles**
 . . field army ballistic missiles
 . . intercontinental ballistic missiles
 . . . Atlas ICBM
 Atlas D ICBM
 Atlas E ICBM
 Atlas F ICBM
 . . . Minuteman ICBM
 . . . MX missile
 . . . Titan ICBM
 Titan 1 ICBM
 Titan 2 ICBM
 . . intermediate range ballistic missiles
 . . . Blue Streak missile
 . . . Jupiter missile
 . . . polaris missiles
 Polaris A1 missile
 Polaris A2 missile
 Polaris A3 missile
 . . Pershing missile
 . . Poseidon missiles
 . . short range ballistic missiles
 . . Skybolt missile
 . . Subroc missile
 . . V-2 missile
 RT antimissile missiles
 Safeguard system
 surface to surface missiles
- ballistic ranges**
 GS ranges (facilities)
 . test ranges
 . . **ballistic ranges**
 test facilities
 . test ranges
 . . **ballistic ranges**
 RT downrange
 hydroballistics
 missile ranges
- ballistic trajectories**
 DEF Trajectories followed by a body being acted upon only by gravitational forces and the resistance of the medium through which it passes.
 GS trajectories
 . **ballistic trajectories**
 RT ascent trajectories
 ballistics
 coasting flight
 descent trajectories
 downrange
 free fall
 impact prediction
 midcourse trajectories
 missile trajectories
 parabolic flight
- ballistic vehicles**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *nonlifting vehicles*
 RT reentry vehicles
 rocket vehicles
 test vehicles
 ∞ vehicles
 weapons
- ballistics**
 DEF The science that deals with the motion, behavior and effects of projectiles, especially bullets, aerial bombs, rockets or the like; the science or art of designing and hurling projectiles so as to achieve a desired performance.
 GS **ballistics**
 . hydroballistics
 . interior ballistics
 . terminal ballistics
 RT aerodynamic drag
 ballistic trajectories
 gas guns
 howitzers
- hypervelocity guns
 ordnance
 projectiles
 propellants
 trajectories
 trajectory analysis
 trajectory measurement
- ballistocardiography**
 GS bioengineering
 . biometrics
 . . cardiography
 . . . **ballistocardiography**
 RT electrocardiography
 phonocardiography
 seismocardiography
- balloon flight**
 RT ∞ flight
 meteorological flight
 vertical flight
- balloon sounding**
 GS sounding
 . **balloon sounding**
 RT atmospheric sounding
 in situ measurement
 ozonesondes
 radiosondes
 superpressure balloons
- balloon-borne instruments**
 GS measuring instruments
 . **balloon-borne instruments**
 RT airborne equipment
 balloons
 high altitude balloons
 meteorological instruments
 ozonesondes
 radiosondes
 telescopes
- ballooning modes**
 GS modes
 . **ballooning modes**
 RT magnetohydrodynamic stability
 plasma control
 plasma equilibrium
 tearing modes (plasmas)
- balloons**
 GS expandable structures
 . inflatable structures
 . . **balloons**
 . . . high altitude balloons
 jimsphere balloons
 skyhook balloons
 superpressure balloons
 . . . meteorological balloons
 jimsphere balloons
 ROBIN balloons
 . . . microballoons
 . . . tethered balloons
 RT ∞ aircraft
 airships
 ascent
 balloon-borne instruments
 ballutes
 folding structures
 gas bags
 gondolas
 observation aircraft
 pilotless aircraft
 stratoscope telescopes
- balls**
 RT ball bearings
 falling spheres
 joints (junctions)
 spheres
 valves
- ballutes**
 GS brakes (for arresting motion)
 . aerodynamic brakes
 . . **ballutes**
 drag devices
 . aerodynamic brakes
 . . **ballutes**
 expandable structures
- . inflatable structures
 . . **ballutes**
 RT air drop operations
 aircraft brakes
 balloons
 drag chutes
 folding structures
 parachutes
- Balmer series**
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **Balmer series**
 RT absorption spectra
 atomic spectra
 electron transitions
 emission spectra
 H beta line
 H gamma line
 H lines
 hydrogen
- balsa**
 RT trees (plants)
 wood
- Baltic sea**
 GS seas
 . **Baltic sea**
 RT Estonia
 Latvia
- Baltic Shield (Europe)**
 GS rocks
 . bedrock
 . . **Baltic Shield (Europe)**
 RT Earth resources
 Europe
 Precambrian period
- Banach space**
 GS algebra
 . vector spaces
 . . **Banach space**
 . . . Hilbert space
 Sobolev space
 analysis (mathematics)
 . function space
 . . **Banach space**
 . . . Hilbert space
 Sobolev space
 . functional analysis
 . . **Banach space**
 . . . Hilbert space
 Sobolev space
 RT harmonic analysis
 metric space
- band ratioing**
 GS image processing
 . **band ratioing**
 RT image enhancement
 multispectral band scanners
 remote sensing
 spectral bands
- band structure of solids**
 RT Brillouin zones
 conduction bands
 electron transitions
 electronic structure
 energy gaps (solid state)
 forbidden bands
 heterojunction devices
 quantum wells
- bandgap*
 USE **energy gaps (solid state)**
- bandpass filters**
 DEF Wave filters having a single transmission band; neither of the cut-off frequencies being zero or infinity.
 GS electromagnetic wave filters
 . **bandpass filters**
 . . crystal filters
 . . tracking filters
 RT adaptive filters

bands

bandstop filters
bandwidth
electric filters
∞ filters
FIR filters
microwave filters
optical filters
ultraviolet filters
vocoders

∞ bands

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT absorption spectra
anchors (fasteners)
bandwidth
Bloch band
broadband
clamps
clips
conduction bands
edge dislocations
energy bands
fasteners
forbidden bands
frequencies
Herzberg bands
holders
low frequencies
narrowband
photoluminescent bands
plastic deformation
ring structures
Schumann-Runge bands
sidebands
spectral bands
straps
Swan bands
Vegard-Kaplan bands

bandstop filters

DEF Filters that block signals of a specific frequency or a band of frequencies.

GS electromagnetic wave filters
. electric filters
. . . **bandstop filters**

RT adaptive filters
bandpass filters
bandwidth
crystal filters
∞ filters
high pass filters
low pass filters
microwave filters
optical filters
tracking filters
waveguide filters

bandwidth

GS **bandwidth**
. broadband
. narrowband
. spectral line width

RT bandpass filters
∞ bands
bandstop filters
broadband amplifiers
channel capacity
dynamic characteristics
frequencies
frequency ranges
impedance
laser windows
resonant frequencies
speech baseband compression
tracking filters
transfer functions
width
windows (intervals)

bang-bang control

USE **off-on control**

Bangladesh

UF *East Pakistan*
GS nations
. **Bangladesh**
RT Asia
India

Pakistan

banking flight

USE **turning flight**

Barany chair

DEF A kind of chair in which a person is revolved to test his susceptibility to vertigo. It is named after the Swedish physician Robert Barany who lived from 1876 to 1936.

GS seats
. **Barany chair**
RT rotating environments
tolerances (physiology)
vertigo

Barbados

GS landforms
. islands
. . West Indies
. . . **Barbados**
nations
. **Barbados**
RT Caribbean region

barchans

USE **dunes**

Bardeen approximation

USE **barrier layers**
electrical properties
surface properties

Bardeen-Cooper-Schrieffer theory

USE **BCS theory**

Barents Sea

GS seas
. **Barents Sea**
RT Arctic Ocean
U.S.S.R.

barite

GS minerals
. **barite**
sulfur compounds
. sulfates
. . **barite**

barium

GS chemical elements
. **barium**
. . barium isotopes
metals
. **barium**
. . barium isotopes

barium alloys

GS alloys
. **barium alloys**

barium compounds

GS **barium compounds**
. barium ferrates
. barium fluorides
. barium oxides
. barium sulfides
. barium titanates
. barium zirconates
RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds

barium ferrates

GS barium compounds
. **barium ferrates**
iron compounds
. ferrates
. . **barium ferrates**

barium fluorides

GS barium compounds
. **barium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . **barium fluorides**
. halides
. . fluorides
. . . **barium fluorides**
. . metal halides

. . . **barium fluorides**

barium ion clouds

GS clouds (meteorology)
. artificial clouds
. . chemical clouds
. . . **barium ion clouds**
RT Earth magnetosphere
electric fields
geomagnetism
lines of force
metal ions
rocket sounding
thermites

barium isotopes

GS chemical elements
. alkaline earth metals
. . **barium isotopes**
. barium
. . **barium isotopes**
. nuclides
. . isotopes
. . . **barium isotopes**
metals
. alkaline earth metals
. . **barium isotopes**
. barium
. . **barium isotopes**

barium oxides

GS barium compounds
. **barium oxides**
chalcogenides
. oxides
. . metal oxides
. . . alkaline earth oxides
. . . . **barium oxides**
RT high temperature superconductors
YBCO superconductors

barium sulfides

GS barium compounds
. **barium sulfides**
chalcogenides
. sulfides
. . inorganic sulfides
. . . **barium sulfides**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **barium sulfides**

barium titanates

GS barium compounds
. **barium titanates**
titanium compounds
. titanates
. . **barium titanates**
RT dielectrics
ferroelectric materials

barium zirconates

GS barium compounds
. **barium zirconates**
zirconium compounds
. zirconates
. . **barium zirconates**

Barkhausen effect

RT ∞ effects
electromagnetic measurement
electromagnetism
oscillographs

barley

GS farm crops
. grains (food)
. . **barley**
plants (botany)
. **barley**
RT agriculture
blight
botany
crop growth
crop vigor
∞ crops
∞ food
irrigation

seeds

proprioceptors

Virgo galactic cluster

baroclinic instability

DEF Hydrodynamic instability arising from the existence of a meridional temperature gradient (and hence a thermal wind) in an atmosphere in quasigeostrophic equilibrium and possessing static stability.

- GS stability
 - . **baroclinic instability**
- RT atmospheric circulation
 - atmospheric models
 - baroclinic waves
 - baroclinity
 - flow stability
 - geostrophic wind
 - meteorology
 - zonal flow (meteorology)

baroclinic waves

- GS elastic waves
 - . capillary waves
 - . . gravity waves
 - . . . **baroclinic waves**
 - surface waves
 - . capillary waves
 - . . gravity waves
 - . . . **baroclinic waves**
- RT baroclinic instability
 - baroclinity
 - barotropic flow
 - cyclones
 - density distribution
 - geostrophic wind
 - radiation pressure
 - stratified flow
 - wave amplification
- ∞ waves
 - zonal flow (meteorology)

baroclinity

DEF The state of stratification in a fluid in which surfaces of constant pressure (isobaric) intersect surfaces of constant density (isotheric). The number, per unit area, of isobaric-isotheric solenoids intersecting a given surface is a measure of baroclinity.

- RT baroclinic instability
 - baroclinic waves
 - barotropic flow
 - barotropism
- ∞ isobars
 - meteorological solenoids
 - stratified flow

barometers

DEF Instruments used to measure atmospheric pressure.

- GS measuring instruments
 - . meteorological instruments
 - . . **barometers**
 - . . pressure gages
 - . . . **barometers**
- RT altimeters
 - hypsometers
 - manometers
 - pressure measurement
 - vacuum gages

*barometric pressure*USE **atmospheric pressure***baroreceptor reflexes**(added April 2001)*USE **baroreflexes****baroreceptors**

DEF Receptors in the vascular system, particularly the aorta and carotid sinus, which are sensitive to stretch of the vessel walls.

- UF *pressoreceptors*
- GS anatomy
 - . sense organs
 - . . **baroreceptors**
 - receptors (physiology)
 - . **baroreceptors**
- RT baroreflexes
 - pressure

baroreflexes*(added March 2001)*

DEF A negative feedback system that buffers short-term changes in blood pressure. Increased pressure stretches blood vessels, which activates pressoreceptors (baroreceptors) in the vessel walls. The central nervous system's net response is a reduction of central sympathetic outflow. This reduces blood pressure by decreasing peripheral vascular resistance and by lowering cardiac output. Because the baroreceptors are tonically active, the baroreflex can compensate rapidly for both increases and decreases in blood pressure.

- UF *baroreceptor reflexes*
- GS *pressoreceptor reflexes*
- GS reflexes
 - . **baroreflexes**
 - . . carotid sinus reflex
- RT baroreceptors
 - blood pressure
 - cardiovascular system
 - heart rate
 - hemodynamic responses
 - physiological responses

barotrauma

- GS injuries
 - . **barotrauma**
- RT decompression sickness
 - diving (underwater)

barotropic flow

- GS fluid flow
 - . **barotropic flow**
- RT air currents
 - air flow
 - baroclinic waves
 - baroclinity
 - barotropism
 - flow characteristics
 - lee waves
 - planetary waves
 - Rayleigh waves
 - Rossby regimes
 - sea breeze
 - viscous flow
 - wind (meteorology)
 - wind shear

barotropism

DEF The state of a fluid in which surfaces of constant density (or temperature) are coincident with surfaces of constant pressure; it is the state of zero baroclinity.

- GS **barotropism**
 - . planetary waves
- RT baroclinity
 - barotropic flow
- ∞ isobars

∞ **barrages**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT artillery fire
 - dams

barred galaxies

DEF Spiral galaxies whose nuclei are in the shape of bars at the ends of which the spiral arms begin. About one fifth of all spiral galaxies are barred spirals.

- GS celestial bodies
 - . galaxies
 - . . spiral galaxies
 - . . . **barred galaxies**
- RT disk galaxies
 - galactic structure
 - Hubble diagram
 - local group (astronomy)
 - star clusters
 - star distribution
 - stars

∞ **barrels**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT barrels (containers)
- ∞ drums
 - gun launchers

barrels (containers)

- UF *casks*
- RT ∞ barrels
 - ∞ containers
 - drums (containers)

barren land

DEF Rugged or unproductive lands devoid of significant vegetation compared to adjacent areas because of environmental factors such as adverse climate, poor soil, o, or winds, Used for barrens.

- UF *barrens*
- GS land
 - . **barren land**
- RT arid lands
 - badlands
 - desertification
 - deserts
 - land use
 - Sahara Desert (Africa)
 - sites
 - soils
 - topography

*barrens*USE **barren land***barricades*USE **barriers***barrier injection transit time diodes*USE **Barritt diodes****barrier layers**

- UF *Bardeen approximation*
- RT ∞ barriers
 - Barritt diodes
 - interlayers
 - JFET
 - joints (junctions)
 - junction diodes
 - junction transistors
- ∞ layers
 - MBM junctions
 - nonohmic effect
 - resonant tunneling
 - resonant tunneling diodes
 - seals (stoppers)
 - semiconductor devices
 - SIS (semiconductors)
 - surface layers
 - tunnel junctions
 - waterproofing
 - Zener effect

∞ **barriers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Any materials limiting passage through itself of solids, liquids, semisolids, gases, or forms of energy such as ultraviolet light. Used for barricades and obstacles.

- UF *barricades*
- obstacles*
- RT abort apparatus
 - acoustic velocity
 - arresting gear
 - baffles
 - barrier layers
 - barriers (landforms)
 - Barritt diodes
 - blood-brain barrier
 - bulkheads
 - chains
 - closures
 - constrictions
 - curtains
 - dams
 - dividers

barriers (landforms)

electrode film barriers
enclosures
fences (barriers)
gates (openings)
guards (shields)
MBM junctions
safety devices
Schottky diodes
seals (stoppers)
shielding
thermal barriers (plasma control)
vapor barrier clothing
walls
wind (meteorology)
windows (apertures)

barriers (landforms)

DEF Elongated offshore ridges or masses, usually of sand, rising above the high-tide level, generally extending parallel to, and at some distance from, the shore, and separated from it by some kind of coastal bay. It is built up by the action of waves and currents.

GS landforms
. **barriers (landforms)**
. . Outer Banks (NC)
. . reefs
RT ∞ barriers
bars (landforms)
island arcs

Barritt diodes

DEF Barrier injection transit time diodes that operate similarly to IMPATT diodes. The operating frequencies are determined by the transit times across the drift. Used for barrier injection transit time diodes.

UF *barrier injection transit time diodes*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **Barritt diodes**
. solid state devices
. . semiconductor devices
. . . **Barritt diodes**
RT avalanche diodes
barrier layers
∞ barriers
carrier injection
cryosar
electric potential
injection
junction diodes
microwave oscillators
rectifiers
Schottky diodes
semiconductor junctions
shot noise
transit time

bars

GS **bars**
. elastic bars
. prismatic bars
RT metal plates
rods
structural members

bars (landforms)

DEF A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tides, and built up by the action of waves or currents on the water bottom, especially at the mouth of a river or estuary, or at a slight distance from the beach. Bars commonly form obstructions to water navigation.

UF *tombolos*
GS landforms
. **bars (landforms)**
RT barriers (landforms)
beaches
coastal plains
lagoons
littoral drift

reefs

barycenter

USE **center of gravity**

baryon resonance

DEF An anomaly found in scattering cross sections indicating the existence of an unstable, excited state of baryon.

GS resonance
. **baryon resonance**
RT baryons
hyperons
scattering cross sections

baryons

GS particles
. elementary particles
. fermions
. . . **baryons**
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. hadrons
. . . **baryons**
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
RT baryon resonance
cold neutrons
dark matter
eta-mesons
fast neutrons
gravitinos
kaons
meson resonance
mesons
muons
neutrons
nucleons
photoneutrons
pions
protons
recoil protons
solar protons
thermal neutrons

basalt

GS rocks
. igneous rocks
. . **basalt**
RT cones (volcanoes)
lunar maria
Mars volcanoes
regolith
soils
volcanoes
volcanology

base flow

DEF Fluid flow at the base or extreme aft end of a body.

GS fluid flow
. **base flow**
RT head flow
wakes

base heating

GS heating
. **base heating**
RT afterbodies
convection
exhaust nozzles
jet exhaust
jet impingement
∞ radiation
rocket exhaust

base pressure

DEF In aerodynamics, the pressure exerted on the base, or extreme aft end, of a body, as of a cylindrical or boat-tailed body or of a blunt-trailing-edge wing, in a fluid flow.

GS pressure
. **base pressure**

RT aerodynamic drag

basements

RT buildings
floors
foundations

∞ bases

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bases (chemical)
data bases
foundations
inorganic compounds
ion concentration
lunar bases
space bases
stations

bases (chemical)

GS **bases (chemical)**
. adenines
. alkalies
. lithium hydroxides
. potassium hydroxides
. sodium hydroxides
. alkaloids
. atropine
. betaines
. caffeine
. colchicine
. ergotamine
. hyoscine
. lysergine
. morphine
. nicotinamide
. nicotine
. pilocarpine
. reserpine
. strychnine
. . troyl compounds
. guanines
. piperidine
. pyridines
. quinoline
. thymidine
. uracil
RT alkalinity
anhydrides
∞ bases
buffers (chemistry)
pH

bases (foundations)

USE **foundations**

BASIC (programming language)

GS languages
. programming languages
. . **BASIC (programming language)**
RT computer programming

basins

USE **structural basins**

basins (containers)

RT tanks (containers)

baskets

RT ∞ containers
gondolas

bastnasite

GS carbon compounds
. carbonates
. . **bastnasite**
minerals
. **bastnasite**
rare earth compounds
. cerium compounds
. . **bastnasite**

batch processing

GS data processing
. **batch processing**
RT computer programming
computer programs
data processing equipment

- ∞ processing
- bathing**
 GS cleaning
 . washing
 . . **bathing**
 RT cooling
 hygiene
 waste water
- batholiths**
 GS rock intrusions
 . **batholiths**
 rocks
 . bedrock
 . . **batholiths**
 RT granite
 igneous rocks
- baths**
 SN (EXCLUDES BATHING)
 GS **baths**
 . salt baths
 RT dipping
 electroplating
 heat transfer
 quenching (cooling)
 ∞ soaking
 submerging
 water immersion
- bathymeters**
 DEF Instruments that measure the ocean depths and check the topography of the ocean floor. Used for bathymetry.
 UF *bathymetry*
 GS measuring instruments
 . **bathymeters**
 RT depth measurement
 oceanography
 sounding
 underwater research laboratories
- bathymetry*
 USE **bathymeters**
- bathythermographs**
 GS measuring instruments
 . temperature measuring instruments
 . . **bathythermographs**
 recording instruments
 . **bathythermographs**
 RT pressure gradients
 temperature gradients
- bats**
 GS animals
 . vertebrates
 . . mammals
 . . . **bats**
- batteries*
 USE **electric batteries**
- battery chargers**
 RT charge efficiency
 ∞ charging
 electric batteries
 pulse charging
 storage batteries
- battery separators*
 USE **separators**
- Bauschinger effect**
 RT ∞ effects
 fatigue (materials)
 microstructure
- bauxite**
 DEF A ferruginous aluminium hydroxide rock consisting of several minerals. It is the principle source for aluminum.
 RT aluminum oxides
 minerals
- rocks
- B-A-W devices*
 USE **bulk acoustic wave devices**
- bay ice**
 GS ice
 . **bay ice**
 RT freezing
 frost
 ice formation
 ice mapping
 ice reporting
 lake ice
 low temperature
 navigation
 oceanography
 sea ice
 slush
 water
- Bayard-Alpert ionization gages**
 DEF Ionization vacuum gages using a tube with an electrode structure designed to minimize x ray induced electron emission from the ion collector.
 GS measuring instruments
 . pressure gages
 . . vacuum gages
 . . . ionization gages
 **Bayard-Alpert ionization gages**
 vacuum apparatus
 . vacuum gages
 . . ionization gages
 . . . **Bayard-Alpert ionization gages**
 RT hot cathodes
- Bayes theorem**
 UF *Bayesian statistics*
 GS theorems
 . **Bayes theorem**
 RT belief networks
 quality control
 sampling
- Bayesian belief networks*
 USE **belief networks**
- Bayesian statistics*
 USE **Bayes theorem**
- bayous**
 DEF A term variously applied to many local water features in the lower Mississippi River basin and in the Gulf Coast region of the U.S., especially in Louisiana. Its general meaning is a creek of a secondary watercourse that is tributary to another body of water; especially through alluvial lowlands, coastal swamps or river deltas. The origin of the term is from the American French "boyau", "gut"; from the Choctaw "bayuk", "small stream".
 GS landforms
 . inlets (topography)
 . . **bayous**
 RT lakes
 marshlands
 rivers
- ∞ **bays**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT bays (structural units)
 bays (topographic features)
- bays (structural units)**
 RT aircraft compartments
 airframes
 ∞ bays
 compartments
 fuselages
 hulls (structures)
 shells (structural forms)
- bays (topographic features)**
 DEF Wide, curving open indentations, recesses, or arms of seas or lakes into the land or between two capes or headlands; larger than coves, and usually smaller than, but of the same
- general character as gulfs. Used for bights and coves.
 UF *bights*
coves
 GS **bays (topographic features)**
 . Chesapeake Bay (US)
 . Delaware Bay (US)
 . Hudson Bay (Canada)
 . Monterey Bay (CA)
 . Saginaw Bay (MI)
 . San Francisco Bay (CA)
 . San Pablo Bay (CA)
 RT ∞ bays
 estuaries
 gulfs
 inlets (topography)
- BBGKY hierarchy**
 GS classifications
 . hierarchies
 . . **BBGKY hierarchy**
 RT Bogoliubov theory
 Boltzmann transport equation
 equations of state
 Fourier transformation
 kinetic equations
 plasma physics
- BCAS*
 USE **Beacon Collision Avoidance System**
- BCC lattices*
 USE **body centered cubic lattices**
- BCH codes**
 UF *Bose-Chaudhuri-Hocquenghem codes*
 RT binary codes
 ∞ codes
 coding
 computer programming
 decoders
 decoding
 digital techniques
 error correcting devices
 information theory
 parity
 random errors
- BCS theory**
 UF *Bardeen-Cooper-Schrieffer theory*
 RT many body problem
 superconductivity
 ∞ theories
 thermodynamic coupling
- BE A*
 USE **Beacon Explorer A**
- BE B*
 USE **Explorer 22 satellite**
- BE C*
 USE **Explorer 27 satellite**
- BE-3 engine**
 GS engines
 . rocket engines
 . . retrorocket engines
 . . . **BE-3 engine**
 RT Athena rocket vehicle
 Ranger lunar landing vehicles
 solid propellant rocket engines
- beaches**
 DEF Stretches of unconsolidated material that constitute gently sloping zones, typically with concave profiles, extending landward from the low-water line to the place where there is a definite change in material or physiographic form. Used for advancing shorelines, backshores, and inshore zones.
 UF *advancing shorelines*
backshores
inshore zones
 RT bars (landforms)
 coastal currents
 coastal plains
 coasts
 cusps (landforms)

Beacon Collision Avoidance System

dunes
lagoons
lakes
littoral drift
marine environments
shoals
shorelines
topography
waterfowl

Beacon Collision Avoidance System

UF *BCAS*
GS avoidance
. collision avoidance
. . . **Beacon Collision Avoidance System**
RT air traffic control
aircraft safety
midair collisions
radio beacons
∞ systems
transponders

Beacon Explorer A

UF *BE A*
S-66 satellite
GS artificial satellites
. passive satellites
. . . **Beacon satellites**
. . . . **Beacon Explorer A**
expandable structures
. inflatable structures
. . . inflatable spacecraft
. . . . **Beacon satellites**
. **Beacon Explorer A**
inflatable space structures
. inflatable spacecraft
. . . **Beacon satellites**
. . . . **Beacon Explorer A**
space erectable structures
. inflatable spacecraft
. . . **Beacon satellites**
. . . . **Beacon Explorer A**
RT Delta launch vehicle

Beacon Explorer B

USE **Explorer 22 satellite**

Beacon Explorer C

USE **Explorer 27 satellite**

Beacon satellites

UF *polar ionosphere beacon*
GS artificial satellites
. passive satellites
. . . **Beacon satellites**
. . . . **Beacon Explorer A**
. . . . **Explorer 22 satellite**
expandable structures
. inflatable structures
. . . inflatable spacecraft
. . . . **Beacon satellites**
. **Beacon Explorer A**
. **Explorer 22 satellite**
inflatable space structures
. inflatable spacecraft
. . . **Beacon satellites**
. . . . **Beacon Explorer A**
. . . . **Explorer 22 satellite**
space erectable structures
. inflatable spacecraft
. . . **Beacon satellites**
. . . . **Beacon Explorer A**
. . . . **Explorer 22 satellite**
RT LOCATES system

beacons

DEF Lights, groups of lights, electronic apparatus, or other devices that guide, orient, or warn aircraft, spacecraft, etc. in flight.
GS navigation aids
. **beacons**
. . . airport beacons
. . . discrete address beacon system
. . . radar beacons
. . . discrete address beacon system
. . . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . . radio direction finders

RT aircraft lights
buoys
compasses
homing
homing devices
instrument flight rules
∞ markers
position indicators
projectors
searchlights
∞ signals
solar compasses
visual signals

beads

RT spot welds
welded joints
welding

Beagle aircraft

RT ∞ aircraft

beam currents

DEF Currents incident on specimens by primary particle sources.
GS electric current
. **beam currents**
RT backward wave tubes
Brillouin flow
∞ currents
plasma currents

beam forming

USE **beamforming**

beam injection

DEF The introduction of a particle radiation beam into a plasma or ionized gas for the purpose of diagnostics, plasma control, or the study of beam/plasma interactions.
RT electron beams
ion beams
neutral beams
plasma heating
plasma-particle interactions
tokamak devices
toroidal plasmas

beam interactions

DEF A general term for interactions between various types of beams with each other or with plasmas or substances.
RT atom optics
beams (radiation)
collision parameters
high energy interactions
∞ interactions
wave-particle interactions

beam leads

GS conductors
. electric conductors
. . . **beam leads**
. . . flat conductors
. . . . **beam leads**
RT bonding
electric connectors
∞ joining
microelectronics
micromodules
soldered joints

beam neutralization

DEF Neutralization that takes place by means of charge exchange with a neutral gas.
RT beams (radiation)
electron beams
ion beams
neutral beams

beam plasma amplifiers

GS amplifiers
. **beam plasma amplifiers**
RT electron beams
millimeter waves
plasma-particle interactions
plasmas (physics)

relativistic electron beams

beam rider guidance

DEF System for guiding aircraft, spacecraft, or missiles, along a desired path by means of a radar beam, light beam, etc. The center of the beam axis forms a line along which the vehicle senses its location and corrects its course relative to the beam axis.
GS guidance (motion)
. **beam rider guidance**
RT missile control
missile systems

beam splitters

DEF Partially reflecting mirrors which permit some incident light to pass through and reflect the remainder.
RT beams (radiation)
particle accelerators
particle beams
scatter plates (optics)

beam steering

(added June 1997)
GS steering
. **beam steering**
RT antenna radiation patterns
beam waveguides
beamforming
beams (radiation)
collimation
laser beams
steerable antennas

beam switching

GS switching
. **beam switching**
RT beams (radiation)
electron optics
ion engines
lasers
magnetic switching
packet switching

beam waveguides

GS waveguides
. **beam waveguides**
RT beam steering
collimators
ion optics
photon beams
plasmaguides
rectangular waveguides
wave propagation
yokes

beamed power

USE **power beaming**

beamforming

(added September 1992)
UF *beam forming*
beamshaping
GS collimation
. **beamforming**
RT antenna arrays
antenna radiation patterns
beam steering
beams (radiation)
ion optics
laser beams
polarization (waves)
radar beams

∞ beams

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT beams (radiation)
beams (supports)

beams (radiation)

GS **beams (radiation)**
. gamma ray beams
. light beams
. . . laser beams
. . . microbeams
. . . particle beams
. . . atomic beams
. . . electron beams

- . . . relativistic electron beams
- . . ion beams
- . . neutral beams
- . . . molecular beams
- . . . neutron beams
- . . neutrino beams
- . . pion beams
- . . proton beams
- . pencil beams
- . phonon beams
- . photon beams
- . radar beams
- RT beam interactions
- beam neutralization
- beam splitters
- beam steering
- beam switching
- beamforming
- ∞ beams
- coherent electromagnetic radiation
- coherent radiation
- corpuscular radiation
- electromagnetic radiation
- extreme ultraviolet radiation
- infrared radiation
- ionizing radiation
- irradiation
- light (visible radiation)
- longitudinal waves
- monochromatic radiation
- multibeam antennas
- plane waves
- ∞ radiation
- ∞ rays
- submillimeter waves
- ultraviolet radiation
- beams (supports)**
- UF *structural beams*
- GS structural members
- . **beams (supports)**
- . . box beams
- . . cantilever beams
- . . curved beams
- . . Euler-Bernoulli beams
- . . I beams
- . . rectangular beams
- . . Timoshenko beams
- RT ∞ beams
- clamped structures
- columns (supports)
- girders
- ∞ headers
- plastic bodies
- T shape
- trusses
- beamshaping*
- USE **beamforming**
- ∞ **bearing**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bearing (direction)
- bearings
- internal combustion engines
- bearing (direction)**
- RT alignment
- azimuth
- ∞ bearing
- ∞ direction
- direction finding
- exposure
- field of view
- instrument orientation
- ∞ orientation
- position (location)
- sound localization
- ∞ space orientation
- bearing alloys**
- GS alloys
- . **bearing alloys**
- RT aluminum alloys
- babbitt metal
- bearings
- cadmium alloys
- copper alloys
- iron alloys
- lead alloys
- metal powder
- silver alloys
- tin alloys
- zinc alloys
- bearingless rotors**
- GS airfoils
- . wings
- . . rotary wings
- . . . lifting rotors
- **bearingless rotors**
- rotating bodies
- . rotors
- . . rotary wings
- . . . lifting rotors
- **bearingless rotors**
- RT hinges
- rigid rotors
- bearings**
- GS **bearings**
- . antifriction bearings
- . . ball bearings
- . . roller bearings
- . . . needle bearings
- . . foil bearings
- . . gas bearings
- . . journal bearings
- . . liquid bearings
- . . magnetic bearings
- . . thrust bearings
- RT ∞ bearing
- bearing alloys
- boundary lubrication
- bushings
- gimbals
- idlers
- internal combustion engines
- lubrication
- packings (seals)
- pivots
- shafts (machine elements)
- supports
- suspension systems (vehicles)
- swivels
- wheels
- bears**
- GS animals
- . vertebrates
- . . mammals
- . . . **bears**
- beat*
- USE **synchronism**
- beat frequencies**
- DEF The frequencies obtained when two simple harmonic quantities of different frequencies f1 and f2 are superimposed. The beat frequency equals f1-f2.
- GS frequencies
- . **beat frequencies**
- RT group velocity
- intermediate frequency amplifiers
- Moire effects
- resonant frequencies
- standing waves
- superheterodyne receivers
- Beaufort Sea (North America)**
- GS seas
- . **Beaufort Sea (North America)**
- RT Alaska
- Arctic Ocean
- Canada
- bed rest**
- GS rest
- . **bed rest**
- RT calcium metabolism
- clinical medicine
- head down tilt
- head up tilt
- orthostatic tolerance
- bedding equipment**
- RT ∞ blankets
- ∞ equipment
- bediasites**
- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . tektites
- **bediasites**
- RT australites
- bedrock**
- UF *shields (geology)*
- GS rocks
- . **bedrock**
- . . Baltic Shield (Europe)
- . . batholiths
- RT Earth resources
- geology
- regolith
- ∞ shelves
- soils
- strata
- stratification
- stratigraphy
- tunneling (excavation)
- beds**
- RT beds (process engineering)
- couches
- beds (geology)**
- UF *lake beds*
- GS geology
- . **beds (geology)**
- . . salt beds
- landforms
- . **beds (geology)**
- . . salt beds
- RT ocean bottom
- strata
- stratigraphy
- beds (process engineering)**
- RT beds
- chemical reactors
- extraction
- filtration
- fluidized bed processors
- ion exchanging
- percolation
- Beech 99 aircraft**
- DEF Light, low-wing aircraft manufactured by Beechcraft.
- GS Beechcraft aircraft
- . **Beech 99 aircraft**
- . . Beechcraft 18 aircraft
- . . C-33 aircraft
- . . C-35 aircraft
- light aircraft
- . **Beech 99 aircraft**
- . . Beechcraft 18 aircraft
- . . C-33 aircraft
- . . C-35 aircraft
- RT ∞ aircraft
- ∞ low wing aircraft
- Beech aircraft*
- USE **Beechcraft aircraft**
- Beech C-33 aircraft*
- USE **C-33 aircraft**
- Beech S-35 aircraft*
- USE **C-35 aircraft**
- Beechcraft 18 aircraft**
- GS Beechcraft aircraft
- . Beech 99 aircraft
- . . **Beechcraft 18 aircraft**
- general aviation aircraft
- . **Beechcraft 18 aircraft**
- light aircraft
- . Beech 99 aircraft
- . . **Beechcraft 18 aircraft**
- monoplanes
- . **Beechcraft 18 aircraft**

Beechcraft aircraft

RT ∞ aircraft

Beechcraft aircraft

UF *Beech aircraft*

GS **Beechcraft aircraft**

- . Beech 99 aircraft
- . . Beechcraft 18 aircraft
- . . C-33 aircraft
- . . C-35 aircraft

RT ∞ aircraft

Beer law

RT absorptivity
Bouguer law
electromagnetic absorption
molecular absorption

bees

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **bees**
RT swarming

beetles

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . Coleoptera
. **beetles**
. tribolia
RT infestation

behavior

DEF The way in which an organism, organ, body, or substance acts in an environment or responds to excitation, as the behavior of steel under stress, or the behavior of an animal in a test.

GS **behavior**
. deconditioning
. human behavior
RT conditioning (learning)
diagnosis
education
extroversion
learning
migration
Skinner boxes

Belarus

(added August 1993)

GS nations
. **Belarus**
RT Europe

Belfast aircraft

USE **SC-5 aircraft**

Belgian Congo

USE **Democratic Republic of Congo**

Belgian space program

(added August 1990)

GS programs
. space programs
. . European space programs
. . . **Belgian space program**
RT Belgium

Belgium

GS nations
. **Belgium**
RT Belgian space program
Europe

belief networks

(added December 1994)

DEF Artificial Intelligence technique for computing probabilistic information.

UF *Bayesian belief networks*
GS networks
. **belief networks**
RT artificial intelligence
Bayes theorem
computer techniques
expert systems
knowledge representation
neural nets

probability theory

Belize

UF *British Honduras*
GS nations
. **Belize**
RT Caribbean region
Caribbean Sea
Central America

Bell 214A helicopter

DEF Sixteen-seat utility helicopter manufactured by Bell Helicopter.

GS Bell aircraft
. **Bell 214A helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **Bell 214A helicopter**
RT ∞ aircraft
vertical takeoff aircraft

Bell aircraft

GS **Bell aircraft**
. AH-1S helicopter
. AH-1W helicopter
. AH-63 helicopter
. Bell 214A helicopter
. OH-4 helicopter
. OH-13 helicopter
. UH-1 helicopter
. V-22 aircraft
. X-1 aircraft
. X-2 aircraft
. X-5 aircraft
. X-14 aircraft
. X-22 aircraft
. XV-3 aircraft
. XV-15 aircraft
RT ∞ aircraft

Bellman theory

RT dynamic programming
optimization
∞ theories

bellows

SN (EXPANDABLE JOINTS--FOR DEVICES TO MOVE GASES, USE BLOWERS)
DEF Mechanical structures with walls like those of an accordion.
GS expandable structures
. **bellows**
RT expulsion bladders
joints (junctions)
pumps

bells

RT auditory signals
pressure vessels
psychoacoustics
∞ signals
sound generators
warning
warning systems

Beltrami flow

GS fluid flow
. **Beltrami flow**
RT incompressible flow
steady flow
vorticity

∞ belts

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT asteroid belts
cables (ropes)
fasteners
girdles
proton belts
pulleys
radiation belts
regions
Rouse belts
seat belts
terrestrial dust belt

Benard cells

GS convection

. free convection
. . Rayleigh-Benard convection
. . . **Benard cells**
fluid flow
. convective flow
. . Rayleigh-Benard convection
. . . **Benard cells**
RT convection currents
convection-diffusion equation
Rayleigh number
solar convection (astronomy)
solar granulation
stellar convection

benches

USE **seats**

bend tests

DEF Ductility tests in which specimens are bent through an arc of known radius and angle.

RT bending
crack propagation
destructive tests
flexural strength
fracture mechanics
fracture strength
∞ materials tests
∞ tests

bending

GS **bending**
. elastic bending
RT bend tests
∞ bows
buckling
camber
deflection
deformation
displacement
distortion
elastic deformation
Euler-Bernoulli beams
fatigue tests
fiber strength
flexibility
flexing
flutter
folding
heaving
kinking
modulus of elasticity
plastic deformation
stiffness
structural failure
structural strain
temperature inversions
twisting
warpage

bending diagrams

GS diagrams
. **bending diagrams**
RT deflection

bending fatigue

GS fatigue (materials)
. **bending fatigue**
RT flexural strength
metal fatigue
S-N diagrams

bending moments

GS moments
. **bending moments**
RT loading moments
NASTRAN
static loads
stress analysis
structural design criteria
torque

bending strength

USE **flexural strength**

bending theory

RT stress analysis
stress intensity factors
∞ theories

- Treffitz method
- bending vibration**
 GS vibration
 . structural vibration
 . . **bending vibration**
 RT breathing vibration
 Euler-Bernoulli beams
 flutter
 missile vibration
 panel flutter
 random vibration
 self induced vibration
- bends (physiology)*
 USE **decompression sickness**
- beneficiation**
 RT ∞ absorption
 adsorption
 aeration
 clean fuels
 comminution
 concentrating
 ∞ conditioning
 enrichment
 exploitation
 extraction
 filtration
 flotation
 foaming
 isotopic enrichment
 leaching
 ∞ metallurgy
 minerals
 purification
 refining
 ∞ separation
 settling
 size separation
 sublimation
 upgrading
 washing
 wastes
- Benin**
 UF *Dahomey*
 GS nations
 . **Benin**
 RT Africa
- bentonite**
 DEF A soft, plastic, porous, light colored rock composed essentially of clay minerals of the montmorillonite group plus colloidal silica, and produced by divitrification and chemical alteration of a glassy igneous material, usually a tuff or a volcanic ash.
 RT montmorillonite
 soils
 water treatment
- benzene**
 GS organic compounds
 . cyclic compounds
 . . cyclic hydrocarbons
 . . . **benzene**
 . hydrocarbons
 . . cyclic hydrocarbons
 . . . **benzene**
 RT chlorobenzenes
 cyclohexane
 solvent refined coal
 thiophenes
- benzene poisoning**
 GS diseases
 . toxic diseases
 . . **benzene poisoning**
 toxicity
 . **benzene poisoning**
 RT hydrocarbon poisoning
 industrial safety
 ∞ poisoning
 toxicity and safety hazard
 toxicology
- benzilic acid**
 GS acids
 . carboxylic acids
- . . fatty acids
 . . . **benzilic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **benzilic acid**
- benzoic acid**
 GS acids
 . carboxylic acids
 . . fatty acids
 . . . **benzoic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **benzoic acid**
- benzoquinone*
 USE **quinones**
- Berenice rocket vehicle**
 GS rocket vehicles
 . multistage rocket vehicles
 . . **Berenice rocket vehicle**
 RT hypersonic reentry
 solid propellant rocket engines
- Bergman operator**
 GS operators (mathematics)
 . **Bergman operator**
- Bering Sea**
 GS seas
 . **Bering Sea**
 RT Pacific Ocean
- berkelium**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **berkelium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **berkelium**
 metals
 . actinide series
 . . transuranium elements
 . . . **berkelium**
- Bermuda**
 GS landforms
 . islands
 . . **Bermuda**
 RT Atlantic Ocean
- Bernoulli equation*
 USE **Bernoulli theorem**
- Bernoulli theorem**
 DEF In aeronautics, a law or theorem stating that in a flow of incompressible fluid the sum of the static pressure and the dynamic pressure along a streamline is constant if gravity and frictional effects are disregarded. It is named for Daniel Bernoulli, a Swiss scientist who lived from 1700 to 1782. Used for Bernoulli equation.
 UF *Bernoulli equation*
 GS theorems
 . **Bernoulli theorem**
 RT conservation equations
 ∞ equations
 flow equations
 fluid flow
 isentropic processes
 linearization
 Magnus effect
 panel method (fluid dynamics)
- Bernstein energy principle**
 GS structural analysis
 . energy methods
 . . **Bernstein energy principle**
 RT ∞ energy
 magnetic fields
- beryl**
 UF *emerald*
 GS aluminum compounds
 . **beryl**
- . . alexandrite
 beryllium compounds
 . **beryl**
 . . alexandrite
 minerals
 . **beryl**
 . . alexandrite
 silicon compounds
 . silicates
 . . **beryl**
 . . . alexandrite
 RT beryllium
- beryllium**
 GS chemical elements
 . **beryllium**
 . . beryllium isotopes
 . . . beryllium 7
 . . . beryllium 9
 . . . beryllium 10
 metals
 . **beryllium**
 . . beryllium isotopes
 . . . beryllium 7
 . . . beryllium 9
 . . . beryllium 10
 RT beryl
 moderators
- beryllium 7**
 GS chemical elements
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 7**
 . nuclides
 . . isotopes
 . . . beryllium isotopes
 **beryllium 7**
 . . . radioactive isotopes
 **beryllium 7**
 metals
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 7**
- beryllium 9**
 GS chemical elements
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 9**
 . nuclides
 . . isotopes
 . . . beryllium isotopes
 **beryllium 9**
 . . . radioactive isotopes
 **beryllium 9**
 metals
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 9**
- beryllium 10**
 GS chemical elements
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 10**
 . nuclides
 . . isotopes
 . . . beryllium isotopes
 **beryllium 10**
 . . . radioactive isotopes
 **beryllium 10**
 metals
 . beryllium
 . . beryllium isotopes
 . . . **beryllium 10**
- beryllium alloys**
 GS alloys
 . light alloys
 . . **beryllium alloys**
- beryllium borohydrides**
 GS beryllium compounds
 . **beryllium borohydrides**
 boron compounds
 . borohydrides
 . . **beryllium borohydrides**
 . boron hydrides
 . . **beryllium borohydrides**

beryllium chlorides

- hydrogen compounds
- . hydrides
- . . borohydrides
- . . . **beryllium borohydrides**
- . . boron hydrides
- . . . **beryllium borohydrides**

beryllium chlorides

GS beryllium compounds

- . **beryllium chlorides**

halogen compounds

- . chlorine compounds
- . . chlorides
- . . . **beryllium chlorides**
- . halides
- . . chlorides
- . . . **beryllium chlorides**
- . . metal halides
- . . . **beryllium chlorides**

beryllium compounds

GS **beryllium compounds**

- . beryl
- . . alexandrite
- . beryllium borohydrides
- . beryllium chlorides
- . beryllium fluorides
- . beryllium hydrides
- . beryllium nitrides
- . beryllium oxides
- . . alexandrite

RT ∞ alkaline earth compounds

∞ chemical compounds

∞ metal compounds

- metal fuels
- metal propellants

beryllium fluorides

GS beryllium compounds

- . **beryllium fluorides**

halogen compounds

- . fluorine compounds
- . . fluorides
- . . . metal fluorides
- **beryllium fluorides**
- . halides
- . . fluorides
- . . . metal fluorides
- **beryllium fluorides**
- . . metal halides
- . . . metal fluorides
- **beryllium fluorides**

beryllium hydrides

GS beryllium compounds

- . **beryllium hydrides**

hydrogen compounds

- . hydrides
- . . metal hydrides
- . . . **beryllium hydrides**

beryllium isotopes

GS chemical elements

- . beryllium
- . . **beryllium isotopes**
- . . . beryllium 7
- . . . beryllium 9
- . . . beryllium 10
- . nuclides
- . . isotopes
- . . . **beryllium isotopes**
- beryllium 7
- beryllium 9
- beryllium 10
- metals
- . beryllium
- . . **beryllium isotopes**
- . . . beryllium 7
- . . . beryllium 9
- . . . beryllium 10

beryllium nitrides

GS beryllium compounds

- . **beryllium nitrides**

nitrogen compounds

- . nitrides
- . . metal nitrides

- . . . **beryllium nitrides**

beryllium oxides

GS beryllium compounds

- . **beryllium oxides**
- . . alexandrite
- . . chalcogenides
- . . oxides
- . . . metal oxides
- alkaline earth oxides
- **beryllium oxides**
- alexandrite

beryllium poisoning

GS diseases

- . toxic diseases
- . . **beryllium poisoning**
- . toxicity
- . . **beryllium poisoning**

RT industrial safety

∞ poisoning

- respiratory diseases
- toxicity and safety hazard
- toxicology

BESS (satellite)

DEF A proposed NASA primate biomedical experiment scientific satellite that was never developed. Used for biomedical experiment scientific satellite.

UF *Biomedical Experiment Scientific Satellite*

GS artificial satellites

- . **BESS (satellite)**

RT multimission modular spacecraft

- space shuttles

Bessel functions

GS analysis (mathematics)

- . complex variables
- . . **Bessel functions**
- . . . Hankel functions
- . . real variables
- . . . **Bessel functions**
- Hankel functions

RT boundary value problems

- differential equations
- hypergeometric functions
- orthogonal functions
- power series

Bessel-Bredichin theory

RT comets

- Kohoutek comet
- radiation pressure

∞ theories

beta factor

DEF In plasma physics, the ratio of the plasma kinetic pressure to the magnetic pressure.

RT dense plasmas

- fluid pressure
- fusion reactors
- magnetic fields
- magnetic flux
- magnetohydrodynamic stability
- plasma control
- plasma equilibrium
- plasma heating
- plasma physics
- pressure effects
- reactor physics
- tokamak devices
- toroidal plasmas

beta interactions

USE **weak interactions (field theory)**

beta particles

DEF Particles emitted in the radioactive decay of many radionuclides. A beta particle is identical to an electron. It has a short range in air and a low ability to penetrate other materials.

GS ionizing radiation

- . **beta particles**

nuclear radiation

- . **beta particles**

particles

- . charged particles

- . . energetic particles
- . . . plasmas (physics)
- **beta particles**

corpuscular radiation

- . electron radiation
- . . . **beta particles**

energetic particles

- . . plasmas (physics)
- **beta particles**

elementary particles

- . **beta particles**

nuclear particles

- . **beta particles**

RT decay

- electron beams
- electrons
- flux (rate)
- hot atoms
- N electrons
- relativistic electron beams
- weak energy interactions

betaines

GS bases (chemical)

- . alkaloids
- . . **betaines**

nitrogen compounds

- . alkaloids
- . . **betaines**

organic compounds

- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **betaines**

betatrons

DEF Particle accelerators in which magnetic induction is used to accelerate electrons.

GS particle accelerators

- . cyclic accelerators
- . . **betatrons**
- . . electron accelerators
- . . . **betatrons**

RT microtrons

- synchrotrons

Bethe-Heitler formula

GS mathematical logic

- . formulas (mathematics)
- . . **Bethe-Heitler formula**

Bethe-Salpeter equation

GS analysis (mathematics)

- . real variables
- . . **Bethe-Salpeter equation**

RT differential equations

∞ equations

- equations of motion
- kinetic equations
- quantum mechanics

bevatron

GS particle accelerators

- . cyclic accelerators
- . . synchrotrons
- . . . **bevatron**

RT synchrocyclotrons

bevel gears

(added May 1999)

GS gears

- . **bevel gears**
- . . spiral bevel gears

RT gear teeth

beverages

GS liquids

- . potable liquids
- . . **beverages**
- . . . wines

RT coffee

- drinking

∞ food

- milk

BGK model

(added September 1993)

UF *Bhatnagar-Grass-Krook model*

GS models

- . mathematical models

- . . **BGK model**
- RT Boltzmann transport equation
computational fluid dynamics
kinetic equations
kinetic theory
Knudsen flow
molecular collisions
molecular flow
particle collisions
rarefied gas dynamics
- Bhatnagar-Grass-Krook model*
USE **BGK model**
- Bhutan**
 - GS nations
 - . **Bhutan**
 - RT Himalayas
India
Sikkim
Tibet
- bias**
 - DEF A constant or systematic error as opposed to a random error. It manifests itself as a persistent positive or negative deviation of the method average from the accepted reference value.
 - GS **bias**
 - . response bias
 - RT compensators
displacement
electric potential errors
instrument errors
open circuit voltage
tube grids
- bibliographies**
 - GS documents
 - . **bibliographies**
 - RT abstracts
biography
documentation
general overviews
handbooks
indexes (documentation)
information dissemination
information retrieval
libraries
literature
 - ∞ reference systems
space glossaries
summaries
- bicarbonates*
USE **carbonates**
- bicrystals**
 - GS crystals
 - . **bicrystals**
 - RT polycrystals
single crystals
- ∞ **bicycle**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT landing gear
surface vehicles
- bidirectional reflectance**
 - GS electromagnetic properties
 - . optical properties
 - . . reflectance
 - . . . **bidirectional reflectance**
 - RT light scattering
reflection
spectral reflectance
surface properties
- bifurcation (biology)**
 - DEF The separation or branching into two parts, areas, aspects or connected segments, of anatomical systems or functions.
 - RT anatomy
arteries
arterioles
 - ∞ biology
blood vessels
branching (physics)
- veins
- bifurcation (mathematics)*
USE **branching (mathematics)**
- big bang cosmology**
 - GS cosmology
 - . **big bang cosmology**
 - RT astronomical models
background radiation
cosmic rays
galactic evolution
gamma ray bursts
grand unified theory
gravitational constant
large-scale structure of the universe
relativity
relic radiation
universe
- Bighorn Mountains (MT-WY)**
 - GS landforms
 - . mountains
 - . . **Bighorn Mountains (MT-WY)**
 - RT Montana
Wyoming
- bights*
USE **bays (topographic features)**
- biharmonic equations**
 - GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . partial differential equations
 - **biharmonic equations**
 - RT elastic properties
 - ∞ equations
- billets**
 - RT casting
castings
forging
ingots
metal plates
metal strips
rods
slabs
wire
- bimetals**
 - RT alloying
alloys
composite materials
functionally gradient materials
metal bonding
metals
- bimetric theories**
 - DEF Theories of gravitation.
 - RT gravitation theory
metric space
Schwarzschild metric
 - ∞ theories
- binary alloys**
 - GS alloys
 - . **binary alloys**
 - binary systems (materials)
 - . **binary alloys**
 - RT alloying
antiphase boundaries
cluster variation method
- binary codes**
 - DEF Codes composed of a combination of entities each of which can assume one of two possible states. Each entity must be identifiable in time or space.
 - RT BCH codes
bit error rate
 - ∞ codes
concatenated codes
digital systems
trellis coding
- binary data**
 - RT analog data
bit error rate
bubble memory devices
 - ∞ data
- data processing
decimal to binary converters
digital data
- binary digits**
 - GS symbols
 - . alphanumeric characters
 - . . digits
 - . . . **binary digits**
 - RT bit error rate
bits
digital electronics
digital systems
- binary fluids**
 - GS binary systems (materials)
 - . binary mixtures
 - . . **binary fluids**
 - mixtures
 - . binary mixtures
 - . . **binary fluids**
 - RT ∞ fluids
gas mixtures
kinetic theory
Lennard-Jones gas
transport properties
- binary integration**
 - GS analysis (mathematics)
 - . real variables
 - . . measure and integration
 - . . . **binary integration**
 - RT adding circuits
digital integrators
- binary mixtures**
 - GS binary systems (materials)
 - . **binary mixtures**
 - . . binary fluids
 - . . . eutectics
 - eutectic alloys
 - mixtures
 - . **binary mixtures**
 - . . binary fluids
 - . . . eutectics
 - eutectic alloys
 - RT azeotropes
gas mixtures
liquid-gas mixtures
- binary phase shift keying**
(added February 1992)
UF *biphase shift keying*
BPSK
GS coding
. signal encoding
. . phase modulation
. . . phase shift keying
. . . . **binary phase shift keying**
keying
. phase shift keying
. . **binary phase shift keying**
modulation
. phase modulation
. . phase shift keying
. . . **binary phase shift keying**
RT quadrature phase shift keying
satellite transmission
- binary stars**
 - DEF Systems of two stars revolving about a barycenter.
 - GS celestial bodies
 - . stars
 - . . double stars
 - . . . **binary stars**
 - cataclysmic variables
 - companion stars
 - Nemesis (star)
 - eclipsing binary stars
 - dwarf novae
 - Lambda Tauri stars
 - Zeta Aurigae star
 - Sigma Orionis
 - symbiotic stars
 - x ray binaries
 - RT accretion disks
gravitational binding energy
limb darkening
star clusters

binary systems (materials)

stellar parallax
stellar systems
superhumps (astronomy)
triple stars
two body problem
variable stars

binary summators

USE **adding circuits**

binary systems (digital)

USE **digital systems**

binary systems (materials)

UF *two phase systems*

GS **binary systems (materials)**

. binary alloys
. binary mixtures
. . . binary fluids
. . . eutectics
. . . eutectic alloys

RT alloys

∞ materials

phase diagrams
phase separation (materials)
solidus

∞ systems

ternary systems

binary to decimal converters

GS data converters

. **binary to decimal converters**

RT computer components

∞ converters

data processing
decimal to binary converters

binaural hearing

GS hearing

. **binaural hearing**
perception

RT auditory perception

sound localization

Weber test

binders (adhesives)

USE **adhesives**

binders (materials)

GS **binders (materials)**

. propellant binders
. . . solid rocket binders

RT additives

adhesives

cements

∞ materials

molding materials
oxetane polymers
sizing materials
solid lubricants

binding

RT binding energy

bonding

collating

folding

∞ joining

printing

sealing

sewing

binding energy

(added May 1995)

GS **binding energy**

. gravitational binding energy
. nuclear binding energy

RT activation energy

active sites (chemistry)

binding

chemical bonds

electrostatic bonding

∞ energy

lattice energy

quantum wells

vacancies (crystal defects)

binding sites

(added August 2004)

USE **active sites (chemistry)**

binocular vision

GS vision

. **binocular vision**

RT haploscopes

motion perception

space perception

stereoscopic vision

binoculars

GS optical equipment

. **binoculars**

RT eyepieces

microscopes

periscopes

telescopes

binomial coefficients

GS analysis (mathematics)

. combinatorial analysis

. . **binomial coefficients**

coefficients

. **binomial coefficients**

RT factorials

binomial theorem

GS algebra

. **binomial theorem**

theorems

. **binomial theorem**

RT binomials

probability density functions

probability theory

statistical analysis

statistical distributions

binomials

GS algebra

. polynomials

. . **binomials**

RT binomial theorem

bioacoustics

GS acoustics

. **bioacoustics**

RT acoustic attenuation

auditory defects

auditory sensation areas

bioengineering

∞ biology

psychoacoustics

∞ science

sound intensity

bioassay

DEF A standardized procedure for the determination of the effects of an environmental variable or substance on living organisms. Used for biological analysis.

UF *biological analysis*

RT animal models

biochemistry

biological diversity

biological effects

∞ biology

biomarkers

histochemical analysis

in vitro methods and tests

in vivo methods and tests

lab-on-a-chip devices

Bioastronautical Orbital Space System

GS programs

. NASA programs

. . NASA space programs

. . . **Bioastronautical Orbital Space System**

. space programs

. . NASA space programs

. . . **Bioastronautical Orbital Space System**

RT ∞ systems

bioastronautics

DEF The study of biological, behavioral,

and medical problems pertaining to astronautics. This includes systems functioning in the environments expected to be found in space, vehicles designed to travel in space, and the conditions on terrestrial bodies other than the Earth.

RT aerospace environments

aerospace medicine

animal models

∞ astronautics

bioengineering

∞ biology

Biosatellite 1

Biosatellite 2

Biosatellite 3

closed ecological systems

Columbus space station

Earth atmosphere

exobiology

head down tilt

head up tilt

hindlimb suspension

lunar environment

planetary environments

∞ science

space adaptation syndrome

space exploration

space flight

space stations

spacecraft environments

tilt-table test

bioavailability

(added August 2001)

DEF The extent to which a drug, nutrient, toxin, or other substance enters the circulatory system or becomes available at a site of physiological activity.

UF *biological availability*

physiologic availability

GS availability

. **bioavailability**

RT adsorption

exposure

intravenous procedures

material absorption

pharmacology

physiochemistry

sorption

toxicity

toxicology

biochemical fuel cells

GS electric generators

. direct power generators

. . fuel cells

. . . **biochemical fuel cells**

electrochemical cells

. fuel cells

. . **biochemical fuel cells**

RT ∞ biology

phosphoric acid fuel cells

regenerative fuel cells

biochemical oxygen demand

DEF The amount of oxygen necessary for the oxidative decomposition of a material by microorganisms. The amount of oxygen consumed in mg/l of water (or waste water) over a period of 5 days at 20 deg. C under laboratory conditions. Used for BOD.

UF *BOD*

RT algae

∞ biology

ecology

oximetry

oxygen consumption

plants (botany)

pollution control

water pollution

water treatment

biochemistry

DEF Chemistry dealing with the chemical processes and compounds of living organisms.

GS **biochemistry**

. biogeochemistry

. enzymology

. physiochemistry

RT bacteriology

bioassay
 biodegradation
 bioengineering
 ∞ biology
 biomarkers
 biomimetics
 chemical warfare
 ∞ chemistry
 cytology
 enzyme inhibitors
 Gaia hypothesis
 genetic engineering
 histochemical analysis
 immunoassay
 indoleacetic acids
 interferon
 marine chemistry
 metabolites
 molecular biology
 mutagens
 nitrogen metabolism
 nutrition
 optical activity
 organic chemistry
 polymerase chain reaction
 radioimmunoassay
 vegetation growth

bioclimatology
 USE **biometeorology**

biocompatibility
 DEF Compatibility of substances with living tissues and blood components.
 GS compatibility
 . **biocompatibility**
 RT antibodies
 antigens
 ∞ biology
 blood
 immunology
 leukocytes
 monocytes
 physiological defenses
 vaccines

biocontrol systems
 SN (RESTRICTED TO ARTIFICIAL BIOTECHNOLOGICAL SYSTEMS FOR THE CONTROL OF BIOLOGICAL PROCESSES--USE REGULATORY MECHANISMS (BIOLOGY) FOR NATURAL PHYSIOLOGICAL REGULATION)
 RT biofeedback
 ∞ biology
 bionics
 psychomotor performance
 regulatory mechanisms (biology)
 ∞ systems
 tolerances (physiology)

bioconversion
 DEF The transformation of algae and/or other biomass materials in successive stages to aliphatic organic acids to aliphatic hydrocarbons to diesel and/or other liquid fuels.
 RT algae
 ∞ biology
 biomass energy production
 bioprocessing
 ∞ conversion
 enzyme activity
 fermentation
 fuels
 hydrocarbon fuel production
 methane
 renewable energy
 solar heating
 vegetation

biodegradability
 DEF The characteristic of a substance that can be decomposed by microorganisms.
 GS dissociation
 . **biodegradability**
 RT ∞ biology
 decay
 decomposition
 deterioration
 organic materials

∞ properties

biodegradation
 GS degradation
 . **biodegradation**
 RT activated sludge
 biochemistry
 biofilms
 ∞ biology
 decay
 decomposition
 deterioration

biodiversity
 USE **biological diversity**

biodynamics
 DEF The study of the effects of dynamic processes (motion, acceleration, weightlessness, etc.) on living organisms. Used for biomechanics.
 UF *biomechanics*
 RT anatomy
 bioengineering
 biological models (mathematics)
 ∞ biology
 biophysics
 ∞ dynamics
 ∞ science
 stress (physiology)

bioelectric potential
 GS potential energy
 . electric potential
 . . **bioelectric potential**
 RT bioelectricity
 ∞ biology
 ion channels (biology)

bioelectricity
 UF *neuron transmission*
 RT bioelectric potential
 ∞ biology
 biomagnetism
 information processing (biology)
 ion channels (biology)
 myelin sheath
 neuromuscular transmission
 spike potentials

bioengineering
 GS **bioengineering**
 . bioinstrumentation
 . . biotelemetry
 . . implanted electrodes (biology)
 . . biometrics
 . . body measurement (biology)
 . . . anthropometry
 . . . electroplethysmography
 . . . cardiography
 . . . ballistocardiography
 . . . electrocardiography
 . . . magnetocardiography
 . . . phonocardiography
 echocardiography
 seismocardiography
 vectorcardiography
 . . . echoencephalography
 . . . electroencephalography
 . . . electromyography
 . . . electronystagmography
 . . . electroretinography
 . . . plethysmography
 electroplethysmography
 radiocardiography
 . . . tissue engineering
 RT bioacoustics
 bioastronautics
 biochemistry
 biodynamics
 ∞ biology
 biomimetics
 bionics
 biopaks
 biophysics
 bone mineral content
 ∞ engineering
 genetic engineering
 human factors engineering
 underwater breathing apparatus

voice control

biofeedback
 DEF Originally confined to the presenting of a subject with sensory information about ongoing physiological activities, it now includes the controlling of specific physiological activities through trained mental effort.
 GS feedback
 . **biofeedback**
 . . sensory feedback
 RT aerospace medicine
 biocontrol systems
 blood pressure
 conditioning (learning)
 ∞ control
 feedback control
 heart rate
 human factors engineering
 psychology

biofilms
 (added July 2001)
 DEF Films of bacteria or other microbial organisms, the growth of which is usually defined by the surface of a biological or non-biological substrate.
 RT bacteria
 biodegradation
 biogeochemistry
 contaminants
 extraterrestrial life
 ∞ films
 fouling
 membranes
 microorganisms

bioflavonoids
 UF *vitamin P*
 GS organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **bioflavonoids**
 vitamins
 . **bioflavonoids**
 RT drugs

biogenesis
 USE **biological evolution**

biogeny
 RT ∞ biology
 biomarkers
 ∞ evolution
 ontogeny

biogeochemistry
 GS biochemistry
 . **biogeochemistry**
 environmental chemistry
 . geochemistry
 . . **biogeochemistry**
 RT biofilms
 ∞ biology
 biomarkers
 botany
 ∞ chemistry
 geobotany
 International Geosphere-Biosphere program
 minerals
 plants (botany)

biography
 GS literature
 . **biography**
 RT awards
 bibliographies
 case histories
 documentation

biohazards
 (added August 2003)
 USE **biological hazards**

bioinstrumentation
 UF *biosensors*
 GS bioengineering
 . **bioinstrumentation**
 . . biotelemetry

biological diversity

. . . implanted electrodes (biology)
RT ∞ biology
biometrics
bionics
echoencephalography
∞ engineering
IMBLMS
∞ instruments
magnetocardiography
measuring instruments
respirometers
∞ sensors
sphygmography
wildlife radiolocation

biological activity
USE **activity (biology)**

biological analysis
USE **bioassay**

biological availability
(added August 2001)
USE **bioavailability**

biological cells
USE **cells (biology)**

biological clocks
USE **rhythm (biology)**

biological diversity
(added June 1995)
DEF The diversity of genes, species, and ecosystems that make up the variety and variability of life.
UF *biodiversity*
genetic diversity
RT bioassay
biological evolution
biosynthesis
cytology
deforestation
differentiation (biology)
gene expression
genetics
mutations
protobiology
species diffusion

biological effects
GS **biological effects**
. desynchronization (biology)
. fluid shifts (biology)
. jet lag
. relative biological effectiveness (RBE)
RT activity (biology)
apoptosis
atrophy
bioassay
∞ biology
biomedical data
bone demineralization
Bragg curve
chemical effects
disorientation
dosage
∞ effects
flight stress (biology)
human reactions
Orbiting Frog Otolith
pathological effects
physiological effects
psychological effects
radiation dosage
radiation effects
space adaptation syndrome
temperature
thermal pollution

biological evolution
UF *biogenesis*
GS evolution (development)
. **biological evolution**
. . abiogenesis
RT archaeobacteria
biological diversity
∞ biology
chemical evolution

eukaryotes
Gaia hypothesis
gene expression
genetics
life sciences
mutagens
mutations
panspermia
prokaryotes
protein synthesis
protobiology

biological hazards
(added August 2003)
DEF Infectious agents or biologically derived infectious materials that cause health risks to human or animals through absorption, inhalation or ingestion.

UF *biohazards*
GS hazards
. **biological hazards**
RT contamination
hazardous materials
hazardous wastes
toxic hazards

biological markers
(added August 2004)
USE **biomarkers**

biological models
USE **bionics**

biological models (mathematics)
DEF Mathematical models for living systems.
GS models
. mathematical models
. . **biological models (mathematics)**
RT biodynamics
∞ biology
biomimetics
bionics
digital simulation
dynamic models

biological rhythm
USE **rhythm (biology)**

biological warfare agents
(added January 2002)
USE **biological weapons**

biological weapons
(added December 2001)
DEF Infectious agents engineered for deliberate use as a weapon; includes bacteria, viruses, fungi, and other living microorganisms that can kill or incapacitate.
UF *biological warfare agents*
GS weapons
. **biological weapons**
RT bacteria
chemical warfare
infectious diseases
spores
terrorism
toxins and antitoxins
virulence
viruses

∞ **biology**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT activation (biology)
activity (biology)
activity cycles (biology)
aerobiology
aerospace medicine
aging (biology)
agriculture
anatomy
animals
bacteriology
bifurcation (biology)
bioacoustics
bioassay
bioastronautics
biochemical fuel cells
biochemical oxygen demand

biochemistry
biocompatibility
biocontrol systems
bioconversion
biodegradability
biodegradation
biodynamics
bioelectric potential
bioelectricity
bioengineering
biogeny
biogeochemistry
bioinstrumentation
biological effects
biological evolution
biological models (mathematics)
bioluminescence
biomagnetism
biomass
biomass energy production
biomedical data
biometeorology
biometrics
biomimetics
bionics
biophysics
bioreactors
biosatellites
biosphere
biosynthesis
biotechnology
biotelemetry
body composition (biology)
body measurement (biology)
body size (biology)
body volume (biology)
bone demineralization
bone mineral content
botany
carbon cycle
cells (biology)
complement (biology)
cytogenesis
cytology
differentiation (biology)
ecology
embryology
evolution (development)
exobiology
fatigue (biology)
flight stress (biology)
genetic engineering
genetics
habitats
immunology
implanted electrodes (biology)
interferon
life sciences
marine biology
medical science
microbiology
molecular biology
morphology
nitrogen metabolism
paleobiology
protobiology
radiobiology
relative biological effectiveness (RBE)
reproduction (biology)
rhythm (biology)
∞ science
skin temperature (biology)
tissues (biology)
veterinary medicine

bioluminescence
GS emission
. light emission
. . luminescence
. . . **bioluminescence**
RT ∞ biology
luminescent proteins
phosphorescence

biomagnetism
DEF Magnetic fields surrounding parts or the whole of a living biological system; also, the effects of magnetism on parts or the whole of a biological entity.

GS magnetic fields
 . **biomagnetism**
 magnetic properties
 . **biomagnetism**
 RT bioelectricity
 ∞ biology
 biophysics
 electromagnetic fields
 electromagnetic interactions
 radiobiology

biomarkers

(added March 2002)

DEF Any measurable feature from which one can infer a particular environment-induced change in a biological system, detect the presence of a disease, or infer the presence of life in a particular environment.

UF *biological markers*
clinical markers

RT bioassay
 biochemistry
 biogeny
 biogeochemistry
 biometrics
 chemical indicators
 diagnosis
 environmental monitoring
 exobiology
 extraterrestrial life
 life detectors
 ∞ markers
 signatures
 toxicology

biomass

DEF The dry weight of living matter in a given area expressed in terms of mass or weight per unit of volume or area.

GS weight (mass)
 . **biomass**

RT animals
 ∞ biology
 carbon cycle
 ∞ density
 organisms
 plants (botany)
 populations
 silviculture
 ∞ weight

biomass burning

(added December 1999)

DEF Burning of vegetation in forests, grasslands, and agricultural lands usually carried out to clear the land and change its use; a significant contributor to the global budgets of many radiatively and chemically active gases and particulates in the atmosphere.

GS combustion
 . **biomass burning**

RT air pollution
 climate change
 combustion products
 contaminants
 deforestation
 environment pollution
 forest fires
 man environment interactions
 smoke

biomass energy production

GS energy conversion
 . **biomass energy production**

RT bioconversion
 ∞ biology
 bioreactors
 ∞ crops
 ∞ energy sources
 energy technology
 hydrocarbon fuel production
 manures
 methanation
 renewable energy
 vegetation

waste utilization

biomechanics

USE **biodynamics**

biomedical data

RT aerospace medicine
 biological effects
 ∞ biology
 biometrics
 body measurement (biology)
 cardiograms
 ∞ data
 heart rate
 IMLMS

Biomedical Experiment Scientific Satellite

USE **BESS (satellite)**

biometeorology

UF *bioclimatology*
 GS meteorology
 . **biometeorology**
 RT ∞ biology
 coastal ecology
 coastal plains
 ecology
 microclimatology
 nightglow
 phenology

biometrics

GS bioengineering
 . **biometrics**
 . . body measurement (biology)
 . . . anthropometry
 . . . electroplethysmography
 . . . cardiography
 . . . ballistocardiography
 . . . electrocardiography
 . . . magnetocardiography
 . . . phonocardiography
 . . . echocardiography
 . . . seismocardiography
 . . . vectorcardiography
 . . . echoencephalography
 . . . electroencephalography
 . . . electromyography
 . . . electronystagmography
 . . . electroretinography
 . . . plethysmography
 . . . electroplethysmography
 . . . radiocardiography
 RT bioinstrumentation
 ∞ biology
 biomarkers
 biomedical data
 bone mineral content
 ∞ engineering
 Orbiting Frog Otolith
 pupillometry
 statistical analysis
 ∞ statistics

biomimetics

(added October 2000)

DEF The study of biological systems as models for the development of synthetic materials, devices, sensors, and processes.

RT biochemistry
 bioengineering
 biological models (mathematics)
 ∞ biology
 bionics
 cybernetics
 smart materials
 smart structures

bionics

DEF The study of systems, particularly electronic systems, which function after the manner characteristic of, or resembling living systems. Used for biological models and biosimulation.

UF *biological models*
biosimulation
 RT artificial intelligence
 automata theory
 biocontrol systems
 bioengineering
 bioinstrumentation

biological models (mathematics)
 ∞ biology
 biomimetics
 control systems design
 cybernetics
 human factors engineering
 man machine systems
 neuristors
 rheoelectrical simulation
 robots
 simulation
 syncoders
 systems engineering

biopaks

GS support systems
 . life support systems
 . . **biopaks**
 RT bioengineering
 biosatellites
 ∞ containers
 enclosures
 portable life support systems
 preserving

biophysics

GS **biophysics**
 . health physics
 . . public health
 RT biodynamics
 bioengineering
 ∞ biology
 biomagnetism
 ∞ physics
 ∞ science

biopolymer denaturation

UF *denaturation (biopolymers)*
nucleic acid denaturation
protein denaturation
 RT biopolymers
 molecular structure
 nucleic acids
 polymer chemistry
 proteins

biopolymers

GS **biopolymers**
 . nucleic acids
 . . deoxyribonucleic acid
 . . . complementary DNA
 . . . ribonucleic acids
 . . proteins
 . . . albumins
 . . . aspartates
 . . . calmodulin
 . . . elastin
 . . . enzymes
 aldolase
 amidase
 carbonic anhydrase
 catalase
 cholinesterase
 cytochromes
 dehydrogenases
 hexokinase
 lysozyme
 nuclease
 oxidase
 papain
 pepsin
 phosphatases
 protease
 renin
 thrombin
 trypsin
 . . . fibrin
 . . . globulins
 . . . fibrinogen
 . . . gamma globulin
 . . . hemoglobin
 . . . carboxyhemoglobin
 . . . oxyhemoglobin
 . . . keratins
 . . . lipoproteins
 . . . luminescent proteins
 . . . melanin
 . . . myoglobin
 . . . myosins
 . . . osteocalcin

bioprocessing

- . . phytochrome
- . . proteinoids
- . . prothrombin
- . . protoproteins
- . . tumor suppressor proteins
- . lignin
- . polysaccharides
 - . . cellulose
 - . . . Fortisan (trademark)
 - . . chitin
 - . . dextrans
 - . . glycogens
 - . . starches
- . oligonucleotides

RT biopolymer denaturation
nucleotides
∞ polymers
polynucleotides
polypeptides

bioprocessing

RT aerospace environments
bioconversion
biotechnology
electrophoresis
microgravity
∞ microgravity applications
pharmacology
space processing
spaceborne experiments
weightlessness

bioreactors

DEF Biological processors to remove or produce certain chemicals or a particular chemical.

RT ∞ biology
biomass energy production
biotechnology
clinostats
tissue engineering

bioregeneration

USE **regeneration (physiology)**

bioregenerative life support systems

USE **closed ecological systems**

biorhythms

USE **rhythm (biology)**

BIOS project

GS programs
. projects
. . **BIOS project**

Biosatellite 1

GS artificial satellites
. biosatellites
. . **Biosatellite 1**
RT bioastronautics

Biosatellite 2

GS artificial satellites
. biosatellites
. . **Biosatellite 2**
RT bioastronautics

Biosatellite 3

GS artificial satellites
. biosatellites
. . **Biosatellite 3**
RT ∞ astronautics
bioastronautics

biosatellites

SN (EXCLUDES MANNED SPACECRAFT)

DEF Artificial satellites which are specifically designed to contain and support man, animals, or other living material in a reasonably normal manner for an adequate period of time and which, particularly for man and animals, possesses the proper means for safe return to the Earth.

GS artificial satellites
. **biosatellites**
. . Biosatellite 1
. . Biosatellite 2
. . Biosatellite 3
. . Orbiting Frog Otolith
. . Sputnik 2 satellite

RT aerospace environments
∞ biology
biopaks
environmental control
extraterrestrial life
life detectors
life support systems
manned spacecraft
space capsules
∞ spacecraft

biosensors

USE **bioinstrumentation**

biosimulation

USE **bionics**

biosphere

DEF That transition zone between Earth and atmosphere within which most forms of terrestrial life are commonly found; the outer portion of the geosphere and inner or lower portion of the atmosphere.

RT ∞ biology
chemosphere
Earth hydrosphere
free atmosphere
Gaia hypothesis
homosphere
International Geosphere-Biosphere program
lower atmosphere

biosynthesis

RT biological diversity
∞ biology
chemical reactions
genetic engineering
metabolites
prostaglandins
∞ synthesis
synthetic food

Biot method

RT calculus of variations
∞ methodology

Biot number

DEF A standard heat transfer dimensionless number.

GS dimensionless numbers
. **Biot number**
ratios
. **Biot number**
RT heat transfer
∞ numbers

biotechnology

DEF The application of engineering and technological principles to the life sciences.

GS technologies
. **biotechnology**
. . tissue engineering
RT artificial cardiac pacemaker
artificial heart valves
∞ biology
bioprocessing
bioreactors
blood pumps
clone cells
cloning (biology)
cultured cells
heart implantation
in vitro methods and tests
in vivo methods and tests
man machine systems
stem cells

biotelemetry

DEF The remote sensing and evaluation of life functions, as, e.g., in spacecraft and artificial satellites. Used for physiological telemetry.

UF *physiological telemetry*
GS bioengineering
. bioinstrumentation
. . **biotelemetry**
telecommunication
. telemetry
. . **biotelemetry**
transmission

. signal transmission

. . telemetry
. . . **biotelemetry**

RT ∞ biology
communication equipment
∞ engineering
Orbiting Frog Otolith
pneumography
telemedicine
wildlife radiolocation

biotin

UF *vitamin B complex*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **biotin**
vitamins
. **biotin**
RT drugs

biotite

DEF A widely distributed and important rock-forming mineral of the mica group. Used for kimberlite.

UF *kimberlite*
GS minerals
. mica
. . **biotite**

Biot-Savart law

(added August 1998)

DEF Law describing the intensity of a magnetic field produced by a current carrying wire. Also applied in fluid dynamics to describe the flow-velocity field induced by a vortex.

GS laws
. **Biot-Savart law**
RT electromagnetism
flow velocity
magnetic fields
Maxwell equation
vortices

biphase shift keying

USE **binary phase shift keying**

biplanes

GS **biplanes**
. AN-2 aircraft
RT ∞ aircraft
dual wing configurations
light aircraft
monoplanes
tandem wing aircraft
utility aircraft

bipolar transistors

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . **bipolar transistors**
RT bipolarity
carrier injection
epitaxy
majority carriers
minority carriers
n-p-n junctions
semiconductors (materials)

bipolarity

DEF Capability of assuming negative or positive values.

RT bipolar transistors
∞ polarization

bipropellants

USE **liquid rocket propellants**

bird-aircraft collisions

GS accidents
. aircraft accidents
. . **bird-aircraft collisions**
collisions
. midair collisions
. . **bird-aircraft collisions**
RT ∞ aircraft
aircraft hazards
birds

- flight hazards
ingestion (engines)
- birds**
- GS animals
. vertebrates
. . . **birds**
. . . chickens
. . . pigeons
. . . turkeys
. . . waterfowl
- RT aircraft hazards
bird-aircraft collisions
Earth resources
endangered species
flight hazards
homeotherms
plumage
wildlife
- birefringence**
- DEF A double-refraction phenomenon in which an unpolarized beam of light is divided into two beams with different directions and relative velocities of propagation. The amount of energy transmitted along an optical path through a crystal which exhibits birefringence and is a function of crystalline orientation. Used for Pockels effect.
- UF *Pockels effect*
- GS electromagnetic properties
. optical properties
. . . **birefringence**
. . . Kerr electrooptical effect
refraction
. **birefringence**
. . . Kerr electrooptical effect
- RT anisotropic media
anisotropy
birefringent coatings
birefringent filters
calcite
electro-optics
Moire effects
nonlinear optics
photoelasticity
polarization (waves)
reflectance
refractivity
temperature inversions
Voigt effect
- birefringent coatings**
- GS coatings
. optical coatings
. . . **birefringent coatings**
- RT anisotropic media
birefringence
birefringent filters
refractivity
- birefringent filters**
- GS electromagnetic wave filters
. optical filters
. . . **birefringent filters**
- RT birefringence
birefringent coatings
 ∞ filters
optical properties
refractivity
- Birkeland currents**
(added May 1989)
- GS electric current
. field aligned currents
. . . **Birkeland currents**
. . . ionospheric currents
. . . **Birkeland currents**
electricity
. atmospheric electricity
. . . ionospheric currents
. . . **Birkeland currents**
- RT auroral electrojets
auroral zones
electrojets
geomagnetism
ionospheric disturbances
magnetic disturbances
magnetic storms
- Pedersen currents
- birth**
- RT fertilization
fetuses
pregnancy
reproduction (biology)
reproductive systems
- bismaleimide**
- GS nitrogen compounds
. amides
. . . polyimides
. . . **bismaleimide**
. imides
. . . **bismaleimide**
- RT matrix materials
polyimide resins
polymer matrix composites
resin matrix composites
resins
- bismuth**
- GS chemical elements
. **bismuth**
. . . bismuth isotopes
metals
. **bismuth**
. . . bismuth isotopes
- bismuth 205*
USE **bismuth isotopes**
- bismuth alloys**
- GS alloys
. **bismuth alloys**
- RT antimony alloys
eutectic alloys
magnesium alloys
tin alloys
- bismuth compounds**
- GS **bismuth compounds**
. bismuth oxides
. bismuth sulfides
. bismuth tellurides
- RT ∞ chemical compounds
 ∞ Group 5A compounds
 ∞ metal compounds
- bismuth isotopes**
- UF *bismuth 205*
- GS chemical elements
. bismuth
. . . **bismuth isotopes**
. nuclides
. . . isotopes
. . . . **bismuth isotopes**
metals
. bismuth
. . . **bismuth isotopes**
- bismuth oxides**
- GS bismuth compounds
. **bismuth oxides**
chalcogenides
. oxides
. . . metal oxides
. . . . **bismuth oxides**
- RT BSCCO superconductors
- bismuth sulfides**
- GS bismuth compounds
. **bismuth sulfides**
chalcogenides
. sulfides
. . . inorganic sulfides
. . . . **bismuth sulfides**
sulfur compounds
. sulfides
. . . inorganic sulfides
. . . . **bismuth sulfides**
- bismuth tellurides**
- GS bismuth compounds
. **bismuth tellurides**
chalcogenides
. tellurides
. . . **bismuth tellurides**
tellurium compounds
- . tellurides
. . . **bismuth tellurides**
- bisphenols**
- GS hydroxyl compounds
. alcohols
. . . phenols
. . . . **bisphenols**
- Bi-Sr-Ca-Cu-O superconductors*
USE **BSCCO superconductors**
- bistable amplifiers*
USE **flip-flops**
- bistable circuits**
- GS circuits
. **bistable circuits**
. . . flip-flops
- RT digital techniques
multivibrators
trigger circuits
- bistatic radar*
USE **multistatic radar**
- bistatic reflectivity**
- DEF The characteristic of a reflector which reflects energy along a line, or lines, different from, or in addition to, that of the incident ray.
- RT brightness
incident radiation
reflectance
scattering
- bit error rate**
- DEF The number of erroneous bits or characters received from some fixed number of bits transmitted.
- GS rates (per time)
. **bit error rate**
- RT binary codes
binary data
binary digits
bit synchronization
bits
error analysis
error correcting codes
error detection codes
error signals
pulse communication
Reed-Solomon codes
signal to noise ratios
transmission efficiency
transmission rate (communications)
- bit synchronization**
- GS synchronism
. **bit synchronization**
- RT bit error rate
frequency synchronization
- biternary code**
- RT ∞ codes
differential pulse code modulation
digital systems
pulse code modulation
- bits**
- RT binary digits
bit error rate
drill bits
- bitumens**
- DEF Dark-colored (solid, semisolid, or viscous) cementitious substances, natural or manufactured, composed principally of high molecular weight hydrocarbons, of which asphalts, tars, pitches, and asphaltenes are typical.
- RT carbon
coal
coke
 ∞ construction materials
lignite
 ∞ materials
solvent refined coal
- bivariate analysis**
- GS statistical analysis
. variance (statistics)
. . . multivariate statistical analysis

BL Lacertae objects

. . . **bivariate analysis**

RT correlation

BL Lacertae objects

DEF One of a class of astronomical objects exhibiting: (1) rapid variations in intensity at radio, infrared, and optical wavelengths; (2) energy distributions largely at infrared wavelengths; (3) absence of discrete features in low dispersion spectra; and (4) strong and rapidly varying polarization at visual and radio wavelengths.

GS celestial bodies
. blazars

. . . **BL Lacertae objects**

RT extragalactic radio sources
galaxies
irregular galaxies
luminous intensity
polarization (waves)
radiant flux density
radio sources (astronomy)

black and white photography

GS imagery
. photography
. . . **black and white photography**

RT all sky photography
astronomical photography
autoradiography
chronophotography
cinematography
cloud photography
color photography
electron photography
electro-optical photography
frame photography
infrared photography
lunar photography
photomicrography
photoreconnaissance
radar photography
rocket-borne photography
satellite-borne photography
Schlieren photography
shadowgraph photography
spaceborne photography
spectroheliographs
spectrophotography
stereophotography
ultraviolet photometry
urography

Black Arrow launch vehicle

USE **Black Knight rocket vehicle**

black body radiation

DEF The electromagnetic radiation emitted by an ideal black body; it is the theoretical maximum amount of radiant energy of all wavelengths which can be emitted by a body at a given temperature.

GS electromagnetic radiation
. thermal radiation

. . . **black body radiation**

RT brightness distribution
brightness temperature
emissivity
heat radiators
hohlraums
infrared radiation
Kirchhoff law of radiation
light (visible radiation)
nongray atmospheres
nongray gas
Plancks constant
radiance
∞ radiation
sunlight
ultraviolet radiation

Black Brant 1 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . **Black Brant 1 sounding rocket**
. . . **Black Brant 1 sounding rocket**
. sounding rockets
. . . **Black Brant 1 sounding rocket**
. . . **Black Brant 1 sounding rocket**

RT solid propellant rocket engines

Black Brant 2 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . **Black Brant 2 sounding rocket**
. . . **Black Brant 2 sounding rocket**
. sounding rockets
. . . **Black Brant 2 sounding rocket**
. . . **Black Brant 2 sounding rocket**
RT solid propellant rocket engines

Black Brant 3 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . **Black Brant 3 sounding rocket**
. . . **Black Brant 3 sounding rocket**
. sounding rockets
. . . **Black Brant 3 sounding rocket**
. . . **Black Brant 3 sounding rocket**
RT solid propellant rocket engines

Black Brant 4 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . **Black Brant 4 sounding rocket**
. . . **Black Brant 4 sounding rocket**
. sounding rockets
. . . **Black Brant 4 sounding rocket**
. . . **Black Brant 4 sounding rocket**
RT solid propellant rocket engines

Black Brant 5 sounding rocket

GS rocket vehicles
. single stage rocket vehicles
. . . **Black Brant 5 sounding rocket**
. . . **Black Brant 5 sounding rocket**
. sounding rockets
. . . **Black Brant 5 sounding rocket**
. . . **Black Brant 5 sounding rocket**
RT solid propellant rocket engines

Black Brant sounding rockets

GS rocket vehicles
. single stage rocket vehicles
. . . **Black Brant sounding rockets**
. . . **Black Brant 1 sounding rocket**
. . . **Black Brant 2 sounding rocket**
. . . **Black Brant 3 sounding rocket**
. . . **Black Brant 4 sounding rocket**
. . . **Black Brant 5 sounding rocket**
. sounding rockets
. . . **Black Brant sounding rockets**
. . . **Black Brant 1 sounding rocket**
. . . **Black Brant 2 sounding rocket**
. . . **Black Brant 3 sounding rocket**
. . . **Black Brant 4 sounding rocket**
. . . **Black Brant 5 sounding rocket**
RT solid propellant rocket engines

Black Hawk assault helicopter

USE **H-60 Helicopter**

Black Hills (SD-WY)

GS landforms
. mountains
. . . **Black Hills (SD-WY)**
RT South Dakota
Wyoming

black holes (astronomy)

GS celestial bodies
. stars
. . . **black holes (astronomy)**
RT accretion disks
degenerate matter
event horizon
gravitational collapse
gravitational lenses
massive stars
naked singularities
Reissner-Nordstrom solution
supernova remnants
white holes (astronomy)
x ray binaries

Black Knight rocket vehicle

UF *Black Arrow launch vehicle*
GS rocket vehicles
. multistage rocket vehicles

. . . **Black Knight rocket vehicle**

. single stage rocket vehicles
. . . **Black Knight rocket vehicle**
RT liquid propellant rocket engines

Black Sea

GS seas
. **Black Sea**
RT Bulgaria
Romania
Turkey
U.S.S.R.

black smokers (oceanography)
(added April 2005)

USE **submarine hydrothermal vents**

Blackbird aircraft

USE **SR-71 aircraft**

Blackburn B-103 aircraft

USE **Buccaneer aircraft**

∞ blackout

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blackout (physiology)
blackout (propagation)

blackout (physiology)

GS syncope
. **blackout (physiology)**
. . . blackout prevention
unconsciousness
. **blackout (physiology)**
. . . blackout prevention
RT acceleration tolerance
∞ blackout
∞ coma

blackout (propagation)

UF *ionospheric blackout*
GS electromagnetic interference
. radio frequency interference
. . . **blackout (propagation)**
. . . polar radio blackout
RT atmospheric
∞ blackout
electromagnetic fields
electromagnetic noise
ionospheric disturbances
plasma sheaths
plasmas (physics)
radiation effects
radio communication
reentry communication
reentry effects
solar activity effects
x rays

blackout prevention

GS human performance
. astronaut performance
. . . **blackout prevention**
. pilot performance
. . . **blackout prevention**
syncope
. blackout (physiology)
. . . **blackout prevention**
unconsciousness
. blackout (physiology)
. . . **blackout prevention**
RT acceleration tolerance
∞ coma
weightlessness

bladder

GS anatomy
. genitourinary system
. . . **bladder**
RT prostate gland

urology

bladders (mechanics)
USE **diaphragms (mechanics)**

blade slap
USE **blade-vortex interaction**

blade slap noise
DEF Impulsive noise (short high pressure sound waves) of rotating blades, primarily helicopter blades. Used for helicopter impulsive noise.

UF *helicopter impulsive noise*
GS elastic waves
. sound waves
. . noise (sound)
. . . aircraft noise
. . . . **blade slap noise**
. . . flow noise
. . . . aerodynamic noise
. **blade slap noise**

RT blade tips
blade-vortex interaction
Flowcs Williams-Hawkings equation
helicopters
propeller noise

blade tips
GS tips
. **blade tips**
RT airfoil profiles
blade slap noise
blade-vortex interaction
propeller blades
rotary wings
rotor blades (turbomachinery)
wing tips

∞ **blades**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Arms of propeller and rotating wings. Specifically, restrictive, those parts of propellers or of rotating wings from the shank outward, i.e., those parts having efficient airfoil shapes and that cleave the air. Vanes such as rotating vanes or stationary vanes in rotary air compressors, or vanes of turbine wheels.
RT airfoils
blades (cutters)
compressor blades
fins
hydrofoils
propeller blades
rims
rotary wings
rotor blades (turbomachinery)
stator blades
turbine blades
turbomachine blades
vanes

blades (cutters)
GS cutters
. **blades (cutters)**
. . razor blades
RT ∞ blades

blade-vortex interaction
UF *blade slap*
vortex-blade interaction
RT airfoils
blade slap noise
blade tips
helicopters
interactional aerodynamics
∞ interactions
rotary wings
vortices
wing tip vortices

∞ **blankets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bedding equipment
blankets (fission reactors)
blankets (fusion reactors)
cloud cover

controlled atmospheres
solar blankets

blankets (fission reactors)
DEF Damper materials for fission reactors.
RT ∞ blankets
∞ dampers
fission
reactor design
reactor materials

blankets (fusion reactors)
DEF Damper materials for fusion reactors.
RT ∞ blankets
fusion reactors
limiters (fusion reactors)
moderators
reactor design
reactor materials

∞ **blanking**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blanking (cutting)
forming techniques
stamping

blanking (cutting)
GS cutting
. **blanking (cutting)**
forming techniques
. pressing (forming)
. . **blanking (cutting)**
RT ∞ blanking
laser cutting
shearing
stamping

blanks
RT ammunition
briquets
forms (paper)
preforms

Blasius equation
GS analysis (mathematics)
. real variables
. . differential equations
. . . **Blasius equation**
flow equations
. boundary layer equations
. . **Blasius equation**
RT boundary layer flow
∞ equations
Falkner-Skan equation
flat plates
Prandtl-Meyer expansion

Blasius flow
GS fluid flow
. laminar flow
. . **Blasius flow**
. . uniform flow
. . . **Blasius flow**
RT flat plates
head flow
Tollmien-Schlichting waves
turbulent flow
two dimensional flow
wedge flow

blast deflectors
DEF Devices used to divert the exhaust of a rocket fired from a vertical position.
GS deflectors
. **blast deflectors**
RT baffles
diverters
flame deflectors
shielding

blast loads
GS aerodynamic forces
. aerodynamic loads
. . **blast loads**
loads (forces)
. dynamic loads
. . aerodynamic loads
. . . **blast loads**
. . transient loads

. . . shock loads
. . . . **blast loads**
RT aerial explosions
dynamic pressure
explosions
gust loads
impact loads
overpressure
pressure
pressure pulses
Riemann waves
shock waves
wave resistance

blastoff
USE **rocket launching**

∞ **blasts**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT exhaust gases
explosions
jet blast effects
shock waves
sound waves

Blattidae
USE **cockroaches**

blazars
(added December 1988)
DEF Strongly optical polarized active galactic nuclei objects exhibiting BL Lacertae-like and quasar-like characteristics.
GS celestial bodies
. **blazars**
. . BL Lacertae objects
RT accretion disks
active galactic nuclei
active galaxies
disk galaxies
extragalactic radio sources
infrared astronomy
quasars
radio galaxies
radio sources (astronomy)
Seyfert galaxies

bleaching
RT chlorination
cleaning
fading

∞ **bleeding**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT boundary layer control
fluid mechanics
hemorrhages
pressure reduction

bleed-off
USE **pressure reduction**

blended-wing-body configurations
(added April 2001)
DEF Flight vehicle configurations that maximize overall efficiency by integrating the engines, wings, and the body into a single lifting surface. Sometimes referred to as flying-wing configurations.
UF *blended-wing-fuselage*
BWB configurations
flying wing configurations
GS aerodynamic configurations
. body-wing configurations
. . **blended-wing-body configurations**
RT aircraft configurations
aircraft design
SR-71 aircraft

blight

tailless aircraft

blended-wing-fuselage
(added April 2001)

USE **blended-wing-body configurations**

blends

USE **mixtures**

blight

GS plant diseases

. **blight**

RT

alfalfa
bacteria
barley
botany
citrus trees
corn
crop growth
crop vigor
fungi
orchards
parasites
parasitic diseases
plants (botany)
rhizopus
rust fungi
vineyards

blind landing

GS landing

. **blind landing**

RT

aircraft landing
approach indicators
automatic landing control
instrument approach
instrument flight rules
instrument landing systems
landing instruments
night flights (aircraft)

blindness

GS **blindness**

. flash blindness

RT

braille
disabilities
eye diseases
optometry
vision

blinds

RT shielding

∞ shutters

blinking

RT astronomical photometry
display devices
eye movements
visual perception

∞ blisters

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED—CONSULT THE TERMS
LISTED BELOW)

RT

infectious diseases
injuries
mucocoeles
protuberances
rupturing
skin (anatomy)
viruses

Bloch band

GS energy bands

. **Bloch band**

RT ∞

bands
superconductivity

block copolymers

(added January 1990)

GS copolymers

. **block copolymers**

RT

copolymerization
micelles
polybutadiene
∞ polymers
polystyrene

block diagrams

GS diagrams

. **block diagrams**

RT charts

computer programming
computer programs
flow charts
research management
systems analysis

Block Island Sound (RI)

GS sounds (topographic features)

. **Block Island Sound (RI)**

RT

Atlantic Ocean
Rhode Island

blocking

UF *obstructing*

RT ∞

arresters
closing
closures
constraints
constrictions
containment
plugging
plugs
prevention
retarders (devices)
retarding
sealing
seals (stoppers)
stopping

blocks

RT cubes (mathematics)

pulleys
slabs

bleoedite

DEF A mineral consisting of hydrous sodium magnesium sulfate that is colorless. Also known as astrakanite or astrochanite.

GS minerals

. **bleoedite**

RT

magnesium sulfates
sodium compounds
sulfur compounds

blood

GS body fluids

. **blood**

. . fibrin
. . fibrinogen
. . thrombin
. . thromboplastin

RT

anemias
biocompatibility
blood cell count
blood cells
blood circulation
blood coagulation
blood flow
blood groups
blood plasma
blood pressure
blood pumps
blood vessels
blood volume
blood-brain barrier
capillaries (anatomy)
carboxyhemoglobin test
cardiovascular system
coagulation
heart
hematocrit
hematopoiesis
hemoglobin
hemorrhages
hypercapnia
hypocapnia
oximetry
Rhesus factor
transfusion

blood cell count

(added August 2004)

DEF The number of leukocytes and erythrocytes per unit volume in a sample of venous blood. A complete blood count (CBC) also includes measurement of the hemoglobin; hematocrit, and erythrocyte indices.

RT

anemias
blood

blood cells
blood volume
cytology
erythrocytes
hematocrit
hematocrit ratio
hematology
hematopoiesis
hemoglobin
leukocytes
lymphocytes
monocytes
platelets

blood cells

UF *corpuscles (blood)*

GS cells (biology)

. **blood cells**

. . erythrocytes
. . . reticulocytes
. . hemocytes
. . leukocytes
. . . eosinophils
. . . lymphocytes
. . . monocytes
. . . neutrophils

RT

anemias
blood
blood cell count
blood plasma
hematopoiesis
hematopoietic system
hemoglobin

blood circulation

GS circulation

. **blood circulation**

. . brain circulation
. . coronary circulation
. . intercranial circulation
. . ocular circulation
. . peripheral circulation
. . pulmonary circulation

RT

artificial cardiac pacemaker
artificial heart valves
blood
blood-brain barrier
carboxyhemoglobin
circulatory system
cyanosis
diastole
electroplethysmography
heart conduction system
heart function
heart implantation
hematocrit
hemodynamic responses
hemodynamics
hypervolemia
hypovolemia
intravascular system
ischemia
phonoarteriography
physiology
rheoencephalography
rheometers
tourniquets
vasodilator agents

blood coagulation

GS coagulation

. **blood coagulation**

RT

blood
clotting
fibrin
hemostatics
myocardial infarction
platelets
thrombin
thrombocytes
thromboplastin
thrombosis

blood flow

GS fluid flow

. **blood flow**

RT

blood
capillary flow
diastole
hematocrit

- hemoperfusion
- systole
- tourniquets
- blood groups**
 - RT blood
 - platelets
- blood plasma**
 - RT blood
 - blood cells
 - body fluids
 - electrolyte metabolism
 - hematocrit
- blood pressure**
 - GS pressure
 - . **blood pressure**
 - .. diastolic pressure
 - .. hypertension
 - .. hypotension
 - .. lower body negative pressure
 - .. systolic pressure
 - RT baroreflexes
 - biofeedback
 - blood
 - diastole
 - heart function
 - hemodynamic responses
 - hemoperfusion
 - manometers
 - ophthalmodynamometry
 - orthostatic tolerance
 - sphygmography
 - systole
 - ∞ tension
- blood pumps**
 - GS medical equipment
 - . **blood pumps**
 - pumps
 - . **blood pumps**
 - RT artificial heart valves
 - biotechnology
 - blood
 - circulatory system
 - heart
 - pulmonary circulation
- blood serum**
 - (added April 2004)
 - DEF The clear portion of blood that is left after blood coagulation to remove blood cells and clotting proteins.
 - GS serums
 - . **blood serum**
- blood vessels**
 - GS anatomy
 - . circulatory system
 - .. cardiovascular system
 - ... **blood vessels**
 - arteries
 - aorta
 - arterioles
 - capillaries (anatomy)
 - glomerulus
 - veins
 - RT angiogenesis
 - bifurcation (biology)
 - blood
 - carotid sinus body
 - carotid sinus reflex
 - catheterization
 - embolisms
 - endothelium
 - fat embolisms
 - vasoconstriction
 - vasodilation
 - vasodilator agents
 - ∞ vessels
- blood volume**
 - RT blood
 - blood cell count
 - cardiac output
 - cardiovascular system
 - chronic conditions
 - clinical medicine
 - hematocrit
- hematopoietic system
- hemodynamics
- hypovolemia
- hypovolemia
- stroke volume
- blood-brain barrier**
 - DEF A mechanism which maintains the constancy of the neurons in the central nervous system by preventing certain substances from leaving the bloodstream and entering the neural tissue.
 - RT ∞ barriers
 - blood
 - blood circulation
 - central nervous system
 - neurons
- blowdown wind tunnels**
 - GS test facilities
 - . wind tunnels
 - .. **blowdown wind tunnels**
 - RT hotshot wind tunnels
 - hypersonic wind tunnels
 - hypervelocity wind tunnels
 - low density research
 - low speed wind tunnels
 - subsonic wind tunnels
 - supersonic wind tunnels
 - transonic wind tunnels
- blowers**
 - RT air conditioning
 - air conditioning equipment
 - air ducts
 - blowing
 - centrifugal compressors
 - compressors
 - cooling systems
 - ducted fans
 - exhaust systems
 - ∞ fans
 - impellers
 - injectors
 - materials handling
 - mixers
 - ∞ nozzles
 - refrigerating machinery
 - sealing
 - sprayers
 - superchargers
 - turbomachinery
 - ventilation
 - ventilation fans
 - ventilators
- blowing**
 - GS **blowing**
 - . spanwise blowing
 - . tangential blowing
 - . under surface blowing
 - . upper surface blowing
 - RT aeration
 - agitation
 - blowers
 - boundary layer control
 - circulation
 - circulation control airfoils
 - compressing
 - entrainment
 - exhausting
 - externally blown flaps
 - forced convection
 - injection
 - mixing
 - ∞ pumping
 - spraying
 - upper surface blown flaps
 - wind (meteorology)
- blown flaps*
- USE **externally blown flaps**
- blowoff (combustion)*
- USE **flameout**
- blowouts**
 - RT fatigue life
- tires
- Blue Goose missile**
 - GS decoys
 - . **Blue Goose missile**
 - missiles
 - . surface to air missiles
 - .. **Blue Goose missile**
 - RT booster rocket engines
 - countermeasures
 - J-85 engine
 - solid propellant rocket engines
- blue green algae**
 - UF *Cyanophyta*
 - GS plants (botany)
 - . algae
 - .. **blue green algae**
 - ... anabaena
 - ... Microcystis
 - ... Nostoc
 - . thermophilic plants
 - .. **blue green algae**
 - ... anabaena
 - ... Microcystis
 - ... Nostoc
- Blue Scout rocket vehicle**
 - GS launch vehicles
 - . **Blue Scout rocket vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. **Blue Scout rocket vehicle**
 - RT Algol engine
 - solid propellant rocket engines
 - X-248 engine
 - X-254 engine
 - XM-33 engine
- blue shift**
 - (added February 2002)
 - DEF The displacement of observed spectral lines toward the shorter wavelengths of the blue end of the spectrum.
 - RT absorption spectra
 - astronomical spectroscopy
 - Doppler effect
 - Doppler-Fizeau effect
 - emission spectra
 - energy gaps (solid state)
 - photoluminescence
 - quantum wells
 - radial velocity
 - red shift
- blue stars**
 - DEF Stars of spectral type O, B, A, or F according to the Draper catalog.
 - GS celestial bodies
 - . stars
 - .. early stars
 - ... hot stars
 - **blue stars**
 - RT A stars
 - B stars
 - F stars
 - O stars
- Blue Steel missile**
 - GS missiles
 - . **Blue Steel missile**
 - RT liquid propellant rocket engines
- Blue Streak launch vehicle**
 - GS launch vehicles
 - . **Blue Streak launch vehicle**
 - rocket vehicles
 - . **Blue Streak launch vehicle**
 - RT Eldo launch vehicle
 - liquid propellant rocket engines
- Blue Streak missile**
 - GS missiles
 - . ballistic missiles
 - .. intermediate range ballistic missiles
 - ... **Blue Streak missile**
 - . surface to surface missiles
 - .. intermediate range ballistic missiles
 - ... **Blue Streak missile**
 - rocket vehicles

blueprints

. **Blue Streak missile**
RT liquid propellant rocket engines

blueprints

GS documents
. drawings
. . engineering drawings
. . . **blueprints**
RT layouts
reproduction (copying)

bluff bodies

DEF Bodies having a broad, flattened front, as in some reentry vehicles.
RT blunt bodies
∞ bodies
ducted bodies
forebodies
lifting bodies
reentry vehicles
Roshko prediction

bluffs (landforms)

USE **cliffs**

blunt bodies

RT aerodynamic configurations
aerodynamics
axisymmetric bodies
bluff bodies
∞ bodies
ducted bodies
forebodies
missile bodies
nose cones
power law bodies
stagnation point
symmetrical bodies

blunt leading edges

DEF The obtuse cross sections of certain front edges of airfoils or wings.

GS edges
. leading edges
. . **blunt leading edges**
RT airfoils
forebodies
trailing edges

blunt trailing edges

DEF The rounded or obtuse angled trailing edges of wings and/or control surfaces designed to enhance aerodynamic characteristics.

GS edges
. trailing edges
. . **blunt trailing edges**
RT airfoils
control surfaces
wings

blurring

RT aberration
resolution
spatial filtering

BMC

USE **bone mineral content**

BMEWS

USE **Ballistic Missile Early Warning System**

BO-105 helicopter

GS Bolkow aircraft
. **BO-105 helicopter**
passenger aircraft
. **BO-105 helicopter**
utility aircraft
. **BO-105 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **BO-105 helicopter**

boards (paper)

UF *fiberboard*
RT ∞ construction materials
paper (material)

papers

boats

GS surface vehicles
. **boats**
. . lifeboats
water vehicles
. **boats**
. . lifeboats
RT amphibious vehicles
harbors
inflatable structures
keels
∞ military vehicles
research vehicles
ships
underwater vehicles

boattails

DEF The rear portions of elongated bodies, as in rockets, having decreasing cross-sectional area toward the rear.

RT afterbodies
skirts
tail assemblies

BOD

USE **biochemical oxygen demand**

∞ bodies

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT afterbodies
axisymmetric bodies
bluff bodies
blunt bodies
bodies of revolution
celestial bodies
centerbodies
ducted bodies
elastic bodies
finned bodies
flexible bodies
foreign bodies
Herbig-Haro objects
human body
lenticular bodies
lifting bodies
maneuverable reentry bodies
missile bodies
platforms
plastic bodies
pyramidal bodies
reentry vehicles
rotating bodies
slender bodies
solids
streamlined bodies
symmetrical bodies
three dimensional bodies
towed bodies
two dimensional bodies

bodies of revolution

DEF Symmetrical bodies having the form described by rotating a plane curve about an axis in its plane.

GS symmetrical bodies
. **bodies of revolution**
. . conical bodies
. . . slender cones
. . cylindrical bodies
. . . rotating cylinders
. . parabolic bodies
. . power law bodies
. . spheres
. . . celestial sphere
. . . concentric spheres
. . . falling spheres
. . . Poincare spheres
. . . rotating spheres
. . toruses
RT aerodynamic configurations
aerodynamics
axes of rotation
axisymmetric bodies
∞ bodies
cones
disks (shapes)

ellipsoids
finned bodies
geometry
∞ hemispheres
hemispherical shells
ogives
∞ rings
spherical shells
streamlined bodies

body centered cubic lattices

UF *BCC lattices*
GS crystal lattices
. cubic lattices
. . **body centered cubic lattices**
RT close packed lattices
cluster variation method
crystals
face centered cubic lattices

body composition (biology)

GS composition (property)
. **body composition (biology)**
RT ∞ biology
chemical composition
exoskeletons

body fluids

GS **body fluids**
. blood
. . fibrin
. . fibrinogen
. . thrombin
. . thromboplastin
. cerebrospinal fluid
. endolymph
. lymph
. mucus
. saliva
. sweat
. urine
RT blood plasma
diuresis
edema
electrolyte metabolism
fluid shifts (biology)
∞ fluids
isotonicity
lysozyme
mineral metabolism
obesity
perspiration
secretions
water
water balance

body kinematics

GS kinematics
. **body kinematics**
RT acceleration (physics)
acceleration stresses (physiology)
kinetics
particle theory
velocity

body measurement (biology)

SN (LIMITED TO BIOLOGICAL APPLICATIONS--FOR MEASUREMENT OF NON-BIOLOGICAL BODIES USE SIZE DETERMINATION)
GS bioengineering
. biometrics
. . **body measurement (biology)**
. . . anthropometry
. . . electroplethysmography
RT ∞ biology
biomedical data
electrocardiography
electroencephalography
electrophysiology
∞ engineering
human body
human factors engineering
obesity
size determination
∞ sizing

body size (biology)

RT anthropometry
∞ biology

- obesity
- body sway test**
 GS physiological tests
 . **body sway test**
 RT ∞ equilibrium
 head down tilt
 vertical perception
 vestibular tests
- body temperature**
 SN (LIMITED TO TEMPERATURE OF BIOLOGICAL BODIES)
 GS temperature
 . **body temperature**
 RT cold tolerance
 fever
 heat acclimatization
 heat stroke
 heat tolerance
 homeostasis
 homeotherms
 humidity
 hyperthermia
 hypothermia
 perspiration
 poikilothermia
 shivering
 thermoreceptors
 thermoregulation
 vasoconstriction
 vasodilation
- body temperature (non-biological)*
 USE **temperature**
- body temperature regulation*
 USE **thermoregulation**
- body volume (biology)**
 GS volume
 . **body volume (biology)**
 RT ∞ biology
 obesity
- body weight**
 GS weight (mass)
 . **body weight**
 RT obesity
 weightlessness
- body-wing and tail configurations**
 UF *wing-body and tail configurations*
 GS aerodynamic configurations
 . **body-wing and tail configurations**
 RT ∞ configurations
 fuselages
 tail assemblies
 wings
- body-wing configurations**
 UF *wing-body configurations*
 GS aerodynamic configurations
 . **body-wing configurations**
 . . blended-wing-body configurations
 RT airfoils
 drooped airfoils
 GAW-2 airfoil
 wings
- Boeing 707 aircraft**
 GS Boeing aircraft
 . **Boeing 707 aircraft**
 commercial aircraft
 . **Boeing 707 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 707 aircraft**
 monoplanes
 . **Boeing 707 aircraft**
 passenger aircraft
 . **Boeing 707 aircraft**
 transport aircraft
 . **Boeing 707 aircraft**
 RT ∞ aircraft
- Boeing 717 aircraft**
 (added October 1998)
 GS Boeing aircraft
 . **Boeing 717 aircraft**
 commercial aircraft
- . **Boeing 717 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 717 aircraft**
 monoplanes
 . **Boeing 717 aircraft**
 passenger aircraft
 . **Boeing 717 aircraft**
 transport aircraft
 . **Boeing 717 aircraft**
 RT ∞ aircraft
- Boeing 720 aircraft**
 GS Boeing aircraft
 . **Boeing 720 aircraft**
 commercial aircraft
 . **Boeing 720 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 720 aircraft**
 monoplanes
 . **Boeing 720 aircraft**
 passenger aircraft
 . **Boeing 720 aircraft**
 transport aircraft
 . **Boeing 720 aircraft**
 RT ∞ aircraft
- Boeing 727 aircraft**
 GS Boeing aircraft
 . **Boeing 727 aircraft**
 commercial aircraft
 . **Boeing 727 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 727 aircraft**
 passenger aircraft
 . **Boeing 727 aircraft**
 transport aircraft
 . **Boeing 727 aircraft**
 RT ∞ aircraft
 cargo aircraft
- Boeing 733 aircraft**
 GS Boeing aircraft
 . **Boeing 733 aircraft**
 commercial aircraft
 . **Boeing 733 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 733 aircraft**
 monoplanes
 . **Boeing 733 aircraft**
 supersonic aircraft
 . **Boeing 733 aircraft**
 transport aircraft
 . **Boeing 733 aircraft**
 RT ∞ aircraft
 variable sweep wings
- Boeing 737 aircraft**
 GS Boeing aircraft
 . **Boeing 737 aircraft**
 commercial aircraft
 . **Boeing 737 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 737 aircraft**
 monoplanes
 . **Boeing 737 aircraft**
 passenger aircraft
 . **Boeing 737 aircraft**
 transport aircraft
 . **Boeing 737 aircraft**
 RT ∞ aircraft
 cargo aircraft
- Boeing 747 aircraft**
 GS Boeing aircraft
 . **Boeing 747 aircraft**
 commercial aircraft
 . **Boeing 747 aircraft**
 jet aircraft
 . **Boeing 747 aircraft**
 passenger aircraft
 . **Boeing 747 aircraft**
 transport aircraft
 . **Boeing 747 aircraft**
 RT ∞ aircraft
 SOFIA (airborne observatory)
- turbofan engines
 X-34 reusable launch vehicle
- Boeing 747B aircraft*
 USE **E-4A aircraft**
- Boeing 757 aircraft**
 DEF Boeing's twin turbofan short/medium range transport aircraft that made its first flight on February 19, 1982.
 GS Boeing aircraft
 . **Boeing 757 aircraft**
 commercial aircraft
 . **Boeing 757 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 757 aircraft**
 monoplanes
 . **Boeing 757 aircraft**
 passenger aircraft
 . **Boeing 757 aircraft**
 transport aircraft
 . **Boeing 757 aircraft**
 RT ∞ aircraft
- Boeing 767 aircraft**
 DEF Boeing's widebodied medium range commercial transport aircraft that made its first flight on September 26, 1981.
 GS Boeing aircraft
 . **Boeing 767 aircraft**
 commercial aircraft
 . **Boeing 767 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Boeing 767 aircraft**
 monoplanes
 . **Boeing 767 aircraft**
 passenger aircraft
 . **Boeing 767 aircraft**
 transport aircraft
 . **Boeing 767 aircraft**
 RT ∞ aircraft
 cargo aircraft
 turbofan engines
- Boeing 777 aircraft**
 (added September 1994)
 GS Boeing aircraft
 . **Boeing 777 aircraft**
 commercial aircraft
 . **Boeing 777 aircraft**
 jet aircraft
 . **Boeing 777 aircraft**
 passenger aircraft
 . **Boeing 777 aircraft**
 transport aircraft
 . **Boeing 777 aircraft**
 RT ∞ aircraft
- Boeing 2707 aircraft**
 GS Boeing aircraft
 . **Boeing 2707 aircraft**
 commercial aircraft
 . supersonic commercial air transport
 . . **Boeing 2707 aircraft**
 jet aircraft
 . **Boeing 2707 aircraft**
 passenger aircraft
 . **Boeing 2707 aircraft**
 supersonic aircraft
 . supersonic transports
 . . supersonic commercial air transport
 . . . **Boeing 2707 aircraft**
 transport aircraft
 . **Boeing 2707 aircraft**
 RT ∞ aircraft
- Boeing aircraft**
 UF *Vertol military helicopters*
 GS Boeing aircraft
 . B-47 aircraft
 . B-50 aircraft
 . B-52 aircraft
 . Boeing 707 aircraft
 . Boeing 717 aircraft
 . Boeing 720 aircraft
 . Boeing 727 aircraft
 . Boeing 733 aircraft

Bogoliubov theory

- . Boeing 737 aircraft
 - . Boeing 747 aircraft
 - . Boeing 757 aircraft
 - . Boeing 767 aircraft
 - . Boeing 777 aircraft
 - . Boeing 2707 aircraft
 - . C-135 aircraft
 - . CH-21 helicopter
 - . CH-46 helicopter
 - . CH-47 helicopter
 - . CH-62 helicopter
 - . E-3A aircraft
 - . E-4A aircraft
 - . H-25 helicopter
 - . V-22 aircraft
 - . VZ-2 aircraft
 - . X-20 aircraft
 - . X-32 aircraft
- RT ∞ aircraft
- AWACS aircraft
 - McDonnell Douglas aircraft
 - X-45 aircraft
 - YC-14 aircraft

Bogoliubov theory

- RT BBGKY hierarchy
- ∞ theories

bogs

- USE marshlands

Bohr magneton

- DEF A constant equivalent to the magnetic moment of an electron.
- GS constants
- . **Bohr magneton**
- RT electrons
- magnetic moments

Bohr theory

- GS theoretical physics
- . quantum theory
 - . . **Bohr theory**
- RT electron transitions
- line spectra
- ∞ theories

bohrium

- (added May 1998)
- GS chemical elements
- . **bohrium**
- RT hassium
- seaborgium

boiler plate

- GS structural members
- . plates (structural members)
 - . . metal plates
 - . . . **boiler plate**
- RT thick walls

boilers

- UF *steam generators*
- GS heating equipment
- . **boilers**
- RT external combustion engines
- furnaces
- ∞ generators
- heat balance
- pressure vessels
- steam
- vaporizers
- waste energy utilization

boiling

- UF *ebullition*
- GS phase transformations
- . vaporizing
 - . . **boiling**
 - . . . film boiling
 - . . . nucleate boiling
 - Leidenfrost phenomenon
- RT effervescence
- evaporation
- evolution (liberation)
- heat transfer
- heating

boiling water reactors

- GS nuclear reactors

- . liquid cooled reactors
 - . . water cooled reactors
 - . . . **boiling water reactors**
 - experimental boiling water reactors
 - Halden Boiling Water Reactor
 - Los Alamos Water Boiler Reactor
 - Pathfinder nuclear reactor
 - Spert reactors
- RT nuclear power reactors
- nuclear research and test reactors

bolides

- DEF Brilliant meteors, especially ones which explode; detonating fireballs.
- GS celestial bodies
- . meteoroids
 - . . **bolides**
 - . . . Cyrillid meteoroids
- RT atmospheric entry
- atmospheric heating
- ∞ fireballs
- meteor trails
- meteorites
- meteoroid showers
- Pribram meteorite

Bolivia

- GS nations
- . **Bolivia**
- RT South America

Bolkow aircraft

- GS **Bolkow aircraft**
- . BO-105 helicopter
- RT ∞ aircraft

boll weevils

- GS animals
- . invertebrates
 - . . arthropods
 - . . . insects
 - Coleoptera
 - **boll weevils**
- RT bollworms
- cotton
- infestation

bollworms

- GS animals
- . invertebrates
 - . . arthropods
 - . . . insects
 - **bollworms**
- larvae
- . **bollworms**
- RT boll weevils
- corn
- cotton
- fruits
- infestation
- moths

bolograms

- USE **bolometers**

bolometers

- DEF Instruments which measure the intensity of radiant energy by employing thermally sensitive electrical resistors; a type of actinometer. Used for bolograms.
- UF *bolograms*
- GS measuring instruments
- . radiation measuring instruments
 - . . **bolometers**
- RT Dicke radiometers
- electrical measurement
- heat measurement
- infrared detectors
- photometers
- potentiometers (instruments)
- radiation pyrometers
- radiometers
- resistance thermometers
- temperature measurement
- temperature measuring instruments

- x ray detectors

bolted joints

- DEF Joints fastened with bolts. They are usually designed for heavy loads.
- GS joints (junctions)
- . **bolted joints**
- RT bolts
- lap joints
 - riveted joints
 - scarf joints

bolts

- GS fasteners
- . **bolts**
 - . . rock bolts
 - . . tiebolts
- RT anchors (fasteners)
- bolted joints
- couplings
- holders
- nuts (fasteners)
- screws
- studs (structural members)
- threads

Boltzmann distribution

- GS distribution (property)
- . **Boltzmann distribution**
- RT atmospheric density
- atmospheric diffusion
- kinetic theory
- statistical mechanics
- two fluid models

Boltzmann transport equation

- RT BBGKY hierarchy
- BGK model
- Burnett equations
- Chapman-Enskog theory
- ∞ equations
- Fokker-Planck equation
 - hydrodynamic equations
 - kinetic theory
 - particle diffusion
 - statistical mechanics
 - transport properties
 - transport theory

Boltzmann-Vlasov equation

- RT ∞ equations
- high temperature plasmas
 - Maxwell equation
 - partial differential equations
 - wave equations

Bolza problems

- RT optimization
- ∞ problems

BOMARC A missile

- GS missiles
- . antiaircraft missiles
 - . . BOMARC missiles
 - . . . **BOMARC A missile**
 - . . . surface to air missiles
 - . . . BOMARC missiles
 - **BOMARC A missile**
- RT liquid propellant rocket engines
- solid propellant rocket engines

BOMARC B missile

- GS missiles
- . antiaircraft missiles
 - . . BOMARC missiles
 - . . . **BOMARC B missile**
 - . . . surface to air missiles
 - . . . BOMARC missiles
 - **BOMARC B missile**
- RT liquid propellant rocket engines
- solid propellant rocket engines

BOMARC missiles

- GS missiles
- . antiaircraft missiles
 - . . **BOMARC missiles**
 - . . . BOMARC A missile
 - BOMARC B missile
 - . . . surface to air missiles
 - . . . **BOMARC missiles**

- . . . BOMARC A missile
- . . . BOMARC B missile
- bomb calorimeters**
 - GS measuring instruments
 - . calorimeters
 - . . **bomb calorimeters**
 - RT drop calorimeters
 - flame calorimeters
 - heat measurement
 - high temperature tests
 - temperature measuring instruments
- ∞ **bombardment**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT electron bombardment
 - hypervelocity projectiles
 - irradiation
 - meteoritic damage
 - sputtering
- bomber aircraft**
 - GS attack aircraft
 - . **bomber aircraft**
 - . . A-2 aircraft
 - . . A-3 aircraft
 - . . A-4 aircraft
 - . . A-5 aircraft
 - . . A-6 aircraft
 - . . B-1 aircraft
 - . . B-2 aircraft
 - . . B-26 aircraft
 - . . B-47 aircraft
 - . . B-50 aircraft
 - . . B-52 aircraft
 - . . B-57 aircraft
 - . . B-58 aircraft
 - . . B-66 aircraft
 - . . B-70 aircraft
 - . . F-111 aircraft
 - . . Shackleton bomber
 - . . Valiant aircraft
 - . . Victor MK-1 aircraft
 - . . Vulcan aircraft
 - RT ∞ aircraft
 - antisubmarine warfare aircraft
 - bombing equipment
 - F-117A aircraft
 - jet aircraft
 - ∞ military aircraft
 - ∞ military aviation
 - tanker aircraft
 - training aircraft
 - Vampire MK 35 aircraft
- bombing equipment**
 - GS onboard equipment
 - . aircraft equipment
 - . . **bombing equipment**
 - RT B-1 aircraft
 - bomber aircraft
 - bombs (ordnance)
 - ∞ equipment
 - fire control
- ∞ **bombs**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT bombs (ordnance)
 - precision guided projectiles
 - pressure gages
 - samplers
- bombs (ordnance)**
 - DEF Explosive devices designed to be detonated under specified conditions.
 - GS explosive devices
 - . **bombs (ordnance)**
 - RT ammunition
 - B-1 aircraft
 - bombing equipment
 - ∞ bombs
 - explosives
 - incendiary ammunition
 - missiles
 - nuclear weapons
 - projectiles
 - pyrotechnics
- shaped charges
- torpedoes
- warheads
- bombs (pressure gages)**
 - USE **pressure gages**
- bombs (samplers)**
 - USE **samplers**
- Bonanza aircraft**
 - USE **C-35 aircraft**
- bond graphs**
 - GS charts
 - . graphs (charts)
 - . . **bond graphs**
 - RT control systems design
 - differential equations
 - dynamic models
 - mathematical models
 - ∞ mathematics
 - simulation
 - systems analysis
 - systems engineering
- Bond number**
 - (added December 1999)
 - DEF Dimensionless number representing the ratio between gravitational force and the surface tension of a bubble, drop, or meniscus.
 - GS dimensionless numbers
 - . **Bond number**
 - RT drops (liquids)
 - gravitational effects
 - interfacial tension
 - menisci
- bonded joints**
 - (added March 1993)
 - UF *bondlines*
 - GS joints (junctions)
 - . **bonded joints**
 - RT adhesive bonding
 - bonding
 - rocket engine cases
 - rocket linings
 - scarf joints
 - soldered joints
 - solid propellant rocket engines
 - welded joints
- bonding**
 - DEF Specifically, a system of connections between all metal parts of an aircraft or other structure forming a continuous electrical unit and preventing jumping or arching of static electricity. Glueing or cementing together for structural strength.
 - GS **bonding**
 - . adhesive bonding
 - . agglutination
 - . ceramic bonding
 - . explosive welding
 - . inertia bonding
 - . metal bonding
 - . . metal-metal bonding
 - . reaction bonding
 - . resin bonding
 - RT adhesion
 - adhesion tests
 - beam leads
 - binding
 - bonded joints
 - cementation
 - chemical bonds
 - cohesion
 - cold welding
 - debonding (materials)
 - diffusion welding
 - ∞ joining
 - joints (junctions)
 - laminates
 - laser welding
 - sealing
 - soldering
 - superplastic forming
- welding
- bondlines*
- USE **bonded joints**
- Bondoc meteorite**
 - GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . achondrites
 - **Bondoc meteorite**
- bone demineralization**
 - GS demineralizing
 - . **bone demineralization** diseases
 - . **bone demineralization**
 - RT biological effects
 - ∞ biology
 - bones
 - hindlimb suspension
 - osteoblasts
 - osteocalcin
 - osteogenesis
 - osteoporosis
 - physiological effects
 - physiology
 - weightlessness
- bone density*
 - (added August 2004)
 - USE **bone mineral content**
- bone formation*
 - (added January 2005)
 - USE **osteogenesis**
- bone marrow**
 - GS tissues (biology)
 - . connective tissue
 - . . **bone marrow**
 - RT bones
 - cancer
 - erythrocytes
 - hematopoiesis
 - hematopoietic system
 - leukemias
 - leukocytes
 - lymphatic system
 - monocytes
 - osteogenesis
- bone mineral content**
 - UF *BMC*
 - bone density*
 - GS content
 - . **bone mineral content**
 - RT bioengineering
 - ∞ biology
 - biometrics
 - bones
 - calcium carbonates
 - calcium phosphates
 - collagens
 - minerals
 - osteoblasts
 - osteocalcin
 - osteogenesis
 - osteoporosis
- bones**
 - GS anatomy
 - . musculoskeletal system
 - . . **bones**
 - . . . femur
 - . . . pelvis
 - . . . scapula
 - . . . skull
 - cranium
 - intracranial cavity
 - mastoids
 - . . . spine
 - vertebrae
 - . . . sternum
 - . . . tibia
 - . . . ulna
 - RT arthritis
 - bone demineralization
 - bone marrow
 - bone mineral content

Bonne projection

calcification
cartilage
chin
connective tissue
exoskeletons
joints (anatomy)
lamella
osteoblasts
osteocalcin
osteogenesis
osteoporosis
spinal cord
splints

Bonne projection

DEF A type of conical map projection in which meridians are plotted as curves and the parallels are spaced along them at true distances.

RT mapping
maps
∞ projection

Boolean algebra

DEF The study of the manipulation of symbols representing operations according to the rules of logic. Boolean algebra corresponds to an algebra using only the numbers 0 and 1, therefore can be used in programming digital computers which operate on the binary principle.

GS mathematical logic
. lattices (mathematics)
. . **Boolean algebra**
. . . Boolean functions
RT algebra
∞ conjunction
instruction sets (computers)
∞ logic
set theory
switching theory
transistor logic
∞ unions

Boolean functions

GS functions (mathematics)
. **Boolean functions**
mathematical logic
. lattices (mathematics)
. . Boolean algebra
. . . **Boolean functions**

∞ boom

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT booms (equipment)
sonic booms
tail assemblies

booms (equipment)

GS positioning devices (machinery)
. **booms (equipment)**
RT ∞ boom
cranes

boost

USE **acceleration (physics)**

booster recovery

RT expendable stages (spacecraft)
recoverable launch vehicles
∞ recovery
recovery parachutes
spacecraft recovery

booster rocket engines

UF *rocket boosters*
GS engines
. rocket engines
. . **booster rocket engines**
. . . AJ-10 engine
. . . Algol engine
. . . apogee boost motors
. . . H-1 engine
. . . LR-87-AJ-5 engine
. . . M-1 engine
. . . M-55 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine

. . . Nike booster rocket engines
. . . P-1 engine
. . . rocket engine 9KS-11000
. . . Space Shuttle Boosters
. . . . Advanced Solid Rocket Motor (STS)

. . . X-405 engine
RT air breathing boosters
Ares 1 first stage
Ares 5 cargo launch vehicle
Blue Goose missile

∞ boosters
burnout
Delta 4 Heavy launch vehicle
ducted rocket engines
expendable stages (spacecraft)
F-1 rocket engine
hybrid propellant rocket engines
internal combustion engines
launch vehicles
liftoff (launching)
liquid propellant rocket engines
Mace missiles
nuclear engine for rocket vehicles
nuclear rocket engines
oxygen-hydrocarbon rocket engines
recoverable spacecraft
solid propellant rocket engines
spinning solid upper stage
stage separation
sustainer rocket engines
turbo-rocket engines
TX-354 engine

∞ booster rockets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT launch vehicles

∞ boosters

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air breathing boosters
amplifiers
apogee boost motors
booster rocket engines
boosters (explosives)
launch vehicles
Scout project
Space Shuttle Boosters
Titan project

boosters (explosives)

GS explosive devices
. initiators (explosives)
. . **boosters (explosives)**
igniters
. initiators (explosives)
. . **boosters (explosives)**
RT ∞ boosters
exploding wires

boostglide vehicles

DEF Vehicles designed to glide in the atmosphere following a rocket-powered phase. Portions of the flights may be ballistic, out of the atmosphere.

GS gliders
. **boostglide vehicles**
. . X-20 aircraft
reentry vehicles
. **boostglide vehicles**
. . X-20 aircraft
RT aerospace planes
∞ aircraft
Astro vehicle
gliding
hypersonic aircraft
hypersonic gliders
lifting reentry vehicles
manned spacecraft
recoverable spacecraft
rocket planes
∞ vehicles

boots (footwear)

GS clothing
. **boots (footwear)**

RT shoes

Boral

GS composite materials
. **Boral**
composite structures
. laminates
. . **Boral**
RT aluminum
boron carbides
radiation shielding

boranes

GS boron compounds
. boron hydrides
. . **boranes**
. . . carborane
. . . hydrazine borane
. . . pentaboranes
hydrogen compounds
. hydrides
. . boron hydrides
. . . **boranes**
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
RT borohydrides

borates

GS boron compounds
. **borates**
. . lithium borates
RT boric acids
∞ oxygen compounds

Borazon (trademark)

USE **boron nitrides**

borders

RT boundaries
margins
rims

Bordoni peaks

RT elastic deformation
plastic deformation
resonant frequencies
stress relaxation

boredom

RT detachment
human behavior
human reactions
lethargy
monotony
psychological effects
psychology
space flight stress

boreholes

DEF Holes made by drilling into the ground to study stratification, to search for or to obtain natural resources, or to release underground pressures.

RT cavities
clays
drilling
excavation
exploration
geology
gravels
∞ holes
minerals
pits (excavations)
rocks
shales
soils

Borel sets

GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Borel sets**
mathematical logic
. set theory
. . **Borel sets**

RT probability theory

bores

USE **cavities**

borescopes

USE **endoscopes**

boresight error

DEF Linear displacement between two parallel lines of sight.

GS errors

. position errors
. . **boresight error**

RT

air navigation
boresights
directional antennas
displacement
displacement measurement
error analysis
instrument errors
line of sight communication
navigation instruments
optical tracking
range errors

boresights

RT boresight error
directional antennas
optical tracking

boric acids

GS acids

. **boric acids**
boron compounds
. **boric acids**

RT

borates

borides

GS boron compounds

. **borides**
. . chromium borides
. . titanium borides

RT

intermetallics

boring machines

GS tools

. machine tools
. . **boring machines**

RT

drills

∞ machinery

Born approximation

UF *Born-Mayer equation*

GS analysis (mathematics)

. numerical analysis
. . approximation
. . . **Born approximation**

RT

∞ equations
quantum mechanics
scattering cross sections

Born-Infeld theory

RT electrodynamics

electrostatics
Maxwell equation
nonlinear equations
∞ theories

Born-Mayer equation

USE **Born approximation**

Born-Oppenheimer approximation

GS analysis (mathematics)

. numerical analysis
. . approximation
. . . **Born-Oppenheimer approximation**

RT

Franck-Condon principle

borohydrides

GS boron compounds

. **borohydrides**
. . aluminum borohydrides
. . beryllium borohydrides
hydrogen compounds
. hydrides
. . **borohydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides

RT

boranes

boron hydrides

boron

GS chemical elements

. metalloids
. . **boron**
. . . boron isotopes
. . . . boron 10

RT

boron reinforced materials
Borsic (tradename)

boron 10

GS chemical elements

. metalloids
. . boron
. . . boron isotopes
. . . . **boron 10**
. nuclides
. isotopes
. . . . boron isotopes
. **boron 10**

boron alloys

GS alloys

. **boron alloys**

RT

metalloids

boron carbides

GS boron compounds

. **boron carbides**
carbon compounds
. carbides

RT

. . **boron carbides**

Boral
ceramic fibers

boron chlorides

GS boron compounds

. **boron chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **boron chlorides**
. . . halides
. . . chlorides
. . . . **boron chlorides**

boron compounds

GS **boron compounds**

. borates
. . lithium borates
. . boric acids
. . borides
. . . chromium borides
. . . titanium borides
. . borohydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . boron carbides
. . boron chlorides
. . boron fluorides
. . boron hydrides
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
. . boron nitrides
. . boron oxides
. . boron phosphides
. . diborane
. . organic boron compounds
. . . tourmaline

RT

∞ chemical compounds
∞ Group 3A compounds
high energy fuels
metal fuels
metal propellants

boron fibers

DEF Fibers produced by vapor deposition methods; used in various composite materials to impart a balance of strength and stiffness.

GS fibers

. reinforcing fibers
. . **boron fibers**

RT

aluminum boron composites
Borsic (tradename)
carbon fibers

composite materials

fiber composites

fiber orientation

fiber strength

∞ filaments

glass fibers

metal matrix composites

polymer matrix composites

reinforced plastics

boron fluorides

UF *boron trifluoride*

GS boron compounds

. **boron fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . **boron fluorides**
. . . halides
. . . fluorides
. . . . **boron fluorides**

boron hydrides

GS boron compounds

. **boron hydrides**
. . aluminum borohydrides
. . beryllium borohydrides
. . boranes
. . . carborane
. . . hydrazine borane
. . . pentaboranes
hydrogen compounds
. hydrides
. . **boron hydrides**
. . . aluminum borohydrides
. . . beryllium borohydrides
. . . boranes
. . . . carborane
. . . . hydrazine borane
. . . . pentaboranes
RT borohydrides

boron isotopes

GS chemical elements

. metalloids
. . boron
. . . **boron isotopes**
. . . . boron 10
. . . . nuclides
. . . . isotopes
. . . . **boron isotopes**
. boron 10

boron nitrides

UF *Borazon (trademark)*

GS boron compounds

. **boron nitrides**
nitrogen compounds
. nitrides
. . **boron nitrides**
RT carbon nitrides

boron oxides

GS boron compounds

. **boron oxides**
chalcogenides
. oxides
. . **boron oxides**

boron phosphides

GS boron compounds

. **boron phosphides**
phosphorus compounds
. phosphides
. . **boron phosphides**

boron reinforced materials

GS composite materials

. **boron reinforced materials**
. . aluminum boron composites
. . boron-epoxy composites
RT boron
ceramic matrix composites
epoxy resins
fiber composites
fibers
∞ materials
plastics
reinforced plastics

boron-epoxy composites

reinforcing fibers

boron trifluoride

USE **boron fluorides**

boron-epoxy composites

- GS composite materials
 - . boron reinforced materials
 - . . **boron-epoxy composites**
 - . . polymer matrix composites
 - . . epoxy matrix composites
 - . . . **boron-epoxy composites**
 - . . resin matrix composites
 - . . **boron-epoxy composites**
- RT aircraft structures
 - ∞ chemical compounds
 - composite structures
 - epoxy resins
 - fiber composites
 - laminates
 - plastic aircraft structures
 - spacecraft components
 - superhybrid materials

borosilicate glass

- DEF Low expansion heat resistant glass.
- Used for Pyrex (trademark).
- UF *Pyrex (trademark)*
- GS glass
 - . **borosilicate glass**
- RT glassware
 - honeycomb mirrors
 - silicon dioxide

Borsic (tradename)

- DEF Trademark of United Aircraft Products, Inc. for its boron aluminum composite materials.
- GS composite materials
 - . metal matrix composites
 - . . **Borsic (tradename)**
- RT aluminum
 - boron
 - boron fibers
 - fiber composites
 - ∞ materials
 - metal fibers
 - metals

Bose geometry

- GS geometry
 - . **Bose geometry**
- RT equations of state

Bose-Chaudhuri-Hocquenghem codes

USE **BCH codes**

Bose-Einstein condensates

- (added February 1996)
- GS condensates
 - . **Bose-Einstein condensates**
- RT atom optics
 - bosons
 - condensed matter physics
 - ideal gas
 - relativistic effects
 - superfluidity

Bose-Einstein statistics

USE **quantum statistics**

Bosnia

(added June 1996)

USE **Bosnia and Herzegovina**

Bosnia and Herzegovina

- (added June 1996)
- UF *Bosnia*
 - Herzegovina*
- GS nations
 - . **Bosnia and Herzegovina**
- RT Croatia
 - Europe
 - Serbska Republic
 - Yugoslavia

boson fields

- RT field theory (physics)
- ∞ fields

mesons

bosons

- GS particles
 - . elementary particles
 - . . **bosons**
 - . . . alpha particles
 - . . . Higgs bosons
 - . . . mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - . . . photons
 - . . . xi hyperons
 - . nuclear particles
 - . . **bosons**
 - . . . alpha particles
 - . . . Higgs bosons
 - . . . mesons
 - eta-mesons
 - hyperons
 - xi hyperons
 - kaons
 - meson resonance
 - X mesons
 - muons
 - omega-mesons
 - pions
 - vector mesons
 - rho-mesons
 - sigma-mesons
 - . . . photons
 - . . . xi hyperons
- RT Bose-Einstein condensates
 - charged particles
 - Fermi-Dirac statistics
 - quantum statistics
 - standard model (particle physics)
 - string theory
 - supersymmetry

botany

- GS **botany**
 - . geobotany
- RT agriculture
 - alfalfa
 - barley
 - biogeochemistry
 - ∞ biology
 - blight
 - brown wave effect
 - brush (botany)
 - chaparral
 - citrus trees
 - corn
 - farm crops
 - fruits
 - genetically modified plants
 - green wave effect
 - habitats
 - hay
 - leguminous plants
 - oats
 - plants (botany)
 - ∞ science
 - silviculture
 - sugar beets
 - sugar cane
 - tomatoes
 - vegetation growth
 - vineyards
 - ∞ zoology

Botswana

- GS nations
 - . **Botswana**
- RT Africa
 - Republic of South Africa

bottles

- RT ∞ containers

flasks
glassware
tanks (containers)

Bouguer law

- DEF A relationship describing the rate of decrease of flux density of a plane-parallel beam of monochromatic radiation as it penetrates a medium which both scatters and absorbs at that wavelength. Used for Lambert law.
- UF *Lambert law*
- RT absorptivity
 - Beer law
 - electromagnetic absorption
 - thermoplasticity

boules

- GS crystals
 - . **boules**
- RT single crystals

boundaries

- UF *peripheries*
- GS **boundaries**
 - . core-mantle boundary
 - . fluid boundaries
 - . . gas-solid interfaces
 - . . jet boundaries
 - . . liquid-liquid interfaces
 - . . liquid-solid interfaces
 - . . liquid-vapor interfaces
 - . antiphase boundaries
 - . free boundaries
 - . grain boundaries
- RT airspace
 - borders
 - boundary conditions
 - circumferences
 - contour sensors
 - delineation
 - fences (barriers)
 - interfaces
 - regions

boundary conditions

- (added July 1990)
- GS conditions
 - . **boundary conditions**
 - . . perfectly matched layers
- RT boundaries
 - boundary element method
 - boundary layers
 - boundary value problems
 - computational aeroacoustics
 - Trefftz method
 - vortex lattice method

boundary detection (imagery)

USE **edge detection**

boundary element method

- DEF Technique for solving two- and three-dimensional boundary value problems in thermodynamics, mechanics, etc.
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **boundary element method**
 - Trefftz method
- RT boundary conditions
 - computational mechanics
 - stress analysis

boundary integral method

- DEF Technique related to the boundary element method, and used for laminar and turbulent flow problems.
- GS analysis (mathematics)
 - . numerical analysis
 - . . **boundary integral method**
 - . . . procedures
 - . . . **boundary integral method**
- RT boundary value problems
 - ∞ methodology

boundary layer combustion

- GS combustion
 - . **boundary layer combustion**
- RT boundary layers
 - combustible flow

convective heat transfer
diffusion flames
flame propagation
laminar boundary layer
reacting flow

boundary layer control

UF *laminar flow control*
GS **boundary layer control**
. porous boundary layer control
RT aerodynamics
airfoil fences
∞ bleeding
blowing
boundary layers
buffeting
circulation control airfoils
∞ control
control surfaces
drag devices
fluid amplifiers
flutter
jet control
leading edge slats
lift augmentation
lift devices
riblets
spoilers
tangential blowing
turbulence
upper surface blown flaps
vacuum
vortex generators
wing slots
X-21 aircraft

boundary layer equations

GS flow equations
. **boundary layer equations**
. . Blasius equation
RT boundary layers
differential equations
∞ equations
flow theory
Reynolds averaging

boundary layer flow

GS fluid flow
. viscous flow
. . **boundary layer flow**
. . . reattached flow
. . . secondary flow
. . . separated flow
. . . boundary layer separation
RT air currents
atmospheric boundary layer
backward facing steps
Blasius equation
boundary layer thickness
convective heat transfer
flow distribution
forward facing steps
Lighthill gas model
Magnus effect
recirculative fluid flow
Reynolds number
stagnation flow
stagnation point
Tollmien-Schlichting waves
wall flow

boundary layer noise

USE **aerodynamic noise**
boundary layers

boundary layer plasmas

DEF Plasmas resulting from the frictional heat of hypersonic spacecraft entering the Earth's atmosphere.
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **boundary layer plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **boundary layer plasmas**
RT aerodynamic heating
aerothermodynamics

boundary layers
hypersonic reentry
plasma physics
plasma sheaths

boundary layer separation

UF *breakaway*
flow separation
laminar boundary layer separation
GS fluid flow
. viscous flow
. . boundary layer flow
. . . separated flow
. . . . **boundary layer separation**
RT aerodynamic stalling
airspeed
angle of attack
boundary layers
Crocco-Lee theory
∞ diffusers
Falkner-Skan equation
flow distribution
injection
Kutta-Joukowski condition
lift drag ratio
reattached flow
recirculative fluid flow
reversed flow
rotating stalls
∞ separation
stagnation flow
∞ stalling
sweep angle
vortex generators
zero lift

boundary layer stability

GS dynamic characteristics
. dynamic stability
. . motion stability
. . . flow stability
. . . . **boundary layer stability**
. flow characteristics
. . flow stability
. . . **boundary layer stability**
stability
. dynamic stability
. . motion stability
. . . flow stability
. . . . **boundary layer stability**
RT aerodynamic stability
backwash
boundary layers
Goertler instability
Reynolds number

boundary layer thickness

(added September 1995)
SN (LIMITED TO FLUID DYNAMICS, DO NOT USE FOR PLANETARY OR CORE MANTLE BOUNDARIES)
GS thickness
. **boundary layer thickness**
RT boundary layer flow
flow distribution
pressure gradients
surface layers
transition flow

boundary layer transition

RT air currents
boundary layers
Ekman layer
Goertler instability
Knudsen flow
laminar boundary layer
laminar flow
molecular flow
Reynolds number
three dimensional boundary layer
Tollmien-Schlichting waves
∞ transition
transition flow
∞ transition layers
transition points
turbulence
turbulent boundary layer

turbulent flow

boundary layers

UF *boundary layer noise*
GS **boundary layers**
. atmospheric boundary layer
. compressible boundary layer
. hypersonic boundary layer
. incompressible boundary layer
. laminar boundary layer
. planetary boundary layer
. supersonic boundary layers
. thermal boundary layer
. three dimensional boundary layer
. turbulent boundary layer
. two dimensional boundary layer
RT asthenosphere
boundary conditions
boundary layer combustion
boundary layer control
boundary layer equations
boundary layer plasmas
boundary layer separation
boundary layer stability
boundary layer transition
core-mantle boundary
Crocco method
∞ draft
drag
fluid boundaries
fluid flow
gas-solid interfaces
∞ layers
liquid-liquid interfaces
liquid-solid interfaces
mixing layers (fluids)
panel method (fluid dynamics)
shear layers
surface layers
wall pressure

boundary lubrication

GS lubrication
. **boundary lubrication**
RT bearings
lubricants
squeeze films
vapor phase lubrication
wear resistance

boundary value problems

DEF Physical problems completely specified by a differential equation in an unknown, valid in a certain region of space, and certain information (boundary condition) about the unknown, given on the boundaries of that region. The information required to determine the solution depends completely and uniquely on the particular problem. Used for initial value problems and point matching method (mathematics).

UF *initial value problems*
point matching method (mathematics)
GS **boundary value problems**
. Cauchy problem
. Dirichlet problem
. Neumann problem
RT Bessel functions
boundary conditions
boundary integral method
counter rotation
Crank-Nicholson method
differential equations
finite element method
finite volume method
half planes
half spaces
Hankel functions
ill-posed problems (mathematics)
Lame functions
Mathieu function
minimal surfaces
Monge-Ampere equation
observability (systems)
∞ problems
Sobolev space
three dimensional bodies
Trefftz method

Bourdon tubes

GS transducers

Boussinesq approximation

- . pressure sensors
- . . **Bourdon tubes**
- RT pressure gages
- pressure measurement
- ∞ tubes

Boussinesq approximation

DEF The assumption (frequently used in the theory of convection) that the fluid is incompressible except insofar as the thermal expansion produces a buoyancy.

- RT convection
- heat transfer
- incompressible fluids
- perturbation theory
- thermal expansion

bow shock waves

USE **shock waves**

bow waves

DEF Shock waves in front of a body, such as an airfoil, or apparently attached to the forward tip of the body.

- RT hypersonic wakes
- Mach cones
- magnetosheath
- shock waves
- surface waves

∞ bows

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT bending
- camber
- forebodies
- heaving

box beams

GS structural members

. beams (supports)

. . **box beams**

- RT ∞ boxes
- cantilever beams
- girders
- rectangular beams

∞ boxes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT box beams
- boxes (containers)

boxes (containers)

- RT ∞ boxes
- ∞ buckets
- cases (containers)
- ∞ containers
- packages

BPSK

USE **binary phase shift keying**

brackets

- RT anchors (fasteners)
- fasteners
- fixtures
- holders
- mounting

bradycardia

- GS rates (per time)
- . heart rate
- . . **bradycardia**
- signs and symptoms
- . **bradycardia**
- RT heart diseases

Bragg angle

DEF The angle between the incident beam and the lattice planes considered.

- GS geometry
- . Euclidean geometry
- . . angles (geometry)
- . . . **Bragg angle**
- RT Bragg gratings
- Bragg reflectors
- crystallography
- DBR lasers
- diffraction

- diffraction paths
- electron diffraction
- isotropy
- ∞ orientation
- ∞ physical properties
- radiography

Bragg cells

(added September 1988)

- GS modulators
- . **Bragg cells**
- RT acousto-optics
- amplitude modulation
- crystal optics
- light beams
- light modulation
- phase demodulators
- phase modulation
- ultrasonic light modulation

Bragg curve

DEF A curve showing the average specific ionization of an ionizing particle of a particular kind as a function of its kinetic energy, velocity, or residual range.

- RT biological effects
- nuclear reactions
- particle interactions
- radiation effects

Bragg gratings

(added August 1997)

- GS gratings (spectra)
- . **Bragg gratings**
- RT apodization
- Bragg angle
- Bragg reflectors
- interferometers
- optical fibers
- optical filters

Bragg mirrors

(added August 1997)

USE **Bragg reflectors**

Bragg reflectors

(added August 1997)

- UF *Bragg mirrors*
- GS reflectors
- . **Bragg reflectors**
- RT Bragg angle
- Bragg gratings
- DBR lasers
- gallium arsenides
- mirrors
- semiconductor lasers

braided composites

(added November 1992)

- GS composite materials
- . fiber composites
- . . **braided composites**
- RT carbon fiber reinforced plastics
- epoxy matrix composites
- graphite-epoxy composites
- reinforcing fibers
- three dimensional composites
- woven composites

braille

DEF A system of writing that uses characters made up of raised dots. It was named after Louis Braille.

- RT blindness
- embossing

brain

- GS anatomy
- . nervous system
- . . central nervous system
- . . . **brain**
- brain stem
- cerebellum
- cerebral ventricles
- cerebrum
- cerebral cortex
- occipital lobes
- diencephalon
- hypothalamus
- pineal gland

- thalamus
- hippocampus
- RT angiography
- brain circulation
- brain damage
- cerebrospinal fluid
- echoencephalography
- electroencephalography
- encephalitis
- head (anatomy)
- information processing (biology)
- intracranial pressure
- neuroglia
- neurology
- pituitary gland
- psychiatry
- psychology
- rheoencephalography
- spinal cord

brain circulation

- GS circulation
- . blood circulation
- . . **brain circulation**
- RT brain
- rheoencephalography

brain damage

- UF *brain injuries*
- GS injuries
- . **brain damage**
- RT brain

brain injuries

(added August 2004)

USE **brain damage**

brain stem

- GS anatomy
- . nervous system
- . . central nervous system
- . . . brain
- **brain stem**

∞ brakes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT brakes (for arresting motion)
- brakes (forming or bending)

brakes (for arresting motion)

- UF *decelerators*
- dragulators*
- GS **brakes (for arresting motion)**
- . aerodynamic brakes
- . . ballutes
- . . drag chutes
- . . split flaps
- . . wing flaps
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . aircraft brakes
- . . split flaps
- . . wing flaps
- . . . leading edge flaps
- . . . leading edge slats
- . . . trailing edge flaps
- . . . vortex flaps
- . wheel brakes
- RT abort apparatus
- antiskid devices
- ∞ arresters
- arresting gear
- ∞ brakes
- braking
- cylindrical chambers
- drag devices
- flaps (control surfaces)
- landing gear
- nose wheels
- parachutes
- retarders (devices)
- thrust reversal
- towed bodies
- vehicle wheels

- wheels
- brakes (forming or bending)**
RT ∞ brakes
metal working
- braking**
RT brakes (for arresting motion)
deceleration
eddy currents
retarders (devices)
retarding
thrust reversal
- branching (mathematics)**
DEF The appearance of a new solution of a mathematical equation at some critical value of a parameter, as a result of which there may be more than one solution (different branches) of the equation. Used for bifurcation (mathematics)
UF *bifurcation (mathematics)*
GS **branching (mathematics)**
. period doubling
RT chaos
functions (mathematics)
∞ logic
mathematical logic
set theory
switching theory
- branching (physics)**
RT bifurcation (biology)
∞ physics
- brasses**
GS alloys
. copper alloys
. . **brasses**
- Bravais crystals**
GS crystals
. **Bravais crystals**
RT crystal growth
crystal lattices
crystal structure
packing density
single crystals
- Brayton cycle**
DEF A thermodynamic cycle consisting of two constant-pressure processes interspersed with two constant-entropy cycles. Named after George B. Brayton, American engineer.
GS cycles
. thermodynamic cycles
. . **Brayton cycle**
RT gas turbine engines
gas turbines
Rankine cycle
solar dynamic power systems
- Brazil**
GS nations
. **Brazil**
RT Amazon region (South America)
Brazilian space program
South America
- Brazilian space program**
DEF The space program of Brazil which is under the jurisdiction of the Instituto de Pesquisas Espaciais (INPE).
GS programs
. space programs
. . **Brazilian space program**
RT Brazil
- brazing**
GS welding
. fusion welding
. . gas welding
. . . **brazing**
. . . low temperature brazing
RT fluxes
∞ joining
metal bonding
sealing
soldering
- ultrasonic soldering
- Brazzaville*
USE **Congo (Brazzaville)**
- breadboard models**
DEF Assemblies of preliminary circuits or parts used to prove the feasibility of a device, circuit, system, or principle without regard to the final configuration or packaging of the parts.
GS models
. **breadboard models**
RT circuits
printed circuits
product development
prototypes
- breakaway*
USE **boundary layer separation**
- ∞ **breakdown**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT TERMS LISTED BELOW)
RT classifications
electrical faults
failure
gaps
metal working
system failures
- breakers (electric)*
USE **circuit breakers**
- breaking**
RT destruction
fragmentation
∞ separation
- breakup (spacecraft)*
USE **spacecraft breakup**
- breakwaters**
DEF Offshore structures (such as moles, walls, or jetties) that by breaking the force of waves, protect harbors, anchorages, beaches, or shore areas. Used for jetties and sea walls.
UF *jetties*
sea walls
RT concrete structures
harbors
littoral drift
littoral transport
oceanography
structural design
∞ structures
underwater engineering
underwater structures
water waves
∞ waves
- breast**
(added August 2004)
DEF In humans, one of the paired regions in the anterior portion of the thorax.
GS anatomy
. chest
. . **breast**
. . . mammary glands
RT cancer
thorax
- ∞ **breathing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT argon-oxygen atmospheres
breathing apparatus
breathing vibration
emergency breathing techniques
expiration
helium-oxygen atmospheres
high altitude breathing
hypercapnia
hyperpnea
oxygen breathing
respiration
respiratory reflexes
- breathing apparatus**
GS **breathing apparatus**
. oxygen masks
. underwater breathing apparatus
- RT ∞ breathing
∞ equipment
fire fighting
life support systems
oxygen supply equipment
portable life support systems
respirators
- breathing vibration**
GS vibration
. structural vibration
. . **breathing vibration**
RT bending vibration
∞ breathing
exhausting
missile vibration
venting
- breccia**
GS rocks
. **breccia**
RT ataxite
igneous rocks
regolith
sedimentary rocks
soils
- breeder reactors**
GS nuclear reactors
. **breeder reactors**
. . Experimental Breeder Reactor 1
. . Experimental Breeder Reactor 2
. . light water breeder reactors
. . liquid metal fast breeder reactors
RT Enrico Fermi atomic power plant
nuclear power reactors
- breeding (reproduction)**
RT fertility
genetics
heredity
reproduction (biology)
- Breguet 940 aircraft**
GS Breguet aircraft
. **Breguet 940 aircraft**
monoplanes
. **Breguet 940 aircraft**
research vehicles
. research aircraft
. . **Breguet 940 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 940 aircraft**
RT ∞ aircraft
- Breguet 941 aircraft**
GS Breguet aircraft
. **Breguet 941 aircraft**
jet aircraft
. turboprop aircraft
. . **Breguet 941 aircraft**
monoplanes
. **Breguet 941 aircraft**
passenger aircraft
. **Breguet 941 aircraft**
transport aircraft
. cargo aircraft
. . **Breguet 941 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Breguet 941 aircraft**
RT ∞ aircraft
- Breguet 1150 aircraft**
UF *Atlantic aircraft*
GS antisubmarine warfare aircraft
. **Breguet 1150 aircraft**
attack aircraft
. **Breguet 1150 aircraft**
Breguet aircraft
. **Breguet 1150 aircraft**
jet aircraft
. turboprop aircraft
. . **Breguet 1150 aircraft**
monoplanes
. **Breguet 1150 aircraft**
reconnaissance aircraft
. **Breguet 1150 aircraft**

Breguet aircraft

RT ∞ aircraft

Breguet aircraft

- GS **Breguet aircraft**
 - . Breguet 940 aircraft
 - . Breguet 941 aircraft
 - . Breguet 1150 aircraft
- RT ∞ aircraft
 - Jaguar aircraft

bremsstrahlung

DEF Electromagnetic radiation produced by the rapid change in the velocity of an electron or another fast, charged particle as it approaches an atomic nucleus and is deflected by it. In German it means braking radiation.

- GS electromagnetic radiation
 - . **bremsstrahlung**
- RT Cerenkov radiation
 - diffraction radiation
 - electron photon cascades
 - electron radiation
 - far ultraviolet radiation
 - gamma ray bursts
 - gamma rays
 - nuclear radiation
 - relativistic plasmas
 - synchrotron radiation
 - x rays

Brewster angle

- GS geometry
 - . Euclidean geometry
 - . . . angles (geometry)
 - . . . **Brewster angle**
- RT polarization characteristics
 - reflection
 - refractivity

bricks

DEF Solid masonry units of clay or shale, usually formed into a rectangular prism while plastic and burned or fired in a kiln. Bricks are ceramic products.

- GS masonry
 - . **bricks**
- RT cements
 - ceramics
 - clays
- ∞ construction materials
 - mortars (material)

∞ bridges

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bridges (landforms)
 - bridges (structures)
 - electric bridges
 - liquid bridges

bridges (landforms)

- GS landforms
 - . **bridges (landforms)**
- RT ∞ bridges
 - geology
 - ∞ ridges

bridges (structures)

- RT ∞ bridges
 - construction
 - construction industry
 - crossings
 - crossovers
 - highways
 - ramps (structures)
- ∞ structures
 - towers

Bridgman method

- RT crystal growth
 - ∞ methodology
 - single crystals

brightness

DEF The attribute of visual perception in accordance with which an area appears to emit more or less light.

- GS electromagnetic properties
 - . optical properties
 - . . . **brightness**

- . . . sky brightness
- RT bistatic reflectivity
 - brightness distribution
 - color
 - dimming
 - emissivity
 - flux (rate)
 - glare
 - human factors engineering
 - illuminance
 - illuminating
 - incandescence
- ∞ intensity
 - light (visible radiation)
 - limb brightening
 - luminance
 - luminescence
 - luminosity
 - luminous intensity
 - luster
 - radiance
 - radiant flux density
 - reflectance
 - stellar luminosity
 - visibility
 - vision

brightness discrimination

- GS discrimination
 - . sensory discrimination
 - . . . **brightness discrimination**
- RT ∞ illumination
 - visual perception

brightness distribution

DEF The statistical distribution based on brightness, or the distribution of brightness over the surface of an object.

- GS distribution (property)
 - . **brightness distribution**
 - electromagnetic properties
 - . optical properties
 - . . . **brightness distribution**
 - statistical distributions
 - . **brightness distribution**
- RT astrophysics
 - black body radiation
 - brightness
 - brightness temperature
- ∞ distribution
 - galactic radiation
 - photography
 - radiant flux density
 - radio astronomy
 - solar granulation
 - stellar luminosity

brightness temperature

DEF In astrophysics, the temperature of a black body radiating the same amount of energy per unit area at the wavelengths under consideration as the observed body. The temperature of a nonblack body determined by measurement with an optical pyrometer.

- GS temperature
 - . **brightness temperature**
- RT astrophysics
 - black body radiation
 - brightness distribution
 - limb brightening
 - meteorology
 - photography
 - radio astronomy
 - temperature measurement

Brillouin effect

- RT ∞ effects
 - frequency shift
 - light scattering
 - monochromatic radiation

Brillouin flow

- GS electric current
 - . **Brillouin flow**
- RT beam currents
 - electron beams
 - electron optics
- ∞ flow

traveling wave tubes

Brillouin zones

- GS regions
 - . **Brillouin zones**
- RT band structure of solids
 - conduction bands
 - crystal lattices
 - Fermi surfaces
 - free electrons

Brillouin-Wigner equation

RT ∞ equations

brines

- DEF Water saturated or strongly impregnated with common salt.
- RT coolants
 - refrigerants
 - salinity
 - salt baths
 - salt beds
 - sea water

Brinkman number

(added July 2001)

DEF A dimensionless number expressing the ratio of viscous heating to convective heat transfer rates through the flow boundary.

- GS dimensionless numbers
 - . **Brinkman number**
 - ratios
 - . **Brinkman number**
- RT channel flow
 - convective heat transfer
 - Couette flow
 - Nusselt number
 - viscous flow
 - wall temperature

briquets

- RT blanks
 - pellets
 - tablets

Bristol-Siddeley BS 53 engine

- UF *Pegasus engine*
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **Bristol-Siddeley BS 53 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **Bristol-Siddeley BS 53 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turbofan engines
 - **Bristol-Siddeley BS 53 engine**
- RT P-1127 aircraft

Bristol-Siddeley Olympus 593 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **Bristol-Siddeley Olympus 593 engine**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **Bristol-Siddeley Olympus 593 engine**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines

- **Bristol-Siddeley Olympus 593 engine**
- Bristol-Siddeley Viper engine**
 - GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **Bristol-Siddeley Viper engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **Bristol-Siddeley Viper engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **Bristol-Siddeley Viper engine**
- British Aircraft Corp aircraft*
 - USE **BAC aircraft**
- British Columbia**
 - GS nations
 - . Canada
 - . **British Columbia**
- British Guinea*
 - USE **Guyana**
- British Honduras*
 - USE **Belize**
- brittle materials**
 - RT cleavage
 - cracking (fracturing)
 - embrittlement
 - fracture strength
 - granular materials
 - hardness
 - impact strength
 - ∞ materials
 - porous materials
- brittle-ductile transition*
 - USE **ductile-brittle transition**
- brittleness**
 - GS mechanical properties
 - . **brittleness**
 - RT Charpy impact test
 - cleavage
 - cold hardening
 - crack closure
 - crack initiation
 - crack propagation
 - cracking (fracturing)
 - ductile-brittle transition
 - ductility
 - embrittlement
 - fractography
 - fracture strength
 - fracturing
 - hardness
 - impact strength
 - impact tests
 - notch strength
 - notch tests
 - toughness
 - weldability
- broadband**
 - UF *wideband*
 - GS bandwidth
 - . **broadband**
 - frequencies
 - . **broadband**
 - RT asynchronous transfer mode
 - ∞ bands
 - frequency response
 - log periodic antennas
 - narrowband
 - spiral antennas
- broadband amplifiers**
 - GS amplifiers
 - . **broadband amplifiers**
 - RT bandwidth
- frequencies
 - wideband communication
- broadcasting**
 - UF *radio broadcasting*
 - GS telecommunication
 - . **broadcasting**
 - RT communication networks
 - direct broadcast satellites
 - radio communication
 - radio equipment
 - radio signals
 - radio transmission
 - Symphonie satellites
 - transmission
 - Voice of America
- broken symmetry**
 - DEF Phenomena where a loss of symmetry is present such as in piezoelectricity. Used for symmetry breaking.
 - UF *symmetry breaking*
 - GS symmetry
 - . **broken symmetry**
 - . CP violation
 - RT grand unified theory
 - Higgs bosons
 - mathematical models
 - supergravity
 - supersymmetry
 - theoretical physics
- bromates**
 - GS halogen compounds
 - . bromine compounds
 - . **bromates**
 - RT ∞ oxygen compounds
- bromides**
 - GS halogen compounds
 - . bromine compounds
 - . **bromides**
 - . . . ammonium bromides
 - . . . cesium bromides
 - . . . chromium bromides
 - . . . dibromides
 - . . . hydrobromic acid
 - . . . hydrobromides
 - . . . magnesium bromides
 - . . . potassium bromides
 - . . . silver bromides
 - . . . sodium bromides
 - . . . strontium bromides
 - . halides
 - . **bromides**
 - . . . ammonium bromides
 - . . . cesium bromides
 - . . . chromium bromides
 - . . . dibromides
 - . . . hydrobromic acid
 - . . . hydrobromides
 - . . . magnesium bromides
 - . . . potassium bromides
 - . . . silver bromides
 - . . . sodium bromides
 - . . . strontium bromides
 - RT salt beds
- bromination**
 - GS chemical reactions
 - . halogenation
 - . **bromination**
- bromine**
 - GS chemical elements
 - . halogens
 - . **bromine**
 - . . . bromine isotopes
- bromine 82*
 - USE **bromine isotopes**
- bromine 87*
 - USE **bromine isotopes**
- bromine compounds**
 - GS halogen compounds
 - . **bromine compounds**
 - . bromates
 - . bromides
- . . . ammonium bromides
- . . . cesium bromides
- . . . chromium bromides
- . . . dibromides
- . . . hydrobromic acid
- . . . hydrobromides
- . . . magnesium bromides
- . . . potassium bromides
- . . . silver bromides
- . . . sodium bromides
- . . . strontium bromides
- halon
- RT ∞ chemical compounds
 - halocarbons
 - polybrominated biphenyls
- bromine isotopes**
 - UF *bromine 82*
 - bromine 87*
 - GS chemical elements
 - . halogens
 - . bromine
 - . . . **bromine isotopes**
 - . nuclides
 - . isotopes
 - . . . **bromine isotopes**
- bronchi**
 - UF *bronchial tubes*
 - GS anatomy
 - . respiratory system
 - . **bronchi**
 - RT lungs
 - trachea
 - ∞ tubes
- bronchial tubes*
 - USE **bronchi**
- bronzes**
 - GS alloys
 - . copper alloys
 - . **bronzes**
- Brorsen-Metcalf comet**
 - (added May 1991)*
 - GS celestial bodies
 - . comets
 - . **Brorsen-Metcalf comet**
 - RT solar system
- broths**
 - RT ∞ food
 - nutrition
- brown dwarf stars**
 - (added March 1989)*
 - GS celestial bodies
 - . stars
 - . **brown dwarf stars**
 - RT companion stars
 - cool stars
 - dwarf stars
 - massive compact halo objects
 - protostars
 - stellar evolution
- brown wave effect**
 - RT annual variations
 - botany
 - chlorophylls
 - ∞ effects
 - foliage
 - leaves
- Brownian movements**
 - RT colloids
 - dispersions
 - Einstein equations
 - emulsions
 - Fokker-Planck equation
 - ∞ motion
 - ∞ suspensions
- Bruceton test*
 - USE **statistical tests**
- brucite**
 - GS chalcogenides
 - . oxides
 - . **brucite**

Bruderheim meteorite

- magnesium compounds
 - . **brucite**
 - minerals
 - . **brucite**
- Bruderheim meteorite**
 - GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . chondrites
 - **Bruderheim meteorite**
- Brunei**
 - GS nations
 - . **Brunei**
 - RT Asia
- Brunt-Vaisala frequency**
 - DEF The frequency at which an air parcel will oscillate when subjected to an infinitesimal perturbation in a stably stratified atmosphere.
 - GS constraints
 - . meteorological parameters
 - . . **Brunt-Vaisala frequency** frequencies
 - . **Brunt-Vaisala frequency**
 - RT air currents
 - air flow
 - air masses
 - atmospheric circulation
 - atmospheric physics
 - atmospheric stratification
 - oscillations
- brush (botany)**
 - UF *scrubs (botany)*
 - GS plants (botany)
 - . **brush (botany)**
 - . . chaparral
 - RT botany
 - defoliation
 - Earth resources
 - guayule
 - herbicides
- brush seals**
 - (added July 1991)
 - GS seals (stoppers)
 - . **brush seals**
 - RT leakage
- brushes**
 - GS **brushes**
 - . brushes (electrical contacts)
 - RT electric contacts
 - electric generators
 - electric motors
- brushes (electrical contacts)**
 - DEF Conductive metal or carbon blocks used to make sliding electrical contact with a moving part as in an electric motor.
 - GS brushes
 - . **brushes (electrical contacts)**
 - RT electric contacts
 - electric generators
 - electric motors
- Bryophytes**
 - UF *liverworts*
 - mosses*
 - GS plants (botany)
 - . **Bryophytes**
- BSCCO superconductors**
 - (added March 1993)
 - UF *Bi-Sr-Ca-Cu-O superconductors*
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . mixed oxides
 - **BSCCO superconductors** conductors
 - . superconductors (materials)
 - . . high temperature superconductors
 - . . . **BSCCO superconductors**
 - RT bismuth oxides
 - calcium oxides
 - copper oxides
 - cuprates
- strontium oxides
 - superconducting films
- BSX**
 - GS explosives
 - . **BSX**
 - RT nitromethane
- bubble chambers**
 - DEF Devices used for the detection and study of elementary particles and nuclear reactions. Charged particles from an accelerator are introduced into a superheated liquid, each forming a trail of bubbles along its path.
 - GS ionization chambers
 - . **bubble chambers**
 - RT ∞ chambers
 - cloud chambers
 - elementary particles
 - particle trajectories
 - radiation counters
 - spark chambers
- bubble memory devices**
 - GS computer components
 - . computer storage devices
 - . . **bubble memory devices** magnetic storage
 - . **bubble memory devices**
 - RT binary data
 - core storage
 - data processing
 - data recorders
 - data recording
 - data storage
 - magnetic cores
 - magnetic domains
 - magnetic recording
 - magnetic switching
- bubble technique**
 - GS technologies
 - . **bubble technique**
 - RT data recorders
 - electronic equipment
 - flight instruments
 - ∞ instruments
 - magnetic domains
 - onboard equipment
 - recording instruments
 - semiconductor devices
 - solid state devices
 - spacecraft instruments
- bubbles**
 - DEF Internal voids or trapped globules of air or other gas.
 - RT aeration
 - cavitation flow
 - Coanda effect
 - effervescence
 - foams
 - metal foams
 - thermocapillary migration
 - wakes
- Buccaneer aircraft**
 - UF *B-103 aircraft*
 - Blackburn B-103 aircraft*
 - GS attack aircraft
 - . **Buccaneer aircraft**
 - Hawker Siddeley aircraft
 - . **Buccaneer aircraft**
 - jet aircraft
 - . **Buccaneer aircraft** monoplanes
 - . **Buccaneer aircraft**
 - RT ∞ aircraft
 - Harrier aircraft
- bucket brigade devices**
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . charge transfer devices
 - **bucket brigade devices**
 - RT charge coupled devices
- semiconductors (materials)
- ∞ **buckets**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT boxes (containers)
 - ∞ capsules
 - drums (containers)
 - trays
 - turbomachine blades
- buckeye aircraft*
- USE **T-2 aircraft**
- buckling**
 - DEF An unstable state of equilibrium of a thin-walled body stemming from compressive stresses in walls. The lateral deflection of a thin-walled body resulting from such instability.
 - GS **buckling**
 - . creep buckling
 - . elastic buckling
 - . Euler buckling
 - . thermal buckling
 - RT bending
 - collapse
 - compression loads
 - deformation
 - distortion
 - Donnell equations
 - failure
 - failure modes
 - flange wrinkling
 - heaving
 - kink bands
 - kinking
 - ∞ ridges
 - shell stability
 - stresses
 - structural failure
 - structural strain
 - temperature inversions
 - torsion
 - twisting
 - warpage
 - wrinkling
- buckminsterfullerene**
 - (added August 1991)
 - DEF A form of solid carbon consisting of a somewhat disordered hexagonal close packing of soccer-ball-shaped C60 molecules. The molecules are extremely hard pseudospherical molecules bonded by weak Van der Waals forces.
 - GS fullerenes
 - . **buckminsterfullerene**
 - RT carbon
 - graphite
 - molecules
 - polyatomic molecules
 - polyhedrons
- budgeting**
 - RT accounting
 - allocations
 - appropriations
 - ∞ budgets
 - cost analysis
 - cost effectiveness
 - cost estimates
 - economic factors
 - estimating
 - financial management
 - forecasting
 - grants
 - income
 - mission planning
 - planning
 - procurement management
 - project planning
 - revenue
- ∞ **budgets**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT budgeting
 - Earth radiation budget
 - energy budgets
 - engineering management

federal budgets
foreign policy
heat budget
procurement management
research management

Buffalo aircraft

USE **DHC 5 aircraft**

buffer storage

DEF In computer operations, storage used to compensate for a difference in rate of flow or time of occurrence when transferring information from one device to another.

GS computer components
. computer storage devices
. . **buffer storage**

RT ∞ buffers
core storage
data storage
∞ storage

∞ buffers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT buffer storage
buffers (chemistry)

buffers (chemistry)

RT bases (chemical)
∞ buffers
chemical equilibrium
neutralizers
pH

buffeting

DEF The beating of an aerodynamic structure or surfaces by unsteady flow, gusts, etc.; the irregular shaking or oscillation of a vehicle component owing to turbulent air or separated flow.

RT aerodynamic stability
aircraft stability
boundary layer control
compressibility effects
flight characteristics
flutter
oscillating flow
shaking
spacecraft motion
spacecraft stability
Strouhal number
turbulence effects
vortex avoidance

building materials

USE **construction materials**

building structures

USE **buildings**

buildings

DEF Structures erected and framed of component structural members designed for the housing, shelter or support of persons, animals, or property. Used for building structures.

UF *building structures*
RT architecture
basements
ceilings (architecture)
chimneys
construction
construction industry
floors
greenhouses
hangars
indoor air pollution
inflatable structures
missile silos
museums
roofs
shelters
solar houses
stairways
Starsite program
walls

bulbs

RT luminaires
plant roots

pressure vessels
syringes

Bulgaria

GS nations
. **Bulgaria**
RT Black Sea
Europe

bulging

GS metal working
. **bulging**
RT deep drawing
dimpling
explosive forming
forging
hot working
magnetic forming
metal drawing
stretch forming

bulk acoustic wave devices

DEF Acoustooptic devices utilizing bulk sound waves at megahertz frequencies in thin film transducers. Used for B-A-W devices.

UF *B-A-W devices*
RT ∞ devices
surface acoustic wave devices
transducers

bulk modulus

DEF The reciprocal of the coefficient of compressibility.

GS mechanical properties
. **bulk modulus**
RT compressibility
density (mass/volume)

bulkheads

DEF Steep or vertical structures supporting natural or artificial embankments.

GS walls
. **bulkheads**
RT ∞ barriers
end plates
hulls (structures)
partitions (structures)
reinforcement (structures)
thick walls
thin walls

Bullpup missiles

GS missiles
. air to surface missiles
. . **Bullpup missiles**
RT LR-62-RM-2 engine

Bumblebee project

GS missiles
. **Bumblebee project**
programs
. projects
. . **Bumblebee project**
RT Talos missile
tartar missile
terrier missile
Typhon weapon system

bumpers

RT cushions
meteoroid protection
meteoroids
protectors

bumpy toruses

DEF The shapes (doughnuts) of certain plasmas.

RT fusion reactors
plasma control
plasma heating
tokamak devices
toroidal plasmas

Buna (trademark)

GS elastomers
. rubber
. . synthetic rubbers
. . . **Buna (trademark)**
RT butadiene

styrenes

bunching

GS **bunching**
. electron bunching
RT queueing theory
space charge
velocity modulation

bundle drawing

RT ∞ drawing
metal drawing

bundles

RT ∞ containers
packages
umbilical connectors
wiring

bunkers (fuel)

GS tanks (containers)
. **bunkers (fuel)**
RT fuel systems

buoyancy

RT acoustic levitation
aerostatics
ballast (mass)
buoyancy-driven flow
density (mass/volume)
floating
gas density
levitation
mechanical properties
neutral buoyancy simulation
∞ physical properties
porosity
Rayleigh number
voids

buoyancy-driven flow

(added June 2002)

DEF Convective fluid flow induced by buoyant forces.

GS fluid flow
. convective flow
. . **buoyancy-driven flow**
RT buoyancy
convection
crystal growth
Rayleigh-Benard convection

buoys

RT beacons
compasses
floats
∞ markers
navigation aids
ocean data acquisitions systems

Buran space shuttle

(added August 1989)

GS manned spacecraft
. space shuttles
. . **Buran space shuttle**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . **Buran space shuttle**
soft landing spacecraft
. **Buran space shuttle**
Soviet spacecraft
. **Buran space shuttle**
RT aerospace planes
U.S.S.R. space program

bureaus (organizations)

GS institutions
. **bureaus (organizations)**
organizations
. federations
. . **bureaus (organizations)**
RT programs
projects
teams
university program

burettes

GS measuring instruments

Burger equation

- . **burettes**
- RT glassware
- pipettes
- ∞ tubes
- Burger equation**
- GS analysis (mathematics)
- . real variables
- . . differential equations
- . . . partial differential equations
- **Burger equation**
- RT continuum mechanics
- ∞ equations
- Navier-Stokes equation
- shock wave propagation
- Burkina**
- UF *Upper Volta*
- GS nations
- . **Burkina**
- RT Africa
- Burma**
- GS nations
- . **Burma**
- RT Asia
- burners**
- RT afterburning
- chemical reactors
- combustion chambers
- diffusion welding
- fuel injection
- furnaces
- incinerators
- waste energy utilization
- Burnett equations**
- (added March 1996)
- SN (These equations are frequently associated with models of hypersonic flow and shock waves.)
- GS equations of motion
- . kinetic equations
- . . hydrodynamic equations
- . . . **Burnett equations**
- flow equations
- . **Burnett equations**
- RT Boltzmann transport equation
- Chapman-Enskog theory
- computational fluid dynamics
- hypersonic flow
- shock waves
- burn-in**
- RT failure
- failure analysis
- integrated circuits
- quality control
- burning*
- USE **combustion**
- burning process*
- USE **combustion**
- burning rate**
- DEF The velocity at which a solid propellant in a rocket is consumed. The symbol is r .
- GS rates (per time)
- . **burning rate**
- RT burnout
- combustion
- combustion control
- combustion efficiency
- combustion stability
- explosives
- flame propagation
- flammability
- fuel consumption
- fuel-air ratio
- fuels
- pressure dependence
- propellant consumption
- propellant grains
- propellants
- smoldering
- solid propellant combustion
- solid propellant rocket engines
- solid rocket propellants
- velocity coupling
- burning time**
- UF *firing time*
- GS time
- . **burning time**
- RT combustion
- combustion efficiency
- firing (igniting)
- flight optimization
- flight time
- rocket engines
- rocket firing
- testing time
- thrust
- windows (intervals)
- burnout**
- SN (LIMITED TO TERMINATION OF COMBUSTION IN A ROCKET ENGINE BECAUSE OF EXHAUSTION OF THE PROPELLANT)
- DEF The termination of combustion in a rocket engine because of exhaustion of the propellant.
- RT booster rocket engines
- burning rate
- combustion
- ∞ cut-off
- erosive burning
- extinguishing
- solid propellant rocket engines
- thrust termination
- burns (injuries)**
- GS injuries
- . **burns (injuries)**
- RT crash injuries
- fires
- laser damage
- lesions
- radiation injuries
- burnthrough (failure)**
- GS failure
- . **burnthrough (failure)**
- RT ablation
- damage
- melting
- perforating
- burst tests**
- GS destructive tests
- . **burst tests**
- RT containment
- failure analysis
- fracture mechanics
- fracture strength
- ∞ materials tests
- pressure vessels
- bursts**
- GS **bursts**
- . gamma ray bursts
- . . radio bursts
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- RT ∞ disturbances
- emission
- explosions
- fragmentation
- implosions
- rupturing
- bursts (communication)*
- (added December 1996)
- USE **packets (communication)**
- Burundi**
- UF *Ruanda-Urundi*
- GS nations
- . **Burundi**
- RT Africa
- Rwanda
- bus conductors**
- GS conductors
- . **bus conductors**
- RT electric wire
- flat conductors
- power lines
- ∞ power transmission
- bushings**
- RT bearings
- inserts
- linings
- shafts (machine elements)
- spacers
- business management*
- USE **industrial management**
- butadiene**
- UF *vinyl ethylene*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . dienes
- **butadiene**
- RT Buna (trademark)
- hydrocarbon fuels
- polybutadiene
- butanedinitrile*
- (added April 2004)
- USE **succinonitrile**
- butanes**
- UF *isobutane*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkanes
- **butanes**
- RT petroleum products
- butenes**
- UF *butylene*
- isobutylene*
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkenes
- **butenes**
- butt joints**
- GS joints (junctions)
- . **butt joints**
- RT lap joints
- metal joints
- riveted joints
- soldered joints
- welded joints
- butterfly valves**
- GS valves
- . **butterfly valves**
- . . dampers (valves)
- buttes**
- GS landforms
- . terraces (landforms)
- . . plateaus
- . . . mesas
- **buttes**
- ∞ **buttons**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT manual control
- butylene*
- USE **butenes**
- butylene oxides*
- USE **tetrahydrofuran**
- butyric acid**
- GS acids
- . **butyric acid**
- RT fermentation
- BWB configurations*
- (added April 2001)
- USE **blended-wing-body configurations**
- bypass ratio**
- DEF Ratio of the secondary to the primary

inlet airflows for a turbofan engine.

GS ratios
. **bypass ratio**

RT air intakes
engine inlets
flow geometry
hypersonic inlets
inlet airframe configurations
inlet flow

inlet nozzles
intake systems
nose inlets
side inlets
supersonic inlets

bypasses

UF *shunts*
RT diverters

relief valves

by-products

RT materials recovery
products
reaction products
wastes

C

C (programming language)

(added July 1988)

- GS languages
 - . programming languages
 - . . high level languages
 - . . . **C (programming language)**
- RT C++ (programming language)
 - compilers
 - computer programming
 - expert systems

C band

- SN (3.9 TO 6.2 GHZ)
- GS frequencies
 - . radio frequencies
 - . . microwave frequencies
 - . . . **C band**
- RT millimeter waves
 - superhigh frequencies

C stars

- USE **carbon stars**

C-1A aircraft

- UF *Trader aircraft*
- GS Grumman aircraft
 - . **C-1A aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-1A aircraft**
- RT ∞ aircraft
 - ∞ military aircraft

C-2 aircraft

- UF *COD aircraft*
- GS Grumman aircraft
 - . **C-2 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **C-2 aircraft**
 - monoplanes
 - . **C-2 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-2 aircraft**
- RT ∞ aircraft

C-5 aircraft

- UF *Galaxy aircraft*
- GS *Lockheed C-5 aircraft*
 - jet aircraft
 - . **C-5 aircraft**
 - Lockheed aircraft
 - . **C-5 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-5 aircraft**
- RT ∞ aircraft
 - turbofan engines

C-8A augmentor wing aircraft

- DEF NASA's research, short haul, jet aircraft.
- GS jet aircraft
 - . **C-8A augmentor wing aircraft**
 - research vehicles
 - . research aircraft
 - . . **C-8A augmentor wing aircraft**
 - transport aircraft
 - . short haul aircraft
 - . . **C-8A augmentor wing aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-8A augmentor wing aircraft**
- RT ∞ aircraft

C-9 aircraft

- GS jet aircraft
 - . **C-9 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-9 aircraft**
 - McDonnell aircraft
 - . . **C-9 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-9 aircraft**
- RT ∞ aircraft

evacuating (transportation)

C-15 aircraft

- UF *YC-15 aircraft*
- GS transport aircraft
 - . cargo aircraft
 - . . **C-15 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-15 aircraft**
- RT ∞ aircraft

C-17 aircraft

- (added August 1995)
- GS McDonnell Douglas aircraft
 - . **C-17 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-17 aircraft**
- RT ∞ aircraft
 - turbofan engines

C-33 aircraft

- UF *Beech C-33 aircraft*
- GS *Debonair aircraft*
 - Beechcraft aircraft
 - . Beech 99 aircraft
 - . . **C-33 aircraft**
 - general aviation aircraft
 - . **C-33 aircraft**
 - light aircraft
 - . Beech 99 aircraft
 - . . **C-33 aircraft**
 - monoplanes
 - . **C-33 aircraft**
 - passenger aircraft
 - . **C-33 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-33 aircraft**
- RT ∞ aircraft

C-35 aircraft

- UF *Beech S-35 aircraft*
- GS *Bonanza aircraft*
 - Beechcraft aircraft
 - . Beech 99 aircraft
 - . . **C-35 aircraft**
 - general aviation aircraft
 - . **C-35 aircraft**
 - light aircraft
 - . Beech 99 aircraft
 - . . **C-35 aircraft**
 - monoplanes
 - . **C-35 aircraft**
 - passenger aircraft
 - . **C-35 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-35 aircraft**
- RT ∞ aircraft

C-46 aircraft

- UF *Commando aircraft*
- GS *Curtiss C-46 aircraft*
 - Curtiss-Wright aircraft
 - . **C-46 aircraft**
 - monoplanes
 - . **C-46 aircraft**
 - passenger aircraft
 - . **C-46 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-46 aircraft**
- RT ∞ aircraft

C-47 aircraft

- UF *Dakota aircraft*
- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-47 aircraft**
 - monoplanes
 - . **C-47 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-47 aircraft**

RT ∞ aircraft

C-54 aircraft

- UF *R5D aircraft*
- GS *Skymaster aircraft*
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-54 aircraft**
 - monoplanes
 - . **C-54 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-54 aircraft**
- RT ∞ aircraft

C-118 aircraft

- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-118 aircraft**
 - monoplanes
 - . **C-118 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-118 aircraft**
- RT ∞ aircraft

C-119 aircraft

- GS Fairchild-Hiller aircraft
 - . **C-119 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-119 aircraft**
- RT ∞ aircraft

C-121 aircraft

- UF *EC-121 aircraft*
- GS *Lockheed Constellation aircraft*
 - R7V aircraft*
 - Warning Star aircraft*
 - Lockheed aircraft
 - . **C-121 aircraft**
 - monoplanes
 - . **C-121 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-121 aircraft**
- RT ∞ aircraft
 - passenger aircraft

C-123 aircraft

- UF *Provider aircraft*
- GS *YC-123 aircraft*
 - Fairchild-Hiller aircraft
 - . **C-123 aircraft**
 - monoplanes
 - . **C-123 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-123 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **C-123 aircraft**
- RT ∞ aircraft

C-124 aircraft

- GS McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **C-124 aircraft**
 - monoplanes
 - . **C-124 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . **C-124 aircraft**
- RT ∞ aircraft

C-130 aircraft

- UF *GC-130 aircraft*
- GS *Hercules aircraft*
 - JC-130 aircraft*
 - KC-130 aircraft*
 - NC-130 aircraft*
 - jet aircraft
 - . turboprop aircraft
 - . . **C-130 aircraft**
 - Lockheed aircraft
 - . **C-130 aircraft**
 - monoplanes
 - . **C-130 aircraft**
 - transport aircraft

. cargo aircraft
 . . **C-130 aircraft**
 RT ∞ aircraft
 T-56 engine

C-131 aircraft
 UF *Samaritan aircraft*
 GS General Dynamics aircraft
 . **C-131 aircraft**
 monoplanes
 . **C-131 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-131 aircraft**
 RT ∞ aircraft

C-133 aircraft
 UF *Cargomaster aircraft*
 GS jet aircraft
 . turboprop aircraft
 . . **C-133 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **C-133 aircraft**
 monoplanes
 . **C-133 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-133 aircraft**
 RT ∞ aircraft
 T-34 engine

C-135 aircraft
 UF *EC-135 aircraft*
KC-135 aircraft
Stratotanker aircraft
 GS Boeing aircraft
 . **C-135 aircraft**
 jet aircraft
 . **C-135 aircraft**
 monoplanes
 . **C-135 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-135 aircraft**
 RT Advanced Range Instrumentation
 Aircraft
 ∞ aircraft
 turbofan aircraft

C-140 aircraft
 UF *Jet Star aircraft*
 GS jet aircraft
 . **C-140 aircraft**
 Lockheed aircraft
 . **C-140 aircraft**
 monoplanes
 . **C-140 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-140 aircraft**
 RT ∞ aircraft

C-141 aircraft
 UF *Starlifter aircraft*
 GS jet aircraft
 . turbofan aircraft
 . . **C-141 aircraft**
 Lockheed aircraft
 . **C-141 aircraft**
 monoplanes
 . **C-141 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-141 aircraft**
 RT ∞ aircraft
 Kupper Airborne Observatory
 turbofan engines

C-142 aircraft
 USE **XC-142 aircraft**

C-160 aircraft
 UF *Transall C-160 aircraft*
 GS Hamburger aircraft
 . **C-160 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **C-160 aircraft**
 monoplanes

. **C-160 aircraft**
 Nord aircraft
 . **C-160 aircraft**
 transport aircraft
 . cargo aircraft
 . . **C-160 aircraft**
 RT ∞ aircraft
 turboprop engines

C++ (programming language)
(added October 1991)
 GS languages
 . programming languages
 . . high level languages
 . . . **C++ (programming language)**
 RT C (programming language)
 Java (programming language)
 object-oriented programming

cabin atmospheres
 GS controlled atmospheres
 . **cabin atmospheres**
 . . spacecraft cabin atmospheres
 RT aircraft compartments
 ∞ atmospheres
 cockpits
 environmental control
 oxygen supply equipment
 pressurized cabins
 space capsules

∞ **cabins**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT aircraft compartments
 cockpits
 pressurized cabins
 spacecraft cabins

cable force recorders
 GS recording instruments
 . **cable force recorders**
 RT ∞ recorders
 strain gages
 tensiometers

cable television
(added December 1990)
 UF *CATV*
 GS television systems
 . **cable television**
 RT closed circuit television
 communication cables
 television transmission

∞ **cables**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT cables (ropes)
 coaxial cables
 communication cables
 power lines
 submarine cables
 tetherlines
 transmission lines

cables (ropes)
 RT ∞ belts
 ∞ cables
 chains
 cordage
 fasteners
 reels
 strands
 towing
 wire

CAD (design)
 USE **computer aided design**

cadastral mapping
 DEF Large-scale mapping for showing the
 boundaries of subdivisions of land, usually with
 the directions and lengths thereof and the areas
 of individual tracts, compiled for the purpose of
 describing and recording ownership. The map
 may also show culture, drainage, and other
 features related to the use of the land.
 GS mapping
 . **cadastral mapping**

RT geography
 maps
 thematic mapping

cadmium
 GS chemical elements
 . **cadmium**
 . . cadmium isotopes
 metals
 . transition metals
 . . **cadmium**
 . . . cadmium isotopes
 heavy metals
 RT

cadmium 114
 USE **cadmium isotopes**

cadmium alloys
 GS alloys
 . **cadmium alloys**
 RT bearing alloys

cadmium antimonides
 GS antimony compounds
 . antimonides
 . . **cadmium antimonides**
 cadmium compounds
 . **cadmium antimonides**

cadmium chlorides
 GS cadmium compounds
 . **cadmium chlorides**
 halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **cadmium chlorides**
 . halides
 . . chlorides
 . . . **cadmium chlorides**
 . . metal halides
 . . . **cadmium chlorides**

cadmium compounds
 GS **cadmium compounds**
 . cadmium antimonides
 . cadmium chlorides
 . cadmium fluorides
 . cadmium selenides
 . cadmium sulfides
 . cadmium tellurides
 RT ∞ chemical compounds
 ∞ Group 2B compounds
 ∞ metal compounds

cadmium fluorides
 GS cadmium compounds
 . **cadmium fluorides**
 halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **cadmium fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **cadmium fluorides**
 . metal halides
 . . metal fluorides
 **cadmium fluorides**

cadmium isotopes
 UF *cadmium 114*
 GS chemical elements
 . cadmium
 . . **cadmium isotopes**
 . nuclides
 . . isotopes
 . . . **cadmium isotopes**
 metals
 . transition metals
 . . cadmium
 . . . **cadmium isotopes**

cadmium mercury tellurides
 USE **mercury cadmium tellurides**

cadmium nickel batteries
 USE **nickel cadmium batteries**

cadmium selenides
 GS cadmium compounds

cadmium sulfides

- . **cadmium selenides**
- chalcogenides
- . selenides
- . . **cadmium selenides**
- selenium compounds
- . selenides
- . . **cadmium selenides**

cadmium silver batteries
USE **silver cadmium batteries**

cadmium sulfides
GS cadmium compounds

- . **cadmium sulfides**
- chalcogenides
- . sulfides
- . . inorganic sulfides
- . . . **cadmium sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **cadmium sulfides**

cadmium tellurides
GS cadmium compounds

- . **cadmium tellurides**
- chalcogenides
- . tellurides
- . . **cadmium tellurides**
- tellurium compounds
- . tellurides
- . . **cadmium tellurides**

caffeine
GS bases (chemical)

- . alkaloids
- . . **caffeine**
- drugs
- . stimulants
- . . **caffeine**
- fungicides
- . xanthines
- . . **caffeine**
- nitrogen compounds
- . alkaloids
- . . **caffeine**
- . xanthines
- . . **caffeine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . alkaloids
- **caffeine**
- . . . purines
- xanthines
- **caffeine**

CAI
USE **computer assisted instruction**

caissons
RT construction
foundations

Cajun rocket vehicle
GS rocket vehicles

- . sounding rockets
- . . **Cajun rocket vehicle**

RT Nike-Cajun rocket vehicle
solid propellant rocket engines
sondes

calciferol
UF *vitamin D*
GS organic compounds

- . lipids
- . . **calciferol**
- vitamins
- . **calciferol**

calcification
RT arthritis
bones
osteocalcin

calcination
USE **roasting**

calcite
GS cadmium compounds

- . calcium carbonates

- . . **calcite**
- carbon compounds
- . carbonates
- . . calcium carbonates
- . . . **calcite**
- minerals
- . **calcite**

RT aragonite
birefringence

calcium
GS chemical elements

- . **calcium**
- . . calcium isotopes
- metals
- . **calcium**
- . . calcium isotopes

RT calmodulin
gypsum
osteocalcin

calcium 45
USE **calcium isotopes**

calcium carbonates
GS calcium compounds

- . **calcium carbonates**
- . . akermanite
- . . aragonite
- . . calcite
- . . chalk
- carbon compounds
- . carbonates
- . . **calcium carbonates**
- . . . akermanite
- . . . aragonite
- . . . calcite
- . . . chalk

RT bone mineral content
limestone

calcium chlorides
GS calcium compounds

- . **calcium chlorides**
- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **calcium chlorides**
- . halides
- . . chlorides
- . . . **calcium chlorides**
- . . metal halides
- . . . **calcium chlorides**

calcium compounds
GS **calcium compounds**

- . calcium carbonates
- . . akermanite
- . . aragonite
- . . calcite
- . . chalk
- . calcium chlorides
- . calcium fluorides
- . . fluorspar
- . calcium oxides
- . . akermanite
- . calcium phosphates
- . calcium silicates
- . . gehlenite
- . calcium sulfides
- . calcium tungstates
- . calcium vanadates
- . fluorite
- . merwinite
- . monticellite
- . perovskites
- . scheelite

RT ∞ alkaline earth compounds
∞ chemical compounds
∞ metal compounds

calcium fluorides
GS calcium compounds

- . **calcium fluorides**
- . . fluorspar
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . difluorides
- **calcium fluorides**

- fluorspar
- . . . metal fluorides
- **calcium fluorides**
- fluorspar
- . halides
- . . fluorides
- . . difluorides
- **calcium fluorides**
- fluorspar
- . . . metal fluorides
- **calcium fluorides**
- fluorspar
- . . . metal halides
- . . . metal fluorides
- **calcium fluorides**
- fluorspar

calcium isotopes
UF *calcium 45*
GS chemical elements

- . calcium
- . . **calcium isotopes**
- . nuclides
- . . isotopes
- . . . **calcium isotopes**
- metals
- . calcium
- . . **calcium isotopes**

calcium metabolism
GS metabolism

RT bed rest
calmodulin
osteoporosis
parathyroid gland
thyroid gland

calcium oxides
UF *lime*
GS calcium compounds

- . **calcium oxides**
- . . akermanite
- chalcogenides
- . oxides
- . . metal oxides
- . . . alkaline earth oxides
- **calcium oxides**
- akermanite

RT BSCCO superconductors

calcium phosphates
UF *apatites*
GS calcium compounds

- . **calcium phosphates**
- phosphorus compounds
- . phosphates
- . . **calcium phosphates**

RT bone mineral content
kidney stones

calcium silicates
GS calcium compounds

- . **calcium silicates**
- . . gehlenite
- silicon compounds
- . silicates
- . . **calcium silicates**
- . . . gehlenite

RT amphiboles
minerals
plagioclase

calcium sulfides
GS calcium compounds

- . **calcium sulfides**
- chalcogenides
- . sulfides
- . . inorganic sulfides
- . . . **calcium sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **calcium sulfides**

calcium tungstates
GS calcium compounds

- . **calcium tungstates**
- tungsten compounds
- . tungstates

- . . calcium tungstates
- calcium vanadates**
 - GS calcium compounds
 - . calcium vanadates
 - vanadium compounds
 - . vanadates
 - . . calcium vanadates
- calculation*
 - USE **computation**
- calculators**
 - RT arithmetic
 - computation
 - computers
- calculi**
 - UF *renal calculi*
 - GS deposits
 - . **calculi**
 - . . dental calculi
 - RT lithiasis
 - uroolithiasis
- calculus**
 - SN (LIMITED TO MATHEMATICS)
 - GS analysis (mathematics)
 - . **calculus**
 - . . continuity (mathematics)
 - . . differential calculus
 - . . Fourier-Bessel transformations
 - . . Graeff calculus
 - . . integral calculus
 - . . limits (mathematics)
 - . . series (mathematics)
 - . . . asymptotic series
 - . . . Campbell-Hausdorff series
 - . . . cosine series
 - . . . Fourier series
 - . . . Pade approximation
 - . . . power series
 - . . . Taylor series
 - MacLaurin series
 - . . progressions
 - . . Prony series
 - . . sine series
 - . . vector analysis
 - . . . collinearity
 - . . . coplanarity
 - . . . curl (vectors)
 - . . . vorticity
 - RT analytic geometry
 - asymptotes
 - differential equations
 - functions (mathematics)
 - ∞ mathematics
 - monotone functions
 - operational calculus
 - real variables
- calculus of variations**
 - UF *variation method*
 - GS analysis (mathematics)
 - . real variables
 - . . **calculus of variations**
 - RT Biot method
 - Castigliano variational theorem
 - differential equations
 - Euler-Lagrange equation
 - integral equations
 - invariant imbeddings
 - Jacobi matrix method
 - maxima
 - operational calculus
 - pontryagin principle
 - steepest descent method
 - variational principles
- calderas**
 - DEF Large, basin-shaped volcanic depressions, more or less circular in form, the diameter of which is many times greater than that of the included vent or vents.
 - GS landforms
 - . **calderas**
 - RT cones (volcanoes)
 - craters
 - lava
 - Mars volcanoes
- volcanic eruptions
- volcanoes
- volcanology
- calendars**
 - DEF Orderly arrangements of days, weeks, months, etc. to suit a particular need such as civil life.
 - GS **calendars**
 - . crop calendars
 - RT month
 - scheduling
 - time
- calibrating**
 - UF *graduation*
 - GS **calibrating**
 - . intercalibration
 - . wind tunnel calibration
 - RT accuracy
 - instrument compensation
 - instrument errors
 - measuring instruments
 - ∞ scaling
 - Solar Cell Calibration Facility
 - standardization
 - standards
 - temperature scales
- California**
 - GS nations
 - . United States
 - . . **California**
 - RT Cascade Range (CA-OR-WA)
 - Coachella Valley (CA)
 - coastal ranges (CA)
 - Death Valley (CA)
 - Feather River Basin (CA)
 - Great Basin (US)
 - Imperial Valley (CA)
 - Lake Tahoe (CA-NV)
 - Mojave Desert (CA)
 - Monterey Bay (CA)
 - Palo Verde Valley (CA)
 - Peninsular Ranges (CA)
 - Sacramento Valley (CA)
 - Salton Sea (CA)
 - San Andreas Fault
 - San Francisco (CA)
 - San Francisco Bay (CA)
 - San Joaquin Valley (CA)
 - San Pablo Bay (CA)
 - Sierra Nevada Mountains (CA)
 - Southern California
- californium**
 - GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . **californium**
 - californium isotopes
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - **californium**
 - californium isotopes
 - metals
 - . actinide series
 - . . transuranium elements
 - . . . **californium**
 - californium isotopes
 - RT californium compounds
- californium 252*
 - USE **californium isotopes**
- californium compounds**
 - GS actinide series compounds
 - . **californium compounds**
 - RT californium
- californium isotopes**
 - UF *californium 252*
 - GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . californium
 - **californium isotopes**
 - . nuclides
- . . isotopes
- . . . radioactive isotopes
- transuranium elements
- californium
- **californium isotopes**
- metals
- . actinide series
- . . transuranium elements
- . . . californium
- californium isotopes
- **californium isotopes**
- CALIPSO (Pathfinder satellite)**
 - (added October 2005)
 - DEF CALIPSO (Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation) is an Earth observing satellite that combines an active lidar instrument with passive infrared and visible imagers to probe the vertical structure and properties of thin clouds and aerosols over the globe.
 - GS artificial satellites
 - . scientific satellites
 - . . **CALIPSO (Pathfinder satellite)**
 - Earth Observing System (EOS)
 - . **CALIPSO (Pathfinder satellite)**
 - RT aerosols
 - Aqua spacecraft
 - Aura spacecraft
 - clouds (meteorology)
 - CloudSat
 - Earth observations (from space)
 - infrared radar
 - meteorological satellites
 - meteorology
 - precipitation (meteorology)
 - remote sensing
- Callisto**
 - DEF A satellite of Jupiter orbiting at a mean distance of 1,884,000 kilometers. Also called Jupiter IV.
 - GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Callisto**
 - . . . Jupiter satellites
 - . . . Galilean satellites
 - **Callisto**
 - RT Charon
 - extraterrestrial oceans
 - Ganymede
 - Io
 - Jupiter (planet)
- calmodulin**
 - GS biopolymers
 - . proteins
 - . . **calmodulin**
 - organic compounds
 - . proteins
 - . . **calmodulin**
 - RT calcium
 - calcium metabolism
 - cytoplasm
 - gravitropism
 - regulatory mechanisms (biology)
- caloric requirements**
 - GS nutritional requirements
 - . **caloric requirements**
 - RT diets
 - ∞ food
 - metabolism
 - mineral metabolism
 - ∞ nutrients
 - nutrition
- caloric stimuli**
 - RT ∞ stimuli
- calorimeters**
 - DEF Instruments designed to measure heat evolved or absorbed. Used for microcalorimeters.
 - UF *microcalorimeters*
 - GS measuring instruments
 - . **calorimeters**
 - . . bomb calorimeters
 - . . drop calorimeters
 - . . flame calorimeters
 - RT heat measurement

calves

high temperature tests
scintillating fibers
temperature measuring instruments

calorimetry

USE **heat measurement**

calutrons

USE **cyclotrons**

calves

GS animals
. vertebrates
. . . mammals
. . . . cattle
. . . . **calves**
RT livestock

Calypso

(added January 1996)

DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.

GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Calypso**
RT Saturn (planet)

CAM (manufacturing)

USE **computer aided manufacturing**

camber

GS **camber**
. conical camber
. wing camber
RT airfoils
bending
∞ bows
cambered wings
curvature
curved beams
deflection
deformation
distortion
flexing
fuselages
lift
warpage

cambered wings

GS airfoils
. wings
. . **cambered wings**
RT camber
fixed wings
twisted wings
uncambered wings
wing camber

Cambodia

UF *Kampuchea*
GS nations
. **Cambodia**
RT Asia

Cambrian Period

(added June 1989)

GS Paleozoic Era
. **Cambrian Period**
RT geochronology
paleontology
Precambrian period

Camel aircraft

USE **TU-104 aircraft**

camera shutters

RT cameras
irises (mechanical apertures)
Kerr cells
panoramic cameras
∞ shutters
streak cameras

camera tubes

GS electron tubes
. **camera tubes**
. . image dissector tubes
. . orthicons
. . . image orthicons
. . vidicons

. . . return beam vidicons
. . . . thermicons
RT cameras
dynodes
image converters
image transducers
monoscopes
planotrons
television cameras
video equipment

cameras

GS optical equipment
. **cameras**
. . Baker-Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . digital cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
photographic equipment
. **cameras**
. . Baker-Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . digital cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
RT camera shutters
camera tubes
cinematography
focusing
lenses
photography
SIM
streak photography
ultraviolet photography
underwater photography
wide angle lenses

Cameroon

GS nations
. **Cameroon**
RT Africa

camouflage

RT air defense
coverings
netting (materials/structures)
stealth technology

Campbell-Hausdorff series

GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **Campbell-Hausdorff series**
. . real variables
. . series (mathematics)
. . . **Campbell-Hausdorff series**

camphor

GS ketones
. **camphor**
terpenes
. **camphor**

cams

GS positioning devices (machinery)

. **cams**
RT actuators
eccentrics
internal combustion engines
linkages
mechanical devices

Canada

GS nations
. **Canada**
. . Alberta
. . British Columbia
. . Manitoba
. . New Brunswick
. . Newfoundland
. . Northwest Territories
. . Nova Scotia
. . Ontario
. . Prince Edward Island
. . Quebec
. . Saskatchewan
. . Yukon Territory
RT Anik 1
Anik 2
Anik 3
Beaufort Sea (North America)
Canadian space program
Canadian spacecraft
Communications Technology Satellite
Great Lakes (North America)
Great Plains Corridor (North America)
Hudson Bay (Canada)
International Field Year for Great Lakes
International Hydrological Decade
Labrador
Lake Champlain Basin (NY-VT)
North America
Pacific Northwest (US)
Rocky Mountains (North America)
St Lawrence Valley (North America)
Williston Basin (North America)

Canadair aircraft

UF *Canadair CF-104 aircraft*
CF-104 aircraft
GS **Canadair aircraft**
. CL-41 aircraft
. CL-44 aircraft
. CL-84 aircraft
. CL-600 challenger aircraft
RT ∞ aircraft
General Dynamics aircraft

Canadair CF-104 aircraft

USE **Canadair aircraft**
F-104 aircraft

Canadair CL-41 aircraft

USE **CL-41 aircraft**

Canadair CL-44 aircraft

USE **CL-44 aircraft**

Canadair CL-84 aircraft

USE **CL-84 aircraft**

Canadarm (ISS)

(added September 2001)

USE **Space Station Mobile Servicing System**

Canadian Shield

RT geology
meteorite craters
Precambrian period

Canadian space program

DEF Space research, programs, and activities undertaken by Canada.

GS programs
. space programs
. . **Canadian space program**
. . . Alouette project
RT aerospace technology transfer
Anik 1
Anik 2
Anik 3
Anik satellites
Canada

Canadian spacecraft
 Communications Technology Satellite
 NASA programs
 Radarsat
 scientific satellites
 Space Station Mobile Servicing System
 synchronous satellites
 technology assessment
 technology utilization

Canadian spacecraft

DEF Spacecraft of the Canadian Government. The following satellites have been developed: Alouette satellites, ISIS satellites, Anik satellites, and Hermes satellite. RADARSAT and MSAT are in the process of being developed.

GS **Canadian spacecraft**

. Alouette satellites
 . . Alouette 1 satellite
 . . Alouette 2 satellite
 . . Alouette B satellite
 . Anik satellites
 . . Anik 1
 . . Anik 2
 . . Anik 3
 . Radarsat

RT Canada
 Canadian space program
 ∞ spacecraft

canals

GS landforms
 . **canals**
 waterways
 . **canals**
 RT ditches
 flood control
 fluid flow
 gates (openings)
 Great Lakes (North America)
 irrigation
 Mars surface
 materials handling
 Panama
 seepage
 straits
 troughs
 water flow

canard configurations

DEF Pertaining to an aerodynamic vehicle in which horizontal surfaces used for trim and control are forward of the main lifting surface; the horizontal trim and control surfaces in such an arrangement.

GS aerodynamic configurations
 . **canard configurations**

RT aircraft structures
 ∞ configurations
 control surfaces
 JAS-39 aircraft
 Saab 37 aircraft
 tandem wing aircraft
 X-31 aircraft

Canary Islands

GS landforms
 . islands
 . . **Canary Islands**
 nations
 . Spain
 . . **Canary Islands**

Canberra aircraft

GS BAC aircraft
 . **Canberra aircraft**
 jet aircraft
 . **Canberra aircraft**
 monoplanes
 . **Canberra aircraft**
 RT ∞ aircraft
 B-57 aircraft

Canberra bomber

USE **B-57 aircraft**

cancellation

RT contracts
 elimination

removal
 stopping

cancellation circuits

GS circuits
 . **cancellation circuits**
 RT display devices
 moving target indicators
 pulse Doppler radar
 radar

cancer

UF *carcinoma*
sarcoma
 GS diseases
 . tumors
 . . neoplasms
 . . . **cancer**
 leukemias
 RT bone marrow
 breast
 carcinogens
 cells (biology)
 immunosuppression
 metastasis
 oncogenes
 radiation therapy
 tissues (biology)
 tumor suppressor genes
 tumor suppressor proteins
 ulcers

cancer genes

(added July 2002)

USE **oncogenes**

canisters

USE **cans**

canning

GS food processing
 . **canning**
 RT encapsulating
 ∞ food

Cannonball 2 satellite

GS artificial satellites
 . scientific satellites
 . . **Cannonball 2 satellite**

cannons

USE **guns (ordnance)**

cannulae

RT ∞ tubes

canonical forms

GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **canonical forms**
 RT fibers (mathematics)

canopies

RT aircraft structures
 airframes
 cockpits
 fairings
 windshields

canopies (vegetation)

DEF The topmost layers of leaves and branches of forest trees or other plants.

GS vegetation
 . **canopies (vegetation)**
 RT foliage
 forests
 grasses
 leaf area index
 leaves
 plants (botany)
 rain forests
 sod
 trees (plants)
 vegetative index

cans

UF *canisters*
 RT ∞ containers

drums (containers)

cant

USE **slopes**

cantilever beams

GS cantilever members
 . **cantilever beams**
 structural members
 . beams (supports)
 . . **cantilever beams**
 RT box beams
 I beams

cantilever members

GS **cantilever members**
 . cantilever beams
 . cantilever plates
 RT levers

cantilever plates

GS cantilever members
 . **cantilever plates**
 structural members
 . plates (structural members)
 . . **cantilever plates**
 RT anisotropic plates

cantilever wings

USE **wings**

canyons

UF *coulees*
gorges
 GS landforms
 . **canyons**
 . . Grand Canyon (AZ)
 RT arroyos
 cliffs
 fans (landforms)
 ravines
 rivers
 valleys
 water erosion

cap clouds

UF *orographic clouds*
 GS clouds (meteorology)
 . **cap clouds**
 RT atmospheric moisture
 climatology
 cloud cover
 meteorology
 nephelanalysis
 precipitation (meteorology)
 weather

capacitance

DEF That property of a system of conductors and dielectrics which permits the storage of electrically separated charges when potential differences exist between the conductors. It is the ratio of a quantity, Q, of electricity to a potential difference, V. A capacitance value is always positive. The units are farads when the charge is expressed in coulombs and the potential in volts: C = Q/V. Capacitance is symbolized as C.

GS electrical properties
 . **capacitance**

RT capacitance-voltage characteristics
 capacitors

∞ capacity
 dielectric properties
 electric charge
 electrical impedance
 electrostatic charge
 inductance
 open circuit voltage
 RC circuits
 reactance
 RLC circuits

capacitance switches

GS switches
 . **capacitance switches**
 RT capacitors
 dielectrics
 RLC circuits

capacitance-voltage characteristics

switching circuits

capacitance-voltage characteristics

DEF The characteristics of a metal semiconductor contact or a semiconductor junction that manifests a measured capacitance as a function of a dc bias voltage with small, superimposed ac voltage applied to that junction or contact.

GS electrical properties
. **capacitance-voltage characteristics**

RT capacitance
∞ characteristics
electric potential
metal oxide semiconductors
volt-ampere characteristics

capacitive fuel gages

GS measuring instruments
. fuel gages
. . . **capacitive fuel gages**

RT dielectrics

capacitors

GS **capacitors**
. electrochemical capacitors

RT amplifiers
ballasts (impedances)
capacitance
capacitance switches
circuit protection circuits
∞ condensers
dielectrics
electrets
electric bridges
electric energy storage
electric filters
electric reactors
energy storage
Gerdien condensers
parallel plates
solid state devices

∞ capacity

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT capacitance
channel capacity
output
production engineering
risk
volume

Cape Hatteras (NC)

GS landforms
. capes (landforms)
. . . **Cape Hatteras (NC)**

RT Atlantic Ocean
North Carolina

Cape Kennedy launch complex

GS launching bases
. **Cape Kennedy launch complex**

RT ground support equipment

Cape Verde

GS nations
. **Cape Verde**

RT Africa
Atlantic Ocean
islands

capes (landforms)

GS landforms
. **capes (landforms)**
. . . Cape Hatteras (NC)

RT land

∞ capillaries

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT capillaries (anatomy)
capillary tubes

capillaries (anatomy)

GS anatomy
. circulatory system
. . . cardiovascular system

. . . blood vessels
. . . . **capillaries (anatomy)**
. glomerulus

RT arterioles
blood
∞ capillaries

capillary circulation

USE **capillary flow**

capillary flow

UF *capillary circulation*

GS fluid flow
. **capillary flow**

RT blood flow
laminar flow
liquid bridges
surface tension driven convection
thermocapillary migration

capillary pumped loops

(added September 2003)

DEF Passive, two-phase heat transport systems that utilize the capillary pressure developed in a fine pore evaporator wick to circulate the working fluid. Often used for cooling electronic components in spacecraft, telecommunications, and other systems.

UF *CPL (heat transfer)*

RT capillary tubes
cooling systems
cryogenic cooling
evaporative cooling
heat transfer
liquid cooling
temperature control

capillary tubes

RT ∞ capillaries
capillary pumped loops
∞ tubes

capillary waves

GS elastic waves
. **capillary waves**
. . . gravity waves
. . . baroclinic waves
. . . ripples
surface waves
. **capillary waves**
. . . gravity waves
. . . baroclinic waves
. . . ripples

RT interfacial tension
two dimensional flow
water waves

∞ caps

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT caps (explosives)
coverings
nose cones
polar caps
seals (stoppers)
spherical caps

caps (explosives)

GS explosive devices
. initiators (explosives)
. . . **caps (explosives)**
igniters
. initiators (explosives)
. . . **caps (explosives)**

RT ∞ caps
detonators
exploding wires
fuses (ordnance)
primers (explosives)

∞ capsules

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ∞ buckets
∞ containers
fuel capsules
shells (structural forms)
space capsules
tablets

test chambers

∞ test equipment
test vehicles
∞ vessels

capsules (spacecraft)

USE **space capsules**

captive tests

DEF Holddown tests of a propulsive subsystem, rocket engine or motor as distinguished from a flight test.

GS **captive tests**

. static tests
. . . static firing

RT engine tests
ground tests
missile tests
prefiring tests
prelaunch tests
∞ tests

capture cross sections

USE **absorption cross sections**

capture effect

DEF An effect in frequency-modulation (FM) reception where the stronger signal of two stations on the same frequency completely suppresses the weaker signal.

RT absorbance

∞ absorption

∞ effects

electron capture
frequency modulation
frequency synchronization
nuclear capture
recombination reactions
trajectory analysis

captured air bubble vehicles

GS surface vehicles
. **captured air bubble vehicles**
water vehicles
. **captured air bubble vehicles**

RT hydrofoil craft
surface effect ships
SWATH (ship)
∞ vehicles

Caravelle aircraft

USE **SE-210 aircraft**

Carbamates (tradename)

GS esters
. **Carbamates (tradename)**
. . . urethanes
poisons
. pesticides
. . . insecticides
. . . **Carbamates (tradename)**
. urethanes

carbamides

GS nitrogen compounds
. amides
. . **carbamides**

carbazoles

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azoles
. pyrroles
. **carbazoles**

carbenes

DEF An organic radical containing divalent carbon.

RT free radicals

carbides

DEF Compounds of carbon with one or more metallic elements.

GS carbon compounds
. **carbides**
. . aluminum carbides
. . boron carbides
. . cementite
. . chromium carbides
. . hafnium carbides

- .. molybdenum carbides
- .. niobium carbides
- .. silicon carbides
- .. tantalum carbides
- .. titanium carbides
- .. tungsten carbides
- .. uranium carbides
- .. vanadium carbides
- .. zirconium carbides
- RT ceramic nuclear fuels
- refractory materials

carbohydrate metabolism

- GS metabolism
 - . **carbohydrate metabolism**
 - .. hyperglycemia
 - .. hypoglycemia
- RT cortisone
- diabetes mellitus
- glucocorticoids
- hydrogen metabolism

carbohydrates

- UF *saccharides*
- GS organic compounds
 - . **carbohydrates**
 - .. citric acid
 - .. glucosides
 - ... nucleosides
 - ... adenines
 - ... guanosines
 - .. polysaccharides
 - .. cellulose
 - ... Fortisan (trademark)
 - .. chitin
 - .. dextrans
 - .. glycogens
 - .. starches
 - .. sugars
 - ... dextrans
 - ... inositols
 - .. lactose
 - ... mannitol
 - ... monosaccharides
 - ... sucrose
 - ... hexoses
 - ... galactose
 - ... glucose
 - ... pentose
 - ... ribose
 - ... xylose
- RT alcohols
- ethyl alcohol
- ∞ food
- glycerols
- ∞ nutrients
- optical activity
- ∞ oxygen compounds
- photosynthesis
- stereochemistry
- synthetic food

carbon

- GS chemical elements
 - . **carbon**
 - .. carbon isotopes
 - ... carbon 12
 - ... carbon 13
 - ... carbon 14
- RT activated carbon
- bitumens
- buckminsterfullerene
- carbon nanotubes
- charcoal
- coke
- decarburization
- diamonds
- fullerenes
- glassy carbon
- graphene
- graphite
- soot

carbon 12

- GS chemical elements
 - . carbon
 - .. carbon isotopes
 - ... **carbon 12**
 - .. nuclides
 - .. isotopes

- ... carbon isotopes
- ... **carbon 12**

carbon 13

- GS chemical elements
 - . carbon
 - .. carbon isotopes
 - ... **carbon 13**
 - .. nuclides
 - .. isotopes
 - ... carbon isotopes
 - ... **carbon 13**

carbon 14

- GS chemical elements
 - . carbon
 - .. carbon isotopes
 - ... **carbon 14**
 - .. nuclides
 - .. isotopes
 - ... carbon isotopes
 - ... **carbon 14**
 - ... radioactive isotopes
 - ... **carbon 14**

carbon arcs

- GS electric current
 - . electric discharges
 - .. electric arcs
 - ... **carbon arcs**
- RT arc lamps
- image furnaces

carbon compounds

- SN (RESTRICTED TO INORGANIC COMPOUNDS)
- GS **carbon compounds**
 - . carbides
 - .. aluminum carbides
 - .. boron carbides
 - .. cementite
 - .. chromium carbides
 - .. hafnium carbides
 - .. molybdenum carbides
 - .. niobium carbides
 - .. silicon carbides
 - .. tantalum carbides
 - .. titanium carbides
 - .. tungsten carbides
 - .. uranium carbides
 - .. vanadium carbides
 - .. zirconium carbides
 - . carbon dioxide
 - . carbon disulfide
 - . carbon monoxide
 - . carbon suboxides
 - . carbon tetrachloride
 - . carbon tetrafluoride
 - . carbonates
 - .. bastnasite
 - .. calcium carbonates
 - ... akermanite
 - ... aragonite
 - ... calcite
 - ... chalk
 - .. dolomite (mineral)
 - .. polycarbonates
 - ... Lexan (trademark)
 - .. siderites
 - .. sodium carbonates
 - .. tetraethyl orthocarbonates
 - . halocarbons
 - .. chlorocarbons
 - .. chlorofluorocarbons
 - .. fluorocarbons
 - .. halon
 - .. carbon nitrides
 - .. fullerides
- RT carbonaceous materials
- ∞ chemical compounds
- ∞ Group 4A compounds
- hydrocarbons
- methylidyne
- Swan bands

carbon cycle

DEF The path of carbon in living beings in which carbon dioxide is fixed by photosynthesis to form organic nutrients and ultimately restored

to the inorganic state by respiration and protoplasmic decay.

- GS cycles
 - . **carbon cycle**
- RT animals
- ∞ biology
- biomass
- ecology
- organisms
- plants (botany)
- viability

carbon dioxide

- GS carbon compounds
 - . **carbon dioxide**
 - .. chalcogenides
 - .. oxides
 - ... dioxides
 - ... **carbon dioxide**
- gases
- . **carbon dioxide**
- RT Chlorella
- metabolic wastes
- synthane

carbon dioxide concentration

- GS composition (property)
 - . chemical composition
 - .. **carbon dioxide concentration**
 - .. concentration (composition)
 - .. **carbon dioxide concentration**
 - .. gas composition
 - .. **carbon dioxide concentration**
- RT air purification
- atmospheric composition
- climate change
- decontamination
- Orbiting Carbon Observatory (OCO)
- rebreathing
- spacecraft cabin atmospheres

carbon dioxide lasers

- GS stimulated emission devices
 - . lasers
 - .. gas lasers
 - ... **carbon dioxide lasers**
- RT chemical lasers
- continuous wave lasers
- gas masers
- infrared lasers
- Mach-Zehnder interferometers
- molecular oscillations
- organic lasers
- polar gases
- pulsed lasers
- Q switched lasers
- stimulated emission
- TEA lasers
- waveguide lasers

carbon dioxide removal

- GS removal
 - . **carbon dioxide removal**
- RT air purification
- decontamination
- rebreathing
- smoke abatement

carbon dioxide tension

- GS **carbon dioxide tension**
 - . hypercapnia
 - . hypocapnia

carbon disulfide

- GS carbon compounds
 - . **carbon disulfide**
 - .. chalcogenides
 - .. sulfides
 - ... disulfides
 - ... **carbon disulfide**
- sulfur compounds
- .. sulfides
- ... disulfides
- ... **carbon disulfide**

carbon fiber reinforced plastics

- UF *CFRP*
- GS composite materials
 - . fiber composites
 - .. **carbon fiber reinforced plastics**

carbon fibers

- . . . carbon-phenolic composites
- . polymer matrix composites
- . reinforced plastics
- . . . **carbon fiber reinforced plastics**
- carbon-phenolic composites plastics
- . reinforced plastics
- . . **carbon fiber reinforced plastics**
- . . . carbon-phenolic composites
- RT braided composites
- fibers
- graphite-epoxy composites
- lay-up
- PEEK
- reinforcing fibers
- superhybrid materials
- woven composites

carbon fibers

- GS fibers
- . reinforcing fibers
- . . **carbon fibers**
- RT boron fibers
- carbon-phenolic composites
- carbon-silicon carbide composites
- chemical vapor infiltration
- composite materials
- fiber composites
- fiber pullout
- ∞ filaments
- polyacrylonitrile

carbon isotopes

- GS chemical elements
- . carbon
- . . **carbon isotopes**
- . . . carbon 12
- . . . carbon 13
- . . . carbon 14
- . nuclides
- . isotopes
- . . . **carbon isotopes**
- carbon 12
- carbon 13
- carbon 14

carbon lasers

- GS stimulated emission devices
- . lasers
- . . **carbon lasers**
- RT chemical lasers
- gas lasers
- infrared lasers
- liquid lasers
- organic lasers
- stimulated emission

carbon monoxide

- GS carbon compounds
- . **carbon monoxide**
- chalcogenides
- . oxides
- . . **carbon monoxide**
- gases
- . **carbon monoxide**
- RT Hopcalite (trademark)
- smog
- synthane

carbon monoxide lasers

- GS stimulated emission devices
- . lasers
- . . gas lasers
- . . . **carbon monoxide lasers**
- RT chemical lasers
- continuous wave lasers
- infrared lasers
- molecular oscillations
- stimulated emission
- TEA lasers

carbon monoxide poisoning

- GS diseases
- . toxic diseases
- . . **carbon monoxide poisoning**
- toxicity
- . **carbon monoxide poisoning**
- RT carboxyhemoglobin
- lethality
- occupational diseases

- pathological effects
- ∞ poisoning

carbon nanotube based memory

- (added December 2009)
- DEF Random access memory devices based on one or more special properties of carbon nanotubes.
- GS computer components
- . computer storage devices
- . . random access memory
- . . . **carbon nanotube based memory**
- memory (computers)
- . random access memory
- . . **carbon nanotube based memory**
- RT carbon nanotubes
- chips (memory devices)
- nanotechnology

carbon nanotubes

- (added September 2001)
- DEF Single- or multilayer nanotubes composed of cylindrical graphene sheets of bonded carbon atoms, and closed at either end with caps containing pentagonal rings. These nanotubes are single molecules typically measuring a few nanometers in diameter and several microns in length.
- UF *CNT (nanotechnology)*
- tubular fullerenes*
- GS nanostructures (devices)
- . nanotubes
- . . **carbon nanotubes**
- RT carbon
- carbon nanotube based memory
- fullerenes
- graphene
- graphite
- nanostucture (characteristics)
- single electron transistors

carbon nitrides

- (added October 2001)
- GS carbon compounds
- . **carbon nitrides**
- nitrogen compounds
- . nitrides
- . . **carbon nitrides**
- RT amorphous materials
- boron nitrides
- ceramic coatings
- protective coatings
- semiconductors (materials)
- thin films

carbon stars

- UF *C stars*
- GS celestial bodies
- . stars
- . . giant stars
- . . . red giant stars
- **carbon stars**
- . . . late stars
- . . . cool stars
- **carbon stars**
- RT asymptotic giant branch stars
- irregular variable stars
- Mira variables
- R Coronae Borealis stars
- stellar composition
- subgiant stars
- Wolf-Rayet stars

carbon steels

- GS alloys
- . iron alloys
- . . steels
- . . . **carbon steels**
- low carbon steels
- RT high strength steels

carbon suboxides

- DEF Colorless lacrimatory gases having unpleasant odors and boiling points of approximately -7 degrees C.
- GS carbon compounds
- . **carbon suboxides**
- chalcogenides
- . oxides

- . . **carbon suboxides**
- gases
- . **carbon suboxides**
- RT ∞ oxygen compounds

carbon tetrachloride

- UF *tetrachloromethane*
- GS carbon compounds
- . **carbon tetrachloride**
- halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **carbon tetrachloride**
- . halides
- . . chlorides
- . . . **carbon tetrachloride**

carbon tetrachloride poisoning

- GS diseases
- . toxic diseases
- . . **carbon tetrachloride poisoning**
- toxicity
- . **carbon tetrachloride poisoning**
- RT industrial safety
- ∞ poisoning
- toxicity and safety hazard
- toxicology

carbon tetrafluoride

- GS carbon compounds
- . **carbon tetrafluoride**
- halogen compounds
- . fluorine compounds
- . . fluoro compounds
- . . . fluorine organic compounds
- fluorohydrocarbons
- **carbon tetrafluoride**
- organic compounds
- . fluorine organic compounds
- . . fluorohydrocarbons
- . . . **carbon tetrafluoride**
- hydrocarbons
- . fluorohydrocarbons
- . . **carbon tetrafluoride**

carbonaceous chondrites

- DEF A group name for friable, dull-black, chondritic stony meteorites, characterized by the presence of hydrated clay type silicate minerals, by considerable amounts and a great variety of organic compounds believed to be of extraterrestrial origin; by a near or total lack of free nickel-iron; and by an abnormally high content of inert gases.

- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- **carbonaceous chondrites**
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- . . . chondrites
- **carbonaceous chondrites**
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite

carbonaceous materials

- DEF Substance composed of or containing carbon or carbon compounds.
- GS **carbonaceous materials**
- . graphite
- . . pyrolytic graphite
- . peat
- . soot
- RT carbon compounds
- coal
- crude oil
- fossil fuels

lignite
 ∞ materials
 organic materials
 solvent refined coal

carbonaceous meteorites
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . **carbonaceous meteorites**
 carbonaceous chondrites
 Alais meteorite
 Allende meteorite
 Cold Bokkeveld meteorite
 Ivuna meteorite
 Murchison meteorite
 Murray meteorite
 Orgueil meteorite
 Tonk meteorite
 ureilites
 RT exobiology
 meteoritic composition

carbonaceous rocks
 GS rocks
 . sedimentary rocks
 . . **carbonaceous rocks**
 . . . coal
 anthracite
 lignite
 solvent refined coal
 RT carbonates
 regolith
 shatter cones
 soils

carbonates
 UF *bicarbonates*
 GS carbon compounds
 . **carbonates**
 . . bastnasite
 . . calcium carbonates
 . . . akermanite
 . . . aragonite
 . . . calcite
 . . . chalk
 . . dolomite (mineral)
 . . polycarbonates
 . . . Lexan (trademark)
 . . siderites
 . . sodium carbonates
 . . tetraethyl orthocarbonates
 RT alkalies
 carbonaceous rocks
 carbonic acid
 molten carbonate fuel cells
 ∞ oxygen compounds

carbon-carbon composites
 GS composite materials
 . **carbon-carbon composites**
 RT carbon-silicon carbide composites
 fiber composites
 fracture strength
 reinforcing fibers
 thermal protection
 thermal resistance

carbonic acid
 GS acids
 . **carbonic acid**
 RT carbonates

carbonic anhydrase
 GS biopolymers
 . proteins
 . . enzymes
 . . . **carbonic anhydrase**
 organic compounds
 . proteins
 . . enzymes
 . . . **carbonic anhydrase**
 RT acetazolamide

carbonization
 GS chemical reactions
 . **carbonization**
 RT charring

decarbonation

carbon-phenolic composites
(added January 1993)
 GS composite materials
 . fiber composites
 . . carbon fiber reinforced plastics
 . . . **carbon-phenolic composites**
 . . . polymer matrix composites
 . . . reinforced plastics
 . . . carbon fiber reinforced plastics
 **carbon-phenolic composites**
 resin matrix composites
 **carbon-phenolic composites**
 plastics
 . reinforced plastics
 . . carbon fiber reinforced plastics
 . . . **carbon-phenolic composites**
 RT ablative materials
 carbon fibers
 phenolic resins
 rocket nozzles

carbon-silicon carbide composites
(added March 2005)
 DEF Composite materials formed from carbon embedded in a matrix of silicon carbide. Also known as C/SiC composites.
 GS composite materials
 . ceramic matrix composites
 . . **carbon-silicon carbide composites**
 RT carbon fibers
 carbon-carbon composites
 fiber composites
 silicon carbides

carbonyl compounds
 RT ∞ chemical compounds
 oxetane polymers

carborane
 GS boron compounds
 . boron hydrides
 . . boranes
 . . . **carborane**
 hydrogen compounds
 . hydrides
 . . boron hydrides
 . . . boranes
 **carborane**

Carborundum (trademark)
 RT abrasives
 refractory materials
 silicon carbides

carboxyhemoglobin
 GS biopolymers
 . proteins
 . . hemoglobin
 . . . **carboxyhemoglobin**
 organic compounds
 . proteins
 . . hemoglobin
 . . . **carboxyhemoglobin**
 organometallic compounds
 . hemoglobin
 . . **carboxyhemoglobin**
 RT blood circulation
 carbon monoxide poisoning
 erythrocytes

carboxyhemoglobin test
 GS physiological tests
 . **carboxyhemoglobin test**
 RT blood
 hematology

carboxyl group
 RT carboxylic acids

carboxylates
 GS esters
 . **carboxylates**
 RT carboxylic acids

carboxylation
 GS chemical reactions
 . **carboxylation**

RT decarboxylation

carboxylic acids
 GS acids
 . **carboxylic acids**
 . . acrylic acid
 . . alanine
 . . phenylalanine
 . . aspartic acid
 . . citric acid
 . . dicarboxylic acids
 . . fatty acids
 . . . acetic acid
 . . . ethylenediaminetetraacetic acids
 . . . iodoacetic acid
 . . . acetylsalicylic acid
 . . benzoic acid
 . . lipoic acid
 . . oleic acid
 . . . palmitic acid
 . . . propionic acid
 . . . sebacic acid
 . . . valeric acid
 . . . abscisic acid
 . . folic acid
 . . formhydroxamic acid
 . . formic acid
 . . Hexogenes (trademark)
 . . lactic acid
 . . lysine
 . . nicotinic acid
 . . oxalic acid
 . . oxamic acids
 . . tryptophan
 organic compounds
 . **carboxylic acids**
 . . acrylic acid
 . . alanine
 . . phenylalanine
 . . aspartic acid
 . . citric acid
 . . dicarboxylic acids
 . . fatty acids
 . . . acetic acid
 . . . ethylenediaminetetraacetic acids
 . . . iodoacetic acid
 . . . acetylsalicylic acid
 . . benzoic acid
 . . lipoic acid
 . . oleic acid
 . . . palmitic acid
 . . . propionic acid
 . . . sebacic acid
 . . . valeric acid
 . . . abscisic acid
 . . folic acid
 . . formhydroxamic acid
 . . formic acid
 . . Hexogenes (trademark)
 . . lactic acid
 . . lysine
 . . nicotinic acid
 . . oxalic acid
 . . oxamic acids
 . . tryptophan
 RT carboxyl group
 carboxylates
 terephthalate

carburetors
 UF *injection carburetors*
 RT chokes (fuel systems)
 contactors
 engine parts
 engines
 fuel injection
 fuel systems
 injectors
 internal combustion engines
 ∞ jet nozzles
 mixers
 premixed flames
 throats

carburizing
 DEF Introducing carbon into a solid ferrous alloy by holding above Ac1 in contact with a suitable carbonaceous material. The carburized

carcinogens

alloy is usually quench hardened.

GS hardening (materials)

. carburizing
RT decarburization

carcinogens

DEF Agents producing or inciting cancerous

growth.

RT cancer
hazardous materials
neoplasms

carcinoma

USE **cancer**

carcinotrons

GS amplifiers
. **carcinotrons**
electron tubes
. vacuum tubes
. . . microwave tubes
. . . . traveling wave tubes
. . . . **carcinotrons**
microwave equipment
. microwave tubes
. . traveling wave tubes
. . . **carcinotrons**

RT helitrons

cardiac auricles

GS anatomy
. circulatory system
. . cardiovascular system
. . . heart
. . . . **cardiac auricles**

RT His bundle

cardiac output

(added March 1991)

GS output
. **cardiac output**
. . heart minute volume
. . stroke volume

RT blood volume
cardiovascular system
heart function
heart rate
physiological tests

cardiac ventricles

GS anatomy
. circulatory system
. . cardiovascular system
. . . heart
. . . . **cardiac ventricles**

RT diastolic pressure
echocardiography
His bundle
systole

cardiograms

RT biomedical data
cardiography
heart

cardiography

GS bioengineering
. biometrics
. . **cardiography**
. . . ballistocardiography
. . . . electrocardiography
. . . . magnetocardiography
. . . . phonocardiography
. echocardiography
. seismocardiography
. vectorcardiography

RT cardiograms
cardiovascular system
heart
heart diseases
heart function
medical equipment
physiological tests

cardiology

GS medical science
. **cardiology**
RT angiography
artificial cardiac pacemaker
heart

heart diseases
heart rate
radiocardiography

cardiotachometers

GS medical equipment
. **cardiotachometers**
RT heart

cardiovascular system

DEF The system of an animal pertaining to the heart and blood vessels. Used for vascular system.

UF *vascular system*
GS anatomy
. circulatory system
. . **cardiovascular system**
. . . blood vessels
. . . . arteries
. aorta
. arterioles
. capillaries (anatomy)
. glomerulus
. veins
. . . heart
. . . . cardiac auricles
. . . . cardiac ventricles
. . . . epicardium
. . . . heart conduction system
. . . . myocardium

RT angiogenesis
angiography
baroreflexes
blood
blood volume
cardiac output
cardiography
carotid sinus body
carotid sinus reflex
cerebral vascular accidents
diastole
fat embolisms
head up tilt
heart diseases
hematopoiesis
hematopoietic system
hemodynamics
hemorrhages
lower body negative pressure
stroke volume
∞ systems
systole
tilt-table test

cards

GS **cards**
. punched cards
RT computer storage devices
data storage

caret wings

GS airfoils
. wings
. . **caret wings**
planforms
RT **caret wings**
arrow wings
delta wings
waveriders

CARETS (test site)

USE **Central Atlantic Regional Ecol Test Site**

cargo

UF *freight*
GS **cargo**
. air cargo
. . air mail
. . baggage
RT air drop operations
airdrops
delivery
freight costs
harbors
hauling
materials handling
Multi-Purpose Logistics Modules
railroad humping tests
rapid transit systems

transportation
transportation energy
trucks

cargo aircraft

GS transport aircraft
. **cargo aircraft**
. . Breguet 941 aircraft
. . C-1A aircraft
. . C-2 aircraft
. . C-5 aircraft
. . C-9 aircraft
. . C-15 aircraft
. . C-17 aircraft
. . C-33 aircraft
. . C-35 aircraft
. . C-46 aircraft
. . C-47 aircraft
. . C-54 aircraft
. . C-118 aircraft
. . C-119 aircraft
. . C-121 aircraft
. . C-123 aircraft
. . C-124 aircraft
. . C-130 aircraft
. . C-131 aircraft
. . C-133 aircraft
. . C-135 aircraft
. . C-140 aircraft
. . C-141 aircraft
. . C-160 aircraft
. . CH-21 helicopter
. . CL-44 aircraft
. . DC 3 aircraft
. . DC 7 aircraft
. . P-160 aircraft
. . P-166 aircraft
. . spanloader aircraft
. . YC-14 aircraft
RT air cargo
∞ aircraft
Boeing 727 aircraft
Boeing 737 aircraft
Boeing 767 aircraft
commercial aircraft
heavy lift helicopters
jet aircraft
materials handling
Mercure aircraft
MH-262 aircraft
∞ military aircraft
monoplanes
passenger aircraft
SC-7 aircraft
supersonic transports
T-39 aircraft
TU-154 aircraft
utility aircraft
VC-10 aircraft
very large transport aircraft

cargo ships

UF *LOTS cargo ships*
GS surface vehicles
. **cargo ships**
. . Savannah nuclear ship
. . tanker ships
water vehicles
. ships
. . **cargo ships**
. . . Savannah nuclear ship
. . . . tanker ships
RT artificial harbors
deepwater terminals
nuclear powered ships
offshore docking
offshore platforms
shipyards
tanker terminals
wharves

cargo spacecraft

RT Automated Transfer Vehicle
ferry spacecraft
∞ spacecraft

Cargomaster aircraft

USE **C-133 aircraft**

Caribbean region

DEF The region that consists of all or parts

of the islands of the Caribbean Sea, the Bahamas, the British dependent territories, the Virgin Islands, and the mainland areas of the three Guianas and Belize.

- RT Antigua and Barbuda
- Bahamas
- Barbados
- Belize
- Cuba
- developing nations
- Dominican Republic
- French Guiana
- Grenada
- Guyana
- Haiti
- Jamaica
- Martinique
- Surinam
- Trinidad and Tobago
- Virgin Islands
- West Indies

Caribbean Sea

- GS seas
 - . **Caribbean Sea**
- RT Belize
- Cuba
- Dominican Republic
- Gulf of Mexico
- Gulf Stream
- Haiti
- Panama Canal Zone
- Virgin Islands

Caribou aircraft

- USE **DHC 4 aircraft**

caribous

- GS animals
 - . vertebrates
 - . . mammals
 - . . . deer
 - **caribous**

Carme

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 22,600,000 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Jupiter satellites
 - . . . **Carme**
- RT Jupiter (planet)

carnitine

- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **carnitine**
- vitamins
- . **carnitine**

Carnot cycle

DEF An idealized reversible thermodynamic cycle. The Carnot cycle consists of four stages: (a) an isothermal expansion of the gas at temperature T1; (b) an adiabatic expansion to temperature T2; (c) an isothermal compression at temperature T2; (d) an adiabatic compression to the original state of the gas to complete the cycle.

- GS cycles
 - . thermodynamic cycles
 - . . **Carnot cycle**
- RT adiabatic conditions
- Rankine cycle
- Stirling cycle

carotene

- GS organic compounds
 - . hydrocarbons
 - . . **carotene**
- pigments
- . **carotene**
- RT retinene
- skin (anatomy)

carotenoids

(added August 2004)

DEF The general name for a group of fat-

soluble pigments found in green, yellow, and leafy vegetables, and yellow fruits. They are aliphatic hydrocarbons consisting of a polyisoprene backbone

- GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . **carotenoids**
- pigments
- . **carotenoids**
- RT terpenes

carotid sinus body

- RT arteries
- blood vessels
- cardiovascular system
- carotid sinus reflex
- chemoreceptors
- circulatory system
- nerves
- sinuses

carotid sinus reflex

- GS reflexes
 - . baroreflexes
 - . . **carotid sinus reflex**
- RT arteries
- blood vessels
- cardiovascular system
- carotid sinus body
- circulatory system
- heart function
- nerves
- sinuses

Carpathian Mountains (Europe)

- GS landforms
 - . mountains
 - . . **Carpathian Mountains (Europe)**
- RT Europe

carriages

- RT carts
- chassis
- dollies
- frames
- landing gear
- supports
- undercarriages

carrier density (solid state)

DEF The charge carrier concentrations of holes and/or electrons in a semiconductor which determines its electronic characteristics and function.

- GS density (number/volume)
 - . particle density (concentration)
 - . . electron density (concentration)
 - . . . **carrier density (solid state)**
- RT acceptor materials
- carrier lifetime
- carrier transport (solid state)
- ∞ carriers
- donor materials
- electron-hole drops
- semiconductors (materials)
- Zener effect

carrier frequencies

- GS frequencies
 - . **carrier frequencies**
- RT carrier to noise ratios
- frequency division multiplexing
- harmonic generations
- modulation
- multiplexing
- radio frequencies
- single channel per carrier
 - . transmission
- sweep frequency
- unified S band

carrier injection

- GS injection
 - . **carrier injection**
- RT additives
- Barritt diodes
- bipolar transistors
- carrier lifetime
- charge carriers

charge transfer
 injection locking
 ion injection
 majority carriers
 minority carriers
 radiative recombination
 semiconductors (materials)
 Suhl effect
 traveling solvent method

carrier lifetime

- GS life (durability)
 - . **carrier lifetime**
- RT carrier density (solid state)
- carrier injection
- carrier mobility
- carrier transport (solid state)
- charge carriers
- minority carriers
- solar cells

carrier mobility

- GS electrical properties
 - . **carrier mobility**
 - . . electron mobility
 - . . hole mobility
- mobility
- . **carrier mobility**
- . . electron mobility
- . . hole mobility
- transport properties
- . **carrier mobility**
- . . electron mobility
- . . hole mobility
- RT carrier lifetime
- electrical resistivity
- electromagnetic properties
- excitons
- Hall effect
- ion implantation
- superconductors (materials)

carrier modulation

- USE **modulation**

carrier rockets

- USE **launch vehicles**

carrier sense multiple access

(added April 2000)

DEF A data transmission protocol for multi-access networks where each node in the network senses traffic and waits for it to clear before transmitting; if two or more nodes transmit simultaneously, they wait a random interval before attempting to re-transmit.

- GS protocol (computers)
 - . **carrier sense multiple access**
- telecommunication
- . multiple access
- . . **carrier sense multiple access**
- transmission
- . signal transmission
- . . data transmission
- . . . multiple access
- **carrier sense multiple access**
- RT communication networks
- computer networks
- Ethernet
- local area networks
- packet transmission

carrier systems

- USE **wireless communication**

carrier to noise ratios

DEF RF signal power input to the receiver divided by the noise power input.

- RT carrier frequencies
- communication satellites
- data transmission
- downlinking
- Earth terminals
- frequency modulation
- signal to noise ratios
- transmission efficiency
- uplinking

carrier transport (solid state)

DEF The mobility of conduction electrons or

carrier waves

holes in semiconductors.

- RT carrier density (solid state)
- carrier lifetime
- diffusion length
- energy conversion efficiency
- solar cells

carrier waves

DEF Waves generated at a point in the transmitting system and modulated by the signal. Used for subcarrier waves.

- UF *subcarrier waves*
- RT modulation
- radio spectra

∞ carriers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft carriers
- carrier density (solid state)
- charge carriers
- Zener effect

Carrington rotation

USE **solar rotation**

Cartan space

- RT compressible flow
- fluid flow
- potential flow
- ∞ space

Cartesian coordinates

DEF A coordinate system in which the locations of points in space are expressed by reference to three planes, called coordinate planes, no two of which are parallel. Used for rectangular coordinates.

- UF *rectangular coordinates*
- GS coordinates
- . **Cartesian coordinates**
- geometry
- . Euclidean geometry
- . . **Cartesian coordinates**
- RT cylindrical coordinates
- oblique coordinates

cartilage

- GS anatomy
- . musculoskeletal system
- . . **cartilage**
- tissues (biology)
- . connective tissue
- . . **cartilage**
- RT bones
- larynx

cartography

USE **mapping**

cartridge actuated devices

USE **actuators**

explosive devices

cartridges

- RT cases (containers)
- ∞ containers
- packages
- projectiles
- propellants

carts

- GS **carts**
- . Crew Equipment Translation Aid (ISS)
- RT carriages
- materials handling
- undercarriages

cascade control

- UF *multiloop systems*
- GS automatic control
- . feedback control
- . . **cascade control**
- RT ∞ cascades
- ∞ control
- electronic control
- optical control

remote control

cascade flow

- GS fluid flow
- . **cascade flow**
- RT ∞ cascades
- outlet flow
- turbomachine blades

Cascade Range (CA-OR-WA)

- GS land
- . **Cascade Range (CA-OR-WA)**
- landforms
- . mountains
- . . **Cascade Range (CA-OR-WA)**
- RT California
- Oregon
- United States
- Washington

cascade wind tunnels

- GS test facilities
- . wind tunnels
- . . hypersonic wind tunnels
- . . . **cascade wind tunnels**
- . . hypervelocity wind tunnels
- . . . **cascade wind tunnels**
- RT hypersonic flow
- shock tunnels

∞ cascades

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cascade control
- cascade flow
- circuits
- cosmic ray showers
- electron photon cascades

cascades (fluid dynamics)

USE **fluid dynamics**

cascode devices

(added August 1998)

DEF Amplifier devices consisting of a common grounded-emitter (cathode) or source stage that drives a grounded-base output stage, resulting in high-impedance, high-gain, and low-noise,

- GS amplifiers
- . **cascode devices**
- electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . **cascode devices**
- RT CMOS
- field effect transistors
- high electron mobility transistors
- switching circuits
- transistor amplifiers
- transistor circuits
- transistors

cascode MOSFET

USE **field effect transistors**

case bonded propellants

- GS propellants
- . solid propellants
- . . **case bonded propellants**
- RT ammunition
- composite propellants
- explosives
- hybrid propellants
- inhibitors
- plasticizers
- solid rocket propellants

case histories

- GS histories
- . **case histories**
- RT anthropology
- biography
- clinical medicine
- documentation
- etiology
- phenomenology
- records

sociology

cases (containers)

- GS **cases (containers)**
- . rocket engine cases
- RT boxes (containers)
- cartridges
- ∞ containers
- missile bodies
- packages
- ∞ shelves

∞ casing

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT coverings
- enclosure
- jackets
- linings
- pipes (tubes)
- sheaths

casks

USE **barrels (containers)**

Caspian Sea

- GS seas
- . **Caspian Sea**
- RT coasts

Cassegrain antennas

- GS antennas
- . **Cassegrain antennas**
- RT antenna design
- Gregorian antennas
- parabolic antennas
- reflector antennas
- subreflectors
- two reflector antennas

Cassegrain optics

- RT fiber optics
- geometrical optics
- mirrors
- ∞ optics
- reflecting telescopes
- telescopes

Cassini mission

- (added August 1998)*
- GS space missions
- . **Cassini mission**
- RT European Space Agency
- European space programs
- Huygens probe
- international cooperation
- Mariner Mark 2 Spacecraft
- ∞ missions
- NASA space programs
- Saturn (planet)
- space exploration
- space probes
- Titan
- Titan 4B launch vehicle
- Titan atmosphere

Cassiopeia A

- GS celestial bodies
- . nebulae
- . . **Cassiopeia A**
- . radio sources (astronomy)
- . . **Cassiopeia A**
- RT Orion nebula

Cassiopeia constellation

- GS constellations
- . **Cassiopeia constellation**
- RT celestial bodies
- celestial sphere
- stars

cast alloys

- GS alloys
- . **cast alloys**
- RT castings
- mechanical properties
- microstructure
- rheocasting

- squeeze casting
- Castigliano variational theorem**
 GS theorems
 . **Castigliano variational theorem**
 RT calculus of variations
 energy methods
 Euler-Lagrange equation
 stress analysis
 structural analysis
- casting**
 GS forming techniques
 . **casting**
 . . centrifugal casting
 . . investment casting
 . . propellant casting
 . . rheocasting
 . . sand casting
 . . slip casting
 . . squeeze casting
 RT baking
 billets
 dies
 extruding
 forging
 inclusions
 ingots
 liquid metals
 melting
 metal working
 ∞ metallurgy
 microstructure
 molding materials
 molds
 mushy zones
 pinholes
 polymeric films
 pouring
 pultrusion
 resin transfer molding
 shrinkage
 solidification
- casting solvents*
 USE **plasticizers**
- castings**
 GS **castings**
 . ingots
 . propellant casting
 RT billets
 cast alloys
 defects
 degassing
 flat patterns
 inclusions
 microstructure
 molds
 pinholes
 pouring
 risers
 solidification
- Castor 2 engine*
 USE **TX-354 engine**
- castor oil**
 GS oils
 . **castor oil**
 organic compounds
 . lipids
 . . **castor oil**
 RT fatty acids
- casts**
 RT damage assessment
 gauze
 plasters
 splints
- casualties**
 RT death
 disasters
- evacuating (transportation)
- CAT scanner*
 USE **computer aided tomography**
- catabolism**
 GS metabolism
 . **catabolism**
 RT physiology
- cataclysmic variables**
 GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 **cataclysmic variables**
 . . variable stars
 . . . **cataclysmic variables**
 RT dwarf stars
 eclipsing binary stars
 flare stars
 hot stars
 novae
 periodic variations
 solar oscillations
 stellar flares
 stellar mass ejection
 stellar oscillations
 superhumps (astronomy)
 white dwarf stars
- catalase**
 GS biopolymers
 . proteins
 . . enzymes
 . . . **catalase**
 organic compounds
 . proteins
 . . enzymes
 . . . **catalase**
 RT cells (biology)
- ∞ **catalogs**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT astronomical catalogs
 catalogs (publications)
 hardware utilization lists
 indexes (documentation)
 lists
- catalogs (publications)**
 GS documents
 . **catalogs (publications)**
 . . astronomical catalogs
 RT ∞ catalogs
 categories
 documentation
 information dissemination
 libraries
- catalysis**
 GS **catalysis**
 . autocatalysis
 RT ∞ acceleration
 activation
 catalytic activity
 cracking (chemical engineering)
 Fischer-Tropsch process
 reaction kinetics
- catalysts**
 GS **catalysts**
 . electrocatalysts
 . Hopcalite (trademark)
 . Ziegler catalyst
 RT accelerating agents
 additives
 admixtures
 coal derived gases
 coal derived liquids
 enzymes
 Grignard reactions
 high energy fuels
 inhibitors
 ∞ initiators
 platinum black
 propellant additives
 reagents
 retardants
- synthesis gas
- catalytic activity**
 RT active sites (chemistry)
 activity (biology)
 autocatalysis
 catalysis
 cracking (chemical engineering)
 enzyme inhibitors
 Fischer-Tropsch process
 phosphatases
- catalytic sites*
(added August 2004)
 USE **active sites (chemistry)**
- catapults**
 DEF A power-actuated machine or device for hurling forth something, as an airplane or missile, at a high initial speed; also a device usually explosive, for ejecting a person from an aircraft.
 GS launchers
 . **catapults**
 . . rocket catapults
 RT aircraft launching devices
 missile launchers
 sea launching
- cataracts**
 GS diseases
 . eye diseases
 . . **cataracts**
 RT lenses
 occupational diseases
- catastrope theory**
 RT discontinuity
 divergence
 predictions
 ∞ theories
 topology
- catchers**
 RT electron bunching
 klystrons
 output
- catchment areas*
 USE **watersheds**
- catecholamine**
 GS organic compounds
 . amines
 . . **catecholamine**
 . . . epinephrine
 . . . norepinephrine
 RT dopamine
 hormones
 neurotransmitters
- categories**
 RT catalogs (publications)
 classes
 ∞ groups
 ∞ sections
- catenaries**
 GS geometry
 . curves (geometry)
 . . **catenaries**
 . Euclidean geometry
 . . analytic geometry
 . . . **catenaries**
- catheterization**
 RT blood vessels
 intravenous procedures
- cathetometers**
 GS measuring instruments
 . optical measuring instruments
 . . **cathetometers**
 optical equipment
 . optical measuring instruments
 . . **cathetometers**
- cathode glow**
 GS emission
 . light emission
 . . luminescence

cathode ray tubes

. . . **cathode glow**
RT cathodoluminescence
glow discharges
rarefied plasmas

cathode ray tubes
DEF Vacuum tubes consisting essentially of an electron gun producing a concentrated electron beam (or cathode ray) which impinges on a phosphorescent coating on the back of a viewing face (or screen). The excitation of the phosphor produces light, the intensity of which is controlled by the flow of electrons. Deflection of the beam is achieved either electromagnetically by currents in coils around the tube, or electrostatically by voltages on internal deflection plates.
GS electron tubes
. vacuum tubes
. . . **cathode ray tubes**
. . . monoscopes
. . . picture tubes
RT display devices
electron guns
electron optics
image tubes
magnetic lenses
oscilloscopes
printers
raster scanning
television equipment
video equipment

cathodes
DEF In electron tubes, electrodes through which a primary stream of electrons enters the interelectrode space.
GS electrodes
. **cathodes**
. . cell cathodes
. . hollow cathodes
. . tube cathodes
. . . cold cathodes
. . . hot cathodes
. . . photocathodes
. . . thermionic cathodes
. . . tunnel cathodes
RT anodes
cold cathode tubes
electrode materials
electron emission
∞ filaments
frequency modulation photomultipliers
photomultiplier tubes
phototubes
thermionics
tube anodes

cathodic coatings
DEF Material forming a continuous film on a base metal by mechanical coating or by electroplating.
GS coatings
. **cathodic coatings**
RT anodic coatings
cladding
electrode materials
electrodeposition
electroplating
metal oxides
mischmetal
oxide films
oxides
plating

cathodoluminescence
DEF Luminescence produced when high velocity electrons bombard a metal in a vacuum, thus vaporizing small amounts of the metal which, in an excited state, emit radiation characteristic of the metal.
GS emission
. light emission
. . luminescence
. . . **cathodoluminescence**
RT cathode glow
light sources
porous silicon

visible spectrum

catholytes
GS conductors
. electrolytes
. . **catholytes**
RT anolytes
cell cathodes
diaphragms (mechanics)

cations
DEF Positively-charged ions.
GS ions
. positive ions
. . **cations**
. . . formyl ions
. . . vanadyl radical
RT anions
cell cathodes
ionic mobility
metal ions

cats
GS animals
. vertebrates
. . mammals
. . . **cats**

CATT devices
DEF Controlled avalanche transit time triodes which use avalanche multiplication in the collector depletion region of a silicon, bipolar, transistor-like structure to increase the gain and thereby achieve a higher frequency operation of silicon bipolar transistors. Used for controlled avalanche transit time devices.
UF *controlled avalanche transit time devices*
RT electron avalanche
power gain
transit time
triodes

cattle
GS animals
. vertebrates
. . mammals
. . . **cattle**
. . . calves
RT grazing
livestock
rangelands

CATV
USE **cable television**

Caucasus Mountains (U.S.S.R.)
GS landforms
. mountains
. . **Caucasus Mountains (U.S.S.R.)**
RT U.S.S.R.

Cauchy integral formula
GS analysis (mathematics)
. complex variables
. . **Cauchy integral formula**

Cauchy problem
UF *Riemann problem*
GS boundary value problems
. **Cauchy problem**
RT differential equations
Godunov method
∞ problems

Cauchy-Riemann equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Cauchy-Riemann equations**
RT analytic functions
∞ equations
Godunov method

caulking
DEF Material ranging in physical characteristics from plastic to solid to preformed. Used to seal and waterproof joints and overlaps in structures, other assemblies or portions thereof where movement may occur.

RT moisture resistance
plugging
sealing
waterproofing

causes
RT ∞ effects
etiology
∞ origins
∞ sources

caustic lines
DEF The locations of wave front interactions induced by the maneuvers of supersonic aircraft in changing direction and/or attitude.
RT flight paths
shock waves
sonic booms
supersonic flight
wave fronts

caustics
USE **alkalies**

caustics (optics)
DEF The envelope of rays diffracted by surface defects in materials.
RT diffraction
fracture mechanics
∞ optics
polarized radiation
∞ rays
surface defects

caves
RT cavities
karst
kettles (geology)
underground structures

cavitation
USE **cavitation flow**

cavitation corrosion
GS corrosion
. **cavitation corrosion**
RT cavitation flow
corrosion prevention
corrosion resistance
corrosion tests
erosion

cavitation flow
DEF The formation of bubbles in a liquid, occurring whenever the static pressure at any point in the fluid flow becomes less than the fluid vapor pressure. Used for cavitation and gaseous cavitation.
UF *cavitation gaseous cavitation*
GS fluid flow
. turbulent flow
. . **cavitation flow**
. . . supercavitating flow
RT bubbles
cavitation corrosion
erosion
flow distribution
impingement
separated flow
ultrasonic cleaning
vortices
wakes
water

cavities
UF *bores*
GS **cavities**
. laser cavities
RT apertures
boreholes
caves
cavity flow
∞ cells
crack geometry
cracks
defects
ducts
gas pockets
hole distribution (mechanics)

- ∞ holes
 - holes (mechanics)
- ∞ hollow
 - interstices
 - karst
 - kettles (geology)
 - leakage
 - openings
 - orifices
 - outlets
 - passageways
 - perforated plates
 - perforated shells
- ∞ perforation
 - ports (openings)
 - recesses
 - tooth diseases
 - vents
 - voids
- cavitons**
 - DEF Density cavities created by localized oscillating electric fields.
 - RT electric fields
 - plasma density
 - plasma physics
 - plasma resonance
- cavity flow**
 - (added November 1991)
 - GS fluid flow
 - . internal flow
 - . . **cavity flow**
 - RT cavities
 - channel flow
 - corner flow
 - ducted flow
 - engine inlets
 - ∞ flow
 - fluid boundaries
 - open channel flow
 - pipe flow
- cavity resonators**
 - UF *resonant cavities*
 - GS resonators
 - . **cavity resonators**
 - . . superconducting cavity resonators
 - RT circulators (phase shift circuits)
 - cyclotron resonance devices
 - electron tubes
 - field mode theory
 - Helmholtz resonators
 - klystrons
 - magnetrons
 - microwave resonance
 - multimode resonators
 - oscillators
 - resonant frequencies
 - traveling wave masers
 - velocity modulation
- cavity vapor generators**
 - RT ∞ generators
 - vaporizers
 - vapors
- cays*
 - USE **keys (islands)**
- CC-106 aircraft*
 - USE **CL-44 aircraft**
- CCD*
 - USE **charge coupled devices**
- CCD cameras**
 - (added September 1995)
 - GS optical equipment
 - . cameras
 - . . **CCD cameras**
 - photographic equipment
 - . cameras
 - . . **CCD cameras**
 - RT CCD star tracker
 - charge coupled devices
 - Clementine spacecraft
 - digital cameras
- photography
 - . . CDC computers
 - . . . CDC 6000 series computers
 - **CDC 6600 computer**
 - digital computers
 - CDC 6000 series computers
 - **CDC 6600 computer**
- CCD star tracker**
 - DEF Navigation instrument designed for the NASA space transportation system. Used for stellar (star tracker).
 - UF *Stellar (star tracker)*
 - GS tracking (position)
 - . star trackers
 - . . **CCD star tracker**
 - RT CCD cameras
 - celestial navigation
 - charge coupled devices
 - spacecraft guidance
- CDC 160-A computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 160-A computer**
 - digital computers
 - **CDC 160-A computer**
- CDC 1604 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 1604 computer**
 - digital computers
 - **CDC 1604 computer**
- CDC 3100 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 3100 computer**
 - digital computers
 - **CDC 3100 computer**
- CDC 3200 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 3200 computer**
 - digital computers
 - **CDC 3200 computer**
- CDC 3600 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 3600 computer**
 - digital computers
 - **CDC 3600 computer**
- CDC 3800 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 3800 computer**
 - digital computers
 - **CDC 3800 computer**
- CDC 6000 series computers**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 6000 series computers**
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - digital computers
 - **CDC 6000 series computers**
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
- CDC 6400 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . CDC 6000 series computers
 - **CDC 6400 computer**
 - digital computers
 - CDC 6000 series computers
 - **CDC 6400 computer**
- CDC 6600 computer**
 - GS data processing equipment
 - . computers
- CDC 6700 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . CDC 6000 series computers
 - **CDC 6700 computer**
- CDC 7000 series computers**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 7000 series computers**
 - CDC 7600 computer
 - digital computers
 - **CDC 7000 series computers**
 - CDC 7600 computer
- CDC 7600 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . CDC 7000 series computers
 - **CDC 7600 computer**
 - digital computers
 - CDC 7000 series computers
 - **CDC 7600 computer**
- CDC 8090 computer**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC 8090 computer**
 - digital computers
 - **CDC 8090 computer**
- CDC computers**
 - GS data processing equipment
 - . computers
 - . . **CDC computers**
 - . . . CDC 160-A computer
 - CDC 1604 computer
 - CDC 3100 computer
 - CDC 3200 computer
 - CDC 3600 computer
 - CDC 3800 computer
 - CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - CDC 6700 computer
 - CDC 7000 series computers
 - CDC 7600 computer
 - CDC 8090 computer
 - CDC Cyber 170 series computers
 - CDC Cyber 175 computer
 - CDC Cyber 74 computer
 - CDC Cyber 174 computer
 - CDC Cyber 203 computer
 - CDC Cyber 205 computer
 - CDC Star 100 computer
 - RT digital computers
- CDC Cyber 74 computer**
 - UF *Cyber 74 computer*
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC Cyber 74 computer**
 - digital computers
 - **CDC Cyber 74 computer**
- CDC Cyber 170 series computers**
 - GS data processing equipment
 - . computers
 - . . CDC computers
 - . . . **CDC Cyber 170 series computers**
 - CDC Cyber 175 computer
 - digital computers
 - **CDC Cyber 170 series computers**

CDC Cyber 174 computer

. . . . CDC Cyber 175 computer

CDC Cyber 174 computer

GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 174 computer**
. . digital computers
. . . **CDC Cyber 174 computer**

CDC Cyber 175 computer

GS data processing equipment
. computers
. . CDC computers
. . . CDC Cyber 170 series computers
. . . . **CDC Cyber 175 computer**
. . digital computers
. . . CDC Cyber 170 series computers
. . . . **CDC Cyber 175 computer**

CDC Cyber 203 computer

GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 203 computer**
. . digital computers
. . . **CDC Cyber 203 computer**

CDC Cyber 205 computer

GS data processing equipment
. computers
. . CDC computers
. . . **CDC Cyber 205 computer**
. . digital computers
. . . **CDC Cyber 205 computer**

CDC Star 100 computer

GS data processing equipment
. computers
. . CDC computers
. . . **CDC Star 100 computer**
. . digital computers
. . . **CDC Star 100 computer**

CDMA

USE **code division multiple access**

CD-ROM

(added September 1992)
GS computer components
. computer storage devices
. . read-only memory devices
. . . **CD-ROM**
RT data bases
information retrieval
information systems
optical disks
optical memory (data storage)

CE/SE method

(added June 2002)
USE **space-time CE/SE method**

Cedar Rapids (IA)

GS cities
. **Cedar Rapids (IA)**
RT Iowa

CEFOAM checkout equipment

RT checkout
∞ test equipment

ceiling (aircraft capability)

RT ∞ aircraft
aircraft specifications
∞ ceilings
flight altitude
flight characteristics

∞ ceilings

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT ceiling (aircraft capability)
ceilings (architecture)
ceilings (meteorology)

ceilings (architecture)

RT buildings
∞ ceilings
∞ diffusers

floors
insulation
panels
reflectors

ceilings (meteorology)

DEF The height above the Earth's surface of the lowest layer of clouds or obscuring phenomena that is reported as "broken", "overcast" or "obscuration" and not classified as "thin" or "partial".

RT aircraft landing
∞ ceilings
cloud height indicators
meteorological parameters
meteorology
visibility

ceilometers

USE **cloud height indicators**

telescopes

GS electron tubes
. vacuum tubes
. . microwave tubes
. . . **telescopes**
microwave equipment
. microwave tubes
. . **telescopes**
mirrors
. **telescopes**
optical equipment
. image converters
. . **telescopes**
telescopes
. **telescopes**
RT solar instruments

celestial bodies

DEF Any aggregations of matter in space constituting a unit for astronomical study, as the sun, moon, a planet, comet, star, or nebula. Also called heavenly bodies.

GS celestial bodies

. asteroid belts
. . Toro asteroid
. . asteroids
. . . Amor asteroid
. . . Amphitrite asteroid
. . . Apollo asteroids
. . . Ceres asteroid
. . . Chiron
. . . EROS asteroid
. . . Gaspard asteroid
. . . Icarus asteroid
. . . Ida asteroid
. . . Quaoar
. . . Toro asteroid
. . . Toutatis asteroid
. . . Trojan asteroids
. . . Vesta asteroid
. . . blazars
. . . BL Lacertae objects
. . . comet heads
. . . comet nuclei
. . . comet tails
. . . comets
. . . Arend-Roland comet
. . . Austin comet
. . . Brorsen-Metcalf comet
. . . Encke comet
. . . Giacobini-Zinner comet
. . . Grigg-Skjellerup comet
. . . Hale-Bopp comet
. . . Halley's comet
. . . Humason comet
. . . IRAS-Araki-Alcock comet
. . . Kohoutek comet
. . . Morehouse comet
. . . Mrkos comet
. . . Okazaki-Levy-Rudenko comet
. . . Schwassmann-Wachmann comet
. . . Shoemaker-Levy 9 comet
. . . Tempel 1 comet
. . . Tempel 2 comet
. . . West comet
. . . Wild 2 comet
. . . faint objects
. . . galactic clusters
. . . local group (astronomy)

. . . Virgo galactic cluster
. . . galaxies
. . . active galaxies
. . . Markarian galaxies
. . . radio galaxies
. . . Seyfert galaxies
. . . compact galaxies
. . . disk galaxies
. . . dwarf galaxies
. . . elliptical galaxies
. . . interacting galaxies
. . . irregular galaxies
. . . Maffei galaxies
. . . Magellanic clouds
. . . peculiar galaxies
. . . ring galaxies
. . . shell galaxies
. . . spiral galaxies
. . . Andromeda Galaxy
. . . barred galaxies
. . . Milky Way Galaxy
. . . protogalaxies
. . . starburst galaxies
. . . Virgo galactic cluster
. . . infrared sources (astronomy)
. . . infrared stars
. . . meteorites
. . . iron meteorites
. . . Aros meteorite
. . . Lazarev meteorite
. . . Odessa meteorite
. . . Sikhote-Alin meteorite
. . . micrometeorites
. . . stony meteorites
. . . achondrites
. . . . Bondoc meteorite
. . . . chassignites
. . . . Kapoeta achondrite
. . . . nakhlites
. . . . Norton County achondrite
. . . . shergottites
. . . . SNC meteorites
. . . . ureilites
. . . carbonaceous meteorites
. . . carbonaceous chondrites
. Alais meteorite
. Allende meteorite
. Cold Bokkeveld meteorite
. Ivuna meteorite
. Murchison meteorite
. Murray meteorite
. Orgueil meteorite
. Tonk meteorite
. ureilites
. chondrites
. Bruderheim meteorite
. carbonaceous chondrites
. Alais meteorite
. Allende meteorite
. Cold Bokkeveld meteorite
. Ivuna meteorite
. Murchison meteorite
. Murray meteorite
. Orgueil meteorite
. Tonk meteorite
. Harleton meteorite
. Hvittis chondrite
. Okhansk meteorite
. Pantar chondrites
. Pribram meteorite
. tektites
. australites
. bediasites
. Tungusk meteorite
. stony-iron meteorites
. meteoroid showers
. Aquarid meteoroids
. Arietid meteoroids
. Cyrrillid meteoroids
. Draconid meteoroids
. Geminid meteoroids
. Leonid meteoroids
. Orionid meteoroids
. Perseid meteoroids
. Quadrantid meteoroids
. Taurid meteoroids
. meteoroids
. Aquarid meteoroids
. Arietid meteoroids

- . . . bolides
- . . . Cyrillid meteoroids
- . . . Draconid meteoroids
- . . . Geminid meteoroids
- . . . Leonid meteoroids
- . . . micrometeoroids
- . . . meteoroid dust clouds
- zodiacal dust
- . . . Orionid meteoroids
- . . . Perseid meteoroids
- . . . Quadrantid meteoroids
- . . . radio meteors
- . . . sporadic meteoroids
- . . . Taurid meteoroids
- . moonlets
- . natural satellites
- . . icy satellites
- . . . Ariel
- . . . Callisto
- . . . Dione
- . . . Enceladus
- . . . Europa
- . . . Ganymede
- . . . Hyperion
- . . . Iapetus
- . . . Mimas
- . . . Rhea (astronomy)
- . . . Tethys
- . . . Titania
- . . Jupiter satellites
- . . . Adrastea
- . . . Amalthea
- . . . Carme
- . . . Elara
- . . . Galilean satellites
- Callisto
- Europa
- Ganymede
- Io
- . . . Himalia
- . . . Leda
- . . . Lysithea
- . . . Metis
- . . . Pasiphae
- . . . Sinope
- . . . Thebe
- . . Mars satellites
- . . . Deimos
- . . . Phobos
- . . moon
- . . Neptune satellites
- . . . Galatea
- . . . Larissa
- . . . Naiad
- . . . Nereid
- . . . Proteus
- . . . Triton
- . . Pluto satellites
- . . . Charon
- . . . Hydra
- . . . Nix
- . . Saturn satellites
- . . . Calypso
- . . . Dione
- . . . Enceladus
- . . . Epimetheus
- . . . Helene
- . . . Hyperion
- . . . Iapetus
- . . . Janus
- . . . Mimas
- . . . Pandora
- . . . Phoebe
- . . . Prometheus
- . . . Rhea (astronomy)
- . . . Telesto
- . . . Tethys
- . . . Titan
- . . Uranus satellites
- . . . Ariel
- . . . Cordelia
- . . . Miranda
- . . . Oberon
- . . . Puck
- . . . Titania
- . . . Umbriel
- . nebulae
- . . Cassiopeia A
- . . Crab nebula
- . . . Gum nebula
- . . . H I regions
- . . . H II regions
- . . . Herbig-Haro objects
- . . . Orion nebula
- . . . planetary nebulae
- . . . reflection nebulae
- . . . solar nebula
- . . planetary rings
- . . . Jupiter rings
- . . . Saturn rings
- . . . Uranus rings
- . planets
- . . extrasolar planets
- . . gas giant planets
- . . . Jupiter (planet)
- . . . Neptune (planet)
- . . . Saturn (planet)
- . . . Uranus (planet)
- . . terrestrial planets
- . . . Earth (planet)
- . . . Mars (planet)
- . . . Mercury (planet)
- . . . Venus (planet)
- . . hypothetical planets
- . . protoplanets
- . . radio sources (astronomy)
- . . . Cassiopeia A
- . . . extragalactic radio sources
- . . . radio galaxies
- . . . radio jets (astronomy)
- . . quasars
- . . radio stars
- . . . pulsars
- . . solar system
- . star clusters
- . . globular clusters
- . . open clusters
- . . . Pleiades cluster
- . . . Praesepe star clusters
- . stars
- . . black holes (astronomy)
- . . brown dwarf stars
- . . double stars
- . . . binary stars
- cataclysmic variables
- companion stars
- Nemesis (star)
- eclipsing binary stars
- dwarf novae
- Lambda Tauri stars
- Zeta Aurigae star
- Sigma Orionis
- symbiotic stars
- x ray binaries
- . . . early stars
- . . hot stars
- . . . A stars
- . . . B stars
- shell stars
- Sigma Orionis
- blue stars
- O stars
- white dwarf stars
- Wolf-Rayet stars
- . . F stars
- . . G stars
- . . sun
- . . giant stars
- . . . asymptotic giant branch stars
- . . . Omicron Ceti star
- . . . red giant stars
- carbon stars
- . . . horizontal branch stars
- . . infrared stars
- . . late stars
- . . . cool stars
- carbon stars
- flare stars
- K stars
- M stars
- Van Biesbroeck star
- Mira variables
- Omicron Ceti star
- S stars
- . . . magnetic stars
- . . . magnetars
- . . main sequence stars
- . . . dwarf stars
- dwarf novae
- flare stars
- red dwarf stars
- . . . sun
- . . massive stars
- . . metallic stars
- . . neutron stars
- . . magnetars
- . . pulsars
- . . . soft gamma repeaters
- . . peculiar stars
- . . . shell stars
- . . . Sigma Orionis
- . . . symbiotic stars
- . . Praesepe star clusters
- . . protostars
- . . pre-main sequence stars
- . . . T Tauri stars
- . . radio stars
- . . . pulsars
- . . reference stars
- . . subdwarf stars
- . . subgiant stars
- . . supergiant stars
- . . . R Coronae Borealis stars
- . . supermassive stars
- . . triple stars
- . . variable stars
- . . . cataclysmic variables
- . . . cepheid variables
- . . . flare stars
- . . . irregular variable stars
- R Coronae Borealis stars
- . . . Lambda Tauri stars
- . . . Mira variables
- Omicron Ceti star
- . . novae
- . . . dwarf novae
- . . . Hercules nova
- . . . semiregular variable stars
- . . . supernovae
- supernova 1987A
- . . . symbiotic stars
- . . . T Tauri stars
- . . white holes (astronomy)
- . . x ray stars
- . . . soft gamma repeaters
- . . . x ray binaries
- . . Population I stars
- . . Population II stars
- . . Population III stars
- . massive compact halo objects
- . meteorite parent bodies
- . near Earth objects
- . stellar systems
- . trans-Neptunian objects
- . . Charon
- . . Pluto (planet)
- . . Quaoar
- . . dwarf planets
- . . . Ceres asteroid
- . . Pluto (planet)
- RT Aries constellation
- asteroid capture
- astrodynamics
- astrolabes
- astronomical observatories
- astronomy
- astrophysics
- ∞ bodies
- Cassiopeia constellation
- Centaurus constellation
- Corona Borealis constellation
- Cygnus constellation
- gravitational waves
- impact melts
- interstellar matter
- Lyra constellation
- orbits
- solar neighborhood
- space flight
- universe
- celestial geodesy**
- DEF The determination of the form of the Earth, of the Earth's gravitational field, and of relative positions of satellite trajectories.
- GS geodesy
- . **celestial geodesy**

celestial mechanics

RT Explorer 29 satellite
Explorer 36 satellite
geodetic satellites
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite
International Satellite Geodesy
Experiment
satellite laser ranging
time

celestial mechanics

DEF The study of the theory of motions of celestial bodies under the influence of gravitational fields.

GS mechanics (physics)
. classical mechanics
. . . space mechanics
. . . **celestial mechanics**

RT astrodynamics
astronomy
astrophysics
ephemerides
equations of motion
four body problem
gravitational waves
hyperbolic trajectories
Lagrangian equilibrium points
long term effects
many body problem
orbital mechanics
orbital resonances (celestial mechanics)
orbits
perturbation theory
planets
Roche limit
Schach effect
solar system
stars
stellar orbits
sun
terrestrial planets
three body problem
trajectory analysis
Trojan orbits
two body problem
Wolf-Rayet stars

celestial navigation

DEF The process of directing a craft from one point to another by reference to celestial bodies of known constants.

GS navigation
. **celestial navigation**
. . . Astroguide Navigation System
. . . astronavigation

RT air navigation
autonomous navigation
CCD star tracker
inertial navigation
injection guidance
interplanetary navigation
polar navigation
radar navigation
radio navigation
reference stars
solar position
space navigation
spacecraft guidance
star trackers
surface navigation

celestial observation

USE **astronomy**

celestial reference systems

RT air navigation
astronomical coordinates
astronomical maps
azimuth
coordinates
geocentric coordinates
inertial reference systems
interplanetary navigation
interstellar travel
laser guide stars
planetocentric coordinates
proper motion
∞ reference systems

solar longitude
spherical coordinates
∞ systems

celestial sphere

DEF An imaginary sphere of infinite radius concentric with the Earth, on which all celestial bodies except the Earth are assumed to be projected.

GS symmetrical bodies
. bodies of revolution
. . . spheres
. . . **celestial sphere**

RT Aries constellation
astronomical maps
Cassiopeia constellation
Centaurus constellation
constellations
Corona Borealis constellation
Cygnus constellation
horizon
Lyra constellation
orbital position estimation
planispheres
proper motion
zenith

cell anodes

GS electrodes
. anodes
. . **cell anodes**

RT anions
anolytes
cell cathodes
electrode materials

cell cathodes

GS electrodes
. cathodes
. . **cell cathodes**

RT catholytes
cations
cell anodes
electrode materials
electrodeposition

cell culturing

(added August 2004)

DEF A technique for maintenance or growth of animal cells in vitro. It refers to the culturing of cells derived from dispersed cells taken from the original tissue, from a primary culture, or from a cell line or cell strain by enzymatic, mechanical, or chemical disaggregation.

GS culture techniques
. **cell culturing**

RT cells (biology)
clone cells
culture media
cultured cells
microbiology
organ culturing
tissue culturing
tissue engineering

cell division

GS cytogenesis
. **cell division**

RT ∞ division
mitosis
reproduction (biology)
stem cells

cell lines

(added December 2004)

USE **cultured cells**

cell membranes (biology)

GS membranes
. **cell membranes (biology)**

RT cells (biology)
cytology
ion channels (biology)

osmosis

cell physiology

(added August 2004)

USE **cytology**

cellophane

RT cellulose
∞ polymers

∞ cells

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT activation (biology)
cavities
cells (biology)
compartments
cores
electrochemical cells
electrolytic cells
fillers
fuel cells
geophysical fluid flow cells
hexagonal cells
honeycomb structures
Kerr cells
lithium sulfur batteries
particle in cell technique
photoconductive cells
photoelectric cells
photovoltaic cells
porous materials
resolution cell
solar cells
tissues (biology)
topology

cells (biology)

UF *biological cells*

GS **cells (biology)**

. blood cells
. . erythrocytes
. . . reticulocytes
. . hemocytes
. . leukocytes
. . . eosinophils
. . . lymphocytes
. . . monocytes
. . . neutrophils
. eukaryotes
. fibroblasts
. gametocytes
. . eggs
. . . zygotes
. . spermatozoa
. macrophages
. neurons
. . axons
. . dendrites
. . neuroblasts
. cultured cells
. osteoblasts
. prokaryotes
. protoplasts
. stem cells
. . clone cells
. . muscle cells
. . muscle fibers

RT anatomy
apoptosis
∞ biology
cancer
catalase
cell culturing
cell membranes (biology)
∞ cells
chlorophylls
chloroplasts
chromosomes
cloning (biology)
culture media
cytogenesis
cytology
cytometry
cytoplasm
endoplasmic reticulum
endothelium
ganglia
hematopoiesis

hemoglobin
 histochemical analysis
 interleukins
 Krebs cycle
 lysosomes
 mitochondria
 mitosis
 mutagens
 mutations
 necrosis
 neuroglia
 neurotransmitters
 nuclei (cytology)
 organelles
 organs
 plasmolysis
 plastids
 ribosomes
 sarcoplasmic reticulum
 tissue engineering
 tissues (biology)

cellular automata

(added May 2003)

DEF A discrete, dynamical system consisting of a regular array of cells, each of which can have one of a finite number of states. With each time step, the cell is updated according to a set of local rules based on the state of neighboring cells.

RT automata theory
 Turing machines

cellular manufacturing

(added April 2000)

USE **group technology (manufacturing)**

cellular materials (non biological)

USE **foams**

cellulose

DEF The carbohydrate that is the principal constituent of wood and forms of structural framework of the wood cells.

GS biopolymers
 . polysaccharides
 . . **cellulose**
 . . . Fortisan (trademark)
 organic compounds
 . carbohydrates
 . . polysaccharides
 . . . **cellulose**
 Fortisan (trademark)

RT cellophane
 lignin
 Masonite (trademark)
 synthetic food
 tenite
 wood

cellulose nitrate

UF *nitrocellulose*
pyroxylin

GS esters
 . organic nitrates
 . . **cellulose nitrate**
 explosives
 . **cellulose nitrate**
 nitrogen compounds
 . nitrates
 . . organic nitrates
 . . . **cellulose nitrate**
 RT double base propellants
 double base rocket propellants

cementation

RT adhesive bonding
 agglomeration
 agglutination
 bonding
 heating
 precipitation (chemistry)

cementite

DEF An intermetallic compound containing iron and carbon.

GS carbon compounds
 . carbides
 . . **cementite**
 RT iron alloys

microstructure
 pearlite
 steels

cements

RT adhesives
 binders (materials)
 bricks
 concretes
 ∞ construction materials
 grout
 masonry
 mortars (material)
 sealing

CEMS system

USE **Central Electronic Management System**

Cenozoic Era

(added June 1989)

DEF An era of geologic time, from the beginning of the Tertiary Period to the present. (Some authors do not include the Quarternary, considering it a separate era.) It is characterized by the evolution and abundance of mammals, advanced mollusks, and birds and paleobotanically, by angiosperms. The Cenozoic Era is considered to have begun about 65 million years ago.

GS **Cenozoic Era**
 . Quaternary period
 . Tertiary Period
 . . Holocene epoch
 . . Pleistocene epoch

RT Cretaceous-Tertiary boundary
 extinction
 geochronology
 paleontology

censored data (mathematics)

GS data processing
 . **censored data (mathematics)**
 RT approximation
 ∞ data
 error analysis
 probability density functions
 reliability
 sampling
 statistical analysis
 statistical distributions

census

RT animals
 demography
 human beings
 ∞ statistics
 urban planning

Centaur launch vehicle

UF *Centaur vehicle*
 GS launch vehicles
 . **Centaur launch vehicle**
 . . Atlas Centaur launch vehicle
 rocket vehicles
 . **Centaur launch vehicle**
 . . Atlas Centaur launch vehicle
 RT Atlas D ICBM
 liquid propellant rocket engines
 Saturn project
 Titan Centaur launch vehicle

Centaur project

GS programs
 . NASA programs
 . . NASA space programs
 . . . **Centaur project**
 . projects
 . . **Centaur project**
 . space programs
 . . NASA space programs
 . . . **Centaur project**
 RT Atlas Centaur launch vehicle
 launch vehicles
 Mariner program
 RL-10 engines

Surveyor project

Centaur vehicle

USE **Centaur launch vehicle**

Centaurus constellation

GS constellations
 . **Centaurus constellation**
 RT celestial bodies
 celestial sphere
 stars

center of gravity

DEF The center of mass of a system of masses, as the barycenter of the Earth-moon system. Used for barycenter.

UF *barycenter*
 RT center of mass
 ∞ centers
 centroids
 gravitational fields
 lunar rotation
 mass
 moments of inertia

center of mass

DEF A point of a material body or system of bodies which moves as though the system's total mass existed at that point and all external forces were applied at the point.

GS mass
 . **center of mass**
 RT center of gravity
 mascons
 weight (mass)

center of pressure

RT ∞ centers
 hydrostatic pressure
 moments of inertia
 pressure
 pressure distribution
 pressure heads

centerbodies

RT afterbodies
 aircraft structures
 ∞ bodies
 cylindrical bodies
 forebodies
 fuselages

∞ centers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT center of gravity
 center of pressure
 color centers
 concentricity
 foci
 loci
 world data centers

centimeter waves

DEF Electromagnetic radiation in the 3,000 to 30,000 MHz range.

GS electromagnetic radiation
 . radio waves
 . . short wave radiation
 . . . microwaves
 **centimeter waves**

RT cosmic noise
 extraterrestrial radio waves
 microwave frequencies
 superhigh frequencies

Central African Republic

GS nations
 . **Central African Republic**
 RT Africa

Central America

GS regions
 . **Central America**
 RT Belize
 Costa Rica
 El Salvador
 Guatemala
 Honduras
 Nicaragua

Central Atlantic Region (US)

North America
Panama
Panama Canal Zone
South America

Central Atlantic Region (US)
GS regions
 . **Central Atlantic Region (US)**
RT United States

Central Atlantic Regional Ecol Test Site
SN (CENTRAL ATLANTIC REGIONAL ECOLOGICAL TEST SITE)
UF *CARETS (test site)*
GS sites
 . **Central Atlantic Regional Ecol Test Site**
 test facilities
 . **Central Atlantic Regional Ecol Test Site**
RT ecology
 environment protection

central bulge (galaxies)
USE **galactic bulge**

Central Electronic Management System
UF *CEMS system*
GS data processing
 . **Central Electronic Management System**
RT management
 ∞ systems

Central Europe
GS continents
 . Europe
 . . **Central Europe**
 regions
 . **Central Europe**
RT Austria
 continents
 Czechoslovakia
 East Germany
 Germany
 Hungary
 Poland
 Romania
 West Germany

central nervous system
GS anatomy
 . nervous system
 . . **central nervous system**
 . . . brain
 brain stem
 cerebellum
 cerebral ventricles
 cerebrum
 cerebral cortex
 occipital lobes
 diencephalon
 hypothalamus
 pineal gland
 thalamus
 hippocampus
 . . . spinal cord
RT blood-brain barrier
 psychopharmacology
 psychotropic drugs
 ∞ systems

central nervous system depressants
GS depressants
 . **central nervous system depressants**
 drugs
 . **central nervous system depressants**
RT amobarbital
 psychopharmacology
 ∞ systems
 tranquillizers

central nervous system stimulants
GS drugs
 . stimulants
 . . **central nervous system stimulants**
RT amphetamines
 psychopharmacology

∞ systems

Central Piedmont (US)
GS landforms
 . terraces (landforms)
 . . plateaus
 . . . piedmonts
 **Central Piedmont (US)**
RT mountains

central processing units
DEF The units of computing systems that include the circuits controlling the interpretation of instructions and their execution. Used for processors (computers).
UF *processors (computers)*
GS computer components
 . **central processing units**
 . . arithmetic and logic units
 . . RISC processors
RT chips (electronics)
 computer storage devices
 computers
 control units (computers)
 logic circuits
 microprocessors
 registers (computers)

centrifugal casting
GS forming techniques
 . casting
 . . **centrifugal casting**
RT investment casting

centrifugal compressors
GS compressors
 . **centrifugal compressors**
 turbomachinery
 . **centrifugal compressors**
RT blowers
 compressor blades
 compressor rotors
 impellers
 pump impellers
 pumps
 radial flow
 rotors
 superchargers
 turbocompressors

centrifugal force
DEF The apparent force in a rotating system, deflecting masses radially from the axis or rotation.
RT angular acceleration
 centrifuges
 centripetal force
 ∞ force
 Goertler instability

centrifugal pumps
GS pumps
 . **centrifugal pumps**
 turbomachinery
 . **centrifugal pumps**
RT axial flow pumps
 fuel pumps
 impellers
 pump impellers
 turbine pumps
 turbocompressors

centrifuges
DEF Specifically in aerospace, large motor driven apparatus with long arms at the end of which human and animal subjects or equipment can be revolved and rotated at various speeds to simulate (very closely) the (prolonged) accelerations in high performance aircraft, rockets, and spacecraft. Sometimes called astronautical centrifuges. Used for cyclones (equipment).
UF *cyclones (equipment)*
GS **centrifuges**
 . human centrifuges
RT centrifugal force
 centrifuging
 centripetal force
 classifiers
 clinostats
 concentrators

extraction
flight simulators
fluid filters
high gravity environments
separators
space simulators
∞ test equipment
training simulators

centrifuging
RT centrifuges
 clinorotation
 concentrating
 extraction
 materials recovery
 ∞ separation
 swirling

centrifuging stress
GS stress (biology)
 . acceleration stresses (physiology)
 . . **centrifuging stress**
 stress (physiology)
 . acceleration stresses (physiology)
 . . **centrifuging stress**
RT acceleration tolerance
 gravitational physiology
 gravity perception

centripetal force
RT angular acceleration
 centrifugal force
 centrifuges
 ∞ force
 revolving

centroids
RT center of gravity
 moments of inertia

Centurion aircraft
USE **Cessna 210 aircraft**

cephalagia
USE **headache**

cephalopods
GS animals
 . invertebrates
 . . mollusks
 . . . **cephalopods**
 octopuses

cepheid variables
GS celestial bodies
 . stars
 . . variable stars
 . . . **cepheid variables**
RT Cepheus constellation

Cepheus constellation
GS constellations
 . **Cepheus constellation**
RT cepheid variables

cepstra
DEF The Fourier transformation of the logarithm of the power spectrum.
GS spectra
 . power spectra
 . . **cepstra**
RT quefrequencies

cepstral analysis
DEF The application of cepstral methods to wave or signal phenomena in seismology, speech analysis, echos, underwater acoustics, etc.
GS data processing
 . signal analysis
 . . **cepstral analysis**
 . . voice data processing
 . . **cepstral analysis**
 spectrum analysis
 . **cepstral analysis**
RT acoustic measurement
 audio frequencies
 echoes
 multipath transmission
 power spectra
 signal reflection

signature analysis
 spectral signatures
 speech recognition
 time lag
 vibration measurement

ceramal protective coatings
 USE **cermets**
protective coatings

ceramals
 USE **cermets**

ceramic bonding
 GS bonding
 . **ceramic bonding**
 RT ceramic matrix composites
 ceramics

ceramic coatings
 SN (COATINGS CONSISTING OF CERAMIC MATERIALS)
 GS coatings
 . inorganic coatings
 . . **ceramic coatings**
 . protective coatings
 . . **ceramic coatings**
 RT carbon nitrides
 finishes
 metal coatings
 porcelain
 sprayed coatings
 vacuum deposition

ceramic fibers
 DEF Fibers composed of ceramic materials. They are usually used for reinforcement.
 GS fibers
 . synthetic fibers
 . . **ceramic fibers**
 RT boron carbides
 ceramic matrix composites
 ceramics
 chemical vapor infiltration
 composite wrapping
 cordage
 fiber composites
 fiber orientation
 fiber strength
 filament winding
 ∞ filaments
 polycarbosilanes
 reinforcing fibers
 silicon carbides
 strands
 titanium carbides

ceramic honeycombs
 RT ceramic matrix composites
 honeycomb cores
 honeycomb structures

ceramic matrix composites
 DEF Composite materials consisting of a reinforced ceramic matrix.
 GS composite materials
 . **ceramic matrix composites**
 . . carbon-silicon carbide composites
 RT aircraft construction materials
 boron reinforced materials
 ceramic bonding
 ceramic fibers
 ceramic honeycombs
 ceramics
 cermets
 chemical vapor infiltration
 composite structures
 crack bridging
 fiber pullout
 fiber pushout
 functionally gradient materials
 matrix materials
 nanocomposites
 reinforcing fibers
 silicon nitrides
 titanium carbides
 titanium nitrides

ceramic nuclear fuels
 GS ceramics
 . **ceramic nuclear fuels**

fuels
 . nuclear fuels
 . . **ceramic nuclear fuels**
 RT carbides
 cermets
 nitrides
 plutonium compounds
 plutonium oxides
 sol-gel processes
 thorium compounds
 uranium carbides
 uranium compounds
 uranium oxides

ceramic-metal composites
 USE **cermets**

ceramics
 DEF Inorganic compounds or mixtures requiring heat treatment to fuse them into homogeneous masses usually possessing high temperature strength but low ductility. Types and uses range from china for dishes to refractory liners for nozzles.
 GS **ceramics**
 . ceramic nuclear fuels
 . lead zirconate titanates
 . piezoelectric ceramics
 . porcelain
 . Pyroceram (trademark)
 RT abrasives
 Bakelite (trademark)
 bricks
 ceramic bonding
 ceramic fibers
 ceramic matrix composites
 cermets
 clays
 dielectrics
 ferroelastic materials
 ferroelectric materials
 frit
 glass
 glazes
 heat engines
 high temperature superconductors
 injection molding
 masonry
 ∞ materials science
 mortars (material)
 photoacoustic microscopy
 pyrolytic materials
 reaction bonding
 refractories
 refractory coatings
 refractory materials
 sialon
 silicon dioxide
 tiles
 vitrification
 YBCO superconductors
 yttria-stabilized zirconia

cerebellum
 GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **cerebellum**

cerebral cortex
 GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 cerebrum
 **cerebral cortex**
 RT ∞ cortexes

cerebral vascular accidents
 RT cardiovascular system
 ∞ strokes

cerebral ventricles
 GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **cerebral ventricles**
 RT cerebrospinal fluid

cerebrum
cerebrospinal fluid
 GS body fluids
 . **cerebrospinal fluid**
 RT brain
 cerebral ventricles
 ∞ fluids

cerebrum
 GS anatomy
 . nervous system
 . . central nervous system
 . . . brain
 **cerebrum**
 cerebral cortex
 occipital lobes
 RT cerebral ventricles

Cerenkov counters
 GS measuring instruments
 . counters
 . . radiation counters
 . . . **Cerenkov counters**
 . radiation measuring instruments
 . . radiation counters
 . . . **Cerenkov counters**
 RT Alpha Magnetic Spectrometer
 scintillation counters

Cerenkov effect
 USE **Cerenkov radiation**

Cerenkov radiation
 DEF The radiation from a charged particle whose velocity is greater than the phase velocity that an electromagnetic wave would have if it were propagating in the medium. The particle will continue to lose energy by radiation until its velocity is less than this phase velocity. Used for Cerenkov effect.
 UF *Cerenkov effect*
 GS electromagnetic radiation
 . **Cerenkov radiation**
 RT bremsstrahlung
 corpuscular radiation
 cosmic rays
 ∞ effects
 gamma ray bursts
 gamma rays
 light (visible radiation)
 nuclear radiation
 ∞ radiation
 ultraviolet radiation

CERES (experiment)
 (added May 2007)
 DEF As a key component of the Earth Observing System (EOS) program, the Clouds and the Earth's Radiant Energy System (CERES) experiment aims to record cloud properties and radiative fluxes within the Earth's atmosphere. Aboard the TRMM, Terra, and Aqua spacecraft, the CERES instruments provide radiometric measurements of both solar-reflected and Earth-emitted radiation from the top of the atmosphere to the Earth's surface from three broadband channels. CERES data products provide scientists with a better understanding of the roles of clouds and the energy cycle in global climate change.

UF *Clouds and the Earth's Radiant Energy System*
 GS programs
 . projects
 . . **CERES (experiment)**
 RT Aqua spacecraft
 climate change
 cloud physics
 clouds (meteorology)
 data products
 Earth atmosphere
 Earth observations (from space)
 Earth Observing System (EOS)
 Earth radiation budget
 Earth radiation budget experiment
 radiant flux density
 remote sensing
 Terra spacecraft
 terrestrial radiation

Ceres asteroid

- TRMM satellite
 - cerium 137
 - cerium 144
 - metals
 - . rare earth elements
 - . . cerium
 - . . . **cerium isotopes**
 - cerium 137
 - cerium 144
- Ceres asteroid**
 - GS celestial bodies
 - . asteroids
 - . . **Ceres asteroid**
 - . . dwarf planets
 - . . **Ceres asteroid**
 - RT asteroid belts
- ceresin**
 - GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkanes
 - paraffins
 - **ceresin**
 - waxes
 - . **ceresin**
 - RT phase change materials
- cerium**
 - GS chemical elements
 - . rare earth elements
 - . . **cerium**
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - metals
 - . rare earth elements
 - . . **cerium**
 - . . . cerium isotopes
 - cerium 137
 - cerium 144
 - RT mischmetal
- cerium 137**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . cerium isotopes
 - **cerium 137**
 - radioactive isotopes
 - **cerium 137**
 - . rare earth elements
 - . . cerium
 - . . . cerium isotopes
 - **cerium 137**
 - metals
 - . rare earth elements
 - . . cerium
 - . . . cerium isotopes
 - **cerium 137**
- cerium 144**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . cerium isotopes
 - **cerium 144**
 - radioactive isotopes
 - **cerium 144**
 - . rare earth elements
 - . . cerium
 - . . . cerium isotopes
 - **cerium 144**
 - metals
 - . rare earth elements
 - . . cerium
 - . . . cerium isotopes
 - **cerium 144**
- cerium compounds**
 - GS rare earth compounds
 - . **cerium compounds**
 - . . bastnasite
 - . . cerium oxides
 - RT ∞ chemical compounds
 - ∞ metal compounds
- cerium isotopes**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **cerium isotopes**
 - cerium 137
 - cerium 144
 - . rare earth elements
 - . . cerium
 - . . . **cerium isotopes**
- cerium oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **cerium oxides**
 - . rare earth compounds
 - . . cerium compounds
 - . . **cerium oxides**
- cermets**
 - DEF Bodies consisting of ceramic particles bonded with a metal; used in aircraft, rockets, and spacecraft for high strength, high temperature applications. The name is derived from a combination of CERamic and METal. Used for ceramal protective coatings and ceramals.
 - UF *ceramal protective coatings*
 - ceramals*
 - ceramic-metal composites*
 - GS composite materials
 - . **cermets**
 - RT ceramic matrix composites
 - ceramic nuclear fuels
 - ceramics
 - combustion synthesis
 - heat resistant alloys
 - metals
 - powder metallurgy
 - refractories
 - refractory materials
 - YBCO superconductors
- certification**
 - DEF Personnel - The act of verifying and documenting that personnel have completed required training and have demonstrated specific proficiency. Process & Software - An act, whereby a responsible official provides a written guarantee that a product, process, or service satisfies all performance and design requirements.
 - RT aircraft reliability
 - checkout
 - evaluation
 - flight tests
 - performance tests
 - physiological tests
 - psychological tests
 - qualifications
 - quality control
 - selection
 - site selection
 - training evaluation
- cesium**
 - GS chemical elements
 - . alkali metals
 - . . **cesium**
 - . . . cesium isotopes
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - metals
 - . alkali metals
 - . . **cesium**
 - . . . cesium isotopes
 - cesium 133
 - cesium 134
 - cesium 137
 - cesium 144
 - RT cesium alloys
 - cesium antimonides
 - cesium bromides
 - cesium diodes
 - cesium engines
 - cesium fluorides
 - cesium halides
 - cesium hydrides
 - cesium iodides
 - cesium ions
- cesium plasma
- cesium vapor
- cesium 133**
 - GS chemical elements
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 133**
 - . nuclides
 - . . isotopes
 - . . . cesium isotopes
 - **cesium 133**
 - metals
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 133**
- cesium 134**
 - GS chemical elements
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 134**
 - . nuclides
 - . . isotopes
 - . . . cesium isotopes
 - **cesium 134**
 - radioactive isotopes
 - **cesium 134**
 - metals
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 134**
- cesium 137**
 - GS chemical elements
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 137**
 - . nuclides
 - . . isotopes
 - . . . cesium isotopes
 - **cesium 137**
 - radioactive isotopes
 - **cesium 137**
 - metals
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 137**
- cesium 144**
 - GS chemical elements
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 144**
 - . nuclides
 - . . isotopes
 - . . . cesium isotopes
 - **cesium 144**
 - radioactive isotopes
 - **cesium 144**
 - metals
 - . alkali metals
 - . . cesium
 - . . . cesium isotopes
 - **cesium 144**
- cesium alloys**
 - GS alloys
 - . **cesium alloys**
 - RT alkali metals
 - cesium
- cesium antimonides**
 - GS antimony compounds
 - . antimonides
 - . . **cesium antimonides**
 - cesium compounds
 - . **cesium antimonides**
 - RT cesium
- cesium bromides**
 - GS cesium compounds
 - . cesium halides

- . . cesium bromides
- halogen compounds
- . bromine compounds
- . . bromides
- cesium bromides
- . halides
- . . bromides
- cesium bromides
- . . metal halides
- alkali halides
- cesium halides
- cesium bromides
- RT cesium
- cesium compounds**
- GS **cesium compounds**
- . cesium antimonides
- . cesium halides
- . . cesium bromides
- . . cesium fluorides
- . . cesium iodides
- . cesium hydrides
- . cesium oxides
- RT ∞ alkali metal compounds
- ∞ chemical compounds
- ∞ metal compounds
- metal fuels
- cesium diodes**
- GS electron tubes
- . thermionic diodes
- . . **cesium diodes**
- . vacuum tubes
- . . **cesium diodes**
- electronic equipment
- . diodes
- . . thermionic diodes
- **cesium diodes**
- RT cesium
- plasma diodes
- thermionic converters
- cesium engines**
- GS engines
- . rocket engines
- . . electric rocket engines
- electrostatic engines
- ion engines
- **cesium engines**
- RT cesium
- cesium fluorides**
- GS cesium compounds
- . cesium halides
- . . **cesium fluorides**
- halogen compounds
- . fluorine compounds
- . . fluorides
- metal fluorides
- **cesium fluorides**
- . halides
- . . fluorides
- metal fluorides
- **cesium fluorides**
- . . metal halides
- alkali halides
- cesium halides
- **cesium fluorides**
- metal fluorides
- **cesium fluorides**
- RT cesium
- cesium halides**
- GS cesium compounds
- . **cesium halides**
- . . cesium bromides
- . . cesium fluorides
- . . cesium iodides
- halogen compounds
- . halides
- . . metal halides
- alkali halides
- **cesium halides**
- cesium bromides
- cesium fluorides
- cesium iodides
- RT cesium
- cesium hydrides**
- GS cesium compounds
- . **cesium hydrides**
- hydrogen compounds
- . hydrides
- . . metal hydrides
- **cesium hydrides**
- RT cesium
- cesium iodides**
- GS cesium compounds
- . cesium halides
- . . **cesium iodides**
- halogen compounds
- . halides
- . . metal halides
- alkali halides
- cesium halides
- **cesium iodides**
- . iodine compounds
- . . iodides
- **cesium iodides**
- RT cesium
- cesium ions**
- GS ions
- . **cesium ions**
- RT cesium
- cesium isotopes**
- GS chemical elements
- . alkali metals
- . . cesium
- **cesium isotopes**
- cesium 133
- cesium 134
- cesium 137
- cesium 144
- . nuclides
- . . isotopes
- **cesium isotopes**
- cesium 133
- cesium 134
- cesium 137
- cesium 144
- metals
- . alkali metals
- . . cesium
- **cesium isotopes**
- cesium 133
- cesium 134
- cesium 137
- cesium 144
- cesium oxides**
- GS cesium compounds
- . **cesium oxides**
- chalcogenides
- . oxides
- . . metal oxides
- **cesium oxides**
- cesium plasma**
- GS particles
- . charged particles
- . . energetic particles
- plasmas (physics)
- metallic plasmas
- **cesium plasma**
- . corpuscular radiation
- . . energetic particles
- plasmas (physics)
- metallic plasmas
- **cesium plasma**
- RT cesium
- thermionic converters
- cesium vapor**
- GS chemical elements
- . alkali metals
- . . **cesium vapor**
- . nuclides
- . . isotopes
- **cesium vapor**
- metals
- . alkali metals
- . . **cesium vapor**
- vapors
- . **cesium vapor**
- RT cesium
- mercury vapor
- Cessna 172 aircraft**
- GS Cessna aircraft
- . **Cessna 172 aircraft**
- general aviation aircraft
- . **Cessna 172 aircraft**
- light aircraft
- . **Cessna 172 aircraft**
- monoplanes
- . **Cessna 172 aircraft**
- passenger aircraft
- . **Cessna 172 aircraft**
- single engine aircraft
- . **Cessna 172 aircraft**
- RT ∞ aircraft
- Cessna 205 aircraft**
- GS Cessna aircraft
- . **Cessna 205 aircraft**
- general aviation aircraft
- . **Cessna 205 aircraft**
- light aircraft
- . **Cessna 205 aircraft**
- monoplanes
- . **Cessna 205 aircraft**
- passenger aircraft
- . **Cessna 205 aircraft**
- single engine aircraft
- . **Cessna 205 aircraft**
- RT ∞ aircraft
- Cessna 210 aircraft**
- UF *Centurion aircraft*
- GS Cessna aircraft
- . **Cessna 210 aircraft**
- general aviation aircraft
- . **Cessna 210 aircraft**
- light aircraft
- . **Cessna 210 aircraft**
- monoplanes
- . **Cessna 210 aircraft**
- passenger aircraft
- . **Cessna 210 aircraft**
- single engine aircraft
- . **Cessna 210 aircraft**
- Cessna 402B aircraft**
- DEF A lighter, twin-engine, short-haul cargo/passenger aircraft manufactured by the Cessna Aircraft Company.
- GS Cessna aircraft
- . **Cessna 402B aircraft**
- general aviation aircraft
- . **Cessna 402B aircraft**
- light aircraft
- . **Cessna 402B aircraft**
- monoplanes
- . **Cessna 402B aircraft**
- passenger aircraft
- . **Cessna 402B aircraft**
- transport aircraft
- . short haul aircraft
- . . **Cessna 402B aircraft**
- RT ∞ aircraft
- Cessna aircraft**
- GS **Cessna aircraft**
- . A-37 aircraft
- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft
- . Cessna 402B aircraft
- . Cessna L-19 aircraft
- . T-37 aircraft
- RT ∞ aircraft
- Cessna L-19 aircraft**
- GS Cessna aircraft
- . **Cessna L-19 aircraft**
- light aircraft
- . **Cessna L-19 aircraft**
- monoplanes
- . **Cessna L-19 aircraft**
- observation aircraft
- . **Cessna L-19 aircraft**
- reconnaissance aircraft
- . **Cessna L-19 aircraft**

cetane

RT ∞ aircraft

CETA cart (ISS)
(added December 2002)

USE **Crew Equipment Translation Aid (ISS)**

cetane
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **cetane**

cetyl compounds
GS alkyl compounds
. **cetyl compounds**
RT ∞ chemical compounds

Ceylon
USE **Sri Lanka**

CF-104 aircraft
USE **Canadair aircraft F-104 aircraft**

CF-700 engine
GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **CF-700 engine**
. internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **CF-700 engine**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . turbojet engines
. turbofan engines
. **CF-700 engine**
RT vertical takeoff aircraft

CFCs
USE **chlorofluorocarbons**

CFD
USE **charge flow devices**

CFRP
USE **carbon fiber reinforced plastics**

CH (methylidyne)
USE **methylidyne**

CH-3 helicopter
GS passenger aircraft
. **CH-3 helicopter**
Sikorsky aircraft
. **CH-3 helicopter**
transport aircraft
. **CH-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-3 helicopter**
. rigid rotor helicopters
. **CH-3 helicopter**
RT S-61 helicopter

CH-21 helicopter
UF *H-21 helicopter*
Shawnee helicopter
Workhorse helicopter
GS Boeing aircraft
. **CH-21 helicopter**
transport aircraft
. cargo aircraft
. . **CH-21 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters

. . . . **CH-21 helicopter**

CH-34 helicopter
UF *Choctaw helicopter*
H-34 helicopter
GS Sikorsky aircraft
. **CH-34 helicopter**
transport aircraft
. **CH-34 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-34 helicopter**
RT S-58 helicopter

CH-46 helicopter
UF *CH-113 helicopter*
HRB-1 helicopter
Sea Knight helicopter
Voyageur helicopter
GS Boeing aircraft
. **CH-46 helicopter**
passenger aircraft
. **CH-46 helicopter**
transport aircraft
. **CH-46 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-46 helicopter**
. tandem rotor helicopters
. **CH-46 helicopter**

CH-47 helicopter
UF *Chinook helicopter*
HC-1 helicopter
GS Boeing aircraft
. **CH-47 helicopter**
passenger aircraft
. **CH-47 helicopter**
transport aircraft
. **CH-47 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-47 helicopter**
. tandem rotor helicopters
. **CH-47 helicopter**

CH-53 helicopter
USE **H-53 helicopter**

CH-54 helicopter
UF *S-64 helicopter*
Sikorsky S-64 helicopter
Skycrane helicopter
GS passenger aircraft
. **CH-54 helicopter**
Sikorsky aircraft
. **CH-54 helicopter**
transport aircraft
. **CH-54 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **CH-54 helicopter**

CH-62 helicopter
GS Boeing aircraft
. **CH-62 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . heavy lift helicopters
. . . . **CH-62 helicopter**
. military helicopters
. **CH-62 helicopter**
RT ∞ military aircraft

CH-113 helicopter
USE **CH-46 helicopter**

Chad
GS nations
. **Chad**

RT Africa

chaff
GS countermeasures
. electronic countermeasures
. . **chaff**
RT deception
electronic warfare
radar echoes

chain reactions (chemistry)
(added May 1999)
GS chemical reactions
. **chain reactions (chemistry)**
RT chemical lasers
combustion chemistry

chain reactions (nuclear physics)
(added May 1999)
GS nuclear reactions
. nuclear fission
. . **chain reactions (nuclear physics)**
RT fission products
neutrons

chains
SN (EXCLUDES CHEMICAL BONDS AND NUCLEAR REACTIONS)
RT ∞ barriers
cables (ropes)
fasteners
∞ links
molecular chains

chairs
USE **seats**

chalcogenides
GS **chalcogenides**
. oxides
. . alkoxides
. . anhydrides
. . . peroxides
. . . . inorganic peroxides
. hydrogen peroxide
. organic peroxides
. potassium peroxides
. sodium peroxides
. boron oxides
. . brucite
. . carbon monoxide
. . carbon suboxides
. . chlorine oxides
. . dioxides
. . . carbon dioxide
. . . flint
. . . hydrogen peroxide
. . . silicon dioxide
. . . quartz
. . . . coesite
. stishovite
. sulfur dioxides
. germanium oxides
. heavy water
. . indium oxides
. . metal oxides
. . . alkaline earth oxides
. . . . barium oxides
. beryllium oxides
. alexandrite
. calcium oxides
. akermanite
. magnesium oxides
. akermanite
. periclase
. . . aluminum oxides
. . . alexandrite
. . . sapphire
. . . bismuth oxides
. . . cerium oxides
. . . cesium oxides
. . . chromium oxides
. . . cobalt oxides
. . . copper oxides
. . . gallium oxides
. . . hafnium oxides
. . . iron oxides
. . . . hematite
. . . . ilmenite

- . . . magnetite
- . . . lanthanum oxides
- . . . lead oxides
- . . . lithium oxides
- . . . manganese oxides
- . . . Hopcalite (trademark)
- . . . mercury oxides
- . . . mixed oxides
- . . . BSCCO superconductors
- . . . YBCO superconductors
- . . . molybdenum oxides
- . . . nickel oxides
- . . . niobium oxides
- . . . platinum oxides
- . . . plutonium oxides
- . . . potassium oxides
- . . . scandium oxides
- . . . silver oxides
- . . . sodium peroxides
- . . . strontium oxides
- . . . tantalum oxides
- . . . thorium oxides
- . . . tin oxides
- . . . titanium oxides
- . . . anatase
- . . . ilmenite
- . . . rutile
- . . . tungsten oxides
- . . . scheelite
- . . . uranium oxides
- . . . vanadium oxides
- . . . yttrium oxides
- . . . zinc oxides
- . . . zirconium oxides
- . . . yttria-stabilized zirconia
- . . . nitrogen oxides
- . . . nitric oxide
- . . . nitrogen dioxide
- . . . nitrogen tetroxide
- . . . nitrous oxides
- . . . phosphorus oxides
- . . . pyroxenes
- . . . enstatite
- . . . selenium oxides
- . . . silicon oxides
- . . . muscovite
- . . . nephelite
- . . . silicon dioxide
- . . . quartz
- . . . coesite
- . . . stishovite
- . . . spodumene
- . . . sulfur oxides
- . . . sulfur dioxides
- . . . selenides
- . . . cadmium selenides
- . . . copper selenides
- . . . copper indium selenides
- . . . gallium selenides
- . . . indium selenides
- . . . copper indium selenides
- . . . lead selenides
- . . . zinc selenides
- . . . sulfides
- . . . disulfides
- . . . carbon disulfide
- . . . inorganic sulfides
- . . . barium sulfides
- . . . bismuth sulfides
- . . . cadmium sulfides
- . . . calcium sulfides
- . . . copper sulfides
- . . . hydrogen sulfide
- . . . indium sulfides
- . . . lead sulfides
- . . . molybdenum sulfides
- . . . molybdenum disulfides
- . . . polysulfides
- . . . strontium sulfides
- . . . zinc sulfides
- . . . wurtzite
- . . . zincblende
- . . . pyrites
- . . . pyrrhotite
- . . . troilite
- . . . tellurides
- . . . bismuth tellurides
- . . . cadmium tellurides
- . . . indium tellurides
- . . . lanthanum tellurides
- . . . lead tellurides
- . . . mercury tellurides
- . . . mercury cadmium tellurides
- . . . tin tellurides
- . . . zinc tellurides
- RT ∞ Group 6A compounds
- chalk**
- GS calcium compounds
- . calcium carbonates
- . . **chalk**
- carbon compounds
- . carbonates
- . . calcium carbonates
- . . . **chalk**
- RT gypsum
- Challenger (Orbiter)**
- UF *Space Shuttle Orbiter 099*
- GS manned spacecraft
- . space shuttles
- . . Space Shuttle orbiters
- . . . **Challenger (Orbiter)**
- reentry vehicles
- . recoverable spacecraft
- . . reusable spacecraft
- . . . space shuttles
- Space Shuttle orbiters
- **Challenger (Orbiter)**
- RT Endeavour (orbiter)
- Space Shuttle mission 31-B
- Space Shuttle mission 31-C
- Space Shuttle mission 31-D
- Space Shuttle mission 41-B
- Space Shuttle mission 41-C
- Space Shuttle mission 41-G
- Space Shuttle mission 51-B
- Space Shuttle mission 51-E
- Space Shuttle mission 51-F
- Space Shuttle mission 51-L
- Space Shuttle mission 61-A
- ∞ spacecraft
- ∞ **chambers**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT anechoic chambers
- arc chambers
- bubble chambers
- cloud chambers
- combustion chambers
- cylindrical chambers
- flexing
- flow chambers
- hyperbaric chambers
- ionization chambers
- plenum chambers
- pressure chambers
- reverberation chambers
- spark chambers
- test chambers
- thrust chambers
- vacuum chambers
- Chance-Vought aircraft**
- RT ∞ aircraft
- Chandler motion*
- USE **polar wandering (geology)**
- Chandler wobble**
- (added September 1992)
- SN (EXCLUDES CHANDLER MOTION)
- DEF A movement in the Earth's axis of rotation whose period of motion is about 14 months. Used for Eulerian nutation.
- UF *Eulerian nutation*
- GS nutation
- . **Chandler wobble**
- RT Earth axis
- ∞ Earth motion
- Earth orientation
- Earth rotation
- geodynamics
- geophysics
- polar wandering (geology)
- Chandra X Ray Astrophysics Facility*
(added March 1999)
- USE **X Ray Astrophysics Facility**
- Chandrasekhar equation**
- GS analysis (mathematics)
- . real variables
- . . differential equations
- . . . **Chandrasekhar equation**
- RT electromagnetic absorption
- ∞ equations
- change detection**
- DEF A process of examining imagery to detect changes on a planetary surface or astronomical body.
- GS detection
- . **change detection**
- RT aerial photography
- aerial reconnaissance
- Earth Resources Program
- image classification
- image processing
- imagery
- land use
- multispectral band scanners
- multispectral photography
- pattern recognition
- photointerpretation
- radar imagery
- remote sensing
- scene analysis
- side-looking radar
- terrain analysis
- channel capacity**
- RT Aloha system
- bandwidth
- ∞ capacity
- cochannel interference
- demand assignment multiple access
- frequencies
- packet transmission
- transmission rate (communications)
- channel flow**
- GS fluid flow
- . internal flow
- . . **channel flow**
- . . . open channel flow
- RT annular flow
- Brinkman number
- cavity flow
- choked flow
- corner flow
- dredged materials
- ducted flow
- flow geometry
- fluid injection
- incompressible fluids
- outlet flow
- pipe flow
- wall flow
- channel multipliers**
- UF *channeltrons*
- GS multipliers
- . **channel multipliers**
- RT auroral spectroscopy
- electron avalanche
- microchannel plates
- photomultiplier tubes
- radiation counters
- channel noise**
- DEF In communications bursts of interruptive pulses caused mainly by contact closures in electromagnetic equipment or by transient voltages in electric cables during transmission of signals or data. Impulsive noise is the frequent cause of transmission errors.
- RT Aloha system
- background noise
- cochannel interference
- electromagnetic noise
- noise spectra
- random noise
- signal to noise ratios

channel wings

thermal noise
time division multiple access
trellis coding

channel wings

GS airfoils
. wings
. . **channel wings**
planforms
. wing planforms
. . **channel wings**
RT aerodynamic configurations
aircraft design
aircraft parts
aircraft structures

∞ channels

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT channels (data transmission)
computer storage devices
dredged materials
ducts
frequencies
media
parallel plates
structural members
telecommunication
throats

channels (data transmission)

UF *data busses*
RT asynchronous transfer mode
∞ channels
∞ data
data links
data processing
data transmission
protocol (computers)
Rayleigh fading
single channel per carrier
transmission

channeltrons

USE **channel multipliers**

chaos

(*added June 1989*)
RT attractors (mathematics)
branching (mathematics)
mathematical models
nonlinear systems
period doubling
stochastic processes
strange attractors

chaotic cloud patterns

USE **clouds (meteorology)**

chaparral

GS plants (botany)
. brush (botany)
. . **chaparral**
RT botany
Earth resources
trees (plants)

Chaparral missile

GS missiles
. surface to air missiles
. . **Chaparral missile**
RT space weapons

Chaplygin equation

GS flow equations
. **Chaplygin equation**
RT ∞ equations
hodographs
vector spaces

Chapman shear layer

USE **shear layers**

Chapman-Enskog theory

UF *Enskog-Chapman theory*
GS kinetic theory
. transport theory
. . **Chapman-Enskog theory**
RT Boltzmann transport equation
Burnett equations

distribution functions
flow distribution
monatomic gases
rarefied gas dynamics
temperature gradients
∞ theories
thermal diffusion

Chapman-Ferraro problem

RT atmospheric models
Earth magnetosphere
interplanetary magnetic fields
magnetopause
∞ problems
solar wind

Chapman-Jouget flame

USE **chemical equilibrium detonation flame propagation**

character recognition

GS recognition
. pattern recognition
. . **character recognition**
RT artificial intelligence
contrast
∞ detectors
graphology
handwriting
legibility
optical data processing
optical scanners
perception
readers
reading
resolution
scene analysis
∞ sensors
symbols
visibility

characteristic equations

USE **eigenvalues eigenvectors**

characteristic functions

USE **eigenvalues eigenvectors**

characteristic method

USE **method of characteristics**

∞ characteristics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Specifically, distinguishing qualities, properties, features or capabilities of an entity.
RT aerodynamic characteristics
capacitance-voltage characteristics
dynamic characteristics
flight characteristics
flow characteristics
method of characteristics
nanostructure (characteristics)
polarization characteristics
Segre characteristic
spray characteristics
static aerodynamic characteristics
volt-ampere characteristics

characterization

RT descriptions
examination
representations

characters

USE **symbols**

charcoal

GS **charcoal**
. activated carbon
RT adsorbents
carbon
coke
fuels

charge carriers

GS **charge carriers**
. free electrons

. holes (electron deficiencies)
. majority carriers
. minority carriers
RT carrier injection
carrier lifetime
∞ carriers
electron mobility
hole mobility

charge coupled devices

DEF Semiconductor devices arrayed so that the electric charge at the output of one provides the input stimulus to the next. Use for CCD.
UF *CCD*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . charge transfer devices
. . . . **charge coupled devices**
RT bucket brigade devices
CCD cameras
CCD star tracker
charge injection devices
focal plane devices
ITO (semiconductors)

charge distribution

GS distribution (property)
. **charge distribution**
electrical properties
. **charge distribution**
RT current distribution
electron distribution
electrostatic charge
force distribution
hole distribution (electronics)
ion distribution
mass distribution
neutral atoms
polarization (charge separation)

charge efficiency

DEF The efficiency of electric cell recharging.
GS efficiency
. **charge efficiency**
RT battery chargers
∞ charging
electric batteries
primary batteries
recharging
storage batteries

charge exchange

SN (LIMITED TO COLLISIONAL TRANSFER OF AN ELECTRON FROM A NEUTRAL ATOM OR MOLECULE TO AN ION--EXCLUDES SEMICONDUCTOR AND PHOTOCHEMICAL CHARGE TRANSFER)
DEF The collisional transfer of an electron from a neutral atom or molecule to an ion.
GS exchanging
. **charge exchange**
. . resonance charge exchange
RT electron transfer
ion atom interactions
ion charge
ion production rates
plasma-particle interactions
recoil ions

charge flow devices

DEF Metal oxide semiconductor (MOS) devices used for fire detectors and humidity sensors. Used for CFD.
UF *CFD*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . field effect transistors
. **charge flow devices**
RT integrated circuits
∞ sensors

charge injection devices

UF *CID*
GS electronic equipment
. solid state devices
. . semiconductor devices

... charge transfer devices
 ... **charge injection devices**
 RT charge coupled devices
 electro-optics
 imaging techniques
 semiconductors (materials)
 star trackers

charge separation

USE **polarization (charge separation)**

charge transfer

SN (EXCLUDES COLLISIONAL CHARGE EXCHANGE)
 RT carrier injection
 charged particles
 electron transfer
 ion exchanging
 ionic reactions
 mass transfer
 photochemical reactions
 polarization (charge separation)
 transferring

charge transfer devices

UF *CTD*
 GS electronic equipment
 . solid state devices
 . semiconductor devices
 . . . **charge transfer devices**
 bucket brigade devices
 charge coupled devices
 charge injection devices
 RT ITO (semiconductors)
 organic charge transfer salts
 tunable filters

charged particles

SN (FOR IONIC PARTICLES SEE IONS)
 GS particles
 . **charged particles**
 . . antiprotons
 . . energetic particles
 . . . electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . . . nuclei (nuclear physics)
 alpha particles
 deuterons
 even-even nuclei
 heavy nuclei
 hypernuclei
 odd-even nuclei
 odd-odd nuclei
 tritons
 . . . plasmas (physics)
 argon plasma
 beta particles
 boundary layer plasmas
 cold plasmas
 collisional plasmas
 strongly coupled plasmas
 collisionless plasmas
 cosmic plasma
 cylindrical plasmas
 dense plasmas
 plasma focus
 strongly coupled plasmas
 electron plasma
 electron-positron plasmas
 elliptical plasmas
 helium plasma
 high temperature plasmas
 hydrogen plasma
 deuterium plasma
 laser plasmas
 metallic plasmas
 cesium plasma
 uranium plasmas
 microplasmas
 nitrogen plasma

... nonequilibrium plasmas
 ... nonuniform plasmas
 ... oxygen plasma
 ... rarefied plasmas
 ... relativistic plasmas
 ... rotating plasmas
 ... semiconductor plasmas
 ... space plasmas
 solar wind
 stellar winds
 dusty plasmas
 spherical plasmas
 thermal plasmas
 toroidal plasmas
 . . ionized gases
 . . . Lorentz gas
 . . magnetically trapped particles
 . . . radiation belts
 artificial radiation belts
 inner radiation belt
 outer radiation belt
 proton belts
 . . partons
 . . plasma clouds
 . . . magnetic clouds
 . . plasma jets
 . . . radio jets (astronomy)
 . . plasma layers
 . . plasma sheaths
 . . plasma slabs
 . . positrons
 . . protons
 . . . recoil protons
 . . . solar protons

RT antineutrinos
 antiparticles
 bosons
 charge transfer
 corpuscular radiation
 Coulomb collisions
 Coulomb potential
 cyclotron frequency
 cyclotron radiation
 cyclotron resonance
 deuteron irradiation
 electron-positron pairs
 elementary particles
 eta-mesons
 gyrofrequency
 Helios Project
 hyperons
 ion charge
 kaons
 leptons
 Lorentz force
 meson-nucleon interactions
 mesons
 muon spin rotation
 muons
 neutral sheets
 neutrons
 nonadiabatic theory
 ∞ nuclei
 nucleon-nucleon interactions
 nucleons
 omega-mesons
 particle charging
 particle precipitation
 particle trajectories
 pions
 Reissner-Nordstrom solution
 rho-mesons
 sigma-mesons
 single event upsets
 trapped particles

∞ charging

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT battery chargers
 charge efficiency
 electric charge
 electrostatic charge
 explosive devices
 explosives
 filling
 injection
 magnetic charge density

SCATHA satellite

charm (particle physics)

DEF A quantum number which has been proposed to account for an apparent lack of symmetry in the behavior of hadrons relative to that of leptons, to explain why certain reactions of elementary particles do not occur, and to account for the longevity of the J particle.

RT hadrons
 leptons
 particle interactions
 particle theory
 ∞ physics
 quantum theory
 theoretical physics

Charon

DEF Natural satellite of the planet Pluto, discovered and named by Dr. James W. Christy.

GS celestial bodies
 . natural satellites
 . . Pluto satellites
 . . . **Charon**
 . . trans-Neptunian objects
 . . **Charon**
 RT Callisto
 Deimos
 Earth-Moon system
 Europa
 Galilean satellites
 Ganymede
 Iapetus
 Io
 New Horizons mission
 planetary orbits
 Pluto (planet)
 solar system
 Titan

Charpy impact test

GS impact tests
 . **Charpy impact test**
 notch tests
 . **Charpy impact test**
 RT brittleness
 drop tests
 hardness
 ∞ materials tests
 notch sensitivity

charring

RT ablation
 carbonization
 combustion
 decomposition
 fire damage
 oxidation
 thermal absorption

charts

GS **charts**
 . flow charts
 . graphs (charts)
 . . bond graphs
 . . Gompertz curves
 . . Mollier diagram
 . . Patterson map
 . meteorological charts
 . nautical charts
 RT block diagrams
 diagrams
 display devices
 drawings
 graphic arts
 maps
 navigation aids
 nomographs
 ∞ plots
 statistical analysis
 statistical tests
 visual aids

chassignites

(added August 1991)

DEF Achondritic stony meteorites composed almost entirely (958) of olivine, with accessory amounts of chromite, and lacking nickel-iron. It resembles terrestrial dunite.

GS celestial bodies

chassis

- . meteorites
- . . . stony meteorites
- achondrites
- **chassignites**
- RT nakhilites
- shergottites
- SNC meteorites

chassis

- GS frames
- . **chassis**
- RT automobiles
- carriages
- ∞ headers
- struts
- supports
- undercarriages

Chebyshev approximation

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . **Chebyshev approximation**
- RT series (mathematics)
- statistical analysis

checkout

- SN (SEQUENCE OF TESTS TO DETERMINE FUNCTIONAL READINESS OF EQUIPMENT)
- DEF A sequence of actions taken to test or examine a thing as to its readiness for incorporation into a new phase of use, or for the performance of its intended function. The sequence of steps taken to familiarize a person with the operation of an airplane or other piece of equipment. Used for debugging.
- UF *debugging*
- RT aircraft maintenance
- CEFOAM checkout equipment
- certification
- cold flow tests
- countdown
- file maintenance (computers)
- inspection
- maintenance
- performance tests
- prefiring tests
- program verification (computers)
- self tests
- space vehicle checkout program
- spacecraft maintenance
- ∞ test equipment
- ∞ tests

checkout equipment

- USE **test equipment**

chelate compounds

- USE **chelates**

chelates

- UF *chelate compounds*
- RT chelation
- ∞ chemical compounds
- organometallic compounds

chelation

- RT chelates
- chemical reactions

chemical analysis

- GS chemical tests
- . **chemical analysis**
- . . chromatography
- . . . gas chromatography
- . . . gel chromatography
- . . . liquid chromatography
- . . . paper chromatography
- . . . thin layer chromatography
- . . electrophotometry
- . . gas analysis
- . . . ozonometry
- . . . Van Slyke method
- . . iodimetry
- . . Karl Fischer reagent
- . . microanalysis
- . . neutron activation analysis
- . . potentiometric analysis
- . . qualitative analysis
- . . quantitative analysis

- . . . Kjeldahl method
- . . . Van Slyke method
- . . spectroscopic analysis
- . . urinalysis
- . . volumetric analysis
- RT alkalinity
- analytical chemistry
- ∞ analyzing
- assaying
- Auger spectroscopy
- chemical detection
- ∞ chemistry
- colorimetry
- coulometers
- density measurement
- diffractometers
- electron probes
- fuel tests
- gas spectroscopy
- gel chromatography
- hydrometers
- hygrometers
- identifying
- inductively coupled plasma mass spectrometry
- infrared spectrophotometers
- infrared spectroscopy
- ion selective electrodes
- isotopic labeling
- laser spectroscopy
- magnetic resonance spectroscopy
- Mars surface samples
- mass spectrometers
- mass spectroscopy
- ∞ materials tests
- ∞ measurement
- metallicity
- methylene blue
- moisture meters
- mutagens
- nephanalysis
- optical measurement
- particle tracks
- particulate sampling
- photometry
- physical chemistry
- polarimeters
- polarography
- psychrometers
- radiochemistry
- reagents
- sampling
- spectral signatures
- spectrometers
- spectrophotometers
- spectroscopy
- ∞ tests
- thermogravimetry
- titrimeters
- x ray analysis

chemical attack

- GS **chemical attack**
- . intergranular corrosion
- . transgranular corrosion
- RT ∞ attack
- corrosion
- corrosion prevention
- corrosion resistance
- corrosion tests
- degradation
- dissolving
- impregnating
- oxidation
- passivity
- pitting
- rusting
- scale (corrosion)

chemical auxiliary power units

- GS auxiliary power sources
- . **chemical auxiliary power units**
- RT electric batteries
- fuel cells
- lead acid batteries
- magnesium cells

chemical bonds

- UF *molecular bonds*
- GS **chemical bonds**

- . covalent bonds
- . hydrogen bonds
- RT active sites (chemistry)
- agglutination
- binding energy
- bonding
- coupled modes
- covalence
- crystal lattices
- ionic crystals
- ligands
- molecules
- monatomic molecules
- octets
- polyatomic molecules
- polywater
- saturation (chemistry)
- Swan bands
- unsaturation (chemistry)
- valence

chemical cleaning

- GS cleaning
- . **chemical cleaning**
- . . pickling (metallurgy)
- RT descaling
- dissolving

chemical clouds

- DEF Artificial clouds of chemical compounds released in the ionosphere for observation of dispersion and other characteristics.
- GS clouds (meteorology)
- . artificial clouds
- . . **chemical clouds**
- . . . barium ion clouds
- RT chemical release modules
- CRRES (satellite)
- particles
- plasma clouds

chemical compatibility

- (added September 1995)
- GS compatibility
- . **chemical compatibility**
- RT affinity
- liquid rocket propellants
- metal matrix composites
- propellant tests
- stability

chemical composition

- GS composition (property)
- . **chemical composition**
- . . carbon dioxide concentration
- . . stellar composition
- RT alkalinity
- atmospheric composition
- atom concentration
- body composition (biology)
- distribution (property)
- gas composition
- ionospheric composition
- ligands
- metallic stars
- metallicity
- planetary structure
- spectral signatures

∞ chemical compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Distinct substances formed by a union of two or more ingredients in definite proportions by weight.
- RT acetyl compounds
- actinide series compounds
- adducts
- ∞ alkali metal compounds
- ∞ alkaline earth compounds
- alkyl compounds
- allyl compounds
- aluminum compounds
- amines
- ammonium compounds
- antimony compounds
- ∞ aromatic compounds
- arsenic compounds
- azo compounds

barium compounds
beryllium compounds
bismuth compounds
boron compounds
boron-epoxy composites
bromine compounds
cadmium compounds
calcium compounds
carbon compounds
carbonyl compounds
cerium compounds
cesium compounds
cetyl compounds
chelates
∞ chemicals
chlorine compounds
chromium compounds
clathrates
cobalt compounds
complex compounds
compound A
∞ compounds
congeners
copper compounds
curium compounds
cyano compounds
cyclic compounds
deuterium compounds
diallyl compounds
dibasic compounds
dibutyl compounds
difluoro compounds
diphenyl compounds
dopa
dysprosium compounds
epoxy compounds
erbium compounds
ethyl compounds
ethylene compounds
europium compounds
fluorine compounds
fluorine organic compounds
fluoro compounds
fullerides
furans
gallium compounds
germanium compounds
∞ Group 1B compounds
∞ Group 2B compounds
∞ Group 3A compounds
∞ Group 3B compounds
∞ Group 4A compounds
∞ Group 4B compounds
∞ Group 5A compounds
∞ Group 5B compounds
∞ Group 6A compounds
∞ Group 6B compounds
∞ Group 7B compounds
∞ Group 8 compounds
hafnium compounds
halocarbons
halogen compounds
heterocyclic compounds
hexyl compounds
hydrazinium compounds
hydrazonium compounds
hydrogen compounds
hydroxyl compounds
indium aluminum arsenides
indium compounds
indium oxides
inorganic compounds
intercalation
iodine compounds
iridium compounds
iron compounds
isopropyl compounds
lanthanum compounds
lead compounds
lead organic compounds
lithium compounds
lutetium compounds
magnesium compounds
manganese compounds
mercury compounds
∞ metal compounds
methoxy systems
methyl compounds
molecules

molybdenum compounds
monatomic molecules
neodymium compounds
neptunium compounds
nickel compounds
niobium compounds
nitro compounds
nitrogen compounds
nitronium compounds
nitroso compounds
organic aluminum compounds
organic boron compounds
organic compounds
organic germanium compounds
organic lithium compounds
organic phosphorus compounds
organic semiconductors
organic silicon compounds
organic sulfur compounds
organic tin compounds
organometallic compounds
osmium compounds
∞ oxygen compounds
oxynitrides
palladium compounds
phosgene
phosphonium compounds
phosphorus compounds
platinum compounds
plutonium compounds
polonium compounds
polyatomic molecules
polynuclear organic compounds
polyquinoxalines
potassium compounds
praseodymium compounds
propyl compounds
protactinium compounds
rare earth compounds
∞ rare gas compounds
refractory materials
rhenium compounds
rhodium compounds
rubidium compounds
ruthenium compounds
samarium compounds
scandium compounds
selenium compounds
silicon compounds
silver compounds
sodium compounds
strontium compounds
strontium oxides
styphnates
sulfur compounds
sulfur hexafluoride
tantalum compounds
technetium compounds
tellurium compounds
tetrahydrofuran
thiols
thorium compounds
thulium compounds
tin compounds
titanium compounds
triethyl compounds
trimethyl compounds
trinitro compounds
troyl compounds
tungsten compounds
uranium compounds
vanadium compounds
vanadyl compounds
Wiswesser notations
xenon compounds
ytterbium compounds
yttrium compounds
zinc compounds
zirconium compounds
zwitterions

chemical defense

DEF All actions and counteractions designed for the protection of personnel and material against offensive chemical agents.

RT chemical detection
civil defense
clothing
drugs

first aid
injuries
masks
neurology
physiological factors
protective clothing
safety devices
warfare

chemical detection

(added April 2004)

DEF Sensing and identification of chemical compounds within a particular environment.

GS detection
. **chemical detection**
. . explosives detection
RT chemical analysis
chemical defense
chemical tests
lab-on-a-chip devices

chemical effects

RT biological effects
∞ effects
sterilization effects
temperature effects

chemical elements

GS **chemical elements**
. actinide series
. . actinium
. . . radium
. . . . radium isotopes
. radium 226
. thorium
. thorium isotopes
. transuranium elements
. americium
. americium isotopes
. americium 241
. berkelium
. californium
. californium isotopes
. curium
. curium isotopes
. curium 242
. curium 244
. einsteinium
. fermium
. lawrencium
. mendelevium
. neptunium
. neptunium isotopes
. nobelium
. plutonium
. plutonium isotopes
. plutonium 238
. plutonium 239
. plutonium 240
. plutonium 241
. plutonium 244
. sergenium
. uranium
. uranium isotopes
. uranium 232
. uranium 233
. uranium 234
. uranium 235
. uranium 238
. alkali metals
. cesium
. cesium isotopes
. cesium 133
. cesium 134
. cesium 137
. cesium 144
. cesium vapor
. francium
. lithium
. liquid lithium
. lithium isotopes
. potassium
. liquid potassium
. potassium isotopes
. potassium 38
. potassium 39
. potassium 40
. rubidium
. rubidium isotopes
. rubidium 86

- fermium
- lawrencium
- mendeleevium
- neptunium
- neptunium isotopes
- nobelium
- plutonium
- plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- sergenium
- tritium
- uranium 232
- uranium 233
- uranium 238
- xenon 133
- xenon 135
- zirconium 95
- radium isotopes
- radium 226
- radon isotopes
- rhenium isotopes
- rhodium isotopes
- rubidium isotopes
- rubidium 86
- ruthenium isotopes
- samarium isotopes
- scandium isotopes
- selenium isotopes
- silicon isotopes
- silver isotopes
- sodium isotopes
- sodium 22
- sodium 24
- strontium isotopes
- strontium 85
- strontium 87
- strontium 89
- strontium 90
- sulfur isotopes
- tantalum isotopes
- technetium isotopes
- tellurium
- tellurium isotopes
- terbium isotopes
- thallium isotopes
- thorium isotopes
- thulium isotopes
- tin isotopes
- titanium isotopes
- tungsten isotopes
- uranium isotopes
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- vanadium isotopes
- xenon isotopes
- xenon 129
- xenon 133
- xenon 135
- ytterbium isotopes
- yttrium isotopes
- zinc isotopes
- zirconium isotopes
- zirconium 95
- . osmium
- . . osmium isotopes
- . oxygen
- . . liquid oxygen
- . . oxygen isotopes
- . . . oxygen 17
- . . . oxygen 18
- . palladium
- . phosphorus
- . . phosphorus isotopes
- . . . phosphorus 32
- . platinum
- . . platinum isotopes
- . protactinium
- . . protactinium isotopes
- . rare earth elements
- . . cerium
- . . . cerium isotopes
- . . . cerium 137
- . . . cerium 144
- . . dysprosium
- . . . dysprosium isotopes
- . . erbium
- . . . erbium isotopes
- . . europium
- . . . europium isotopes
- . . gadolinium
- . . . gadolinium isotopes
- . . holmium
- . . . holmium isotopes
- . . lanthanum
- . . . lanthanum isotopes
- . . lutetium
- . . . lutetium isotopes
- . . neodymium
- . . . neodymium isotopes
- . . praseodymium
- . . . praseodymium isotopes
- . . promethium
- . . . promethium isotopes
- . . samarium
- . . . samarium isotopes
- . . scandium
- . . . scandium isotopes
- . . terbium
- . . . terbium isotopes
- . . thulium
- . . . thulium isotopes
- . . ytterbium
- . . . ytterbium isotopes
- . . yttrium
- . . . yttrium isotopes
- . rare gases
- . . argon
- . . . argon isotopes
- . . helium
- . . . helium isotopes
- . . liquid helium
- . . . liquid helium 2
- . . krypton
- . . . krypton isotopes
- krypton 85
- . . neon
- . . . liquid neon
- . . . neon isotopes
- . . radon
- . . . radon isotopes
- . . xenon
- . . . xenon isotopes
- xenon 129
- xenon 133
- xenon 135
- . rhenium
- . . rhenium isotopes
- . rhodium
- . . rhodium isotopes
- . ruthenium
- . . ruthenium isotopes
- . rutherfordium
- . selenium
- . silver
- . . silver isotopes
- . strontium
- . . strontium isotopes
- . . . strontium 85
- . . . strontium 87
- . . . strontium 89
- . . . strontium 90
- . sulfur
- . . sulfur isotopes
- . tantalum
- . . tantalum isotopes
- . technetium
- . thallium
- . . thallium isotopes
- . tin
- . . tin isotopes
- . titanium
- . . titanium isotopes
- . tungsten
- . . vanadium
- . . . vanadium isotopes
- . zinc
- . . zinc isotopes
- . zirconium
- . . zirconium isotopes
- . . . zirconium 95
- . bohrium

- . dubnium
- . hassium
- . meitnerium
- . seaborgium
- . siderophile elements
- RT atoms
- ∞ chemicals
- ∞ elements
- ferrous metals
- ions
- isotopic enrichment
- light ions
- metals
- nonferrous metals
- nuclear isobars
- plasmas (physics)
- trace contaminants

chemical energy

DEF Energy produced or absorbed in the process of a chemical reaction. In any such a reaction, energy losses or gains usually involve only the outermost electrons of the atoms or ions of the system undergoing change; here a chemical bond of some type is established or broken without disrupting the original atomic or ionic identities of the constituents.

GS **chemical energy**

- . energy of formation

RT ∞ energy

- free energy
- internal energy
- kinetic energy
- ∞ level
- molecular energy levels
- ∞ nuclear energy
- potential energy

chemical engineering

- RT aerothermochemistry
- ∞ chemistry
- combustion chemistry
- cracking (chemical engineering)
- diffusion
- ∞ engineering
- fluid flow
- furnaces
- heat transfer
- materials handling
- ∞ operations
- thermochemistry

chemical equilibrium

- UF *Chapman-Jouget flame*
- chemical shift*
- GS **chemical equilibrium**
- . acid base equilibrium
- RT association reactions
- buffers (chemistry)
- dissociation
- ∞ equilibrium
- heat of dissociation
- phase rule
- reaction kinetics
- thermodynamic equilibrium

chemical evolution

DEF The theory of the creation or production of living matter from nonliving matter.

GS evolution (development)

- . **chemical evolution**
- RT abiogenesis
- biological evolution
- ∞ evolution
- exobiology
- life sciences
- organic compounds
- protein synthesis
- protobiology
- self assembly

chemical explosions

- GS explosions
- . **chemical explosions**
- . . gas explosions
- . . propellant explosions
- RT aerial explosions
- combustion
- detonable gas mixtures
- detonation

chemical fractionation

explosives
flammable gases
turbulent combustion
underground explosions
underwater explosions

chemical extinguishers

USE **fire extinguishers**

chemical fractionation

GS fractionation
. **chemical fractionation**

RT distillation
refining
∞ separation

chemical fuels

DEF Fuels that depend upon an oxidizer for combustion or for development of thrust, such as liquid or solid rocket fuel or internal combustion engine fuel; distinguished from nuclear fuel.

GS fuels
. **chemical fuels**
.. endothermic fuels
.. high energy fuels
.. hydrocarbon fuels
... diesel fuels
... fossil fuels
... coal
... anthracite
... lignite
... solvent refined coal
... crude oil
... natural gas
... liquefied natural gas
... peat
... shale oil
... gasoline
... jet engine fuels
... JP-4 jet fuel
... JP-5 jet fuel
... JP-6 jet fuel
... JP-7 jet fuel
... JP-8 jet fuel
... synthane
.. liquid fuels
... antimisting fuels
... diesel fuels
... gasoline
... hydrogen fuels
... jet engine fuels
... JP-4 jet fuel
... JP-5 jet fuel
... JP-6 jet fuel
... JP-7 jet fuel
... JP-8 jet fuel
... fuel oils
... kerosene
.. metal fuels
.. synthetic fuels
... gasohol (fuel)
... synthane

RT clean fuels
explosives
fuel production
gelled propellants
gelled rocket propellants
hybrid propellants
monopropellants
plastic propellants
propellants
pyrotechnics
solid propellants

chemical indicators

RT biomarkers
∞ indicators
methylene blue
phloroglucinol

chemical kinetics

USE **reaction kinetics**

chemical lasers

GS stimulated emission devices
. lasers
.. **chemical lasers**
... HCL lasers
... HCL argon lasers
... chemical oxygen-iodine lasers

RT argon lasers
carbon dioxide lasers
carbon lasers
carbon monoxide lasers
chain reactions (chemistry)
gas lasers
HCN lasers
HF lasers
infrared lasers
liquid lasers
organic lasers
Q switched lasers
TEA lasers
tube lasers

chemical machining

UF *chemical milling*
GS machining
. **chemical machining**
.. electrochemical machining
RT milling (machining)

chemical milling

USE **chemical machining**

chemical oxygen-iodine lasers

(added August 1997)
UF *COIL (lasers)*
GS stimulated emission devices
. lasers
.. chemical lasers
... **chemical oxygen-iodine lasers**
... iodine lasers
... **chemical oxygen-iodine lasers**
RT continuous wave lasers

chemical properties

GS **chemical properties**
. acidity
. salinity
. thermochemical properties
.. heat of combustion
.. heat of dissociation
.. heat of formation
.. heat of solution
.. latent heat
... heat of fusion
... heat of vaporization
RT adsorptivity
∞ high resistance
hydrophobicity
hygroscopicity
∞ low resistance
moisture content
passivity
∞ physical properties
propellant properties
∞ properties
∞ resistance
thermodynamic properties
toxicity
toxicity and safety hazard

chemical propulsion

UF *chemonuclear propulsion*
GS propulsion
. **chemical propulsion**
.. hybrid propulsion
RT jet propulsion
marine propulsion
spacecraft propulsion
underwater propulsion

chemical reaction control

RT agitation
∞ control
∞ reaction control
temperature control

chemical reactions

UF *flame interaction*
GS **chemical reactions**
. acylation
.. acetylation
.. alkylation
.. ammonolysis
.. association reactions
.. atomic recombination
.. oxygen recombination
.. carbonization

. carboxylation
. copolymerization
. cracking (chemical engineering)
.. hydrocracking
.. pyrolysis
. decarbonation
. decarboxylation
. defluorination
. dehydrogenation
. deionization
. denitrogenation
. depolymerization
. desulfurizing
. endothermic reactions
. epoxidation
. exothermic reactions
. fermentation
. Friedel-Craft reaction
. glycolysis
. Grignard reactions
. halogenation
.. bromination
.. chlorination
.. fluorination
. hydroboration
. hydrogenolysis
.. hydrocracking
. hydrolysis
. ion recombination
. metal-water reactions
. metathesis
. methanation
. methylation
. Michael reaction
. nitration
. nitriding
. nitrogenation
. nitrolysis
. oxidation
.. electrochemical oxidation
.. photooxidation
.. rusting
. oxidation-reduction reactions
. oxygenation
. phosphorylation
. photochemical reactions
.. photochromism
.. photodecomposition
.. photolysis
.. photooxidation
.. photosynthesis
.. radiolysis
. pyrohydrolysis
. reduction (chemistry)
.. deoxidizing
.. hydrogenation
. Sabatier reaction
. sulfation
. sulfidation
. thermal decomposition
.. pyrolysis
. cycloaddition
. thermal dissociation
. titration
.. Diels-Alder reactions
. chain reactions (chemistry)
RT biosynthesis
chelation
combustion chemistry
corrosion
gas-metal interactions
hydration
interstellar chemistry
∞ operations
particle interactions
plasma jet synthesis
polymerization
radiochemical separation
reacting flow
∞ reaction
reaction bonding
reaction intermediates
reaction kinetics
reactivity
reagents
sodalite
solvation
stoichiometry
surface reactions

- ∞ synthesis
 - synthesis (chemistry)
 - synthetic fuels
 - thermochemistry
- chemical reactors**
 - RT autoclaves
 - beds (process engineering)
 - burners
 - columns (process engineering)
 - contactors
 - fluidized bed processors
 - furnaces
 - gas generators
 - ∞ gas reactors
 - reactor design
 - reactor materials
 - reactor safety
 - ∞ reactors
 - synthesizers
 - tanks (containers)
 - water cooled reactors
- chemical relaxation*
 - USE **molecular relaxation**
- chemical release modules**
 - DEF Shuttle launched, free-flying spacecraft containing canisters for injecting chemicals into the upper atmosphere and the measurement of the reactions.
 - GS modules
 - . **chemical release modules**
 - RT chemical clouds
 - CRRES (satellite)
 - dispersing
- chemical shift*
 - USE **chemical equilibrium**
- chemical sterilization**
 - GS cleaning
 - . sterilization
 - . . **chemical sterilization**
 - RT antiseptics
 - bactericides
 - ethylene oxide
 - purification
 - sewage treatment
 - spacecraft sterilization
- chemical tests**
 - GS **chemical tests**
 - . chemical analysis
 - . . chromatography
 - . . . gas chromatography
 - . . . gel chromatography
 - . . . liquid chromatography
 - . . . paper chromatography
 - . . . thin layer chromatography
 - . . electrophotometry
 - . . gas analysis
 - . . . ozonometry
 - . . . Van Slyke method
 - . . iodimetry
 - . . Karl Fischer reagent
 - . . microanalysis
 - . . neutron activation analysis
 - . . potentiometric analysis
 - . . qualitative analysis
 - . . quantitative analysis
 - . . . Kjeldahl method
 - . . . Van Slyke method
 - . . spectroscopic analysis
 - . . urinalysis
 - . . volumetric analysis
 - . . salt spray tests
 - RT chemical detection
 - corrosion resistance
 - gas spectroscopy
 - high temperature tests
 - inspection
 - low temperature tests
 - nondestructive tests
 - quality control
 - sampling
 - staining
- ∞ tests
 - chemical vapor deposition*
 - USE **vapor deposition**
 - chemical vapor infiltration**
 - (added December 1992)
 - UF *CVI (fabrication)*
 - GS infiltration
 - . **chemical vapor infiltration**
 - RT carbon fibers
 - ceramic fibers
 - ceramic matrix composites
 - composite materials
 - densification
 - fiber composites
 - chemical warfare**
 - GS warfare
 - . **chemical warfare**
 - RT biochemistry
 - biological weapons
 - physiological factors
 - chemically reacting flow*
 - USE **reacting flow**
 - ∞ **chemicals**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT ∞ chemical compounds
 - chemical elements
 - chemiluminescence**
 - DEF Any luminescence produced by chemical action.
 - GS emission
 - . light emission
 - . . luminescence
 - . . . **chemiluminescence**
 - RT airglow
 - phosphorescence
 - chemisorption**
 - DEF The binding of a liquid or gas on the surface or in the interior of a solid by chemical bonds or forces.
 - GS sorption
 - . adsorption
 - . . **chemisorption**
 - RT adatoms
 - adsorptivity
 - atomic clusters
 - gas-metal interactions
 - hydrogen embrittlement
 - masking
 - metal clusters
 - molecular clusters
 - ∞ **chemistry**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The science that studies the composition, structure, properties, interactions, and transformations of elemental matter and compounds.
 - RT aerothermochemistry
 - aerothermodynamics
 - analytical chemistry
 - atmospheric chemistry
 - biochemistry
 - biogeochemistry
 - chemical analysis
 - chemical engineering
 - chemotherapy
 - combustion chemistry
 - computational chemistry
 - cosmochemistry
 - cryochemistry
 - electrochemistry
 - environmental chemistry
 - geochemistry
 - hydroxyl radicals
 - inorganic chemistry
 - interstellar chemistry
 - marine chemistry
 - nuclear chemistry
 - organic chemistry
 - photoelectrochemistry
 - physical chemistry
 - ∞ physical sciences
 - Physics and Chemistry Experiment in Space
 - physiochemistry
 - plasma chemistry
 - polymer chemistry
 - precipitation (chemistry)
 - propellant chemistry
 - quantum chemistry
 - radiation chemistry
 - radiochemistry
 - reduction (chemistry)
 - saturation (chemistry)
 - stereochemistry
 - stoichiometry
 - synthesis (chemistry)
 - thermochemistry
 - unsaturation (chemistry)
 - Wiswesser notations
 - chemonuclear propulsion*
 - USE **chemical propulsion**
 - nuclear propulsion**
 - chemoreceptors**
 - GS anatomy
 - . sense organs
 - . . **chemoreceptors**
 - . . . **chemoreceptors**
 - . . . receptors (physiology)
 - . . . **chemoreceptors**
 - RT carotid sinus body
 - olfactory perception
 - taste
 - chemosphere**
 - DEF The vaguely defined region of the upper atmosphere in which photochemical reactions take place. It is generally considered to include the stratosphere (or the top thereof) and the mesosphere, and sometimes the lower part of the thermosphere.
 - GS Earth atmosphere
 - . **chemosphere**
 - RT biosphere
 - Earth ionosphere
 - heterosphere
 - homosphere
 - lower atmosphere
 - mesosphere
 - middle atmosphere
 - ozonosphere
 - plasmisphere
 - stratosphere
 - thermosphere
 - troposphere
 - upper atmosphere
 - chemotherapeutic agents*
 - (added April 2004)
 - USE **drugs**
 - chemotherapy**
 - UF *drug therapy*
 - GS therapy
 - . **chemotherapy**
 - RT antiseptics
 - ∞ chemistry
 - drugs
 - Chena River Basin (AK)**
 - GS landforms
 - . structural basins
 - . . river basins
 - . . . **Chena River Basin (AK)**
 - RT Alaska
 - Chesapeake Bay (US)**
 - GS bays (topographic features)
 - . **Chesapeake Bay (US)**
 - RT estuaries
 - Maryland
 - river basins
 - sounds (topographic features)
 - Virginia
 - chest**
 - GS anatomy
 - . **chest**
 - . . breast

chiasms

. . . mammary glands
 RT thorax
 torso

chewing
 USE **mastication**

chiasms
 GS crossings
 . **chiasms**

chickens
 GS animals
 . vertebrates
 . . birds
 . . . **chickens**

child device
 RT learning
 learning theory
 training devices

Child-Langmuir law
 GS laws
 . **Child-Langmuir law**
 RT perveance
 space charge
 thermionic diodes

children
 RT adults
 females
 human beings
 males
 parents
 progeny

Chile
 GS nations
 . **Chile**
 RT European Southern Observatory
 South America

chilling
 USE **cooling**

chimes
 USE **auditory signals**

chimneys
 RT buildings
 exhaust systems
 flues
 furnaces
 plumes
 stacks
 vents
 waste energy utilization

chimpanzees
 GS animals
 . vertebrates
 . . mammals
 . . . primates
 apes
 **chimpanzees**
 RT human beings

chin
 GS anatomy
 . face (anatomy)
 . . **chin**
 RT bones
 head (anatomy)

China
 UF *China (communist) mainland*
Chinese Peoples Republic
 GS nations
 . **China**
 RT Asia
 Chinese aircraft
 Chinese space program
 Chinese spacecraft
 Hong Kong

Taiwan
China (communist) mainland
 USE **China**

Chinese aircraft
 RT ∞ aircraft
 China

Chinese Peoples Republic
 USE **China**

Chinese space program
 GS programs
 . space programs
 . . **Chinese space program**
 RT China
 Long March launch vehicles
 ∞ research projects
 Shenzhou 5 spacecraft
 space missions
 Taiwan

Chinese spacecraft
 DEF Spacecraft built and launched by the Chinese Peoples Republic.
 GS **Chinese spacecraft**
 . Shenzhou 5 spacecraft
 RT China
 Long March launch vehicles
 ∞ spacecraft
 Taiwan

chinone
 USE **quinones**

Chinook helicopter
 USE **CH-47 helicopter**

chipping
 RT abrasion
 comminution
 cutting
 flaking
 fracturing
 fragmentation
 pitting
 ∞ separation
 spalling
 splitting
 wear

chips
 RT chips (electronics)
 fragments
 scrap

chips (electronics)
 DEF Integrated microcircuits mounted on substrates and performing significant numbers of functions.
 GS **chips (electronics)**
 . chips (memory devices)
 . lab-on-a-chip devices
 . systems-on-a-chip
 RT application specific integrated circuits
 central processing units
 chips
 computer design
 integrated circuits
 large scale integration
 microelectronics
 microprocessors
 reconfigurable hardware
 RISC processors
 systolic arrays
 very large scale integration
 VHSIC (circuits)

chips (memory devices)
 DEF Integrated microcircuit devices used collectively to perform the functions of data storage: accepting, retaining, and emitting bits of data.
 GS chips (electronics)
 . **chips (memory devices)**
 . computer components
 . **chips (memory devices)**
 RT carbon nanotube based memory
 ∞ devices
 integrated circuits

memory (computers)
 metal-nitride-oxide-semiconductors
 semiconductor devices

chiral dynamics
 RT chirality
 ∞ dynamics
 group theory
 Lagrange multipliers
 matrices (mathematics)

chirality
(added August 1994)
 GS symmetry
 . **chirality**
 RT antisymmetry
 chiral dynamics
 enantiomers
 group theory
 handedness

Chiron
 DEF Minor planet 2060, a solar system asteroid discovered by Charles T. Kowal of Hale Observatories. Used for Minor Planet 2060.
 UF *Minor Planet 2060*
 GS celestial bodies
 . asteroids
 . . **Chiron**
 RT Apollo asteroids
 asteroid belts
 meteoroids
 planets
 solar system
 space debris

chironomus flies
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **chironomus flies**
 RT *Drosophila*
 infestation

chirp
 DEF An all encompassing term for the various techniques of pulse expansion-pulse compression applied to pulse radar; a technique to expand narrow pulses to wide pulses for transmission, and compress wide received pulses to the original narrow pulse width and wave shape, to gain improvement in signal-to-noise ratio without degradation to range resolution and range discrimination.
 GS electromagnetic interference
 . radio frequency interference
 . . **chirp**
 . . . chirp signals

chirp signals
 GS electromagnetic interference
 . radio frequency interference
 . . chirp
 . . . **chirp signals**
 RT electromagnetic noise
 ∞ signals

chitin
 SN (A POLYSACCHARIDE WHICH IS THE PRINCIPAL CONSTITUENT OF THE SHELLS OF CRABS AND LOBSTERS, THE SHARDS OF BEETLES, AND IS ALSO FOUND IN CERTAIN FUNGI)
 DEF A polysaccharide which is the principal constituent of the shells of crabs and lobsters and of the shards of beetles. It is also found in certain fungi.
 GS biopolymers
 . polysaccharides
 . . **chitin**
 organic compounds
 . carbohydrates
 . . polysaccharides
 . . . **chitin**
 RT gums (substances)
 starches

chloral
 GS aldehydes

chloroform

ozone depletion

chloroform
GS drugs
. anesthetics
. . . **chloroform**
RT anesthesiology

chloroformate
GS esters
. **chloroformate**
formates
. **chloroformate**

chlorophylls
GS magnesium compounds
. **chlorophylls**
organometallic compounds
. **chlorophylls**
pigments
. **chlorophylls**
porphyrins
. **chlorophylls**
RT algae
brown wave effect
cells (biology)
chloroplasts
Coastal Zone Color Scanner
dissolved organic matter
green wave effect
ocean color scanner
photosynthesis
plants (botany)
porphines
Sea-viewing Wide Field-of-view
Sensor
skin (anatomy)

chloroplasts
GS organelles
. **chloroplasts**
RT cells (biology)
chlorophylls
cytoplasm
photosynthesis

chloroprene resins
UF *neoprenes*
GS elastomers
. rubber
. . . synthetic rubbers
. . . **chloroprene resins**

chlorosilanes
GS halogen compounds
. chlorine compounds
. . . **chlorosilanes**
hydrogen compounds
. hydrides
. . . silanes
. . . **chlorosilanes**
silicon compounds
. silanes
. . . **chlorosilanes**

chlorpromazine
GS hydrazines
. **chlorpromazine**

Choctaw helicopter
USE **CH-34 helicopter**

choice
USE **selection**

choked flow
(added July 1992)
GS fluid flow
. **choked flow**
RT channel flow
ducted flow
flow velocity
inlet flow
nozzle flow
orifice flow
pipe flow

chokes
SN (EXCLUDES FUEL SYSTEM AND ELECTRONIC DEVICES)
RT chokes (restrictions)

∞ diffusers
electric coils
mixing
nozzle inserts
∞ nozzles

chokes (fuel systems)
RT carburetors
chokes (restrictions)
fuel systems
orifices
∞ systems

chokes (restrictions)
RT chokes
chokes (fuel systems)
closures
constrictions
impedance
∞ nozzles
orifices
throats
valves

cholera
GS diseases
. infectious diseases
. . . bacterial diseases
. . . **cholera**
RT human pathology
kidney diseases
pathogenesis
pathological effects
physiological effects

Cholesky factorization
DEF A numerical algorithm used to solve linear systems of equations.
GS factorization
. **Cholesky factorization**
RT conjugates
finite element method
iterative solution
real variables

cholesterol
GS organic compounds
. lipids
. . . steroids
. . . **cholesterol**
RT arteriosclerosis
liquid crystals

choline
GS organic compounds
. **choline**
RT vitamins

cholinergic blocking agents
USE **anticholinergics**

cholinergics
GS drugs
. **cholinergics**
. . . anticholinergics
RT cyclic AMP

cholinesterase
GS biopolymers
. proteins
. . . enzymes
. . . **cholinesterase**
organic compounds
. proteins
. . . enzymes
. . . **cholinesterase**
RT neuromuscular transmission

chondrites
DEF Meteoritic stones characterized by small rounded grains or spherules.
GS celestial bodies
. meteorites
. . . stony meteorites
. . . **chondrites**
. . . . Bruderheim meteorite
. . . . carbonaceous chondrites
. Alais meteorite
. Allende meteorite
. Cold Bokkeveld meteorite

. Ivuna meteorite
. Murchison meteorite
. Murray meteorite
. Orgueil meteorite
. Tonk meteorite
. Harleton meteorite
. Hvittis chondrite
. Okhansk meteorite
. Pantar chondrites
. Pribram meteorite
RT achondrites
chondrule
siderophile elements
tektites

chondrule
RT chondrites
enstatite
meteorites
meteoritic microstructures
mineralogy

choppers (electric)
USE **electric choppers**

chords (geometry)
DEF Straight lines intersecting circles or other curves, or straight lines connecting the ends of arcs. In aeronautics, straight lines intersecting or touching airfoil profiles at two points; specifically, those parts of lines between two points of intersections. Used for aerodynamic chords.
UF *aerodynamic chords*
GS geometry
. Euclidean geometry
. . . lines (geometry)
. . . **chords (geometry)**
RT curves (geometry)
geodesic lines
tangential blowing
tangents

choroid membranes
GS anatomy
. sense organs
. . . eye (anatomy)
. . . **choroid membranes**
membranes
. **choroid membranes**
RT vision

chorus (dawn phenomenon)
USE **dawn chorus**

chorus phenomenon
USE **dawn chorus**

chromates
UF *dichromates*
GS chromium compounds
. **chromates**
. . . potassium chromates
RT ∞ oxygen compounds

chromatin
(added August 2004)
DEF The material of chromosomes. It is a complex of DNA, histones, and nonhistone proteins (chromosomal proteins, non-histone) found within the nucleus of a cell.
RT chromosomes
cytology
deoxyribonucleic acid
neutrophils

chromatography
DEF The separation of chemical substances by making use of differences in the rates at which the substances travel through or along a stationary medium.
GS chemical tests
. chemical analysis
. . . **chromatography**
. . . gas chromatography
. . . gel chromatography
. . . liquid chromatography
. . . paper chromatography
. . . thin layer chromatography
RT adsorption

- colorimetry
- quantitative analysis
- sorption
- chrome*
- USE **chromium**
- chromic acid**
 - GS acids
 - . **chromic acid**
 - chromium compounds
 - . **chromic acid**
- chromites**
 - GS minerals
 - . **chromites**
 - RT chromium
 - chromium oxides
 - peridotite
 - serpentine
- chromium**
 - UF *chrome*
 - GS chemical elements
 - . **chromium**
 - . . chromium isotopes
 - metals
 - . refractory metals
 - . . **chromium**
 - . . . chromium isotopes
 - . transition metals
 - . . **chromium**
 - . . . chromium isotopes
 - refractory materials
 - . refractory metals
 - . . **chromium**
 - . . . chromium isotopes
 - RT chromites
 - heavy metals
 - strategic materials
 - chromium alloys**
 - GS alloys
 - . **chromium alloys**
 - . . Astroloy (trademark)
 - . . chromium steels
 - . . Rene 41
 - . . Rene 63
 - . . Rene 77
 - . . Rene 95
 - RT heat resistant alloys
 - Inconel (trademark)
 - stainless steels
 - Stellite (trademark)
 - Waspaloy
 - chromium borides**
 - GS boron compounds
 - . borides
 - . . **chromium borides**
 - chromium compounds
 - . **chromium borides**
 - chromium bromides**
 - GS chromium compounds
 - . **chromium bromides**
 - halogen compounds
 - . bromine compounds
 - . bromides
 - . . . **chromium bromides**
 - . halides
 - . bromides
 - . . . **chromium bromides**
 - . metal halides
 - . . . **chromium bromides**
 - chromium carbides**
 - GS carbon compounds
 - . carbides
 - . . **chromium carbides**
 - chromium compounds
 - . **chromium carbides**
 - chromium compounds**
 - GS **chromium compounds**
 - . chromates
 - . . potassium chromates
 - . chromic acid
 - . chromium borides
 - . chromium bromides
 - . chromium carbides
 - . chromium fluorides
 - . chromium oxides
 - . sodium chromites
 - RT ∞ chemical compounds
 - ∞ Group 6B compounds
 - ∞ metal compounds
 - chromium fluorides**
 - GS chromium compounds
 - . **chromium fluorides**
 - halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **chromium fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **chromium fluorides**
 - . metal halides
 - . . metal fluorides
 - **chromium fluorides**
 - chromium isotopes**
 - GS chemical elements
 - . chromium
 - . . **chromium isotopes**
 - . nuclides
 - . . isotopes
 - . . . **chromium isotopes**
 - metals
 - . refractory metals
 - . . chromium
 - . . . **chromium isotopes**
 - . transition metals
 - . . chromium
 - . . . **chromium isotopes**
 - refractory materials
 - . refractory metals
 - . . chromium
 - . . . **chromium isotopes**
 - chromium oxides**
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **chromium oxides**
 - chromium compounds
 - . **chromium oxides**
 - RT chromites
 - chromium steels**
 - DEF Steels containing chromium as the main alloying element.
 - GS alloys
 - . chromium alloys
 - . . **chromium steels**
 - . iron alloys
 - . . steels
 - . . . **chromium steels**
 - RT ferritic stainless steels
 - chromophores**
 - (added July 1994)
 - RT color
 - dyes
 - electrochromism
 - nonlinear optics
 - optical activity
 - optical materials
 - ∞ optics
 - pigments
 - chromosome aberrations**
 - (added August 2004)
 - DEF Abnormal number or structure of chromosomes.
 - RT chromosomes
 - congenital anomalies
 - genes
 - mitosis
 - mutations
 - telomeres
 - chromosomes**
 - DEF The self replicating genetic structure of cells containing the cellular DNA that bears in it's nucleotidesequence the linear array of genes.
 - RT cells (biology)
 - chromatin
 - chromosome aberrations
 - congenital anomalies
 - cytology
 - gene expression
 - gene therapy
 - genes
 - genetic code
 - genetics
 - mitosis
 - mutations
 - ∞ nuclei
 - reproductive systems
 - telomeres
 - tetrad theory
 - chromosphere**
 - DEF A thin layer of relatively transparent gases above the photosphere of the sun.
 - GS environments
 - . extraterrestrial environments
 - . . stellar atmospheres
 - . . . **chromosphere**
 - RT coronal loops
 - faculae
 - photosphere
 - solar atmosphere
 - solar corona
 - solar prominences
 - solar transition region
 - spicules
 - stellar structure
 - stellar winds
 - Transition Region and Coronal Explorer
 - chronaxy**
 - GS time
 - . reaction time
 - . . **chronaxy**
 - RT responses
 - sensory stimulation
 - thresholds (perception)
 - chronic conditions**
 - GS conditions
 - . **chronic conditions**
 - RT blood volume
 - diseases
 - disorders
 - health
 - chronobiology*
 - USE **rhythm (biology)**
 - chronographs*
 - USE **chronometers**
 - chronology**
 - UF *age determination*
 - dating*
 - GS **chronology**
 - . geochronology
 - RT time
 - chronometers**
 - UF *chronographs*
 - GS measuring instruments
 - . time measuring instruments
 - . . clocks
 - . . . **chronometers**
 - RT atomic clocks
 - clock paradox
 - time measurement
 - timing devices
 - chronophotography**
 - UF *time lapse photography*
 - GS imagery
 - . photography
 - . . **chronophotography**
 - RT black and white photography

Chukchi Sea

motion pictures

chronotrons

USE **pulse rate**
time lag

chugging

USE **combustion stability**

Chukchi Sea

DEF Part of the Arctic Ocean north of the Bering Strait between Asia and North America.

GS seas
. **Chukchi Sea**
RT Arctic regions

chutes

UF *slides*
RT conveyors
materials handling

CID

USE **charge injection devices**

cinder cones

USE **cones (volcanoes)**

cinefluorography

USE **motion pictures**
radiography

cinematography

GS imagery
. photography
. . **cinematography**
RT animation
black and white photography
cameras
color photography
infrared photography
motion pictures
stereophotography
streak cameras
video tapes

cineradiography

USE **motion pictures**
radiography

cinespectrographs

RT optical measuring instruments
spectroscopy

cinetheodolites

GS measuring instruments
. optical measuring instruments
. . transits
. . . theodolites
. . . . **cinetheodolites**
optical equipment
. optical measuring instruments
. . transits
. . . theodolites
. . . . **cinetheodolites**
RT photographic tracking
satellite tracking

circadian rhythms

DEF Regular changes in physiological function occurring in approximately 24 hour cycles. Used for diurnal rhythms.

UF *diurnal rhythms*
GS rhythm (biology)
. **circadian rhythms**
RT activity cycles (biology)
photoperiod
zeitgebers

circles (geometry)

GS geometry
. Euclidean geometry
. . **circles (geometry)**
. . . great circles
RT circumferences
curves (geometry)
ellipses
radii
 ∞ rings
 ∞ sectors
segments

spheres

circuit boards

RT electronic packaging
printed circuits

circuit breakers

UF *breakers (electric)*
RT disconnect devices
dropouts
electric relays
 ∞ fuses
switches
switching circuits

circuit diagrams

UF *schematics*
GS diagrams
. **circuit diagrams**
RT engineering drawings
layouts
photomasks

circuit protection

GS protection
. **circuit protection**
RT capacitors
circuits
current regulators
electric fuses
electric power transmission
electric reactors
electrical faults
electrical grounding
electrical insulation
expulsion
 ∞ fuses
overvoltage
phase control
phase error
sneak circuit analysis
suppressors
surges
transformers
transmission circuits
transmission lines
voltage regulators

circuit reliability

GS reliability
. **circuit reliability**
RT aircraft reliability
component reliability
drift (instrumentation)
quality control
sneak circuit analysis
spacecraft reliability

circuits

DEF Networks providing one or more closed paths. Used for electric circuits, exploding conductor circuits, shunts, and subcircuits.

UF *electric circuits*
exploding conductor circuits
shunts
subcircuits
GS **circuits**

. adding circuits
. analog circuits
. autodynes
. bistable circuits
. . flip-flops
. cancellation circuits
. clamping circuits
. coincidence circuits
. comparator circuits
. conjugated circuits
. counting circuits
. . scalars
. coupling circuits
. delay circuits
. . phantastrons
. digital integrators
RT diplexers
. discriminators
. . Fraunhofer line discriminators
. . frequency discriminators
. echo suppressors
. electric bridges
. . wire bridge circuits

. . . Wheatstone bridges
. equivalent circuits
. feedback circuits
. fire control circuits
. fluidic circuits
. gates (circuits)
. . field-programmable gate arrays
. . threshold gates
. hybrid circuits
. integrated circuits
. . application specific integrated circuits
. . DTL integrated circuits
. . encapsulated microcircuits
. . field-programmable gate arrays
. . large scale integration
. . linear integrated circuits
. . medium scale integration
. . TTL integrated circuits
. . very large scale integration
. . VHSIC (circuits)
. iterative networks
. LC circuits
. limiter circuits
. . clipper circuits
. linear circuits
. magnetic circuits
. matrices (circuits)
. microwave circuits
. mixing circuits
. multivibrators
. . flip-flops
. . monostable multivibrators
. negative resistance circuits
. Ohms law
. phase detectors
. . synchroscopes
. phase shift circuits
. . circulators (phase shift circuits)
. pneumatic circuits
. power supply circuits
. printed circuits
. RC circuits
. RL circuits
. . RLC circuits
. squelch circuits
. sweep circuits
. switching circuits
. . fluid switching elements
. logic circuits
. transistor circuits
. transmission circuits
. trigger circuits
. varactor diode circuits
. . threshold gates
RT amplifiers
breadboard models
capacitors
 ∞ cascades
circuit protection
differentiators
digital electronics
duality principle
duplexers
electric connectors
electric current
 ∞ electric equipment
electric filters
electric motors
electric power transmission
electric wire
electrical grounding
electromechanics
electron tubes
flat conductors
inductors
integrators
Kirchhoff law of networks
loops
microelectronics
microminiaturization
microstrip devices
miniature electronic equipment
miniaturization
modules
network analysis
oscillators
selectors
short circuits

- signal generators
 - solid state devices
 - solions
 - ∞ strip
 - transmission lines
 - trees (mathematics)
 - underground transmission lines
 - voltage controlled oscillators
 - wiring
- circular cones**
- GS cones
 - . **circular cones**
 - RT half cones
 - nose cones
- circular cylinders**
- RT ∞ cylinders
 - cylindrical bodies
 - cylindrical shells
 - elliptical cylinders
- circular orbits**
- GS orbits
 - . **circular orbits**
 - . . stationary orbits
 - RT Earth orbits
 - eccentric orbits
 - elliptical orbits
 - equatorial orbits
 - geosynchronous orbits
 - lunar orbits
 - orbital mechanics
 - planetary orbits
 - polar orbits
 - quadratures
 - satellite orbits
 - solar orbits
 - spacecraft orbits
 - twenty-four hour orbits
- circular plates**
- GS structural members
 - . plates (structural members)
 - . . **circular plates**
 - RT annular plates
 - disks (shapes)
 - end plates
 - flat plates
- circular polarization**
- GS polarization (waves)
 - . **circular polarization**
 - RT elliptical polarization
 - optical polarization
- circular shells**
- GS shells (structural forms)
 - . **circular shells**
 - RT cylindrical shells
 - hemispherical shells
 - metal shells
 - spherical shells
- circular tubes**
- RT cylindrical shells
 - duct geometry
 - pipes (tubes)
 - ∞ tubes
- circular waveguides**
- DEF Small hollow tubes that are designed to transmit a specific wavelength along the length of the tube.
 - GS waveguides
 - . **circular waveguides**
 - RT microwave transmission
 - propagation modes
- circulation**
- DEF The flow or motion of a fluid in or through a given area or volume. A precise measure of the average flow of a fluid along a given closed curve. Used for recirculation.
 - UF *recirculation*
 - GS **circulation**
 - . atmospheric circulation
 - . . zonal flow (meteorology)
 - . blood circulation
 - . . brain circulation
 - . . . coronary circulation
 - . . . intercranial circulation
 - . . . ocular circulation
 - . . . peripheral circulation
 - . . . pulmonary circulation
 - . water circulation
 - . . water currents
 - . . . ocean currents
 - coastal currents
 - el Nino
 - Gulf Stream
 - Lomonosov current
 - thermohaline circulation
 - RT blowing
 - circulation distribution
 - congestion
 - ∞ currents
 - delivery
 - diffusion
 - dispersing
 - ∞ flow
 - fluid flow
 - purging
 - rotation
- circulation control airfoils**
- DEF Airfoils in which a high lift capability is produced by supercirculation where control of the stagnation points by the jet sheet produces high lift coefficients.
 - GS airfoils
 - . **circulation control airfoils**
 - . . circulation control rotors
 - RT blowing
 - boundary layer control
 - Coanda effect
 - ∞ control
 - lift augmentation
 - short takeoff aircraft
 - tangential blowing
 - under surface blowing
 - upper surface blowing
- circulation control rotors**
- DEF Rotors that provide STOL capability on high performance aircraft by means of tangential blowing over a rounded trailing edge and mass flow characteristic of turbine engine bleed.
 - GS airfoils
 - . circulation control airfoils
 - . . **circulation control rotors**
 - . wings
 - . . rotary wings
 - . . . **circulation control rotors**
 - . rotating bodies
 - . rotors
 - . . rotary wings
 - . . . **circulation control rotors**
 - RT ∞ control
 - vertical takeoff aircraft
 - x wing rotors
- circulation distribution**
- DEF The line integral of the velocity component around a curve along the closed contour.
 - RT atmospheric circulation
 - circulation
 - ∞ distribution
 - velocity distribution
- circulators (phase shift circuits)**
- GS circuits
 - . phase shift circuits
 - . . **circulators (phase shift circuits)**
 - RT cavity resonators
 - delay circuits
 - duplexers
 - Faraday effect
 - Hall generators
 - limiter circuits
- circulatory system**
- GS anatomy
 - . **circulatory system**
 - . . cardiovascular system
 - . . . blood vessels
 - arteries
 - aorta
 - arterioles
 - capillaries (anatomy)
- glomerulus
 - veins
 - heart
 - cardiac auricles
 - cardiac ventricles
 - epicardium
 - heart conduction system
 - myocardium
- RT arteriosclerosis
- artificial cardiac pacemaker
- blood circulation
- blood pumps
- carotid sinus body
- carotid sinus reflex
- exercise physiology
- hypervolemia
- organs
- circumferences**
- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . **circumferences**
 - RT boundaries
 - circles (geometry)
 - diameters
 - radii
- circumlunar communication**
- GS telecommunication
 - . space communication
 - . . lunar communication
 - . . . **circumlunar communication**
 - RT interplanetary communication
 - radar
 - radio communication
 - satellite communication
 - spacecraft communication
 - unified S band
- circumlunar trajectories**
- GS trajectories
 - . round trip trajectories
 - . . **circumlunar trajectories**
 - . . . spacecraft trajectories
 - lunar trajectories
 - **circumlunar trajectories**
 - RT Earth orbits
 - Earth-Moon trajectories
 - lunar flight
 - lunar orbits
 - moon-Earth trajectories
 - reentry trajectories
 - rendezvous trajectories
 - transfer orbits
- circumpolar westerlies**
- GS wind (meteorology)
 - . **circumpolar westerlies**
 - RT atmospheric circulation
 - jet streams (meteorology)
 - winds aloft
 - zonal flow (meteorology)
- circumsolar radiation**
- DEF Radiation from small angle scattering of direct sunlight from atmospheric aerosols with dimensions on the order of or greater than the wavelength of light.
 - GS extraterrestrial radiation
 - . solar radiation
 - . . **circumsolar radiation**
 - RT atmospheric scattering
 - light scattering
 - ∞ radiation
 - scattering
 - sunlight
- circumsolar telescopes**
- DEF Optical instruments for measuring the circumsolar radiation for application to solar energy systems. Mirrors and lenses are utilized for incident sunlight concentration.
 - GS telescopes
 - . **circumsolar telescopes**
 - RT lenses
 - measuring instruments
 - mirrors
 - optical equipment
 - radiation pyrometers

cirques (landforms)

solar radiation

circumstellar matter

USE **stellar envelopes**

cirques (landforms)

GS landforms

. structural basins

. . **cirques (landforms)**

RT glaciers

ice

mountains

snow

cirrocumulus clouds

DEF Cirriform clouds appearing as a thin sheet of small white puffs resembling flakes or patches of cotton without shadows.

GS clouds (meteorology)

. **cirrocumulus clouds**

RT atmospheric moisture

cirrostratus clouds

climatology

cloud cover

fog

meteorology

nephelanalysis

precipitation (meteorology)

thunderstorms

weather

cirrostratus clouds

DEF Cirriform clouds appearing as a whitish veil. Usually fibrous, sometimes smooth, they often produce halo phenomena. This form may totally cover the sky.

GS clouds (meteorology)

. **cirrostratus clouds**

RT atmospheric moisture

cirrocumulus clouds

climatology

cloud cover

fog

meteorology

nephelanalysis

precipitation (meteorology)

thunderstorms

weather

cirrus clouds

DEF Cirriform clouds in the form of thin, white featherlike shapes in patches or narrow bands. They have a fibrous and/or silky sheen. Large ice crystals often trail downward a considerable vertical distance in fibrous, slanted, or irregularly curved wisps called mares' tails.

GS clouds (meteorology)

. **cirrus clouds**

cirrus shields

GS clouds (meteorology)

. **cirrus shields**

RT climatology

meteorology

weather forecasting

CIS

USE **Commonwealth of Independent States**

cislunar space

DEF Of or pertaining to phenomena, projects, or activity in the space between the Earth and the moon, or between the Earth and the moon's orbit.

GS environments

. aerospace environments

. . **cislunar space**

. extraterrestrial environments

. . **cislunar space**

RT deep space

Earth-Moon trajectories

interplanetary space

lunar flight

lunar orbits

∞ space

cities

UF *metropolitan areas*

urban areas

GS **cities**

. Atlanta (GA)

. Cedar Rapids (IA)

. Houston (TX)

. Manitou (CO)

. Moscow

. New Haven (CT)

. New York City (NY)

. Phoenix (AZ)

. Pontiac (MI)

. San Francisco (CA)

RT

anthropology

communities

heat islands

industrial areas

inhabitants

megalopolises

nations

residential areas

sociology

suburban areas

urban development

urban planning

urban research

citrates

RT citric acid

esters

citric acid

GS acids

. carboxylic acids

. . **citric acid**

organic compounds

. carbohydrates

. . **citric acid**

carboxylic acids

. . **citric acid**

RT

citrate

citrus trees

GS plants (botany)

. trees (plants)

. . **citrus trees**

RT

agriculture

blight

botany

crop growth

crop vigor

∞ crops

curing

∞ food

irrigation

orchards

seeds

civil aviation

UF *commercial aviation*

RT A-380 aircraft

∞ aeronautics

air law

airline operations

aviation meteorology

commercial aircraft

general aviation aircraft

passenger aircraft

civil defense

RT air defense

antimissile defense

chemical defense

∞ defense

defense program

evacuating (transportation)

nuclear explosions

nuclear warfare

protection

Sentinel system

shelters

survival

warning

warning systems

CL-41 aircraft

UF *Canadair CL-41 aircraft*

CT-114 aircraft

Tutor aircraft

GS

attack aircraft

. **CL-41 aircraft**

Canadair aircraft

. **CL-41 aircraft**

General Dynamics aircraft

. **CL-41 aircraft**

jet aircraft

. **CL-41 aircraft**

monoplanes

. **CL-41 aircraft**

RT ∞ aircraft

CL-44 aircraft

UF *Canadair CL-44 aircraft*

CC-106 aircraft

Yukon aircraft

GS

Canadair aircraft

. **CL-44 aircraft**

General Dynamics aircraft

. **CL-44 aircraft**

jet aircraft

. turboprop aircraft

. . **CL-44 aircraft**

monoplanes

. **CL-44 aircraft**

transport aircraft

. cargo aircraft

. . **CL-44 aircraft**

RT ∞ aircraft

CL-84 aircraft

UF *Canadair CL-84 aircraft*

GS antisubmarine warfare aircraft

. **CL-84 aircraft**

Canadair aircraft

. **CL-84 aircraft**

General Dynamics aircraft

. **CL-84 aircraft**

jet aircraft

. turboprop aircraft

. . **CL-84 aircraft**

tilt wing aircraft

. **CL-84 aircraft**

transport aircraft

. **CL-84 aircraft**

V/STOL aircraft

. **CL-84 aircraft**

RT ∞ aircraft

CL-595 helicopter

USE **XH-51 helicopter**

CL-600 challenger aircraft

DEF Canadair turboprop aircraft with supercritical wings.

GS Canadair aircraft

. **CL-600 challenger aircraft**

general aviation aircraft

. **CL-600 challenger aircraft**

jet aircraft

. turboprop aircraft

. . **CL-600 challenger aircraft**

RT ∞ aircraft

∞ military aircraft

supercritical wings

CL-823 aircraft

UF *Lockheed CL-823 aircraft*

GS jet aircraft

. **CL-823 aircraft**

Lockheed aircraft

. **CL-823 aircraft**

supersonic aircraft

. supersonic transports

. . **CL-823 aircraft**

transport aircraft

. **CL-823 aircraft**

RT ∞ aircraft

cladding

DEF A coating placed on the surface of a material and usually bonded to the material.

GS metal working

. **cladding**

RT

anodic stripping

cathodic coatings

cold working

composite materials

explosive welding

extruding

laminates

metal coatings
metallizing
plating
protective coatings

claiming

RT ∞ law
patents
preempting

clamped structures

(added February 1998)
RT beams (supports)
clamps
composite structures
joints (junctions)
laminates
plates (structural members)
shells (structural forms)
structural members
structural vibration
∞ structures

clamping circuits

DEF Circuits which maintain either extremity of a waveform at a prescribed potential. Networks for adjusting the absolute voltage level of waveforms.
GS circuits
 . **clamping circuits**
RT limiter circuits
power limiters

clamps

RT ∞ bands
clamped structures
clips
fasteners
holders
jigs
mechanical devices
sealing
straps

clarity

RT atmospheric optics
electromagnetic properties
haze
opacity
optical properties
purity
∞ sharpness
solubility
transparence
turbidity

Clark Y airfoil

USE **airfoil profiles**

CLARREO (observatory)

(added December 2009)
DEF Multi-satellite observatory that will detect climate change through high-accuracy measurements of emitted infrared radiation, reflected solar radiances, and GPS occultation refractivities. CLARREO data will also be used to calibrate a wide range of sensors flying aboard other U.S. Earth observing spacecraft.
UF *Climate Absolute Radiance and Refractivity Observatory*
GS observatories
 . **CLARREO (observatory)**
RT atmospheric radiation
climate change
climatology
Earth observations (from space)
Earth Observing System (EOS)
global warming

classes

RT categories
∞ groups
∞ sections

Classic aircraft

USE **IL-62 aircraft**

classical mechanics

GS mechanics (physics)
 . **classical mechanics**

. . space mechanics
. . . astrodynamics
. . . celestial mechanics
. . . orbital mechanics
. . . . Kepler laws
. . . . minimum variance orbit
determination

RT angular momentum
continuum mechanics
equations of motion
Euler-Lagrange equation
Hamiltonian functions
Lagrange coordinates
Maxwell bodies
momentum
phase-space integral
Poisson equation
quaternions
statistical mechanics

classifications

GS **classifications**
 . hierarchies
 . . BBGKY hierarchy
 . . dichotomies
 . indexes (documentation)
 . . KWIC indexes
 . . Wiswesser notations
 . subjects
RT astronomical catalogs
∞ breakdown
∞ classifying
cluster analysis
congeners
image classification
taxonomy

classifiers

GS separators
 . **classifiers**
 . . sizing screens
 . . thickeners (equipment)
RT centrifuges
concentrating
concentrators
flotation
∞ separation
shakers
size determination
size separation
spirals (concentrators)

∞ **classifying**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *sorting*
RT classifications
concentrators
discriminant analysis (statistics)
evaluation
image classification
security
selection
size separation
sorting algorithms
taxonomy

clathrates

RT ∞ chemical compounds
crystal structure
crystals
inclusions

clays

GS **clays**
 . illite
 . kaolinite
 . montmorillonite
 . vermiculite
RT alluvium
boreholes
bricks
ceramics
colloids
fans (landforms)
grout
masonry
mining
molding materials

mud
refractory materials
rocks
sedimentary rocks
sediments
shales
sizing materials
soils
strip mining

clean energy

RT air pollution
environment pollution
environmental engineering
geothermal energy conversion
renewable energy
tidepower
water pollution
waterwave energy
windpower utilization

clean fuels

DEF Energy sources from which pollutants and other impurities have been removed by refining, purification, and other means, to produce fuels less conducive to pollution.
GS fuels
 . **clean fuels**
RT beneficiation
chemical fuels
hydrocarbon fuels
pollution
refining
synthetic fuels

clean rooms

DEF Areas in which the temperature, humidity, and the airborne particulate contamination are controlled as required.
GS rooms
 . **clean rooms**
RT assembling
cleanliness
controlled atmospheres
environmental control

cleaners

GS **cleaners**
 . air filters
RT ∞ absorbers
absorbers (equipment)
absorbers (materials)
cleaning
cleanliness
separators
ultrasonic cleaning
washers (cleaners)

cleaning

GS **cleaning**
 . chemical cleaning
 . . pickling (metallurgy)
 . housekeeping (spacecraft)
 . sterilization
 . . chemical sterilization
 . . spacecraft sterilization
 . ultrasonic cleaning
 . washing
 . . bathing
 . environmental cleanup
RT abrasion
antifouling
antiseptics
bleaching
cleaners
cleanliness
clearing
corrosion prevention
decontamination
descaling
dissolving
dust
flushing
metal finishing
metal polishing
paint removal
polishing
purification
∞ reduction
refining

cleanliness

- scarfing
- scavenging
- scrubbers
- ∞ separation
- surface finishing
- trichloroethylene
- waste water

cleanliness

- GS **cleanliness**
 - . housekeeping (spacecraft)
- RT clean rooms
- cleaners
- cleaning
- hygiene
- oral hygiene

clear air turbulence

- GS turbulence
 - . atmospheric turbulence
 - . . **clear air turbulence**
- RT aviation meteorology
- gusts
- jet streams (meteorology)
- thermal instability
- turbulent diffusion
- wind shear

clearances

- RT adjusting
- alignment
- allowances
- datum (elevation)
- spacing
- tightness
- tolerances (mechanics)

clearing

- RT cleaning
- purging
- removal

clearings (openings)

- UF *slashes*
- GS **clearings (openings)**
 - . firebreaks
 - . polynyas
- RT deforestation
- forests
- trees (plants)

cleavage

- UF *scission*
- RT brittle materials
- brittleness

Clebsch-Gordan coefficients

- GS coefficients
 - . **Clebsch-Gordan coefficients**
- RT angular momentum
- coupling

Clementine spacecraft

(*added May 1997*)
DEF A spacecraft launched in January 1994 as part of a joint NASA/DoD-BMDO (Ballistic Missile Defense Organization) mission to space-qualify several lightweight electronic instruments and systems (including an ultraviolet/visible CCD camera, a near infrared and long-wavelength infrared camera, and a combined high-resolution CCD camera and laser ranging system). The Clementine mission also provided the first complete systematic surface mapping of the moon from the ultraviolet to near infrared spectral regions. A software malfunction in May of 1994 precluded a planned flyby of the asteroid Geographos.

- RT asteroid missions
- CCD cameras
- flyby missions
- lunar exploration
- lunar maps
- lunar spacecraft
- lunar surface
- ∞ spacecraft

client server systems

- (*added May 1996*)
- GS networks

- . computer networks
- . . **client server systems**
- RT architecture (computers)
- computer systems design
- distributed processing
- internets
- Java (programming language)
- on-line systems

cliffs

- UF *bluffs (landforms)*
- RT canyons
- escarpments
- fiords
- landslides
- ledges
- ∞ shelves
- slopes
- topography

climate

- UF *macroclimate*
- RT climate change
- climatology
- long term effects
- meteorology
- paleoclimatology
- Southern Oscillation
- weather

Climate Absolute Radiance and Refractivity Observatory

- (*added December 2009*)
- USE **CLARREO (observatory)**

climate change

- RT air pollution
- atmospheric composition
- atmospheric temperature
- biomass burning
- carbon dioxide concentration
- CERES (experiment)
- CLARREO (observatory)
- climate
- climate models
- climatology
- global warming
- Glory Mission satellite
- GRACE mission
- greenhouse effect
- man environment interactions
- Mission to Planet Earth
- Orbiting Carbon Observatory (OCO)
- paleoclimatology
- radiative forcing
- stratospheric warming

climate models

- (*added March 1995*)
- GS models
 - . **climate models**
- RT atmospheric models
- climate change
- environment models
- hydrology models
- ocean models

climatology

DEF Branch of meteorology that studies the average weather conditions and statistical variations for a specified region over an extended period of time.

- UF *Milankovitch theory*
- GS **climatology**
 - . agroclimatology
 - . hydroclimatology
 - . microclimatology
 - . paleoclimatology
- RT Antarctic regions
- anvil clouds
- Arctic regions
- atmospheric circulation
- Atmospheric General Circulation
- Models
- cap clouds
- cirrocumulus clouds
- cirrostratus clouds
- cirrus shields
- CLARREO (observatory)
- climate

- climate change
- cloud cover
- cloud dispersal
- clouds (meteorology)
- dendrochronology
- desertline
- deserts
- environmental chemistry
- environmental engineering
- FIRE (climatology)
- fog dispersal
- geography
- Glory Mission satellite
- hailstorms
- heat islands
- humidity
- hurricanes
- hydrology
- intraseasonal variations
- ISCCP Project
- lightning suppression
- Madden-Julian Oscillation
- meteorology
- middle atmosphere
- NPOESS
- periodic variations
- phenology
- polar meteorology
- polar regions
- precipitation (meteorology)
- primitive equations
- quasi-biennial oscillation
- radiative forcing
- rainmaking
- sea breeze
- seasons
- snowstorms
- solar radiation
- storm enhancement
- storm suppression
- storms
- storms (meteorology)
- sunlight
- teleconnections (meteorology)
- temperate regions
- temperature
- tropical regions
- weather
- wind (meteorology)
- zonal flow (meteorology)

climbing flight

- GS ascent
 - . **climbing flight**
- RT ascent trajectories
- coasting flight
- ∞ flight
- flight paths
- horizontal flight
- parabolic flight
- rocket flight
- soaring
- takeoff
- turning flight
- vertical flight

clinical markers

- (*added August 2004*)
- USE **biomarkers**

clinical medicine

- GS medical science
 - . **clinical medicine**
- RT anesthesiology
- bed rest
- blood volume
- case histories
- diagnosis
- examination
- healing
- health
- human beings
- ∞ medicine
- ∞ operations
- sports medicine
- surgery
- transplantation

∞ treatment

clinorotation

(added July 2000)

DEF Rotational motion of a test subject about one or more axes that are inclined with respect to the gravitational vector; often applied to simulate a microgravity environment.

UF *clinostat rotation*
clinostating

GS gyration
. rotation
. . **clinorotation**

RT centrifuging
clinostats
gravitational effects
gravitational physiology
microgravity
rotating environments
space environment simulation
weightlessness
weightlessness simulation

clinostat rotation

(added July 2000)

USE **clinorotation***clinostating*

(added August 2000)

USE **clinorotation****clinostats**

(added July 2000)

DEF Devices for producing vector-averaged gravitational environments which mimic microgravity.

UF *random positioning machines*

GS simulators
. environment simulators
. . space simulators
. . . **clinostats**

RT bioreactors
centrifuges
clinorotation
gravitational effects
gravitational physiology
microgravity
rotating environments
space environment simulation
tissue engineering
weightlessness simulation

clipper circuits

GS circuits
. limiter circuits
. . **clipper circuits**

RT comparator circuits
power limiters

clips

RT anchors (fasteners)
∞ bands
clamps
couplings
fasteners
holders
mechanical devices

clock paradox

GS time measurement
. **clock paradox**

RT atomic clocks
chronometers
time signals
timing devices

clocks

UF *watches*

GS measuring instruments
. time measuring instruments
. . **clocks**
. . . atomic clocks
. . . autonomous spacecraft clocks
. . . chronometers

RT time measurement
time synchronization

timing devices

*clogging*USE **plugging****clone cells**

(added August 2004)

DEF A group of genetically identical cells all descended from a single common ancestral cell by mitosis in eukaryotes or by binary fission in prokaryotes. Clone cells also include populations of recombinant DNA molecules all carrying the same inserted sequence.

GS cells (biology)
. cultured cells
. . **clone cells**

RT biotechnology
cell culturing
cloning (biology)
culture media
culture techniques
cytology
genetic engineering
organ culturing
tissue culturing

cloning (biology)

(added August 1997)

RT biotechnology
cells (biology)
clone cells
culture media
culture techniques
cultured cells
deoxyribonucleic acid
gene expression
genes
genetic code
genetic engineering
genetics
phenotype
plasmids
reproduction (biology)

close packed lattices

GS crystal lattices
. **close packed lattices**

RT body centered cubic lattices
face centered cubic lattices

*closed basins*USE **structural basins****closed circuit television**

GS communication equipment
. **closed circuit television**
telecommunication
. **closed circuit television**
television systems
. **closed circuit television**

RT cable television
color television
educational television
stereotelevision
television cameras
television receivers
television transmission
wireless communication

closed cycles

SN (EXCLUDES CLOSED LOOP CONTROL SYSTEMS)

RT control theory
cooling systems
electric generators
gas turbines
loops
nuclear reactors
plasma generators
thermal cycling tests
thermodynamic cycles

closed ecological systems

DEF Systems that provide for the maintenance of life in an isolated living chamber through complete reutilization of the material available, in particular, by means of a cycle wherein exhaled carbon dioxide, urine, and other waste matter are converted chemically or by photosynthesis into oxygen, water, and food. Used for bioregenerative life support systems.

UF *bioregenerative life support systems*

GS support systems
. life support systems
. . **closed ecological systems**

RT aerospace medicine
bioastronautics
ecology
ecosystems
food production (in space)
gnatobiotics
long term effects
oxygen production
space habitats
spacecraft cabin atmospheres
spacecraft environments
survival
∞ systems

*closed faults*USE **geological faults***closed loop systems*USE **feedback control****closing**

RT blocking
plugging
sealing
stopping

Clostridium

GS microorganisms
. bacteria
. . **Clostridium**
. . . Clostridium botulinum

RT bacterial diseases

Clostridium botulinum

GS microorganisms
. bacteria
. . Clostridium
. . . **Clostridium botulinum**

RT bacteriology
pathogens
toxic diseases

closure law

GS laws
. **closure law**

RT field theory (physics)
k-epsilon turbulence model
statistical mechanics
turbulent flow

closures

RT ∞ barriers
blocking
chokes (restrictions)
constrictions
couplings
coverings
enclosures
end plates
fasteners
fittings
∞ gates
joints (junctions)
plugging
plugs
seals (stoppers)
tightness
valves

*cloth*USE **fabrics****clothing**

GS **clothing**
. boots (footwear)
. cotton fibers
. coveralls
. flight clothing
. garments
. gloves
. goggles
. protective clothing
. . helmets
. . pressure suits
. . . space suits
. . . extravehicular mobility units

clotting

- . . vapor barrier clothing
- . shoes
- . socks
- . suits
- . . pressure suits
- . . . space suits
- extravehicular mobility units
- RT chemical defense
- consumables (spacecrew supplies)
- cotton
- cuffs
- fabrics
- leather
- textiles
- vests

clotting

- RT blood coagulation
- embolisms
- thrombocytes
- thromboplastin

cloud chambers

DEF Devices for observing the paths of ionizing particles, based on the principle that supersaturated vapor condenses more readily on ions than on neutral molecules.

- GS ionization chambers
- . **cloud chambers**
- RT bubble chambers
- ∞ chambers
- radiation counters
- spark chambers

cloud cover

- UF *overcast*
- RT anvil clouds
- ∞ blankets
- cap clouds
- cirrocumulus clouds
- cirrostratus clouds
- climatology
- clouds (meteorology)
- FIRE (climatology)
- flight conditions
- ISCCP Project
- meteorological parameters
- meteorology
- METEOSAT satellite
- nephanalysis
- shadows
- sky
- sky brightness
- solar radiation
- sunlight
- Venus clouds
- Venus surface
- weather forecasting

cloud dispersal

- GS weather modification
- . **cloud dispersal**
- RT climatology
- clouds (meteorology)
- dispersing

cloud glaciation

- GS ice formation
- . **cloud glaciation**
- RT freezing
- graupel
- hail
- ice clouds
- ice nuclei
- snow
- snow cover

cloud height indicators

- UF *ceilometers*
- GS measuring instruments
- . indicating instruments
- . . **cloud height indicators**
- . meteorological instruments
- . . **cloud height indicators**
- RT ceilings (meteorology)

cloud photographs

- GS photographs
- . **cloud photographs**
- RT aerial photography

- all sky photography
- photography
- spaceborne photography
- TIROS project

cloud photography

- GS imagery
- . photography
- . . **cloud photography**
- RT aerial photography
- all sky photography
- black and white photography
- ESSA satellites
- meteorological satellites
- METEOSAT satellite
- Nimbus 1 satellite
- Nimbus 2 satellite
- Nimbus project
- Nimbus satellites
- spaceborne photography
- TIROS operational satellite system
- TIROS project
- TIROS satellites

cloud physics

DEF A subdivision of physical meteorology concerned with physical properties of clouds in the atmosphere and the processes occurring therein.

- GS atmospheric physics
- . **cloud physics**
- RT Aitken nuclei
- Atmospheric Cloud Physics Lab (Spacelab)
- atmospheric electricity
- CERES (experiment)
- condensation nuclei
- condensing
- convection clouds
- drop size
- fog dispersal
- graupel
- nephanalysis
- Ophiuchi clouds
- ∞ physics
- precipitation (meteorology)
- ∞ science
- Venus clouds
- weather modification

cloud seeding

DEF Any technique carried out with the intent of adding to a natural cloud in a planetary atmosphere certain substances that will alter the natural development of that cloud.

- GS nucleation
- . **cloud seeding**
- weather modification
- . **cloud seeding**
- RT clouds (meteorology)
- precipitation (meteorology)
- rain
- rainmaking
- stimulation

∞ clouds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT clouds (meteorology)
- dust
- electron clouds
- exhaust clouds
- H I regions
- H II regions
- hydrogen clouds
- ice clouds
- infrared cirrus (astronomy)
- Magellanic clouds
- magnetic clouds
- meteoroid dust clouds
- molecular clouds
- Oort cloud
- Ophiuchi clouds
- particles
- plasma clouds
- Venus clouds

clouds (meteorology)

DEF A visible mass of water vapor sus-

pending in the atmosphere above the Earth's surface.

- UF *chaotic cloud patterns*
- GS **clouds (meteorology)**
- . artificial clouds
- . . chemical clouds
- . . . barium ion clouds
- . cap clouds
- . cirrocumulus clouds
- . cirrostratus clouds
- . cirrus clouds
- . cirrus shields
- . convection clouds
- . . arc clouds
- . . cumulonimbus clouds
- . . . anvil clouds
- . . cumulus clouds
- . . . anvil clouds
- . ice clouds
- . nimbostratus clouds
- . noctilucant clouds
- . stratocumulus clouds
- . stratus clouds

- RT acid rain
- Alpine meteorology
- atmospheric correction
- atmospheric moisture
- CALIPSO (Pathfinder satellite)
- CERES (experiment)
- climatology
- cloud cover
- cloud dispersal
- cloud seeding
- ∞ clouds
- CloudSat
- condensation nuclei
- drop size
- FIRE (climatology)
- fog
- fog dispersal
- ISCCP Project
- meteorology
- MISR (radiometry)
- nephanalysis
- precipitation (meteorology)
- shadows
- sky
- thunderstorms
- weather

Clouds and the Earth's Radiant Energy System

(added May 2007)

USE **CERES (experiment)**

CloudSat

(added October 2005)

DEF An Earth observing satellite designed to measure those properties of clouds that are critical for understanding their effects on both weather and climate. Its millimeter-wavelength Cloud Profiling Radar (CPR) measures profiles of cloud vertical structure, liquid and ice water content, and cloud optical properties.

- GS artificial satellites
- . scientific satellites
- . . **CloudSat**
- Earth Observing System (EOS)
- . **CloudSat**
- RT aerosols
- Aqua spacecraft
- Aura spacecraft
- CALIPSO (Pathfinder satellite)
- clouds (meteorology)
- Earth observations (from space)
- meteorological satellites
- meteorology
- precipitation (meteorology)
- remote sensing

cloud-to-cloud discharges

(added August 1999)

- GS electric current
- . electric discharges
- . . lightning
- . . . **cloud-to-cloud discharges**

cloud-to-ground discharges

(added August 1999)

- GS electric current

- . electric discharges
- . . lightning
- . . . **cloud-to-ground discharges**
- RT elves
- sprites (atmospheric physics)
- clumps**
- RT agglomeration
- atomic clusters
- ∞ clusters
- metal clusters
- molecular clusters
- pattern recognition
- regression analysis
- cluster analysis**
- DEF The analysis of data with the object of finding natural groupings within the data either by hand or with the aid of a computer.
- RT classifications
- data mining
- image analysis
- image processing
- pattern recognition
- remote sensing
- statistical analysis
- Cluster Mission**
- (added September 1989)
- GS space missions
- . **Cluster Mission**
- RT Earth magnetosphere
- European space programs
- international cooperation
- ∞ missions
- NASA space programs
- scientific satellites
- SOHO Mission
- solar terrestrial interactions
- solar wind
- space plasmas
- cluster variation method**
- (added July 1997)
- DEF An exact, statistical-mechanical technique for approximating the configurational entropy of a crystalline material, such as an alloy. The method is based on the cluster-cumulant expansion of entropy, that involves the expansion of the thermodynamic quantities of an infinite system in terms of the density matrices of finite groups of lattice sites called clusters. The method, first proposed by Kikuchi, was developed as a theoretical tool for dealing with atomic ordering.
- UF *CVM (solid state)*
- RT binary alloys
- body centered cubic lattices
- face centered cubic lattices
- Hamiltonian functions
- intermetallics
- Ising model
- ∞ methodology
- order-disorder transformations
- phase diagrams
- phase transformations
- solid solutions
- statistical mechanics
- ternary alloys
- ∞ **clusters**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT atomic clusters
- clumps
- galactic clusters
- globular clusters
- metal clusters
- micelles
- molecular clusters
- Pleiades cluster
- Praesepe star clusters
- star clusters
- Virgo galactic cluster
- clutches**
- RT engine parts
- mechanical devices
- mechanical drives
- clutter**
- DEF Atmospheric noise, extraneous signals, etc. which tend to obscure the reception of a desired signal in a radio receiver, radarscope, etc.
- GS echoes
- . radar echoes
- . . **clutter**
- RT airborne radar
- jamming
- radio frequency interference
- space-time adaptive processing
- C-M diagram*
- USE **color-magnitude diagram**
- CMBR (astronomy)*
- (added July 2000)
- USE **cosmic microwave background radiation**
- CMOS**
- DEF The combination of a PMOS (p-type channel metal oxide semiconductor) with an NMOS (n-type channel metal oxide semiconductor). Used for complementary metal oxide semiconductors.
- UF *complementary metal oxide semiconductors*
- GS electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . metal oxide semiconductors
- **CMOS**
- semiconductors (materials)
- . metal oxide semiconductors
- . . **CMOS**
- RT cascode devices
- ITO (semiconductors)
- latch-up
- CN emission**
- DEF Radio waves emitted from incandescent gaseous cyanide (CN) in space under low pressures at wavelengths characteristic of the elements comprising the gas. Used for cyanide emission.
- UF *cyanide emission*
- GS electromagnetic radiation
- . radio waves
- . . radio emission
- . . . **CN emission**
- emission
- . radio emission
- . . **CN emission**
- RT hydrocyanic acid
- millimeter waves
- radio sources (astronomy)
- cnoidal waves**
- DEF Finite amplitude progressive waves in shallow water having a wave profile represented by the Jacobian elliptic function "CN."
- RT elastic waves
- gravity waves
- shallow water
- solitary waves
- surface waves
- water depth
- water waves
- ∞ waves
- CNSR*
- USE **Rosetta mission**
- CNT (nanotechnology)*
- (added September 2001)
- USE **carbon nanotubes**
- Coachella Valley (CA)**
- GS valleys
- . **Coachella Valley (CA)**
- RT California
- deserts
- coagulation**
- GS **coagulation**
- . blood coagulation
- RT accumulations
- agglomeration
- Aitken nuclei
- blood
- coalescing
- concentrating
- deposition
- embolisms
- fibrin
- flocculating
- flotation
- gelation
- hardening (materials)
- hemorrhages
- lumping
- precipitation (chemistry)
- ∞ separation
- ∞ setting
- settling
- solidification
- thrombopenia
- water treatment
- coal**
- DEF A brown to black combustible sedimentary rock (in the geological sense) composed principally of consolidated and chemically altered plant remains.
- GS fuels
- . chemical fuels
- . . hydrocarbon fuels
- . . . fossil fuels
- **coal**
- anthracite
- lignite
- solvent refined coal
- resources
- . Earth resources
- . . fossil fuels
- . . . **coal**
- anthracite
- lignite
- solvent refined coal
- rocks
- . sedimentary rocks
- . . carbonaceous rocks
- . . . **coal**
- anthracite
- lignite
- solvent refined coal
- RT ashes
- asphaltenes
- bitumens
- carbonaceous materials
- coal derived gases
- coal derived liquids
- coal gasification
- coal liquefaction
- coal utilization
- coke
- energy policy
- fly ash
- hydropyrolysis
- peat
- regolith
- soils
- strip mining
- synthane
- coal derived gases**
- DEF The gases which are derived from various coal gasification processes.
- RT catalysts
- coal
- coal derived liquids
- coal gasification
- coal utilization
- methane
- synthesis gas
- coal derived liquids**
- DEF Fluid hydrocarbons derived from the liquefaction of coal.
- RT asphaltenes
- catalysts
- coal
- coal derived gases
- coal gasification
- coal liquefaction

coal gasification

coal utilization

coal gasification

GS gasification
. coal gasification
. . hydrolysis
RT coal
coal derived gases
coal derived liquids
coal liquefaction
cracking (chemical engineering)
energy policy
fuel cell power plants
gases
hydrocarbon fuels
hydrocracking
lignite
methanation
synthane
synthesis gas
volatility

coal liquefaction

GS phase transformations
. liquefaction
. . coal liquefaction
RT asphaltenes
coal
coal derived liquids
coal gasification
energy policy
hydrocarbon fuels
hydrocracking
hydrolysis
lignite
melting
solvent refined coal

coal utilization

GS utilization
. coal utilization
RT coal
coal derived gases
coal derived liquids
energy consumption
energy policy
energy technology
hydrocarbon fuels
lignite
solvent refined coal

coalescence

USE **coalescing**

coalescing

DEF Growing of grains at the expense of the remainder by adsorption or the growth of a phase or particle at the expense of the remainder by absorption or by reprecipitation. Used for coalescence.

UF *coalescence*
RT agglomeration
agitation
coagulation
concentrating
flocculating
magnetic islands
mixers
∞ separation
settling
thickeners (equipment)

Coanda effect

RT ∞ attachment
bubbles
circulation control airfoils
∞ effects
entrainment
fluid amplifiers
jet amplifiers
jet streams (meteorology)
reattached flow
∞ separation
thrust augmentation

coarseness

RT fineness
Ostwald ripening
reflectance
roughness

surface properties
surface roughness
surface stability
surface temperature

coastal currents

DEF Ocean currents caused by the approach of waves to coasts at an angle. They flow parallel to and near the shore. Used for littoral currents and longshore currents.

UF *littoral currents*
longshore currents
GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . **coastal currents**
RT beaches
coasts
∞ currents
gyres
oceanography
oceans
sea truth
seas
tides
wetlands

coastal dunes

USE **dunes**

coastal ecology

GS ecology
. **coastal ecology**
RT biometeorology
coasts
Earth resources
environment effects
environments
marine environments
marine resources
oil pollution
phenology
thermal pollution
waterfowl
wetlands

coastal marshlands

USE **marshlands**

coastal plains

GS land
. plains
. . **coastal plains**
landforms
. plains
. . **coastal plains**
RT bars (landforms)
beaches
biometeorology
coasts
Earth resources
ecology
environments
piedmonts
wetlands

coastal ranges (CA)

GS landforms
. mountains
. . **coastal ranges (CA)**
RT California
Pacific Ocean

coastal water

GS water
. nearshore water
. . **coastal water**
RT Coastal Zone Color Scanner
environment effects
ocean color scanner
oceans
sea water
shellfish
shorelines
vadose water
water depth

wetlands

Coastal Zone Color Scanner

DEF A spaceborne instrument devoted to the measurement of ocean color. Every parameter is optimized for use over water to the exclusion of other types of sensing.

GS scanners
. ocean color scanner
. . **Coastal Zone Color Scanner**
RT chlorophylls
coastal water
colorimetry
multispectral band scanners
ocean data acquisitions systems
oceanographic parameters
oceanography
photomapping
remote sensing
remote sensors
satellite imagery
Sea-viewing Wide Field-of-view
Sensor
water color

coasting flight

DEF The flight of a rocket between burnout of thrust cutoff of one stage and ignition of another, or between burnout and summit altitude or maximum horizontal range.

RT ascent trajectories
ballistic trajectories
climbing flight
cruising flight
descent trajectories
∞ flight
midcourse trajectories
parabolic flight
rocket flight
soaring

coasts

DEF The strips of land of indefinite width (may be many kilometers) that extend from the low tide line inland to the first major change in landforms.

RT beaches
Caspian Sea
coastal currents
coastal ecology
coastal plains
coral reefs
cusps (landforms)
dunes
estuaries
lagoons
lakes
littoral drift
marine environments
oceans
seas
shorelines
storm surges
tidal flats
upwelling water

coating

GS **coating**
. anodizing
. electroplating
. encapsulating
. metallizing
RT anodic stripping
coatings
corrosion prevention
deposition
flame plating
flame spraying
HVOF thermal spraying
lining processes
metal finishing
metal spraying
∞ metallurgy
metalorganic chemical vapor
deposition
optical coatings
plasma spraying
∞ priming
sealing
siliconizing

spraying
 surface finishing
 surface properties
 surface treatment
 vapor deposition

coatings

DEF Liquid, liquefiable or mastic compositions which are converted to a solid protective, decorative, or functional adherent film after application as a thin layer.

GS **coatings**

. antiradar coatings
 . antireflection coatings
 . cathodic coatings
 . electroplating
 . enamels
 . encapsulating
 . glass coatings
 . glazes
 . inorganic coatings
 . . anodic coatings
 . . ceramic coatings
 . lacquers
 . magnetic films
 . metal coatings
 . . aluminum coatings
 . . gold coatings
 . . nickel coatings
 . . zinc coatings
 . metallizing
 . paints
 . . pressure sensitive paints
 . . temperature sensitive paints
 . plastic coatings
 . protective coatings
 . . anodic coatings
 . . ceramic coatings
 . . primers (coatings)
 . . refractory coatings
 . optical coatings
 . rubber coatings
 . sprayed coatings
 . thermal control coatings
 . thermochromic coatings
 . . birefringent coatings

RT

additives
 coating
 composite materials
 corrosion
 corrosion prevention
 coverings
 cryodeposits
 deposition
 deposits
 diamond films
 dipping
 electroless deposition
 energy absorption films
 epoxy resins
 fabrics
 ∞ films
 finishes
 flame spraying
 furan resins
 hot corrosion
 impregnating
 inhibitors
 laminates
 Langmuir-Blodgett films
 ∞ layers
 lining processes
 linings
 metal films
 metal finishing
 metal spraying
 ∞ metallurgy
 moisture resistance
 passivity
 pavements
 plasma spraying
 plasticizers
 ∞ priming
 protection
 rusting
 sealers
 sealing
 ∞ sheets
 silicizing

solvents
 spraying
 substrates
 surface finishing
 surface properties
 thin films
 vapor deposition
 veneers
 waterproofing
 waxes
 weatherproofing
 wings

coaxial cables

DEF Waveguides consisting of two concentric conductors insulated from each other. Used for coaxial transmission.

UF *coaxial transmission*

GS transmission lines
 . communication cables
 . . **coaxial cables**

RT ∞ cables
 power lines
 submarine cables
 waveguides

coaxial flow

GS fluid flow
 . **coaxial flow**
 RT annular flow
 annular nozzles
 axial flow
 axisymmetric flow
 flow geometry
 Hilsch tubes
 shear flow
 stratified flow
 two dimensional flow

coaxial nozzles

DEF Class of nozzle configurations in jet aircraft for reducing noise.

RT aircraft noise
 axial flow
 fluid flow
 noise reduction
 nozzle geometry
 ∞ nozzles
 supersonic nozzles
 variable cycle engines

coaxial plasma accelerators

GS plasma accelerators
 . **coaxial plasma accelerators**
 RT ∞ accelerators
 magnetic nozzles
 plasma engines
 plasma guns

coaxial transmission

USE **coaxial cables transmission**

cobalt

GS chemical elements
 . **cobalt**
 . . cobalt isotopes
 . . . cobalt 58
 . . . cobalt 60
 metals
 . transition metals
 . . **cobalt**
 . . . cobalt isotopes
 cobalt 58
 cobalt 60
 RT strategic materials

cobalt 58

GS chemical elements
 . cobalt
 . . cobalt isotopes
 . . . **cobalt 58**
 . . . nuclides
 . . . isotopes
 . . . cobalt isotopes
 **cobalt 58**
 radioactive isotopes
 **cobalt 58**
 metals
 . transition metals

. . cobalt
 . . . cobalt isotopes
 **cobalt 58**

cobalt 60

GS chemical elements
 . cobalt
 . . cobalt isotopes
 . . . **cobalt 60**
 . . . nuclides
 . . . isotopes
 . . . cobalt isotopes
 **cobalt 60**
 . . . radioactive isotopes
 **cobalt 60**
 metals
 . transition metals
 . . cobalt
 . . . cobalt isotopes
 **cobalt 60**

cobalt acetates

GS acetates
 . **cobalt acetates**
 cobalt compounds
 . **cobalt acetates**
 esters
 . **cobalt acetates**

cobalt alloys

GS alloys
 . **cobalt alloys**
 . . Astroloy (trademark)
 . . Rene 41
 . . Rene 63
 . . Rene 77
 . . Rene 95
 RT heat resistant alloys
 Kovar (trademark)
 Stellite (trademark)
 Waspaloy

cobalt compounds

GS **cobalt compounds**
 . cobalt acetates
 . cobalt fluorides
 . cobalt oxalates
 . cobalt oxides
 . cohenite
 RT ∞ chemical compounds
 ∞ Group 8 compounds
 ∞ metal compounds

cobalt fluorides

GS cobalt compounds
 . **cobalt fluorides**
 halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **cobalt fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **cobalt fluorides**
 . . . metal halides
 . . . metal fluorides
 **cobalt fluorides**

cobalt isotopes

GS chemical elements
 . cobalt
 . . **cobalt isotopes**
 . . . cobalt 58
 . . . cobalt 60
 . nuclides
 . . isotopes
 . . . **cobalt isotopes**
 cobalt 58
 cobalt 60
 metals
 . transition metals
 . . cobalt
 . . . **cobalt isotopes**
 cobalt 58
 cobalt 60

cobalt oxalates

GS cobalt compounds
 . **cobalt oxalates**

cobalt oxides

oxalates
 . **cobalt oxalates**

cobalt oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **cobalt oxides**
 cobalt compounds
 . **cobalt oxides**

COBE
 USE **Cosmic Background Explorer satellite**

Cobol
 UF *Common Business Oriented Language*
 GS languages
 . programming languages
 . . **Cobol**
 RT FORTRAN
 PL/1

Cobra Dane (radar)
 DEF Radar installation for monitoring Soviet missiles.
 GS radar
 . surveillance radar
 . . **Cobra Dane (radar)**
 . tracking radar
 . . **Cobra Dane (radar)**
 RT antenna arrays
 early warning systems
 missile trajectories
 radar signatures

Coccomyces
 GS plants (botany)
 . fungi
 . . **Coccomyces**

cochannel interference
 (added April 2000)
 DEF Interference caused by multiple, simultaneous transmissions occurring in the same communication channel.
 GS electromagnetic interference
 . radio frequency interference
 . . **cochannel interference**
 RT channel capacity
 channel noise
 intersymbolic interference
 phase shift keying

cochlea
 GS anatomy
 . sense organs
 . . ear
 . . . labyrinth
 **cochlea**
 Corti organ

Cock aircraft
 USE **AN-22 aircraft**

cockpit assistant systems
 (added October 1997)
 USE **pilot support systems**

cockpit simulators
 GS simulators
 . training simulators
 . . flight simulators
 . . . **cockpit simulators**
 training devices
 . training simulators
 . . flight simulators
 . . . **cockpit simulators**
 RT spacecraft cabin simulators
 training devices
 virtual reality

cockpit weather information systems
 (added August 1996)
 DEF A cockpit display system that provides flight crews with a graphical display of interactive weather information, including surface observations, terminal forecasts, radar summaries, and lightning strike data. The system also provides weather trend information and has zooming

capabilities that enable the user to see information for the entire nation or to focus on specific areas.
 GS information systems
 . **cockpit weather information systems**

RT airborne equipment
 cockpits
 display devices
 flight conditions
 flight instruments
 meteorological parameters
 weather forecasting

cockpits
 RT aircraft compartments
 cabin atmospheres
 ∞ cabins
 canopies
 cockpit weather information systems
 ejection seats
 flying ejection seats
 fuselages
 pilot support systems
 pressurized cabins
 space capsules
 spacecraft cabin atmospheres
 spacecraft cabins
 windshields

cockroaches
 UF *Blattidae*
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **cockroaches**

cocks
 UF *stopcocks*
 GS valves
 . **cocks**
 RT gas valves
 hydraulic equipment

COD (cracks)
 USE **crack opening displacement**

COD aircraft
 USE **C-2 aircraft**

code division multiple access
 DEF Multiple access system in which users are segregated by means of pseudorandom signal coding and bandwidth spreading so that the complete time and frequency axes are occupied and only the power is shared. Used for CDMA.
 UF *CDMA*
 GS telecommunication
 . multiple access
 . . **code division multiple access**
 . . radio communication
 . . radio relay systems
 . . . **code division multiple access**
 transmission
 . signal transmission
 . . data transmission
 . . . multiple access
 **code division multiple access**
 RT Aloha system
 frequency division multiple access
 multichannel communication
 multiplexing
 satellite networks
 switching
 wideband communication

code division multiplexing
 DEF The separation of two or more simultaneous radio transmissions over a common path by signal coding and bandwidth spreading.
 GS transmission
 . multiplexing
 . . **code division multiplexing**
 RT data transmission
 demultiplexing
 frequency division multiple access
 radio communication
 radio transmission

satellite transmission
 signal transmission
 telecommunication
 wavelength division multiplexing

coders
 UF *encoders*
 RT analog to digital converters
 coding
 decoders
 programmers

∞ **codes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT BCH codes
 binary codes
 biternary code
 coding
 color coding
 concatenated codes
 cryptography
 digits
 error correcting codes
 error detection codes
 Morse code
 Reed-Solomon codes
 standards
 symbols
 trellis coding

coding
 UF *encoding notation*
 GS **coding**
 . decoding
 . redundancy encoding
 . signal encoding
 . . amplitude modulation
 . . . quadrature amplitude modulation
 . . . frequency modulation
 . . . feedback frequency modulation
 . . . FM/PM (modulation)
 . . . frequency shift keying
 . . . pulse frequency modulation
 . . phase modulation
 . . . FM/PM (modulation)
 . . . phase shift keying
 binary phase shift keying
 quadrature phase shift keying
 . . . pulse modulation
 . . . pulse amplitude modulation
 . . . pulse code modulation
 . . . delta modulation
 differential pulse code modulation
 pulse frequency modulation
 pulse time modulation
 pulse duration modulation
 pulse position modulation
 . . trellis coding
 . Wiswesser notations

RT abbreviations
 addressing
 alphabets
 analog to digital converters
 BCH codes
 coders
 ∞ codes
 color coding
 computer programming
 computer programs
 concatenated codes
 cryptography
 data transmission
 dictionaries
 digital techniques
 error detection codes
 identifying
 information theory
 languages
 parity
 pulse compression
 Reed-Solomon codes
 symbolic programming
 symbols
 vector quantization

- Viterbi decoders
- coefficient of friction**
 UF *friction coefficient*
 GS coefficients
 . **coefficient of friction**
 surface properties
 . **coefficient of friction**
 RT friction
 friction factor
 friction reduction
 kinetic friction
 sliding friction
 static friction
 wear resistance
- coefficients**
 GS **coefficients**
 . accommodation coefficient
 . aerodynamic coefficients
 . attenuation coefficients
 . binomial coefficients
 . Clebsch-Gordan coefficients
 . coefficient of friction
 . coherence coefficient
 . correlation coefficients
 . coupling coefficients
 . diffusion coefficient
 . . Soret coefficient
 . flow coefficients
 . . discharge coefficient
 . heat transfer coefficients
 . hydrodynamic coefficients
 . influence coefficient
 . . structural influence coefficients
 . ionization coefficients
 . nozzle thrust coefficients
 . Onsager phenomenological coefficient
 . recombination coefficient
 . regression coefficients
 . scattering coefficients
 . virial coefficients
 . Wigner coefficient
 RT ∞ constant
 constants
 mechanical properties
 optical properties
 polynomials
 Racah coefficient
 statistical analysis
 ∞ weight
- coenzymes**
 GS organic compounds
 . **coenzymes**
 . . adenosine diphosphate
 . . adenosine triphosphate
 . . cyclic AMP
 . . glutathione
 . . thiamine
 RT enzymes
- coercivity**
 RT magnetic properties
 magnetization
- coesite**
 DEF A polymorph of silicon dioxide.
 GS chalcogenides
 . oxides
 . . dioxides
 . . . silicon dioxide
 quartz
 **coesite**
 . . silicon oxides
 . . . silicon dioxide
 quartz
 **coesite**
 minerals
 . quartz
 . . **coesite**
 silicon compounds
 . silicon oxides
 . . silicon dioxide
 . . . quartz
 **coesite**
 RT Earth crust
 Earth mantle
 meteorites
- rutile
 stishovite
 stony meteorites
 tektites
- coffee**
 GS farm crops
 . **coffee**
 RT beverages
- Coffin-Manson law**
 DEF A relationship which enables one to estimate the fatigue life from the cyclic plastic strain range. The specific life for a given metal or alloy is determined by its tensile ductility.
 GS laws
 . **Coffin-Manson law**
 RT crack propagation
 fatigue life
 fatigue tests
 metal fatigue
- cogeneration**
 DEF The generation of electricity or shaft power by an energy conversion system and the concurrent use of the rejected thermal energy from the conversion system as an auxiliary energy source.
 RT electric generators
 electric power plants
 energy conversion
 ∞ generation
 heat generation
 ∞ power plants
 solar energy conversion
 thermal energy
 waste energy utilization
- cognition**
 RT artificial intelligence
 cognitive psychology
 decision making
 identifying
 IFF systems (identification)
 information processing (biology)
 knowledge representation
 perception
- cognitive psychology**
 GS psychology
 . **cognitive psychology**
 RT cognition
 information processing (biology)
 intelligence
 mental performance
- COGO (programming language)**
 UF *coordinate geometry language*
 GS languages
 . programming languages
 . . **COGO (programming language)**
- cohenite**
 GS cobalt compounds
 . **cohenite**
 iron compounds
 . **cohenite**
 minerals
 . **cohenite**
 nickel compounds
 . **cohenite**
- ∞ **coherence**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT coherent radiation
 coherent scattering
 cohesion
 congruences
 elastic scattering
 intelligibility
 laser outputs
 lasers
 maser outputs
 phase coherence
 wave dispersion
 wave propagation
- coherence coefficient**
 GS coefficients
- . **coherence coefficient**
 RT coherent radar
 coherent radiation
 ∞ interference
 noise propagation
 phase coherence
 stochastic processes
- coherent acoustic radiation**
 GS coherent radiation
 . **coherent acoustic radiation**
 elastic waves
 . **coherent acoustic radiation**
 RT ∞ radiation
 ultrasonic radiation
 underwater acoustics
- coherent anti-Stokes Raman spectroscopy*
 USE **Raman spectroscopy**
- coherent electromagnetic radiation**
 GS coherent radiation
 . **coherent electromagnetic radiation**
 radiation
 . . coherent light
 . . laser beams
 electromagnetic radiation
 . **coherent electromagnetic radiation**
 radiation
 . . coherent light
 . . laser beams
 RT beams (radiation)
 holography
 infrared radiation
 interstellar masers
 ionizing radiation
 krypton fluoride lasers
 lasers
 light (visible radiation)
 masers
 modulated continuous radiation
 monochromatic radiation
 quantum electronics
 ∞ radiation
 radio waves
 squeezed states (quantum theory)
 stimulated emission
 stimulated emission devices
 traveling wave masers
 ultraviolet radiation
- coherent light**
 DEF Light in which the phase relationship between points in a beam remains constant throughout the beam.
 GS coherent radiation
 . coherent electromagnetic radiation
 . . **coherent light**
 electromagnetic radiation
 . coherent electromagnetic radiation
 . . **coherent light**
 . light (visible radiation)
 . . **coherent light**
 RT four-wave mixing
 gamma ray lasers
 HCN lasers
 holographic interferometry
 holography
 laser outputs
 lasers
 monochromatic radiation
 neodymium lasers
 optical computers
 optical memory (data storage)
 phase coherence
 plasmadynamic lasers
 rare gas-halide lasers
 scatter plates (optics)
 Shiva laser system
 speckle holography
 squeezed states (quantum theory)
 stimulated emission
 two-wavelength lasers
 ultraviolet lasers
- coherent radar**
 DEF A type of radar that employs circuitry which permits comparison of the phase of successive received target signals.
 GS radar

coherent radiation

. coherent radar
RT coherence coefficient
continuous wave radar
Doppler radar
moving target indicators
pulse Doppler radar
pulse radar
radar detection
search radar
surveillance radar
tracking radar

coherent radiation
UF *coherent sources*
coherent transmission
GS **coherent radiation**
. coherent acoustic radiation
. coherent electromagnetic radiation
. . coherent light
. . laser beams
RT beams (radiation)
∞ coherence
coherence coefficient
continuous radiation
corpuscular radiation
elastic waves
electromagnetic radiation
light (visible radiation)
optical properties
∞ radiation
∞ rays
wave propagation

coherent scattering
DEF Scattering of photons or particles in which there are definite phase relationships between the incoming and scattered waves. Ordinary scattering is coherent. With coherent scattering, interference occurs between the waves scattered by two or more scattering centers. The total intensity is the vector sum of the amplitudes of the various waves.
GS scattering
. **coherent scattering**
RT ∞ coherence
Compton effect
elastic scattering
incoherent scattering
inelastic scattering
nuclear scattering

coherent sources
USE **coherent radiation**
radiation sources

coherent transmission
USE **coherent radiation**

cohesion
DEF The mutual attraction by which elements of a substance are held together.
RT agglutination
bonding
∞ coherence
internal friction
internal pressure
plastic properties
spreading

cohomology
USE **homology**

COIL (lasers)
(added August 1997)
USE **chemical oxygen-iodine lasers**

∞ **coils**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT electric coils
inductors
magnet coils
magnetic coils
springs (elastic)
toroids
wire

COIN aircraft
UF *counterinsurgency aircraft*
LARA aircraft

light armed reconnaissance aircraft
GS attack aircraft
. **COIN aircraft**
. . F-5 aircraft
. . OV-10 aircraft
RT ∞ aircraft
light intratheater transport

coincidence circuits
DEF Circuits that produce a usable output only when each of two or more input circuits receive pulses simultaneously or within an assignable time interval.
GS circuits
. **coincidence circuits**
RT anticoincidence detectors
gates (circuits)
radiation counters
synchronism

coining
GS forming techniques
. pressing (forming)
. . **coining**
metal working
. **coining**
RT cold pressing
cold working
dies
forging
hot isostatic pressing
hot pressing
sizing (shaping)
stamping

coke
GS fuels
. **coke**
RT bitumens
carbon
charcoal
coal
lignite

Coke aircraft
USE **AN-24 aircraft**

colchicine
GS bases (chemical)
. alkaloids
. . **colchicine**
nitrogen compounds
. alkaloids
. . **colchicine**
organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **colchicine**
. . heterocyclic compounds
. . . alkaloids
. . . . **colchicine**
. hydrocarbons
. . cyclic hydrocarbons
. . . **colchicine**

cold acclimatization
GS adaptation
. acclimatization
. . **cold acclimatization**
RT heat acclimatization
subzero temperature

cold blooded animals
USE **poikilothermia**

Cold Bokkeveld meteorite
GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. **Cold Bokkeveld meteorite**
. . . chondrites
. . . . carbonaceous chondrites
. **Cold Bokkeveld meteorite**

cold cathode tubes
DEF Electron tubes containing cold cathodes.
GS electron tubes

. cold cathode tubes
. . phototubes
. . . photomultiplier tubes
. . . . frequency modulation
photomultipliers
RT cathodes
electrodes
gas discharges
∞ gas tubes
tube cathodes
tunnel cathodes

cold cathodes
DEF Cathodes that function without the application of heat.
GS electrodes
. cathodes
. . tube cathodes
. . . **cold cathodes**
RT gas discharges
tunnel cathodes

cold drawing
DEF Reducing the cross section (of wire) by pulling through a die or dies, at a temperature lower than the recrystallization temperature.
RT deep drawing
∞ drawing
metal drawing

cold flow tests
SN (EXCLUDES MECHANICAL CREEP, TESTS)
DEF Tests of liquid rockets without firing them to check or verify the efficiency of a propulsion subsystem, providing for the conditioning and flow of propellants (including tank pressurization, propellant loading, and propellant feeding).
GS engine tests
. **cold flow tests**
ground tests
. **cold flow tests**
RT checkout
feed systems
plastic properties
prelaunch tests
propellant tests
propulsion system performance
rocket engine design
static tests
∞ tests

cold forming
USE **cold working**

cold fronts
GS fronts (meteorology)
. **cold fronts**
RT air masses
∞ fronts
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes
warm fronts
weather forecasting

cold gas
GS gases
. **cold gas**
RT attitude control
gas jets
jet thrust

cold hardening
SN (LIMITED TO HARDENING OF MATERIALS BY COOLING TO VERY LOW TEMPERATURES-- EXCLUDES PRECIPITATION HARDENING AT OR NEAR ROOM TEMPERATURE AND HARDENING VIA COLD WORKING)
GS hardening (materials)
. **cold hardening**
RT brittleness
hardness
phase transformations
precipitation hardening

- work hardening
- cold neutrons**
 DEF Neutrons of less velocity than thermal neutrons; at 152 deg. C their energy is below 0.01 eV.
 GS particles
 . elementary particles
 . . fermions
 . . . neutrons
 **cold neutrons**
 . neutral particles
 . . neutrons
 . . . **cold neutrons**
 RT baryons
- cold plasmas**
 UF *low temperature plasmas*
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **cold plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **cold plasmas**
 RT collisionless plasmas
 rarefied plasmas
- cold pressing**
 RT coining
 compacting
 hot isostatic pressing
 hot pressing
 metal working
 ∞ pressing
 pressing (forming)
 upsetting
- cold rolling**
 GS forming techniques
 . cold working
 . . **cold rolling**
 RT metal working
- cold strength**
 GS mechanical properties
 . **cold strength**
 RT high temperature tests
 low temperature environments
 low temperature tests
 ∞ strength
- cold surfaces**
 UF *cold walls*
 RT cryogenic fluid storage
 ∞ surfaces
- cold tolerance**
 GS tolerances (physiology)
 . **cold tolerance**
 RT body temperature
 exposure
 frostbite
 heat tolerance
 homeostasis
 subzero temperature
 thermoregulation
 vasoconstriction
- cold traps**
 GS traps
 . **cold traps**
 RT condensers (liquefiers)
 cryogenic temperature
 cryogenics
 cryotrapping
 freezing
 refrigerating
 vacuum apparatus
 vapor traps
- cold walls*
 USE **cold surfaces**
walls
- cold water**
 GS water
 . **cold water**
- RT potable water
- cold weather**
 GS weather
 . **cold weather**
 RT frost damage
 low temperature environments
 pressure ice
 snow cover
 subzero temperature
 weatherproofing
 winter
- cold weather tests**
 GS environmental tests
 . **cold weather tests**
 RT high temperature tests
 low temperature tests
 ∞ tests
- cold welding**
 GS welding
 . pressure welding
 . . **cold welding**
 RT adhesion
 bonding
 high vacuum
 vacuum effects
- cold working**
 DEF Deforming metal plasticity at a temperature lower than the recrystallization temperature. Used for cold forming.
 UF *cold forming*
 GS forming techniques
 . **cold working**
 . . cold rolling
 . . electrohydraulic forming
 . . explosive forming
 RT cladding
 coining
 deep drawing
 extruding
 forging
 ∞ joining
 magnetic forming
 metal drawing
 metal spinning
 metal working
 peening
 roll forming
 shearing
 shot peening
 stamping
 stretch forming
 stretching
 swaging
 temper (metallurgy)
 upsetting
 winding
- Coleoptera**
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **Coleoptera**
 beetles
 tribolia
 boll weevils
- colic**
 GS diseases
 . **colic**
 RT gastrointestinal system
 intestines
- collagens**
 RT bone mineral content
 connective tissue
 gelatins
 leather
 proteins
 skin (anatomy)
- collapse**
 GS **collapse**
 . gravitational collapse
 RT buckling
 deformation
- failure
 structural failure
- collating**
 RT binding
 compilers
 correlation
 insertion
 position (location)
 positioning
- collection**
 RT accumulations
 acquisition
 assembling
 input
 lumping
 museums
 ∞ receiving
 sampling
 selection
 stockpiling
- collectors*
 USE **accumulators**
- colleges*
 USE **universities**
- collimation**
 GS **collimation**
 . beamforming
 adjusting
 alignment
 beam steering
 directivity
 four-wave mixing
 microbeams
 ∞ orientation
 polarization (waves)
- collimators**
 DEF Optical devices which render rays of light parallel. Used for autocollimators.
 UF *autocollimators*
 GS optical equipment
 . **collimators**
 RT beam waveguides
 mirrors
 optical measurement
- collinearity**
 GS analysis (mathematics)
 . calculus
 . . vector analysis
 . . . **collinearity**
 . . . real variables
 . . . vector analysis
 **collinearity**
 geometry
 . vector analysis
 . . **collinearity**
 linearity
 . **collinearity**
- collision avoidance**
 UF *collision warning devices*
 GS avoidance
 . **collision avoidance**
 . . Beacon Collision Avoidance System
 RT air navigation
 air traffic
 air traffic control
 aircraft approach spacing
 aircraft guidance
 aircraft safety
 airspace
 approach control
 automatic traffic advisory and resolution
 collisions
 flight paths
 flight rules
 flight safety
 midair collisions
 National Airspace Utilization System
 radar
 radar navigation
 radio navigation

collision parameters

runway incursions
threat evaluation
traffic control
visual flight
warning
warning systems

collision parameters

DEF In orbit computation, the distances between centers of attraction of central force fields and the extension of velocity vectors of moving objects at great distances from the centers. In gas dynamics and atomic physics, any of several parameters such as cross section, collision rate, mean free path, etc., which provide a measure of the probability of collision.

GS collision parameters

. collision rates

RT ∞ absorption

beam interactions

∞ cross sections

mean free path
nuclear interactions
particle interactions
particle theory
scattering

collision rates

DEF Ratios defined by the average number of collisions per second suffered by a molecule or other particle moving through a gas.

GS collision parameters

. collision rates

rates (per time)

. collision rates

collision warning devices

USE **collision avoidance warning systems**

collisional plasmas

GS particles

. charged particles

. . energetic particles

. . . plasmas (physics)

. . . . collisional plasmas

. strongly coupled plasmas

. corpuscular radiation

. . energetic particles

. . . plasmas (physics)

. . . . collisional plasmas

. strongly coupled plasmas

RT

electron runaway (plasma physics)

high temperature plasmas

nuclear fusion

plasma conductivity

plasma density

plasma waves

collisionless plasmas

GS particles

. charged particles

. . energetic particles

. . . plasmas (physics)

. . . . collisionless plasmas

. corpuscular radiation

. . energetic particles

. . . plasmas (physics)

. . . . collisionless plasmas

RT

cold plasmas

ionic waves

Kelvin-Helmholtz instability

low density research

magnetic islands

rarefied plasmas

collisions

GS collisions

. atomic collisions

. cometary collisions

. Coulomb collisions

. inelastic collisions

. ionic collisions

. meteorite collisions

. midair collisions

. . bird-aircraft collisions

. asteroid collisions

. molecular collisions

. particle collisions

RT

air bag restraint devices

air traffic control
aircraft accidents
aircraft hazards
aircraft safety
collision avoidance
crashes
flight hazards
flight paths
gas atomization
impact velocity
pilot error
recoilings
runway incursions
scattering

collocation

RT assemblies

∞ assembly

congruences

position (location)

positioning

colloidal generators

RT atomizing

dispersions

∞ generators

plasma diffusion

plasma generators

sprayers

vaporizers

colloidal propellants

UF cordite

GS mixtures

. dispersions

. . colloids

. . . colloidal propellants

propellants

. colloidal propellants

RT gelled propellants

slurry propellants

solid propellants

solid suspensions

colloidal suspensions

(added May 2001)

USE **colloids**

colloiding

UF lyophilization

GS mixing

. colloiding

RT agitation

atomizing

colloids

comminution

compounding

dispersing

flocculating

gelation

homogenizing

precipitation (chemistry)

suspending (mixing)

colloids

UF *colloidal suspensions*

lyophils

GS mixtures

. dispersions

. . colloids

. . . aerosols

. . . . fog

. . . . colloidal propellants

RT Brownian movements

clays

colloiding

electrodialysis

electrophoresis

emulsions

foams

gels

homeostasis

micelles

nonNewtonian fluids

particles

plastisols

∞ separation

Colombia

GS nations

. **Colombia**

RT Llanos Orientales (Colombia)

Magdalena-Cauca Valley (Colombia)

South America

colonies

RT bacteria

bacteriology

color

UF *coloration*

GS electromagnetic properties

. optical properties

. . color

. . . iridescence

. . . stellar color

. . . water color

RT

brightness

chromophores

colorimetry

contrast

darkness

dichroism

discoloration

electrochromism

fading

human factors engineering

incandescence

isochromatics

light (visible radiation)

perception

phototropism

∞ physical properties

prewhitening

spectra

surface properties

symbols

thermochromatic materials

vegetative index

visibility

vision

wave dispersion

color (particle physics)

USE **quantum chromodynamics**

color centers

UF *F centers*

RT ∞ centers

Franck-Condon principle

color coding

DEF Any system of colors used for purposes of identification. Used for color enhancement.

UF *color enhancement*

RT ∞ codes

coding

color enhancement

USE **color coding**

color infrared photography

DEF A representation of temperature differences using false colors.

GS imagery

. photography

. . multispectral photography

. . . infrared photography

. . . . color infrared photography

RT

color photography

infrared imagery

color perception

USE **color vision**

color photography

GS imagery

. photography

. . color photography

RT

aerial photography

black and white photography

cinematography

color infrared photography

orthophotography

photochromism

photomapping

shadowgraph photography

stereophotography

ultraviolet photography

underwater photography

color television

- GS telecommunication
 - . **color television**
 - television systems
 - . **color television**
- RT closed circuit television
 - communicating
 - communication equipment
 - educational television
 - satellite television
 - spacecraft television
 - stereotelevision
 - television reception
 - television transmission

color vision

- UF *color perception*
- GS vision
 - . **color vision**
- RT eye (anatomy)
 - Young-Helmholtz theory

Colorado

- GS nations
 - . United States
 - . . **Colorado**
- RT Colorado Plateau (US)
 - Colorado River (North America)
 - Manitou (CO)
 - Pike's Peak (CO)
 - San Juan Mountains (CO)

Colorado Plateau (US)

- GS land
 - . **Colorado Plateau (US)**
 - landforms
 - . terraces (landforms)
 - . . plateaus
 - . . . **Colorado Plateau (US)**
- RT Arizona
 - Colorado
 - highlands
 - New Mexico
 - Utah

Colorado River (North America)

- GS rivers
 - . **Colorado River (North America)**
- RT Arizona
 - Colorado
 - Mexico
 - Utah

coloration

USE **color**

color-color diagram

DEF A two-axis coordinate graph showing the distribution of stars or other objects with reference to different color indices.

- GS diagrams
 - . **color-color diagram**
- RT color-magnitude diagram
 - Hertzsprung-Russell diagram
 - stellar color
 - stellar spectra
 - stellar spectrophotometry
 - UBV spectra

colorimetry

- GS optical measurement
 - . **colorimetry**
- RT chemical analysis
 - chromatography
 - Coastal Zone Color Scanner
 - color
 - electrophotometry
 - liquid chromatography
 - ocean color scanner
 - optical measuring instruments
 - photometry
 - spectrophotometry
 - spectroscopy
 - thermochromatic materials

color-magnitude diagram

DEF The plot of the absolute or apparent magnitude against the color index for a group of

stars. Also known as C-M diagram. Used for C-M diagram.

- UF *C-M diagram*
- GS diagrams
 - . **color-magnitude diagram**
- RT asymptotic giant branch stars
 - color-color diagram
 - globular clusters
 - Hertzsprung-Russell diagram
 - horizontal branch stars
 - main sequence stars
 - star clusters
 - stellar color
 - stellar evolution
 - stellar magnitude

cols

USE **gaps (geology)**

Columbia (Orbiter)

- UF *Space Shuttle Orbiter 102*
- GS manned spacecraft
 - . space shuttles
 - . . Space Shuttle orbiters
 - . . . **Columbia (Orbiter)**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . space shuttles
 - Space Shuttle orbiters
 - **Columbia (Orbiter)**
- RT manned space flight
 - Space Shuttle mission 31-A
 - Space Shuttle mission 41-A
 - Space Shuttle mission 61-A
 - Space Shuttle mission 61-C
 - Space Shuttle mission 61-E
 - ∞ spacecraft

Columbia River Basin (ID-OR-WA)

- GS landforms
 - . structural basins
 - . . river basins
 - . . . **Columbia River Basin (ID-OR-WA)**
- RT Idaho
 - Oregon
 - ivers
 - Washington

columbium

USE **niobium**

Columbus module

(added December 2007)

DEF Permanent laboratory module of the International Space Station developed by the European Space Agency. The module accommodates both internal and external experiment racks for conducting multidisciplinary research into material science, fluid physics, and the life sciences.

- GS laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Columbus module**
 - manned spacecraft
 - . manned orbital laboratories
 - . . **Columbus module**
 - modules
 - . space station modules
 - . . **Columbus module**
- RT Columbus space station
 - European Space Agency
 - International Space Station
 - spaceborne experiments

Columbus space station

SN (LIMITED TO THE AUTONOMOUS ESA SPACE STATION. FOR REFERENCES TO THE INTERNATIONAL SPACE STATION MODULE USE COLUMBUS MODULE.)

DEF A manned orbital platform originally planned by the European Space Agency to be a fully autonomous space station. This planned station was later superseded by the 'Columbus module' that became the Agency's largest contribution to the International Space Station.

- GS artificial satellites
 - . space stations
 - . . **Columbus space station**

ESA spacecraft

- . **Columbus space station**
- manned spacecraft
- . **Columbus space station**
- space platforms
- . **Columbus space station**
- stations
 - . space stations
 - . . **Columbus space station**

 RT AEPS

- Automated Transfer Vehicle
- bioastronautics
- Columbus module
- ferry spacecraft
- International Space Station
- intraorbit transfer vehicles
- large space structures
- man tended free flyers
- manned orbital laboratories
- military spacecraft
- orbital servicing
- rendezvous spacecraft
- shape control
- space shuttles
- Space Station Freedom
- space station polar platforms

∞ columns

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT columns (process engineering)
 - columns (supports)

columns (process engineering)

- RT absorbers (equipment)
 - chemical reactors
- ∞ columns
 - concentrators
 - condensers (liquefiers)
 - contactors
 - contractors
 - dehydration
 - dehydrogenation
 - distillation equipment
 - drying apparatus
 - extraction
 - scrubbers
 - separators
 - vaporizers

columns (supports)

- GS structural members
 - . **columns (supports)**
 - . . tapered columns
- RT beams (supports)
 - ∞ columns
 - pylon mounting
 - pylons
 - struts
 - studs (structural members)
 - Timoshenko beams
 - towers

∞ coma

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aberration
 - blackout (physiology)
 - blackout prevention
 - comet heads
 - comet nuclei
 - comet tails
 - cometary atmospheres
 - comets
 - Grigg-Skjellerup comet
 - Kohoutek comet
 - screen effect
 - Tempel 2 comet
 - unconsciousness

combat

- GS military operations
 - . **combat**
 - warfare
 - . **combat**
- RT aircraft survivability
 - B-1 aircraft

combination

electronic warfare

∞ combination

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT admixtures
consolidation
mixtures
permutations

combinations (mathematics)

GS analysis (mathematics)
. combinatorial analysis
. . . **combinations (mathematics)**
RT partitions (mathematics)
permutations

combinatorial analysis

GS analysis (mathematics)
. **combinatorial analysis**
. . binomial coefficients
. . combinations (mathematics)
. . factorials
. . partitions (mathematics)
. . permutations
RT ∞ analyzing
∞ applications of mathematics
graph theory
information theory
number theory
probability theory
set theory

combined cycle power generation

DEF Power generation which combines an open-cycle gas turbine and a closed-cycle steam turbine.

RT electric generators
electric power plants
energy technology
gas turbines
steam turbines

Combined Release and Radiation Effects Sat

USE **CRRES (satellite)**

combined stress

GS stresses
. **combined stress**
RT fatigue life
stress analysis
stress concentration
stress intensity factors

combustibility

USE **flammability**

combustible flow

GS fluid flow
. reacting flow
. . **combustible flow**
RT boundary layer combustion
combustion physics
combustion products
detonation waves
dump combustors
flame propagation
fuel flow
turbulent combustion
turbulent flames
turbulent flow

combustion

DEF A chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light either as a glow or flames. Some oxidation such as that of hydrogen emits radiation outside the visible spectrum. Used for burning and burning process.

UF *burning*
burning process

GS **combustion**
. afterburning
. boundary layer combustion
. deflagration
. erosive burning
. fuel combustion
. . nuclear fuel burnup
. hydrocarbon combustion
. hypersonic combustion

. metal combustion
. propellant combustion
. . solid propellant combustion
. . . solid propellant ignition
. biomass burning
. smoldering
. spontaneous combustion
. supersonic combustion
. turbulent combustion

RT

backfire
burning rate
burning time
burnout
charring
chemical explosions
combustion chambers
combustion chemistry
combustion control
combustion efficiency
combustion physics
combustion products
combustion stability
combustion synthesis
combustion temperature
combustion vibration
detonation
diffusion flames
exothermic reactions
explosions
extinguishing
fire damage
firebreaks
fires
flame propagation
flameout
flames
flammability
flashback
forest fires
heat balance
heat generation
ignition
ignition limits
incendiary ammunition
internal combustion engines
oxidation
∞ physics
quenching (cooling)
spark ignition
supersonic combustion ramjet engines

combustion chambers

DEF Containers in which the actual burning of fuel takes place. Used for combustors.

UF *combustors*

GS **combustion chambers**

. dump combustors
RT burners
∞ chambers
combustion
engine parts
engines
flame holders
flameout
furnaces
internal combustion engines
jet engines
pistons
refractories
spark plugs
thrust chambers

combustion chemistry

DEF The study of the exothermic oxidation reactions occurring immediately before and during combustion.

GS thermochemistry
. **combustion chemistry**
RT chain reactions (chemistry)
chemical engineering
chemical reactions
∞ chemistry
combustion
combustion physics
combustion products
combustion stability
combustion synthesis
exothermic reactions

flame temperature
oxidation
reacting flow
reaction kinetics

combustion control

DEF Control of factors (temperature, preheating, draft, excess or deficient air, etc.) which affects combustion efficiency.

RT automatic control
burning rate
combustion
∞ control
engine control
fuel control
temperature control

combustion efficiency

DEF The efficiency with which fuel is burned, expressed as the ratio of the actual energy released by the combustion to the potential chemical energy of the fuel.

GS efficiency
. **combustion efficiency**
RT ACEE program
burning rate
burning time
combustion
dump combustors
exhaust gases
fuel combustion
fuel consumption
fuel-air ratio
power efficiency
propellant combustion
propellant consumption
propulsion system performance
propulsive efficiency
thermodynamic efficiency

combustion heat

USE **heat of combustion**

combustion instability

USE **combustion stability**

combustion physics

GS thermodynamics
. **combustion physics**
RT aerothermodynamics
combustible flow
combustion
combustion chemistry
Damkohler number
flame propagation
heat of combustion
ignition
∞ physics
plasmas (physics)
reaction-diffusion equations
∞ science
thermochemistry
turbulent combustion

combustion products

GS products
. reaction products
. . **combustion products**
. . . soot
RT air pollution
ashes
biomass burning
combustible flow
combustion
combustion chemistry
dilutents
dust
exhaust gases
flue gases
fly ash
high temperature gases
odors
particulates
pollution transport
polycyclic aromatic hydrocarbons
rocket exhaust
smog
smoke
vapors

- wastes
- combustion stability**
 - UF *acoustic combustion chugging*
 - GS *combustion instability*
 - dynamic characteristics
 - . dynamic stability
 - . . **combustion stability**
 - . . . flame stability
 - stability
 - . dynamic stability
 - . . **combustion stability**
 - . . . flame stability
 - RT axial modes
 - burning rate
 - combustion
 - combustion chemistry
 - fuel combustion
 - motion stability
 - pressure oscillations
 - propellant combustion
 - smoldering
 - solid propellant combustion
 - thermal instability
 - thermoacoustic effects
 - turbulent combustion
 - velocity coupling
- combustion synthesis**
 - (added April 1993)
 - RT annealing
 - cermets
 - combustion
 - combustion chemistry
 - exothermic reactions
 - functionally gradient materials
 - powder metallurgy
 - sintering
- combustion temperature**
 - GS temperature
 - . **combustion temperature**
 - RT combustion
 - erosive burning
 - flame temperature
 - flash point
 - ignition temperature
 - operating temperature
 - spontaneous combustion
- combustion vibration**
 - GS vibration
 - . **combustion vibration**
 - RT combustion
 - elastic waves
 - structural stability
- combustion waves*
 - USE **flame propagation**
- combustion wind tunnels**
 - GS test facilities
 - . wind tunnels
 - . . **combustion wind tunnels**
 - RT hypersonic wind tunnels
 - hypervelocity wind tunnels
- combustors*
 - USE **combustion chambers**
- Comet 4 aircraft**
 - UF *de Havilland DH 106 aircraft*
 - DH 106 aircraft*
 - GS commercial aircraft
 - . **Comet 4 aircraft**
 - de Havilland aircraft
 - . **Comet 4 aircraft**
 - Hawker Siddeley aircraft
 - . **Comet 4 aircraft**
 - jet aircraft
 - . **Comet 4 aircraft**
 - monoplanes
 - . **Comet 4 aircraft**
 - passenger aircraft
 - . **Comet 4 aircraft**
 - RT ∞ aircraft
- comet heads**
 - GS celestial bodies
- . **comet heads**
 - RT ∞ coma
 - cometary atmospheres
 - solar system
- comet nuclei**
 - GS celestial bodies
 - . **comet nuclei**
 - RT ∞ coma
 - Comet Nucleus Tour
 - cometary atmospheres
 - Oort cloud
 - Rosetta mission
 - solar system
 - Stardust Mission
- Comet Nucleus Tour**
 - (added February 1999)
 - DEF A NASA Discovery-class mission to acquire imagery and comparative spectral maps of comet nuclei and analyze comet dust flows. The mission spacecraft will fly to within 100 kilometers of at least three near-Earth comets including Comet Encke, Comet Schwassmann-Wachmann, and Comet d'Arrest.
 - UF *CONTOUR (mission)*
 - GS space missions
 - . flyby missions
 - . . **Comet Nucleus Tour**
 - RT comet nuclei
 - Encke comet
 - Schwassmann-Wachmann comet
 - swingby technique
- Comet Rendezvous Asteroid Flyby Mission**
 - (added November 1988)
 - UF *CRAF mission*
 - GS space missions
 - . asteroid missions
 - . . **Comet Rendezvous Asteroid Flyby Mission**
 - . flyby missions
 - . . **Comet Rendezvous Asteroid Flyby Mission**
 - RT Mariner Mark 2 Spacecraft
 - ∞ missions
 - NASA space programs
 - Near Earth Asteroid Rendezvous Mission
 - Rosetta mission
- comet tails**
 - GS celestial bodies
 - . **comet tails**
 - RT ∞ coma
 - cometary atmospheres
 - Grigg-Skjellerup comet
 - radiation pressure
 - solar system
 - solar wind
- cometary atmospheres**
 - DEF The region of the coma of a comet as well as the gaseous part surrounding the coma that often is a hydrogen atmosphere that contains particulate matter.
 - RT astronomical photometry
 - ∞ atmospheres
 - ∞ coma
 - comet heads
 - comet nuclei
 - comet tails
 - cometary magnetospheres
 - comets
 - ionopause
- cometary collisions**
 - (added June 1994)
 - GS collisions
 - . **cometary collisions**
 - RT asteroid collisions
 - craters
 - Cretaceous-Tertiary boundary
 - Deep Impact Mission
 - hypervelocity impact
 - meteorite collisions
 - near Earth objects
 - shatter cones
- Shoemaker-Levy 9 comet
- cometary magnetospheres**
 - (added September 1988)
 - RT cometary atmospheres
 - comets
 - ∞ magnetospheres
- comets**
 - DEF Luminous members of the solar system composed of a head, or coma, and often with a spectacular gaseous tail extending a great distance from the head.
 - GS celestial bodies
 - . **comets**
 - . . Arend-Roland comet
 - . . Austin comet
 - . . Brorsen-Metcalf comet
 - . . Encke comet
 - . . Giacobini-Zinner comet
 - . . Grigg-Skjellerup comet
 - . . Hale-Bopp comet
 - . . Halley's comet
 - . . Humason comet
 - . . IRAS-Araki-Alcock comet
 - . . Kohoutek comet
 - . . Morehouse comet
 - . . Mrkos comet
 - . . Okazaki-Levy-Rudenko comet
 - . . Schwassmann-Wachmann comet
 - . . Shoemaker-Levy 9 comet
 - . . Tempel 1 comet
 - . . Tempel 2 comet
 - . . West comet
 - . . Wild 2 comet
 - RT Bessel-Bredichin theory
 - ∞ coma
 - cometary atmospheres
 - cometary magnetospheres
 - Deep Impact Mission
 - hypothetical planets
 - Kuiper belt
 - meteorite parent bodies
 - meteoroid showers
 - meteoroids
 - near Earth objects
 - Oort cloud
 - solar system
- comfort**
 - RT acoustics
 - air conditioning
 - efficiency
 - environmental engineering
 - glare
 - human factors engineering
 - humidity
 - illuminating
 - ∞ performance
 - physiological effects
 - psychological effects
 - reward (psychology)
 - riding quality
 - seats
 - temperature
 - ventilation
- command and control**
 - UF *command-control*
 - RT ∞ automation
 - autonomy
 - AWACS aircraft
 - ∞ commands
 - ∞ control
 - decision making
 - E-2 aircraft
 - E-3A aircraft
 - E-4A aircraft
 - ground support equipment
 - logistics
 - management
 - surveillance
 - targets
- command guidance**
 - DEF The guidance of a spacecraft or rocket by means of electronic signals sent to receiving devices in the vehicle. Used for command systems.
 - UF *command systems*

command languages

GS guidance (motion)
. **command guidance**
RT ∞ commands
ground support equipment
injection guidance
midcourse guidance
rendezvous guidance
rendezvous spacecraft
spacecraft guidance
terminal guidance

command languages

DEF Vocabularies to interactively execute activities such as computer retrieval or input.

GS languages
. **command languages**
. . query languages
RT human-computer interface
information retrieval

command modules

GS compartments
. **command modules**
modules
. spacecraft modules
. . **command modules**
spacecraft components
. spacecraft modules
. . **command modules**
RT Apollo spacecraft
∞ commands
Marquardt R4D engine
service modules
spacecraft docking modules
spacecrew transfer

command service modules

UF *CSM*
GS modules
. spacecraft modules
. . **command service modules**
spacecraft components
. spacecraft modules
. . **command service modules**
RT Apollo project
lunar orbits
manned spacecraft
Skylab 1
Skylab 2
Skylab 3
Skylab 4
spacecraft docking modules

command systems

USE **command guidance**

command-control

USE **command and control**

Commando aircraft

USE **C-46 aircraft**

∞ commands

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT autonomy
command and control
command guidance
command modules
decisions

commerce

GS **commerce**
. electronic commerce
commercial spacecraft
consumption
costs
economic development
finance
gross national product
industrial areas
industries
∞ investment
liabilities
losses
manufacturing
market research
marketing
PERT
product development

project management
risk
supplying

commerce lab

RT government/industry relations
∞ microgravity applications
mission planning
space commercialization
Space Shuttle payloads
user requirements

commercial aircraft

UF *commercial aviation*
GS **commercial aircraft**
. Boeing 707 aircraft
. Boeing 720 aircraft
. Boeing 727 aircraft
. Boeing 733 aircraft
. Boeing 737 aircraft
. Boeing 747 aircraft
. Boeing 757 aircraft
. Boeing 767 aircraft
. Boeing 777 aircraft
. Comet 4 aircraft
. CV-340 aircraft
. CV-440 aircraft
. CV-880 aircraft
. CV-990 aircraft
. DC 3 aircraft
. DC 7 aircraft
. DC 8 aircraft
. DC 9 aircraft
. DC 10 aircraft
. DH 121 aircraft
. DO-328 aircraft
. Electra aircraft
. European Airbus
. . A-300 aircraft
. . A-310 aircraft
. . A-320 aircraft
. . A-330 aircraft
. . A-340 aircraft
. . A-380 aircraft
. F-28 transport aircraft
. IL-62 aircraft
. Jetstream aircraft
. L-1011 aircraft
. Lear jet aircraft
. light transport aircraft
. MD 11 aircraft
. MD 80 aircraft
. P-160 aircraft
. SE-210 aircraft
. supersonic commercial air transport
. . Boeing 2707 aircraft
. . TU-144 aircraft
. Boeing 717 aircraft
. TU-104 aircraft
. TU-124 aircraft
. TU-134 aircraft
. TU-154 aircraft
. TU-204 aircraft
RT . VC-10 aircraft
air transportation
∞ aircraft
airline operations
cargo aircraft
civil aviation
commuter aircraft
EH-101 helicopter
general aviation aircraft
ground effect machines
jet aircraft
passenger aircraft
rotary wing aircraft
supersonic transports
transport aircraft
utility aircraft
V/STOL aircraft
water takeoff and landing aircraft

commercial aviation

USE **civil aviation**
commercial aircraft

commercial energy

RT allocations
distributing
domestic energy

economic factors
∞ energy
energy consumption
energy conversion
industrial energy
transportation energy

commercial off-the-shelf products

(added March 2001)

DEF Readily-available, commercially-developed products; often referring to commercial products that can be used as an alternative to in-house or customized product development.

UF *COTS products*

GS products

. **commercial off-the-shelf products**

RT commercialization
cost effectiveness
government procurement
procurement management
product development

commercial spacecraft

DEF Commercial satellites and other spacecraft operated by the private sector.

GS **commercial spacecraft**

. RCA Satcom satellites

RT aerospace industry
aerospace vehicles
commerce
communication satellites
industries
space commercialization
space industrialization
space manufacturing
space processing
VentureStar launch vehicle

commercialization

(added March 1997)

GS **commercialization**

. space commercialization

RT commercial off-the-shelf products
government/industry relations
marketing
product development
technology transfer

comminution

UF *attrition (materials)*

GS **comminution**

. crushing
. grinding (comminution)
. shredding

RT atomizing
beneficiation
chipping
colloiding
crushers
cutting
disintegration
flaking
fragmentation
gas atomization
grinding mills
metal powder
∞ milling
particle production
powder metallurgy
∞ reduction

Committee on Space Research

UF *COSPAR (committee)*

RT ∞ aerospace sciences
conferences
European space programs
international cooperation
NASA programs
programs

commodities

RT government procurement
manufacturing
market research
procurement management

- products
- Common Business Oriented Language*
USE **Cobol**
- commonality**
DEF The factors which are common in equipment or systems.
GS standardization
 . **commonality**
RT aircraft equipment
 cost reduction
 efficiency
 equipment specifications
 ground support systems
 interoperability
 spacecraft components
 specifications
- Commonwealth of Independent States**
(added September 1993)
UF *CIS*
RT Asia
 Europe
 nations
 Russian Space Program
- communicating**
GS **communicating**
 . aircraft communication
 . electrocutaneous communication
 . ground-air-ground communication
 . information dissemination
 . . messages
 . . selective dissemination of information
 . interstellar communication
 . lip reading
 . point to point communication
 . . NASCOM network
 . underground communication
 . verbal communication
 . . conversation
RT color television
 computer conferencing
 crosstalk
 education
 frequency assignment
 information
 information flow
 information management
 message processing
 Morse code
 stereotelevision
 systems engineering
 TDR satellites
 technology transfer
 telecommunication
- communication**
GS telecommunication
 . **communication**
 . . facsimile communication
 . . . automatic picture transmission
 . . line of sight communication
 . . optical communication
 . . . free-space optical communication
 . . ship to shore communication
 . . underwater communication
 . . voice communication
 . . . telephony
 . . quantum communication
RT computer conferencing
 information
 information flow
 information management
 Marisat satellites
 message processing
 spread spectrum transmission
 technology transfer
- communication cables**
GS transmission lines
 . **communication cables**
 . . coaxial cables
RT cable television
 ∞ cables
 electric wire
 optical fibers
 submarine cables
- waveguides
- communication equipment**
GS **communication equipment**
 . Advanced Vidicon Camera System (AVCS)
 . closed circuit television
 . duplexers
 . interphones
 . PLAT system
 . radio receivers
 . . superheterodyne receivers
 . . transmitter receivers
 . . whistler recorders
 . spacecraft television
 . . digital spacecraft television
 . . Ranger block 3 television system
 . . satellite television
 . stereotelevision
RT antenna components
 biotelemetry
 color television
 Earth terminals
 educational television
 ∞ equipment
 furlable antennas
 high definition television
 inertialless steerable antennas
 information adaptive system
 logarithmic receivers
 matched filters
 orbiting dipoles
 P.A.C.M. telemetry
 pulse frequency modulation
 pulse frequency modulation telemetry
 radio communication
 radio equipment
 radio relay systems
 radio telegraphy
 radio telemetry
 spherical antennas
 telemetry
 telephony
 television systems
 unified S band
- communication networks**
DEF Organization of facilities for the rapid reception of, transmission of, and/or relaying of electrical impulses for reproduction as printed messages, pictures, or other data.
GS networks
 . **communication networks**
 . . Aloha system
 . . Deep Space Network
 . . internets
 . . . ARPA computer network
 . . . World Wide Web
 . . Iridium network
 . . local area networks
 . . NASCOM network
 . . VSAT (network)
 . . wide area networks
RT access control
 asynchronous transfer mode
 broadcasting
 carrier sense multiple access
 data links
 defense communications system (DCS)
 demand assignment multiple access
 electronic bulletin boards
 electronic mail
 frequency division multiplexing
 network control
 packet switching
 packets (communication)
 protocol (computers)
 pulse communication
 radio communication
 satellite constellations
 satellite networks
 telecommunication
 video conferencing
- communication satellites**
DEF Satellites designed to reflect or relay electromagnetic signals used for communication.
UF *Iridium satellites*
- GS artificial satellites
 . **communication satellites**
 . . ACTS
 . . aeronautical satellites
 . . . Aerosat satellites
 . . Arcomsat
 . . Communications Technology Satellite
 . . . ComStar C
 . . . NATO 3B satellite
 . . ComStar satellites
 . . direct broadcast satellites
 . . European Communications Satellite
 . . Intelsat satellites
 . . low frequency transionospheric satellites
 . . L-Sat
 . . Marecs maritime satellites
 . . Marots (ESA)
 . . Molniya satellites
 . . MSAT
 . . Palapa satellites
 . . . Palapa 2 satellite
 . . Raduga satellite
 . . RCA Satcom satellites
 . . Relay satellites
 . . . Relay 1 satellite
 . . . Relay 2 satellite
 . . Symphonie satellites
 . . SYNCOM satellites
 . . . Early Bird satellites
 . . . SYNCOM 1 satellite
 . . . SYNCOM 2 satellite
 . . . SYNCOM 3 satellite
 . . . SYNCOM 4 satellite
 . . TDR satellites
 . . Westar satellites
RT Advent Project
 ATS
 carrier to noise ratios
 commercial spacecraft
 Comsat program
 Defense Communications Satellite System
 demand assignment multiple access
 domestic satellite communications systems
 downlinking
 Earth terminal measurement system
 Echo project
 electronic mail
 Fleet Satellite Communication System
 geophysical satellites
 ground-air-ground communication
 HET experiment
 Indian space program
 INMARSAT satellites
 Iridium network
 land mobile satellite service
 mobile communication systems
 network control
 orbit spectrum utilization
 passive satellites
 radio relay systems
 satellite communication
 satellite constellations
 satellite networks
 Skynet satellites
 space commercialization
 space communication
 Synchronous Communications Satellite Proj
 Synchronous Meteorological Satellite
 synchronous platforms
 synchronous satellites
 telecommunication
 teleconferencing
 Telstar project
 unmanned spacecraft
 uplinking
 wireless communication
- communication systems*
USE **telecommunication**
- communication theory**
UF *statistical communication theory*
RT cross coupling

- cybernetics
- data transmission
- high level languages
- information theory
- intelligibility
- languages
- lattices (mathematics)
- messages
- network synthesis
- quantum communication
- random noise
- random processes
- redundancy
- semantics
- sentences
- signal to noise ratios
- switching theory
- ∞ theories

Communications Technology Satellite

- UF *Hermes satellite*
- GS artificial satellites
 - . communication satellites
 - .. **Communications Technology Satellite**
 - ... ComStar C
 - ... NATO 3B satellite
- RT Canada
 - Canadian space program
 - international cooperation
 - NASA programs
 - synchronous satellites
 - technology assessment
 - technology utilization

communities

- GS **communities**
 - . inhabitants
 - .. mountain inhabitants
 - . space colonies
- RT cities
 - demography
 - ethnic factors
 - integrated energy systems
 - megalopolises
 - minorities
 - Modular Integrated Utility System
 - nations
 - police
 - politics
 - regimes
 - sociology
 - Starsite program
 - United Nations
 - urban development
 - urban planning
 - urban research

commutation

DEF Sequential sampling, on a repetitive timesharing basis, of multiple data sources for transmitting or recording, or both, on a single channel.

- RT commutators
 - interpolation
 - switching theory

commutators

DEF Devices used to accomplish time division multiplexing by repetitive sequential switching.

- GS **commutators**
 - . decommutators
- RT armatures
 - commutation
 - distributors
 - electric contacts
 - electric motors
- ∞ rotating electrical machines
 - rotating generators

commuter aircraft

(added October 1988)

- GS passenger aircraft
 - . **commuter aircraft**
 - .. ATR-72 aircraft
- RT air transportation
- ∞ aircraft
 - commercial aircraft

general aviation aircraft

compact disk read-only memory devices

USE **optical disks**

compact galaxies

(added November 1988)

- GS celestial bodies
 - . galaxies
 - .. **compact galaxies**
- RT galactic structure

compacting

- RT agglomeration
 - cold pressing
 - densification
 - hot isostatic pressing
 - hot pressing
 - powder metallurgy
 - presses
- ∞ pressing
 - pressing (forming)
 - vibration

compactness

USE **void ratio**

companding

DEF A process in which compression is followed by expansion, as in noise reduction systems.

- RT frequency modulation
 - modulation
 - radio transmission
 - signal processing
 - signal to noise ratios

companion stars

- GS celestial bodies
 - . stars
 - .. double stars
 - ... binary stars
 - **companion stars**
 - Nemesis (star)
- RT brown dwarf stars
 - parallax
 - stellar motions
 - triple stars
 - variable stars
 - x ray binaries

comparator circuits

- GS circuits
 - . **comparator circuits**
- RT clipper circuits
 - delay circuits
 - discrimination
 - time discrimination

comparators

DEF In computer operations, devices or circuits for comparing information from two sources.

- GS measuring instruments
 - . **comparators**
- RT anticoincidence detectors
 - discriminators
 - error signals
 - harmonic generators
 - monochromators
 - reflectometers

comparison

- RT analogies
 - cost analysis
 - Earth analogs
 - economic analysis
 - estimates
 - evaluation
 - examination
 - intercalibration
 - matching
 - pattern registration
 - ranking

compartmentation

USE **compartments**

compartments

- UF *compartmentation*
- GS **compartments**

- . air locks
 - .. airlock modules
- . aircraft compartments
- . command modules
- . pressurized cabins
- . spacecraft cabins
- . test chambers
 - .. anechoic chambers
 - .. pressure chambers
 - ... hyperbaric chambers
 - ... vacuum chambers
 - .. reverberation chambers
- RT bays (structural units)
 - ∞ cells
 - crew experiment stations
 - crew observation stations
 - crew workstations
 - enclosures
 - modules
 - rooms
 - space station modules
 - spacecraft modules

COMPASS (programming language)

- GS languages
 - . programming languages
 - .. Assembly language
 - ... **COMPASS (programming language)**
- RT compilers
 - computer programming

compasses

DEF Instruments for indicating a horizontal reference direction, specifically, magnetic compasses.

- GS measuring instruments
 - . indicating instruments
 - .. **compasses**
 - ... gyrocompasses
 - ... magnetic compasses
 - ... solar compasses
 - navigation aids
 - . navigation instruments
 - .. **compasses**
 - ... gyrocompasses
 - ... magnetic compasses
 - ... solar compasses
- RT aircraft instruments
 - beacons
 - buoys
 - flight instruments
 - radar beacons
 - radio direction finders
 - transits

compatibility

DEF A characteristic ascribed to a major subsystem that indicates it functions well in the overall system. Also applied to the overall system with reference to how well its various subsystems work together, as in 'the vehicle has good compatibility.' Also applied to materials which can be used in conjunction with other materials and not react with each other under normal operating conditions.

- GS **compatibility**
 - . biocompatibility
 - . chemical compatibility
 - . electromagnetic compatibility
 - . systems compatibility
- RT acceptability
 - affinity
 - conventions
 - permissivity
 - stability
 - suitability
 - versatility

∞ **compensation**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT allowances
 - errors
 - image motion compensation
 - instrument compensation
 - temperature compensation

transient response

compensators

- RT balance
- bias
- compulsators
- error signals
- feedback
- loop transfer recovery
- video equipment

compensatory tracking

- GS tracking (position)
- . **compensatory tracking**
- RT infrared tracking
- optical tracking
- radar tracking

competition

- RT athletes
- human performance
- human reactions
- physical fitness

compilation (computers)

USE **compilers**

compiler programs

USE **compilers**

compilers

- SN (PROGRAM-MAKING ROUTINES FOR DIGITAL COMPUTERS)
- UF *compilation (computers)*
- compiler programs*
- GS computer programs
- . **compilers**
- RT assembler routines
- autocoders
- C (programming language)
- collating
- COMPASS (programming language)
- computer program integrity
- computer systems programs
- data conversion routines
- disk operating system (DOS)
- FORTTRAN
- operating systems (computers)
- parsing algorithms
- Pascal (programming language)
- PL/1
- programmed instruction
- subroutines

∞ **complement**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF An angle equal to 90 deg. minus a given angle. The true complement of any quantity in positional notation, i.e. the quantity which, when added to the first quantity, gives the least quantity containing one more place. The base-minus-one complement of any quantity in positional notation; i.e., the quantity which when added to the first quantity containing the same number of places.

- RT complement (biology)
- complements (mathematics)
- personnel

complement (biology)

- RT ∞ biology
- ∞ complement
- hemolysis

complementary DNA

(added August 2004)

- GS acids
- . nucleic acids
- . . deoxyribonucleic acid
- . . . **complementary DNA**
- biopolymers
- . nucleic acids
- . . deoxyribonucleic acid
- . . . **complementary DNA**
- organic compounds
- . nucleic acids
- . . deoxyribonucleic acid

. . . **complementary DNA**

complementary metal oxide semiconductors

USE **CMOS**

complements (mathematics)

- RT angles (geometry)
- ∞ complement
- ∞ logic

completeness

- RT achievement
- computer program integrity
- integrity

complex compounds

DEF Chemical compounds in which part of the molecular bonding is of the coordinate type.

- RT ∞ chemical compounds
- molecular structure
- transition metals

complex numbers

- RT geometry
- integers
- ∞ numbers
- real numbers

complex systems

- RT parameter identification
- reliability engineering
- system identification
- ∞ systems
- systems analysis

complex variables

- GS analysis (mathematics)
- . **complex variables**
- . . Airy function
- . . analytic functions
- . . . entire functions
- . . . Bessel functions
- . . . Hankel functions
- . . Cauchy integral formula
- . . conformal mapping
- . . conjugates
- . . . conjugate points
- . . exponential functions
- . . . logarithms
- . . gamma function
- . . harmonic functions
- . . hyperbolic functions
- . . hypergeometric functions
- . . Laguerre functions
- . . Legendre functions
- . . Liouville theorem
- . . Mathieu function
- . . meromorphic functions
- . . . elliptic functions
- . . . rational functions
- . . nonholonomic equations
- . . orthogonal functions
- . . . Walsh function
- . . Schwarz-Christoffel transformation
- . . singularity (mathematics)
- . . . naked singularities
- . . spherical harmonics

- RT aperiodic functions
- complexity
- dependent variables
- Euler-Cauchy equations
- functional analysis
- Joukowski transformation
- maximum principle
- real variables
- Schauder fixpoint theorem
- stability derivatives
- Theodorsen transformation
- uniqueness theorem
- ∞ variable

complexity

- UF *complication*
- GS **complexity**
- . task complexity
- RT complex variables
- feedback
- ∞ performance

statistical distributions

compliance (elasticity)

USE **modulus of elasticity**

complication

USE **complexity**

component reliability

- GS reliability
- . **component reliability**
- RT aircraft reliability
- circuit reliability
- cumulative damage
- process control (industry)
- quality control
- retirement for cause
- spacecraft reliability
- structural reliability
- systems health monitoring

∞ **components**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF An article which is a self-contained element of a complete operating unit and performs a function necessary to the operation of that unit. Used for parts.

UF *parts*

- RT accessories
- antenna components
- assemblies
- computer components
- content
- engine parts
- fractions
- ingredients
- missile components
- modules
- redundant components
- segments
- spacecraft components
- spare parts
- structural members
- subassemblies

composite functions

- GS analysis (mathematics)
- . real variables
- . . **composite functions**
- functions (mathematics)
- . **composite functions**

composite materials

DEF Structural materials of metals, ceramics, or plastics with built-in strengthening agents which may be in the form of filaments, foils, powders, or flakes of a different compatible material. Used for composites and pyrographalloy.

UF *composites*

pyrographalloy

GS **composite materials**

- . Boral
- . boron reinforced materials
- . . aluminum boron composites
- . . boron-epoxy composites
- . carbon-carbon composites
- . ceramic matrix composites
- . . carbon-silicon carbide composites
- . cermets
- . composite propellants
- . fiber composites
- . . aramid fiber composites
- . . braided composites
- . . carbon fiber reinforced plastics
- . . . carbon-phenolic composites
- . . glass fiber reinforced plastics
- . . woven composites
- . functionally gradient materials
- . glassy carbon
- . hybrid composites
- . metal matrix composites
- . . aluminum boron composites
- . . aluminum graphite composites
- . . Borsic (tradename)
- . . eutectic composites
- . particulate reinforced composites
- . plywood
- . polymer matrix composites

composite propellants

- . . epoxy matrix composites
- . . . boron-epoxy composites
- . . . graphite-epoxy composites
- . . graphite-polyimide composites
- . . reinforced plastics
- . . . carbon fiber reinforced plastics
- . . . carbon-phenolic composites
- . . . glass fiber reinforced plastics
- . . . micarta
- . resin matrix composites
- . . boron-epoxy composites
- . . carbon-phenolic composites
- . . graphite-epoxy composites
- . superhybrid materials
- . . graphite-epoxy composites
- . nanocomposites
- . three dimensional composites
- . whisker composites
- RT aircraft construction materials
- airframe materials
- aramid fibers
- bimetals
- boron fibers
- carbon fibers
- chemical vapor infiltration
- cladding
- coatings
- ∞ construction materials
- E glass
- fiber orientation
- fiber pullout
- fiber pushout
- fiber volume fraction
- fiber-matrix interfaces
- fibers
- insulation
- interlaminar stress
- laminates
- lay-up
- low density research
- ∞ materials
- ∞ matrices
- matrix materials
- metals
- micromechanics
- mixtures
- modular ratios
- monotectic alloys
- multilayer insulation
- ply orientation
- powder metallurgy
- preforms
- prepregs
- reinforcement (structures)
- reinforcing fibers
- reinforcing materials
- resin film infusion
- resin transfer molding
- rigid structures
- ∞ rovings
- S glass
- sandwich structures
- sheet molding compounds
- smart materials
- solid suspensions
- spiral wrapping
- stacking sequence (composite materials)
- thermosetting resins

composite propellants

DEF Solid rocket propellants consisting of a fuel and an oxidizer neither of which would burn without the presence of the other.

- GS composite materials
- . **composite propellants**
- propellants
- . solid propellants
- . . **composite propellants**

- RT case bonded propellants
- double base propellants
- double base rocket propellants
- explosives
- fuel production
- plastic propellants
- plastisols
- polysulfides
- polyurethane resins
- propellant additives

- propellant binders
- solid rocket propellants

composite structures

- GS **composite structures**
- . laminates
- . . Boral
- . . plywood
- RT boron-epoxy composites
- ceramic matrix composites
- clamped structures
- functionally gradient materials
- glass fiber reinforced plastics
- honeycomb cores
- honeycomb structures
- hybrid structures
- lay-up
- pultrusion
- resin film infusion
- sheet molding compounds
- smart structures
- steel structures
- ∞ structures

composite wrapping

- RT ceramic fibers
- fiber composites
- filament winding
- isotensoid structures
- spiral wrapping
- ∞ wrap

composites

USE **composite materials**

∞ composition

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT composition (property)
- content
- formulations
- ingredients
- stoichiometry

composition (property)

- GS **composition (property)**
- . atmospheric composition
- . . atmospheric moisture
- . . ionospheric composition
- . body composition (biology)
- . chemical composition
- . . carbon dioxide concentration
- . . stellar composition
- . . concentration (composition)
- . . atom concentration
- . . carbon dioxide concentration
- . . fiber volume fraction
- . . low concentrations
- . . mascons
- . . meteoroid concentration
- . . moisture content
- . . . atmospheric moisture
- . gas composition
- . . carbon dioxide concentration
- . isotope ratios
- . lunar composition
- . meteoritic composition
- . planetary composition
- . plasma composition

- RT ∞ composition
- gradients
- Henry law
- lumping
- mixtures
- Raoult law
- solutions
- stoichiometry

composting

- GS disposal
- . waste disposal
- . . **composting**
- management
- . waste management
- . . waste disposal
- . . . **composting**
- RT garbage
- metabolic wastes
- shredding
- solid wastes

- waste treatment
- waste utilization

compound A

- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **compound A**
- . halides
- . . fluorides
- . . . **compound A**
- RT ∞ chemical compounds

compound helicopters

- GS V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . **compound helicopters**
- S-67 helicopter
- RT aeronautical engineering
- air transportation
- ∞ aircraft
- aircraft configurations
- aircraft design
- helicopter design
- short takeoff aircraft
- vertical takeoff aircraft

compounding

- UF *milling (mixing)*
- GS mixing
- . **compounding**
- RT colloidizing
- dissolving
- grinding (comminution)
- homogenizing
- ∞ milling

∞ compounds

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
- potting compounds

compressed air

- GS gases
- . gas mixtures
- . . air
- . . . **compressed air**
- mixtures
- . solutions
- . . gas mixtures
- . . . air
- **compressed air**
- RT compressors
- drills
- energy storage
- man operated propulsion systems
- oxygen supply equipment
- pneumatic equipment
- ∞ pumping

compressed gas

DEF Any gaseous materials or mixtures having a container pressure exceeding 40 psi at 70 degrees F, or 104 psi at 130 degrees F. Compressed gases are further defined as flammable or nonflammable.

- GS gases
- . **compressed gas**
- . . high pressure oxygen
- RT compressors
- gas pressure
- pneumatic control

compressed video

USE **video compression**

compressibility

DEF The property of a substance, as air, by virtue of which its density increases with increase in pressure.

- GS mechanical properties
- . **compressibility**
- RT bulk modulus
- compressible flow
- compressive strength
- density (mass/volume)
- equations of state
- Gruneisen constant

hydroelasticity
 incompressibility
 metal powder
 porosity
 powder (particles)

compressibility effects
 RT buffeting
 compressible flow
 ∞ effects
 flutter
 heat transfer
 oscillating flow
 pressure effects
 relaxation (physiology)
 secondary flow
 supersonic flow
 transonic flow

compressible boundary layer
 GS boundary layers
 . **compressible boundary layer**
 RT laminar boundary layer
 three dimensional boundary layer
 turbulent boundary layer

compressible flow
 DEF In aerodynamics, flow at speeds sufficiently high that density changes in the fluid cannot be neglected.
 GS fluid flow
 . **compressible flow**
 . . Ringleb flow
 . . transonic flow
 RT aerodynamics
 air flow
 Cartan space
 compressibility
 compressibility effects
 Crocco method
 gas flow
 Hugoniot equation of state
 hypersonic flow
 incompressible flow
 magnetohydrodynamic flow
 Newton pressure law
 stagnation flow
 stagnation pressure
 stagnation temperature
 subsonic flow
 supersonic flow

compressible fluids
 RT aerodynamic heating
 Crocco method
 fluid power
 ∞ fluids
 hydroelasticity
 ideal fluids
 incompressible fluids
 Maxwell fluids
 method of characteristics
 P waves
 superfluidity

compressing
 UF *recompression*
squeezing
 GS **compressing**
 . plasma compression
 . speech baseband compression
 RT adiabatic conditions
 anvils
 axial compression loads
 blowing
 compressors
 concentrating
 densification
 internal compression inlets
 magnetic compression
 mechanical properties
 metal powder
 piston theory
 ∞ pressing
 pressure
 pressure reduction
 pulse compression
 ∞ pumping
 rarefaction
 squeeze casting

superchargers

compression loads
 GS loads (forces)
 . **compression loads**
 . . axial compression loads
 . . impact loads
 RT aerodynamic loads
 axial loads
 buckling
 compressive strength
 contact loads
 dynamic loads
 edge loading
 kink bands
 kinking
 mechanical properties
 shock loads
 static loads
 structural design criteria
 thrust loads

compression ratio
 DEF In internal combustion engines, the ratio between the volume displaced by the piston plus the clearance space, to the volume of the clearance space.
 GS ratios
 . **compression ratio**
 RT efficiency
 fuel-air ratio

compression testers
 USE **compression tests**

compression tests
 UF *compression testers*
meteorite compression tests
 RT creep tests
 destructive tests
 hardness tests
 impact tests
 load tests
 ∞ materials tests
 static tests
 ∞ tests

compression waves
 DEF In acoustics, waves in an elastic medium which cause an element of the medium to change its volume without undergoing rotation. Mathematically, a compression wave is one whose velocity wave has zero curl.
 GS elastic waves
 . **compression waves**
 RT P waves
 wave rotors

compressive strength
 DEF The maximum load sustained by a standard specimen of a material when subjected to a crushing force.
 GS mechanical properties
 . **compressive strength**
 RT compressibility
 compression loads
 ductility
 elastic properties
 fiber strength
 high strength
 load carrying capacity
 Poisson ratio
 resilience
 shear strength
 ∞ strength
 toughness

compressor blades
 DEF Blades which are either rotor blades or stator blades in axial-flow compressors; sometimes used restrictively (and ambiguously) for compressor rotor blades.
 GS turbomachine blades
 . **compressor blades**
 RT ∞ blades
 centrifugal compressors
 fan blades
 rotating stalls
 rotor blades (turbomachinery)
 stator blades

turbine blades
 turbocompressors
 vanes

compressor efficiency
 GS efficiency
 . **compressor efficiency**
 RT power efficiency
 thermodynamic efficiency

compressor rotors
 GS rotating bodies
 . rotors
 . . **compressor rotors**
 RT centrifugal compressors
 compressors
 ∞ fans
 impellers
 rotor blades (turbomachinery)
 turbine wheels
 turbocompressors

compressors
 SN (EXCLUDES DATA COMPRESSORS)
 DEF Machines for compressing air or other fluids.
 GS **compressors**
 . centrifugal compressors
 . superchargers
 . supersonic compressors
 . transonic compressors
 . turbocompressors
 RT air conditioning equipment
 blowers
 compressed air
 compressed gas
 compressing
 compressor rotors
 condensers (liquefiers)
 coolers
 ∞ fans
 refrigerating machinery
 stators
 turbomachinery
 vacuum pumps
 vaneless diffusers

Compton effect
 DEF The decrease in frequency and increase in wavelength of x rays or gamma rays when scattered by free electrons.
 GS scattering
 . **Compton effect**
 RT coherent scattering
 ∞ effects
 inelastic scattering
 nuclear reactions
 photoelectricity
 Sunyaev-Zeldovich effect

Compton Gamma Ray Observatory
 USE **Gamma Ray Observatory**

compulsators
 DEF Compensated pulsed alternators, i.e., single phased alternators designed for pulsed power duty with air gap armature windings and air gap compensating windings.
 RT AC generators
 compensators
 electric power supplies
 pulse generators

computation
 UF *calculation*
 GS **computation**
 . computational geometry
 . orbit calculation
 . . minimum variance orbit
 determination
 . . orbital position estimation
 . quantum computation
 RT addition
 ∞ applications of mathematics
 arithmetic
 calculators
 computational astrophysics
 computational electromagnetics
 computational fluid dynamics
 computers

- data processing
- data reduction
- dividing (mathematics)
- flux vector splitting
- ∞ formulas
- ill-conditioned problems (mathematics)
- interpolation
- linear prediction
- multiplication
- subtraction
- sums
- systolic arrays

computational aeroacoustics

(added November 2008)

DEF Computational methods used for the numerical simulation of acoustic fields generated by and interacting with fluid flows.

- GS acoustics
 - . aeroacoustics
 - . . **computational aeroacoustics**
 - analysis (mathematics)
 - . numerical analysis
 - . . **computational aeroacoustics**
- RT aerodynamic noise
 - boundary conditions
 - computational fluid dynamics
 - Flowcs Williams-Hawkings equation
 - finite difference theory
 - noise prediction (aircraft)
 - sound waves
 - wave propagation

computational aerodynamics

(added April 1997)

USE **computational fluid dynamics**

computational astrophysics

- GS analysis (mathematics)
 - . numerical analysis
 - . . **computational astrophysics**
 - astrophysics
 - . **computational astrophysics**
- RT computation
 - computerized simulation
 - laboratory astrophysics
 - mathematical models
- ∞ science

computational chemistry

DEF A complementary method for determining properties of gases, solids, and their interactions from first principle calculations. It extends testing capabilities to realms that are too dangerous or too costly to obtain experimentally.

- GS analysis (mathematics)
 - . numerical analysis
 - . . **computational chemistry**
- RT ∞ chemistry
 - computer techniques
 - computerized simulation
 - configuration interaction
 - physical chemistry
 - self consistent fields
- ∞ tests

computational electromagnetics

(added March 1995)

- GS analysis (mathematics)
 - . numerical analysis
 - . . **computational electromagnetics**
- RT computation
 - computational fluid dynamics
 - electromagnetism
 - finite difference time domain method
 - meshfree methods
 - parallel processing (computers)
 - perfectly matched layers
 - radar cross sections

computational fluid dynamics

DEF The field of study concerned with the application of high-speed digital computers to solve the complete nonlinear partial differential equations governing viscous fluid flows.

- UF *computational aerodynamics*
- GS analysis (mathematics)
 - . numerical analysis

- . . **computational fluid dynamics**
- mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . **computational fluid dynamics**
- RT Baldwin-Lomax turbulence model
 - BGK model
 - Burnett equations
 - computation
 - computational aeroacoustics
 - computational electromagnetics
 - computational mechanics
 - convection-diffusion equation
 - direct numerical simulation
- ∞ dynamics
 - equations of motion
 - finite element method
 - flow deflection
 - flow equations
 - flux difference splitting
 - flux vector splitting
 - Godunov method
 - grid generation (mathematics)
 - hydrodynamic coefficients
 - interactional aerodynamics
 - k-epsilon turbulence model
 - k-omega turbulence model
 - large eddy simulation
 - meshfree methods
 - multiblock grids
 - multigrid methods
 - Navier-Stokes equation
 - numerical flow visualization
 - panel method (fluid dynamics)
 - relaxation method (mathematics)
 - Reynolds averaging
 - space-time CE/SE method
 - spectral methods
 - structured grids (mathematics)
 - turbulence models
 - TVD schemes
 - unstructured grids (mathematics)
 - upwind schemes (mathematics)
 - vortex in cell technique
 - vortex lattice method

computational geometry

(added August 1988)

- GS computation
 - . **computational geometry**
 - geometry
 - . **computational geometry**
- RT computer aided design
 - Voronoi diagrams

computational grids

- UF *grids (mathematics)*
- mesh (mathematics)*
- GS coordinates
 - . **computational grids**
 - . . structured grids (mathematics)
 - . . . multiblock grids
 - . . . unstructured grids (mathematics)
- RT grid generation (mathematics)
 - grid refinement (mathematics)
- ∞ grids
 - mathematical models
 - multigrid methods
 - numerical analysis
 - perfectly matched layers
 - problem solving
 - three dimensional models

computational grids (computer networks)

(added December 2003)

USE **grid computing (computer networks)**

computational mechanics

(added June 2008)

DEF The discipline concerned with the development and application of numerical and scientific computing methods to study phenomena governed by the principles of mechanics.

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **computational mechanics**
 - mechanics (physics)
 - . **computational mechanics**

- RT boundary element method
 - computational fluid dynamics
 - computerized simulation
 - continuum mechanics
 - finite element method
 - fracture mechanics
 - mathematical models
 - meshfree methods
 - solid mechanics
 - structural analysis

computer aided design

DEF The use of the computer in design work. Used for CAD (design), computer aided engineering, and computerized design.

- UF *CAD (design)*
- computer aided engineering*
- computerized design*
- GS computer techniques
 - . **computer aided design**
 - . . IPAD
- RT aircraft design
 - amplifier design
 - computational geometry
 - computer graphics
 - computerized simulation
- ∞ design
 - design optimization
 - drafting machines
 - engine design
 - helicopter design
 - human-computer interface
 - lens design
 - lofting
 - logic design
 - missile design
 - multidisciplinary design optimization
 - rapid prototyping
 - reactor design
 - robotics
 - satellite design
 - spacecraft design
 - structural design
 - structured programming
 - three dimensional models

computer aided engineering

USE **computer aided design**

computer aided manufacturing

DEF Interactive computing in support of manufacturing. Used for CAM (manufacturing).

- UF *CAM (manufacturing)*
- GS computer techniques
 - . **computer aided manufacturing**
 - manufacturing
 - . **computer aided manufacturing**
- RT computer graphics
 - computerized simulation
 - group technology (manufacturing)
 - rapid prototyping
 - robotics

computer aided mapping

DEF Creating data bases of topographic and man-made features for the production of traditional maps and digital maps. Resultant digital maps have great flexibility and can be easily updated. The user can select the appropriate scale, view selected features, and view any desired area.

- GS computer techniques
 - . **computer aided mapping**
 - mapping
 - . **computer aided mapping**
- RT computer graphics
 - computerized simulation
 - maps
 - robotics

computer aided tomography

- UF *CAT scanner*
- GS computer techniques
 - . **computer aided tomography**
 - imagery
 - . radiography
 - . . tomography
 - . . . **computer aided tomography**
- RT computer graphics

image processing

remote consoles

terrorism

computer animation

- GS arts
 - . graphic arts
 - . . animation
 - . . . **computer animation**
- computer graphics
 - . **computer animation**
- computer techniques
 - . **computer animation**
- RT computerized simulation
 - motion pictures

computer architecture

USE **architecture (computers)**

computer assisted instruction

DEF The use of a computer to present instructional material and to accept and evaluate student responses.

- UF CAI
- GS computer techniques
 - . **computer assisted instruction**
- education
 - . programmed instruction
 - . . **computer assisted instruction**
- RT language programming
 - symbolic programming

computer bulletin boards

USE **electronic bulletin boards**

computer codes

USE **computer programs**

computer compatible tapes

- DEF Machine readable tapes.
- GS computer components
 - . computer storage devices
 - . . **computer compatible tapes**
 - magnetic tapes
 - . **computer compatible tapes**
- RT computers
 - data processing equipment
 - digital computers
- ∞ tapes

computer components

- GS **computer components**
 - . adding circuits
 - . central processing units
 - . . arithmetic and logic units
 - . . RISC processors
 - . chips (memory devices)
 - . computer storage devices
 - . . bubble memory devices
 - . . buffer storage
 - . . computer compatible tapes
 - . . cryogenic computer storage
 - . . delay lines (computer storage)
 - . . magnetic disks
 - . . magnetic drums
 - . . optical disks
 - . . random access memory
 - . . . carbon nanotube based memory
 - . . . core storage
 - . . . read-only memory devices
 - . . . CD-ROM
 - . . registers (computers)
 - . . . accumulators (computers)
 - . microprocessors
 - . . Intel 8080 microprocessor
 - . peripheral equipment (computers)
 - . printers (data processing)
 - . . remote consoles
 - . shift registers
 - RT architecture (computers)
 - binary to decimal converters
 - ∞ components
 - computers
 - consoles
 - control units (computers)
 - counters
 - decimal to binary converters
 - digital electronics
 - firmware
 - logical elements

computer conferencing

(added September 1993)

DEF A form of teleconferencing that allows one or more users to exchange messages on a computer network.

- GS telecommunication
 - . teleconferencing
 - . . **computer conferencing**
- RT communicating
 - communication
 - electronic bulletin boards
 - electronic mail
 - electronic publishing
 - World Wide Web

computer design

- SN (DESIGN OF COMPUTERS--EXCLUDES COMPUTERIZED DESIGN AND SYSTEMS ENGINEERING)
- RT architecture (computers)
 - chips (electronics)
 - computers
 - ∞ design
 - fluid logic
 - hardware description languages
 - logic design
 - memory (computers)
 - microprocessors
 - MIMD (computers)
 - optical computers
 - product development
 - read-only memory devices
 - SIMD (computers)

computer graphics

DEF The technique of combining computer calculations with various display devices, printers, plotters, etc. to render information in graphical or pictorial format. Used for interactive graphics.

- UF *interactive graphics*
- GS **computer graphics**
 - . computer animation
- RT computer aided design
 - computer aided manufacturing
 - computer aided mapping
 - computer aided tomography
 - computers
 - data processing terminals
 - display devices
 - graphical user interface
 - IBM personal computers
 - Macintosh personal computers
 - multimedia
 - plotters
 - raster scanning
 - remote consoles
 - scene generation
 - scientific visualization
 - tomography
 - windows (computer programs)

computer information security

DEF Protective measures to prevent destruction, larceny, and/or unauthorized use of information in computerized files. Used for computer security.

- GS security
 - . computer security
 - . . **computer information security**
- RT access control
 - computer viruses
 - cryptography
 - data processing
 - disk operating system (DOS)
 - electronic commerce
 - firewalls (computers)
 - information resources management
 - operating systems (computers)
 - privacy
 - quantum cryptography
 - selective dissemination of information
 - steganography

computer methods

USE **computer programs**

computer networks

DEF The interconnection of two or more computers for the mutual or individual processing of data to and from a multitude of terminals or stations by utilizing appropriate switching techniques, transmission systems, or miniprocessors.

- GS networks
 - . **computer networks**
 - . . internets
 - . . . ARPA computer network
 - . . . World Wide Web
 - . . client server systems
 - . . local area networks
 - . . wide area networks
- RT Aloha system
 - carrier sense multiple access
 - computer security
 - distributed interactive simulation
 - distributed processing
 - electronic mail
 - Ethernet
 - firewalls (computers)
 - grid computing (computer networks)
 - interprocessor communication
 - intrusion detection (computers)
 - network control
 - protocol (computers)
 - service oriented architecture
 - VSAT (network)

computer program integrity

DEF The completeness of a program to execute its intended function.

- GS integrity
 - . **computer program integrity**
 - reliability
 - . software reliability
 - . . **computer program integrity**
- RT compilers
 - completeness
 - computer viruses
 - computers
 - digital computers
 - errors
 - programs
 - redundancy
 - security

computer program reliability

USE **software reliability**

computer programming

DEF The preparation of a formalized sequence of instructions that can be recognized and implemented by a computer.

- UF *Legendre code*
- GS **computer programming**
 - . assembler routines
 - . language programming
 - . logic programming
 - . microprogramming
 - . multiprogramming
 - . object-oriented programming
 - . on-line programming
 - . parallel programming
 - . structured programming
 - . symbolic programming
- RT Ada (programming language)
 - addressing
 - ALGOL
 - algorithms
 - APL (programming language)
 - Assembly language
 - autocoders
 - BASIC (programming language)
 - batch processing
 - BCH codes
 - block diagrams
 - C (programming language)
 - coding
 - COMPASS (programming language)
 - computer viruses
 - context free languages
 - data structures

computer programs

- digital techniques
- expert systems
- file maintenance (computers)
- firmware
- flow charts
- formalism
- format
- Forth (programming language)
- FORTRAN
- HAL/S (language)
- heuristic methods
- kinoforn
- linear programming
- LISP (programming language)
- logic design
- machine-independent programs
- MAP (programming language)
- MIMD (computers)
- natural language (computers)
- numerical analysis
- open source licensing (computers)
- Pascal (programming language)
- PL/1
- program verification (computers)
- programmed instruction
- programmers
- ∞ programming
- programming environments
- programming languages
- Prolog (programming language)
- real time operation
- response time (computers)
- reverse engineering
- RISC processors
- run time (computers)
- sequential control
- SIMD (computers)
- software engineering
- software reliability
- software reuse
- systems analysis
- theorem proving
- time sharing
- UNIX (operating system)

computer programs

- UF *computer codes*
- computer methods*
- software (computers)*
- GS **computer programs**
 - . applications programs (computers)
 - . . NASTRAN
 - . . spreadsheets
 - . . web services
 - . compilers
 - . computer systems programs
 - . . assembler routines
 - . . input/output routines
 - . . operating systems (computers)
 - . . . disk operating system (DOS)
 - . . . UNIX (operating system)
 - . . subroutine libraries (computers)
 - . editing routines (computers)
 - . machine-independent programs
 - . merging routines
 - . multiple output programs
 - . object programs
 - . software development tools
 - . source programs
 - . subroutines
- RT algorithms
- Assembly language
- batch processing
- block diagrams
- coding
- computer viruses
- computers
- data conversion routines
- data flow analysis
- data processing
- data transfer (computers)
- digital computers
- error detection codes
- fixed point arithmetic
- floating point arithmetic
- Goddard Trajectory Determination System
- IBM personal computers
- instruction sets (computers)

- intellectual property
- laser guidance
- machine translation
- Macintosh personal computers
- modularity
- NASA Interactive Planning System
- numerical control
- on-line systems
- programmed instruction
- programming environments
- programs
- report generators
- ∞ routines
- software engineering
- software reliability
- software reuse
- structured programming
- ∞ translators
- user manuals (computer programs)

computer security

(added February 2003)

DEF Measures and controls taken to prevent unauthorized access, misuse, or destruction of computer systems and networks, software, or the information stored in computer files.

- GS security
 - . **computer security**
 - . . computer information security
 - . . firewalls (computers)
 - . . intrusion detection (computers)
- RT access control
- computer networks
- computer systems design
- computer viruses
- internets
- protocol (computers)

computer simulation

USE **computerized simulation**

computer storage devices

- UF *machine storage*
- GS computer components
 - . **computer storage devices**
 - . . bubble memory devices
 - . . buffer storage
 - . . computer compatible tapes
 - . . cryogenic computer storage
 - . . delay lines (computer storage)
 - . . magnetic disks
 - . . magnetic drums
 - . . optical disks
 - . . random access memory
 - . . . carbon nanotube based memory
 - . . . core storage
 - . . . read-only memory devices
 - . . . CD-ROM
 - . . registers (computers)
 - . . . accumulators (computers)
- RT acoustic delay lines
- associative memory
- cards
- central processing units
- ∞ channels
- cryosar
- ∞ equipment
- flip-flops
- hole burning
- magnetic storage
- memory (computers)
- microprocessors
- optical memory (data storage)
- parametrons
- peripheral equipment (computers)
- punched cards
- punched tapes
- random access
- shift registers
- ∞ storage
- thin films

computer systems design

- GS systems engineering
 - . **computer systems design**
- RT client server systems
- computer security
- concurrent processing
- ∞ design
- disk operating system (DOS)

- distributed processing
- firewalls (computers)
- interprocessor communication
- man machine systems
- operating systems (computers)
- peripheral equipment (computers)
- programmable logic devices
- read-only memory devices
- relational data bases
- service oriented architecture
- software development tools
- software engineering
- ∞ systems
- virtual memory systems

computer systems performance

DEF The efficiency and reliability that characterize the real operation of the system.

- RT consistency
- data sampling
- efficiency
- evaluation
- operator performance
- output
- ∞ performance
- performance tests
- quality
- reliability
- response time (computers)
- RISC processors
- software reliability
- ∞ systems

computer systems programs

- GS computer programs
 - . **computer systems programs**
 - . . assembler routines
 - . . input/output routines
 - . . operating systems (computers)
 - . . . disk operating system (DOS)
 - . . . UNIX (operating system)
 - . . subroutine libraries (computers)
- RT algorithms
- application programming interface
- Assembly language
- autocoders
- compilers
- computer viruses
- computers
- data flow analysis
- data processing
- digital computers
- editing routines (computers)
- error detection codes
- report generators
- ∞ routines
- software engineering
- ∞ systems
- systems analysis

computer systems simulation

DEF Forecasting of computer requirements by the use of predictive modeling and estimating computer workloads.

- GS simulation
 - . systems simulation
 - . . **computer systems simulation**
- RT analog simulation
- data processing equipment
- digital simulation
- hardware description languages
- mathematical models
- operations research
- simulators
- ∞ systems
- systems analysis

computer techniques

- GS **computer techniques**
 - . computer aided design
 - . . IPAD
 - . . computer aided manufacturing
 - . . computer aided mapping
 - . . computer aided tomography
 - . . computer animation
 - . . computer assisted instruction
- RT adaptive optics
- ARPA computer network
- backpropagation (artificial intelligence)
- belief networks

computational chemistry
 computers
 decision support systems
 flight management systems
 knowledge based systems
 management information systems
 management methods
 management systems
 microprocessors
 NASTRAN
 numerical differentiation
 on-line systems
 parsing algorithms
 personal computers
 sorting algorithms
 spreadsheets
 word processing

computer viruses*(added March 1989)*

RT computer information security
 computer program integrity
 computer programming
 computer programs
 computer security
 computer systems programs
 intrusion detection (computers)
 software engineering

computer vision

DEF Capability of computers to analyze and act on visual input.

UF *machine vision*

RT artificial intelligence

∞ automation

edge detection

Gabor filters

optical flow (image analysis)

pattern recognition

position sensing

robot sensors

robotics

robots

*computerized control*USE **numerical control***computerized design*USE **computer aided design****computerized simulation**

DEF Computer-calculated representation of a process, device, or concept in mathematical form. Used for ARIP (impact prediction), automatic rocket impact predictors, computer simulation, and IP (impact prediction).

UF *ARIP (impact prediction)**automatic rocket impact predictors**computer simulation**IP (impact prediction)*

GS simulation

. **computerized simulation**

.. analog simulation

.. digital simulation

.. distributed interactive simulation

RT algorithms

altitude simulation

computational astrophysics

computational chemistry

computational mechanics

computer aided design

computer aided manufacturing

computer aided mapping

computer animation

computers

control simulation

differential analyzers

flight simulation

hardware-in-the-loop simulation

highly maneuverable aircraft

hydraulic analogies

landing simulation

Lennard-Jones potential

mathematical models

∞ missile simulators

molecular dynamics

motion simulators

multiscale models

numerical flow visualization

numerical weather forecasting

operations research
 scientific visualization
 simulated annealing
 systems simulation
 target simulators
 three dimensional models
 two dimensional models
 virtual reality

computers

GS data processing equipment

. **computers**

.. analog computers

... EAI 680 computer

... Honeywell 600/6000 computer

... SIGMA 5 computer

... Univac 1100 series computers

... Univac 1105 computer

... Univac 1106 computer

... Univac 1107 computer

... Univac 1108 computer

... Univac 1110 computer

... CDC computers

... CDC 160-A computer

... CDC 1604 computer

... CDC 3100 computer

... CDC 3200 computer

... CDC 3600 computer

... CDC 3800 computer

... CDC 6000 series computers

... CDC 6400 computer

... CDC 6600 computer

... CDC 6700 computer

... CDC 7000 series computers

... CDC 7600 computer

... CDC 8090 computer

... CDC Cyber 170 series computers

... CDC Cyber 175 computer

... CDC Cyber 74 computer

... CDC Cyber 174 computer

... CDC Cyber 203 computer

... CDC Cyber 205 computer

... CDC Star 100 computer

... counting rate computers

... DDP computers

... DDP 516 computer

... digital computers

... CDC 160-A computer

... CDC 1604 computer

... CDC 3100 computer

... CDC 3200 computer

... CDC 3600 computer

... CDC 3800 computer

... CDC 6000 series computers

... CDC 6400 computer

... CDC 6600 computer

... CDC 6700 computer

... CDC 7000 series computers

... CDC 7600 computer

... CDC 8090 computer

... CDC Cyber 170 series computers

... CDC Cyber 175 computer

... CDC Cyber 74 computer

... CDC Cyber 174 computer

... CDC Cyber 203 computer

... CDC Cyber 205 computer

... CDC Star 100 computer

... EAI 680 computer

... EAI 8400 computer

... EAI 8900 computer

... EMR 6050 computer

... Ferranti Mercury computer

... GE computers

... GE 625 computer

... GE 635 computer

... Hewlett-Packard computers

... Honeywell computers

... DDP 516 computer

... Honeywell 600/6000 computer

... Honeywell ADEPT computer

... Honeywell DDP 116 computer

... IBM 360 computer

... IBM 370 computer

... IBM 650 computer

... IBM 704 computer

... IBM 709 computer

... IBM 1130 computer

... IBM 1401 computer

... IBM 1410 computer

... IBM 1620 computer
 ... IBM 2250 computer
 ... IBM 7030 computer
 ... IBM 7040 computer
 ... IBM 7044 computer
 ... IBM 7070 computer
 ... IBM 7074 computer
 ... IBM 7090 computer
 ... IBM 7094 computer
 ... ICL computers
 ... Iliac computers
 ... Iliac 3 computer
 ... Iliac 4 computer
 ... microcomputers
 ... personal computers
 ... IBM personal computers
 ... Macintosh personal computers
 ... minicomputers
 ... Nova computers
 ... Modcomp II computer
 ... Modcomp IV computer
 ... parallel computers
 ... massively parallel processors
 ... Connection Machine
 ... MIMD (computers)
 ... SIMD (computers)
 ... PDP 15 computer
 ... PDP computers
 ... PDP 7 computer
 ... PDP 8 computer
 ... PDP 9 computer
 ... PDP 10 computer
 ... PDP 11 computer
 ... PDP 11/20 computer
 ... PDP 11/40 computer
 ... PDP 11/45 computer
 ... PDP 11/50 computer
 ... PDP 11/70 computer
 ... PDP 12 computer
 ... Philco 2000 computer
 ... Raytheon computers
 ... RCA spectra 70 computer
 ... SDS 900 series computers
 ... SDS 930 computer
 ... SDS 9300 computer
 ... SEL computers
 ... sequential computers
 ... SIGMA 5 computer
 ... SIGMA computers
 ... SIGMA 9 computer
 ... Solomon computers
 ... Univac 1100 series computers
 ... Univac 1105 computer
 ... Univac 1106 computer
 ... Univac 1107 computer
 ... Univac 1108 computer
 ... Univac 1110 computer
 ... Univac 80 computer
 ... Univac 418 computer
 ... Univac 490 computer
 ... Univac 494 computer
 ... Univac 1230 computer
 ... Univac Larc computer
 ... VAX computers
 ... VAX-11 series computers
 ... VAX-11/780 computer
 ... embedded computer systems
 ... airborne/spaceborne computers
 ... hybrid computers
 ... hypercube multiprocessors
 ... IBM computers
 ... IBM 360 computer
 ... IBM 370 computer
 ... IBM 650 computer
 ... IBM 704 computer
 ... IBM 709 computer
 ... IBM 1130 computer
 ... IBM 1401 computer
 ... IBM 1410 computer
 ... IBM 1620 computer
 ... IBM 2250 computer
 ... IBM 7030 computer
 ... IBM 7040 computer
 ... IBM 7044 computer
 ... IBM 7070 computer
 ... IBM 7074 computer
 ... IBM 7090 computer
 ... IBM 7094 computer
 ... IBM personal computers

Comsat program

- . . MINOS computer
- . . optical computers
- . . Pegasus computer
- . . RCA computers
 - . . . RCA spectra 70 computer
 - . . . RCA-110 computers
- . . Siemens 2002 computer
- . . site data processors
- . . supercomputers
 - . . . Connection Machine
 - . . . Cray computers
 - . . . transputers
 - . . . Univac computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - Univac 80 computer
 - Univac 418 computer
 - Univac 490 computer
 - Univac 494 computer
 - Univac 1230 computer
 - Univac Larc computer
- . . quantum computers

RT applications programs (computers)

- arithmetic and logic units
- artificial intelligence
- automata theory
- ∞ automation
 - calculators
 - central processing units
 - computation
 - computer compatible tapes
 - computer components
 - computer design
 - computer graphics
 - computer program integrity
 - computer programs
 - computer systems programs
 - computer techniques
 - computerized simulation
 - control data (computers)
 - control units (computers)
 - cybernetics
 - data converters
 - data processing
 - digital to voice translators
 - file maintenance (computers)
 - fixed point arithmetic
 - floating point arithmetic
 - HAL/S (language)
- ∞ hardware
 - information retrieval
 - information theory
 - Intel 8080 microprocessor
 - logic circuits
 - machine-independent programs
- ∞ machinery
 - memory (computers)
 - multiprocessing (computers)
 - printers (data processing)
 - read-only memory devices
 - real time operation
 - run time (computers)
 - telecommunication
 - vocoders

Comsat program

GS programs

- . **Comsat program**

RT communication satellites

- Early Bird satellites
- Telstar project
- Telstar satellites

ComStar C

DEF The third in a series of Comsat domestic communications satellites launched in a transfer orbit by NASA for COMSAT.

GS artificial satellites

- . communication satellites
- . . Communications Technology Satellite
- . . . **ComStar C**

ComStar satellites

DEF Series of domestic Comsat communication satellites.

GS artificial satellites

- . communication satellites
- . . **ComStar satellites**

RT satellite networks

concatenated codes

DEF Two or more codes which are encoded and decoded in series.

RT binary codes

- ∞ codes
 - coding
 - data transmission
 - decoding
 - error correcting codes
 - redundancy encoding
 - Reed-Solomon codes
 - signal encoding
 - trellis coding

concavity

RT contour sensors

- contours
- convexity
- flatness
- shapes
- ∞ surface geometry

concentrating

RT accumulations

- adsorption
- agglomeration
- beneficiation
- centrifuging
- classifiers
- coagulation
- coalescing
- compressing
- ∞ concentration
 - concentrators
 - condensing
 - crystallization
 - distillation
 - drying
 - enrichment
 - evaporation
 - extraction
 - filtration
 - flocculating
 - flotation
 - percolation
 - precipitation (chemistry)
- ∞ separation
 - separators
 - settling
 - sorption
 - stress concentration
 - upgrading
 - vaporizing

∞ concentration

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The quantity of a substance contained in a unit quantity of sample.

RT concentrating

- concentration (composition)
- crowding
- filtration
- isotopic enrichment

concentration (composition)

UF *volume fraction*

GS composition (property)

- . **concentration (composition)**
- . . atom concentration
- . . carbon dioxide concentration
- . . fiber volume fraction
- . . low concentrations
- . . mascons
- . . meteoroid concentration
- . . moisture content
- . . . atmospheric moisture

RT ∞ concentration

- dilution
- particulate sampling
- purity
- quality
- sampling
- ∞ saturation

solubility

concentrators

GS **concentrators**

- . spirals (concentrators)

RT accumulators

- centrifuges
- classifiers
- ∞ classifying
 - columns (process engineering)
 - concentrating
 - evaporators
 - filtration
 - fluid filters
 - precipitators
 - radiative heat transfer
 - separators
 - size separation
 - sizing screens
 - solar collectors
 - stills
 - thermal radiation
 - traps
 - washers (cleaners)

concentric cylinders

RT ∞ cylinders

- cylindrical shells

concentric spheres

DEF Structures in which the space between the spheres is utilized for experiments involving fluid flow, etc.

GS symmetrical bodies

- . bodies of revolution
- . . spheres
- . . . **concentric spheres**

RT concentricity

concentricity

RT ∞ centers

- concentric spheres
- eccentricity

Concorde aircraft

GS jet aircraft

- . turbofan aircraft
- . . **Concorde aircraft**
- . . Sud Aviation aircraft
- . **Concorde aircraft**
- . supersonic aircraft
- . . supersonic transports
- . . **Concorde aircraft**
- . transport aircraft
- . **Concorde aircraft**

RT ∞ aircraft

concrete structures

DEF Buildings, dams, stadiums, etc., constructed entirely of a mixture of aggregates, water, and Portland cement.

RT aggregates

- breakwaters
- construction
- earthquake resistant structures
- foundations
- ∞ materials
- rigid structures
- ∞ structures
- towers

concretes

DEF Homogeneous mixtures of portland cement, aggregates, and water and which may contain admixtures.

RT admixtures

- aggregates
- cements
- ∞ construction materials
- grout
- insulation
- masonry
- mortars (material)
- pavements
- structural members

concurrent engineering

(added September 1994)

DEF Use of multi-disciplinary teams to perform simultaneous design of products and pro-

duction processes from conception through disposal.

- RT design to cost
- ∞ engineering
- industrial management
- life cycle costs
- multidisciplinary research
- product development
- reliability engineering
- systems engineering
- total quality management
- value engineering

concurrent processing

- GS data processing
- . **concurrent processing**
- RT architecture (computers)
- computer systems design
- MIMD (computers)
- multiprocessing (computers)
- parallel processing (computers)
- SIMD (computers)

condensates

- GS **condensates**
- . Bose-Einstein condensates
- . hydrometeors
- RT Aitken nuclei
- ∞ condensation
- condensers (liquefiers)
- condensing
- contrails
- drop size
- liquefied gases
- plumes
- vapors

∞ condensation

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The physical process by which a vapor becomes a liquid or solid; the opposite of evaporation. Specifically, in meteorology, the transformation from vapor to liquid.
- RT condensates
- condensation nuclei
- condensing
- gas-metal interactions
- liquefaction
- Mayer problem
- rectification

condensation nuclei

DEF Liquid or solid particles upon which condensation of water begins in the atmosphere.

- GS **condensation nuclei**
- . Aitken nuclei
- RT aerosols
- cloud physics
- clouds (meteorology)
- ∞ condensation
- condensing
- drops (liquids)
- ice nuclei
- meteorology
- microparticles
- nucleation
- ∞ nuclei
- rain

condensation pumps

- GS pumps
- . vacuum pumps
- . . **condensation pumps**
- vacuum apparatus
- . vacuum pumps
- . . **condensation pumps**

condensation trails

USE **contrails**

condensed matter physics

- RT Bose-Einstein condensates
- matter (physics)
- negative matter
- ∞ physics

∞ solid state physics

condenser radiators

USE **condensers (liquefiers)**
heat radiators

∞ condensers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT capacitors
- condensers (liquefiers)
- jet condensers
- photographic rectifiers

condensers (liquefiers)

- UF *condenser radiators*
- GS **condensers (liquefiers)**
- . jet condensers
- RT absorbers (equipment)
- air conditioning
- air conditioning equipment
- cold traps
- columns (process engineering)
- compressors
- condensates
- ∞ condensers
- condensing
- cooling fins
- cooling systems
- distillation equipment
- drying apparatus
- evaporators
- exhaust systems
- film condensation
- heat exchangers
- heat pumps
- liquefied gases
- refrigerating machinery
- separators
- spacecraft radiators
- vaporizers

condensing

- UF *gas liquefaction*
- GS **condensing**
- . film condensation
- RT association reactions
- cloud physics
- concentrating
- condensates
- ∞ condensation
- condensation nuclei
- condensers (liquefiers)
- cooling
- dehumidification
- dew point
- distillation
- drop size
- drops (liquids)
- evaporation
- gas-liquid interactions
- gas-metal interactions
- nucleation
- phase change materials
- phase transformations
- refrigerating
- ∞ saturation
- ∞ separation
- sublimation
- supercooling
- supersaturation

conditioned reflexes

- GS reflexes
- . **conditioned reflexes**
- RT conditioning (learning)
- reaction time

conditioned responses

USE **conditioning (learning)**

∞ conditioning

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT beneficium
- conditioning (learning)
- power conditioning

preconditioning

conditioning (learning)

- UF *conditioned responses*
- GS learning
- . **conditioning (learning)**
- RT behavior
- biofeedback
- conditioned reflexes
- ∞ conditioning
- habituation (learning)
- inhibition (psychology)

conditioning (treating)

USE **treatment**

conditions

- GS **conditions**
- . adiabatic conditions
- . boundary conditions
- . . perfectly matched layers
- . chronic conditions
- . flight conditions
- . Kutta-Joukowski condition
- . Lipschitz condition
- . nonadiabatic conditions
- . nonequilibrium conditions
- . runway conditions
- RT in vitro methods and tests
- in vivo methods and tests

Condor missile

- GS missiles
- . air to surface missiles
- . . **Condor missile**

conductance

USE **resistance**

conducting

USE **conduction**

conducting fluids

- SN (EXCLUDES PLASMAS)
- RT conductors
- electrolytes
- ∞ fluids
- magnetohydrodynamics

conducting media

USE **conductors**

conducting polymers

(added January 1990)

- GS conductors
- . electric conductors
- . . **conducting polymers**
- RT dendrimers
- electroactive polymers
- organic semiconductors
- polyacetylene
- polymeric films
- ∞ polymers
- polypyrroles
- semiconductors (materials)

∞ conduction

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The transfer of energy within and through a conductor by means of internal particle of molecular activity and without any net external motion. Used for conducting.
- UF *conducting*
- RT attenuation
- conductive heat transfer
- convection
- electric conductors
- electric power transmission
- heat transfer
- heating
- refraction
- sound propagation
- sound transmission
- thermal conductors
- thermal diffusion
- transmission

conduction bands

wave propagation

conduction bands

DEF A range of states in the energy spectrum of a solid in which electrons can move freely.

GS energy bands

. **conduction bands**

RT band structure of solids

∞ bands

Brillouin zones

electron transitions

Franck-Condon principle

NDM semiconductor devices

polarons

porous silicon

quantum wells

semiconductors (materials)

trapping

conduction electrons

GS particles

. charged particles

. . energetic particles

. . . electrons

. . . . **conduction electrons**

. corpuscular radiation

. . energetic particles

. . . electrons

. . . . **conduction electrons**

. elementary particles

. . fermions

. . . leptons

. . . . electrons

. **conduction electrons**

RT free electrons

quantum wells

valence

conductive heat transfer

UF *heat conduction*

GS transmission

. heat transmission

. . heat transfer

. . . **conductive heat transfer**

RT ∞ conduction

convective heat transfer

laminar heat transfer

thermal conductivity

thermal conductors

∞ conductivity

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The ability to transmit, as electricity, heat, sound, etc. A unit measure of electrical conduction; the facility with which a substance conducts electricity, as represented by the current density per unit electrical-potential gradient in the direction of flow.

RT atmospheric conductivity

electrical properties

electrical resistivity

fluid flow

impedance

ionospheric conductivity

magnetoconductivity

mobility

Ohms law

photoconductivity

plasma conductivity

superconducting power transmission

superconductivity

thermal conductivity

transconductance

transport properties

void ratio

conductivity meters

GS measuring instruments

. **conductivity meters**

. . electrical conductivity meters

conductors

DEF Substances or entities which transmit electricity, heat, or sound. Used for conducting media.

UF *conducting media*

GS **conductors**

. bus conductors

. electric conductors

. . beam leads

. . conducting polymers

. . electric wire

. electrolytes

. . anolytes

. . catholytes

. . ion exchange membrane

electrolytes

. . jumpers

. . molten salt electrolytes

. . nonaqueous electrolytes

. . solid electrolytes

. flat conductors

. . beam leads

. photoconductors

. superconductors (materials)

. . high temperature superconductors

. . . BSCCO superconductors

. . . YBCO superconductors

. . heavy fermion superconductors

. . organic superconductors

. thermal conductors

RT antennas

conducting fluids

exploding wires

metals

nonferrous metals

organic semiconductors

semiconductors (materials)

subreflectors

cones

SN (LIMITED TO MATERIAL OBJECTS)

DEF Geometric configurations having a circular bottom and sides tapering off to an apex (as in nose cones). Used for conical flare and fusiform shapes.

UF *conical flare*

fusiform shapes

GS **cones**

. circular cones

. conical bodies

. . slender cones

. half cones

. Mach cones

. nose cones

. . ablative nose cones

. . rocket nose cones

. shatter cones

RT aerodynamic configurations

bodies of revolution

conical shells

conics

frustums

symmetrical bodies

cones (volcanoes)

UF *cinder cones*

GS geology

. **cones (volcanoes)**

landforms

RT **cones (volcanoes)**

basalt

calderas

craters

effusives

geomorphology

lava

Mars volcanoes

mountains

orography

paleomagnetism

petrology

Rouse belts

volcanoes

volcanology

conferences

UF *congresses*

meetings

proceedings

symposia

RT Committee on Space Research

consulting

conventions

∞ discussion

documentation

documents

papers

reports

Starsite program

teleconferencing

video conferencing

confidence

RT correlation

errors

probability theory

psychological effects

quality control

reliability

risk

statistical analysis

confidence limits

DEF In statistics, the upper and lower extremes of the confidence interval.

RT contingency

estimates

forecasting

maximum likelihood estimates

∞ measurement

null hypothesis

precision

predictions

quality control

range (extremes)

reliability

risk

sampling

significance

standard deviation

statistical analysis

statistical tests

∞ tests

variance (statistics)

configuration interaction

DEF In physical chemistry, the interaction between two different possible arrangements of the electrons in an atom or molecule.

RT computational chemistry

electron orbitals

∞ interactions

intermolecular forces

molecular interactions

molecular structure

∞ structures

configuration management

DEF A discipline applying technical and administrative direction and surveillance to: identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify conformance with specified requirements.

GS management

. **configuration management**

RT ∞ configurations

∞ configurations

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT aerodynamic configurations

aircraft configurations

body-wing and tail configurations

canard configurations

configuration management

launch vehicle configurations

missile configurations

propulsion system configurations

spacecraft configurations

staggering

torpedoes

confinement

RT astronaut performance

containment

isolation

magnetic compression

nuclear reactor control

plasma control

plasma equilibrium

sensory deprivation

confining

RT astronaut performance

- deprivation
isolation
sensory deprivation
- confirmation*
USE **proving**
- confluence*
USE **convergence**
- conformal mapping**
UF *conformal transformations*
GS analysis (mathematics)
. complex variables
. . . **conformal mapping**
functions (mathematics)
. **conformal mapping**
RT coordinate transformations
Euler-Cauchy equations
graphs (charts)
invariant imbeddings
isoparametric finite elements
Jacobi integral
Lighthill method
minimal surfaces
Schwarz-Christoffel transformation
Theodorsen transformation
- conformal transformations*
USE **conformal mapping**
- confusion**
RT entrapment
tangling
- congeners**
RT ∞ chemical compounds
classifications
isomers
muscles
tautomers
- congenital anomalies**
UF *congenital conditions*
RT chromosome aberrations
chromosomes
genetics
heredity
Rhesus factor
- congenital conditions*
USE **congenital anomalies**
- congestion**
RT circulation
ischemia
pneumonia
respiratory diseases
vasodilation
- Congo (Brazzaville)**
UF *Brazzaville*
French Equatorial Congo
GS nations
. **Congo (Brazzaville)**
RT Africa
- Congo (Kinshasa)*
USE **Democratic Republic of Congo**
- congresses*
USE **conferences**
- congressional reports**
UF *proceedings*
GS documents
. **congressional reports**
reports
. **congressional reports**
RT Presidential reports
- congruences**
GS number theory
. **congruences**
RT ∞ coherence
collocation
dividing (mathematics)
geometry
identities
integers
- symmetry
- conical bodies**
UF *conoids*
GS cones
. **conical bodies**
. . slender cones
symmetrical bodies
. bodies of revolution
. . **conical bodies**
. . . slender cones
RT afterbodies
axisymmetric bodies
- conical camber**
GS camber
. **conical camber**
RT wing camber
- conical flare*
USE **cones**
- conical flow**
GS fluid flow
. **conical flow**
RT axisymmetric flow
baffles
∞ diffusers
multiphase flow
separated flow
three dimensional flow
wall flow
wedge flow
- conical inlets**
GS intake systems
. **conical inlets**
RT air intakes
conical nozzles
funnels
- conical nozzles**
RT annular nozzles
conical inlets
convergent nozzles
convergent-divergent nozzles
divergent nozzles
exhaust diffusers
exhaust nozzles
hypersonic nozzles
inlet nozzles
∞ jet nozzles
nozzle geometry
nozzle inserts
nozzle walls
∞ nozzles
plug nozzles
rocket nozzles
skirts
sonic nozzles
spike nozzles
spray nozzles
supersonic nozzles
transonic nozzles
turbine exhaust nozzles
wind tunnel nozzles
- conical scanning**
DEF Scanning in which the direction of maximum radiation generates a cone whose vertex angle is of the order of the beam width. Such scanning may be either rotating of nutating, according as the direction of polarization rotates or remains unchanged.
GS scanning
. **conical scanning**
RT examination
field of view
monitors
panoramic scanning
radar scanning
readers
reading
scanners
searching
surveillance
- conical shells**
GS shells (structural forms)
. **conical shells**
- RT cones
- conics**
GS geometry
. Euclidean geometry
. . analytic geometry
. . . **conics**
. . . . ellipses
. . . . hyperbolas
. . . . parabolas
RT cones
half cones
loci
- conifers**
GS plants (botany)
. trees (plants)
. . **conifers**
RT deciduous trees
forests
timber identification
∞ trees
- coning motion**
(added June 1997)
RT dynamic stability
gyration
∞ motion
motion stability
nutaton
precession
rotation
spin stabilization
tumbling motion
yaw
- conjugate gradient method**
DEF An interactive method for solving a system of linear equations of dimension N which terminates in at most N steps if no rounding errors are encountered. Each iterate will bring one closer to the solution.
GS analysis (mathematics)
. numerical analysis
. . iteration
. . . **conjugate gradient method**
RT algorithms
conjugates
gradients
iterative solution
- conjugate points**
GS analysis (mathematics)
. complex variables
. . conjugates
. . . **conjugate points**
RT lines of force
magnetic fields
- conjugated circuits**
DEF Branches of an electrical network configured so that a change in the electromotive force in either branch does not result in a current change in the other.
GS circuits
. **conjugated circuits**
- conjugates**
GS analysis (mathematics)
. complex variables
. . **conjugates**
. . . conjugate points
RT Cholesky factorization
conjugate gradient method
conjugation
finite element method
- conjugation**
GS **conjugation**
. phase conjugation
. . four-wave mixing
RT conjugates
- ∞ **conjunction**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Boolean algebra
occultation
orbits
probability theory

conjunctiva

set theory

conjunctiva

GS anatomy
. sense organs
. . eye (anatomy)
. . . **conjunctiva**
membranes
. **conjunctiva**
RT conjunctivitis
keratitis
vision

conjunctivitis

GS diseases
. eye diseases
. . **conjunctivitis**
. infectious diseases
. . **conjunctivitis**
RT bacterial diseases
conjunctiva

Connecticut

GS nations
. United States
. . **Connecticut**
RT New Haven (CT)

Connection Machine

(added September 1992)

GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . massively parallel processors
. **Connection Machine**
. . supercomputers
. . . **Connection Machine**
RT architecture (computers)
interprocessor communication
multiprocessing (computers)
parallel processing (computers)

connections

USE **joints (junctions)**

connective tissue

GS tissues (biology)
. **connective tissue**
. . adipose tissues
. . bone marrow
. . cartilage
RT bones
collagens
exoskeletons
joints (anatomy)
ligaments
musculoskeletal system
tendons

connectors

GS **connectors**
. electric connectors
. umbilical connectors
. unions (connectors)
RT adapters
cordage
couplings
disconnect devices
fasteners
fittings
flanges
flat conductors
joints (junctions)
jumpers
∞ junctions
linkages
optical interconnects
sleeves
∞ terminals
yokes

connectors (electric)

USE **electric connectors**

conoids

USE **conical bodies**

consciousness

GS perception

. sensory perception

. . **consciousness**

RT attention
mental performance
recognition
sleep deprivation

consecutive events

GS events
. **consecutive events**
RT intervals
Petri nets
probability theory
scheduling
sequencing
sequential control
time measurement

conservation

GS **conservation**
. energy conservation
RT agriculture
deforestation
drought
energy policy
environment management
firebreaks
forest management
forests
habitats
land use
Newton second law
nonconservative forces
parity
potable water
regional planning
rural land use
soil science
soils
water management
water reclamation

conservation element and solution element
(added June 2002)

USE **space-time CE/SE method**

conservation equations

RT Bernoulli theorem
continuity equation
∞ equations
nonconservative forces
space-time CE/SE method
vorticity transport hypothesis

conservation laws

GS laws
. **conservation laws**
RT CP violation
momentum theory
Newton Theory
nonconservative forces
space-time CE/SE method

consistency

DEF A property of a material determined by the complete flow force relation.

RT accuracy
computer systems performance
effort
errors
leveling
linearity
∞ measurement
∞ performance
precision
quality
ratings
reliability
tolerances (mechanics)
validity
variability

consoles

DEF Arrays of controls and indicators for the monitoring and control of a particular sequence of actions, as in the checkout of a rocket, a countdown action, or a launch procedure.

GS **consoles**
. remote consoles

RT automatic typewriters
computer components
control boards
data processing terminals
display devices
∞ equipment
flat panel displays
head-up displays
man machine systems
manual control

consolidation

RT ∞ combination
densification
liquid phase sintering
overconsolidation
stabilization

consonants (speech)

RT speech
vowels
words (language)

∞ constant

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coefficients
constants
invariance
time constant

constant speed propellers

USE **variable pitch propellers**

constant volume balloons

USE **superpressure balloons**

constantan

GS alloys
. **constantan**
RT copper
nickel
thermocouples

constants

GS **constants**
. Bohr magneton
. gravitational constant
. Gruneisen constant
. Hubble constant
. Plancks constant
. solar constant
. time constant
. . perceptual time constant
RT coefficients
∞ constant

Constellation program

(added July 2007)

DEF A NASA space program to create spacecraft for human spaceflight, consisting primarily of the Ares I and Ares V launch vehicles, the Orion crew capsule, the Earth Departure Stage and the Lunar Surface Access Module. These spacecraft will be capable of performing a variety of missions, from Space Station resupply to lunar landings.

GS programs
. NASA programs
. . NASA space programs
. . . **Constellation program**
. space programs
. . NASA space programs
. . . **Constellation program**
RT Altair Lunar Lander
Ares 1 launch vehicle
Ares 5 cargo launch vehicle
Crew Exploration Vehicle
manned space flight
space exploration

constellations

DEF Originally conspicuous configurations of stars; now regions of the celestial sphere marked by arbitrary boundary lines.

GS **constellations**
. Andromeda Constellation
. Aries constellation
. Auriga constellation
. Cassiopeia constellation

- . Centaurus constellation
- . Cepheus constellation
- . Corona Borealis constellation
- . Cygnus constellation
- . Lyra constellation
- . Orion constellation
- . Sagittarius constellation
- . Scorpius constellation
- . Scutum constellation
- . Taurus constellation

RT celestial sphere
planispheres
stars
zodiac

Constellation-X

(added February 2006)

DEF Astronomical observatory comprised of several x-ray satellites orbiting in close proximity to each other and working in unison to generate the observing power of one giant telescope.

UF *Con-X observatory*

GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **Constellation-X**

networks
. satellite networks
. . . satellite constellations
. . . **Constellation-X**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **Constellation-X**

telescopes
. spaceborne telescopes
. . . **Constellation-X**
. x ray telescopes
. . . **Constellation-X**

RT spaceborne astronomy
x ray astronomy

constitution

RT atomic structure
governments
law (jurisprudence)

constitutional diagrams

USE **phase diagrams**

constitutive equations

RT electric fields
∞ equations
magnetic charge density
magnetic fields
magnetic flux

constraints

UF *hindrance*
limitations
restraints

GS **constraints**
. meteorological parameters
. . . Brunt-Vaisala frequency

RT blocking
constrictions
dynamic programming
∞ holding
linear programming
nonlinear programming
operations research
optimization
penalty function
range (extremes)
retaining

constrictions

UF *restrictions*

RT ∞ barriers
blocking
chokes (restrictions)
closures
constraints
contracts
impedance
plugging
∞ resistance
retarders (devices)
seals (stoppers)

stopping

constrictors

GS anatomy
. musculoskeletal system
. . . muscles
. . . **constrictors**

construction

SN (EXCLUDES TYPES OF STRUCTURES)
UF *erection*

RT architecture
assembling
bridges (structures)
buildings
caissons
concrete structures
∞ construction materials
contractors
contracts
∞ design
excavation
fabrication
highways
inspection
installing
layouts
maintenance
masonry
quality control
reconstruction
rigging
shipyards
space manufacturing
Starsite program
steel structures
stress analysis
structural analysis
structural design
structural engineering
structural members
surveys
tunneling (excavation)
welding

construction in space

USE **orbital assembly**

construction industry

GS industries
. **construction industry**

RT bridges (structures)
buildings
contractors
industrial areas
industrial plants
towers
trusses

∞ **construction materials**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *building materials*
structural materials

RT aggregates
aircraft construction materials
aircraft survivability
airframe materials
architecture
bitumens
boards (paper)
bricks
cements
composite materials
concretes
construction
graphite-epoxy composites
grout
insulation
lathes
Masonite (trademark)
masonry
∞ materials
materials selection
panels
plastics
polymer matrix composites
protective coatings
reactor materials
skin (structural member)

spacecraft construction materials
structural members

consulting

RT conferences
management planning
personnel
resources

consumables (spacecraft)

DEF All supplies for spacecraft and spacecrews that will be consumed during a mission.

GS **consumables (spacecraft)**

. storable propellants
RT consumables (spacecrew supplies)
in situ resource utilization
propellant storage
space logistics
working fluids

consumables (spacecrew supplies)

GS **consumables (spacecrew supplies)**

. space rations
RT clothing
consumables (spacecraft)
dehydrated food
∞ food
food production (in space)
hygiene
potable water
provisioning
sanitation
space flight feeding
space logistics
survival equipment

consumers

RT consumption
market research
marketing
product development

consumption

GS **consumption**
. energy consumption
. fuel consumption
. oxygen consumption
. propellant consumption
. water consumption

RT commerce
consumers
demand (economics)
depletion
exhausting
exhaustion
supplying
utilization

contact dermatitis

GS diseases
. infectious diseases
. . . dermatitis
. . . **contact dermatitis**

RT allergic diseases
dermatology
epidermis
itching
skin (anatomy)

contact lenses

GS lenses
. **contact lenses**

RT eyepieces
reticles

contact loads

DEF Dynamic loading by contact between two bodies.

GS loads (forces)
. **contact loads**
. . . impact loads
. . . rolling contact loads

RT compression loads
dynamic pressure
random loads
shock loads
∞ sliding contact

contact potentials

transient loads

contact potentials

DEF The potential differences at the junctions of two dissimilar substances.

- GS potential energy
 - . electric potential
 - . . **contact potentials**
- RT electric contacts
 - surface properties

contact resistance

DEF The resistance to current flow between two touching bodies, consisting of constriction resistance and film resistance.

- GS electrical properties
 - . electrical impedance
 - . . electrical resistance
 - . . . **contact resistance**
- impedance
 - . electrical impedance
 - . . electrical resistance
 - . . . **contact resistance**
- RT electric contacts
 - nonohmic effect
- ∞ resistance
 - surface properties

contactors

- SN (EXCLUDES ELECTRIC SWITCHES)
- RT carburetors
 - chemical reactors
 - columns (process engineering)
 - electric switches
 - mixers
 - sprayers

contacts (electric)

USE **electric contacts**

contacts (geology)

- GS geology
 - . **contacts (geology)**
- RT formations
 - metamorphism (geology)
 - mineral deposits
 - rock intrusions
 - rocks

containerless melts

- GS melts (crystal growth)
 - . **containerless melts**
- RT crystal growth
 - crystallization
 - crystals
 - directional solidification (crystals)
 - liquid bridges
 - low gravity manufacturing
 - manufacturing
 - melting
 - orbital workshops
 - space processing
 - weightlessness

∞ containers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF A non-specific term for receptacles capable of closure. Used for receptacles (containers).
- UF *receptacles (containers)*
- RT ampoules
 - autoclaves
 - bags
 - barrels (containers)
 - baskets
 - biopaks
 - bottles
 - boxes (containers)
 - bundles
 - cans
- ∞ capsules
 - cartridges
 - cases (containers)
 - crucibles
 - disposal
 - drums (containers)
 - enclosures
 - fuel tanks
 - glassware

hoppers

- housings
- materials handling
- micromodules
- packages
- packaging
- preserving
- pressure vessels
- protectors
- reels
- spools
- sprayers
- tanks (containers)
- transporter
- trays
- wing tanks

containment

- RT asteroid capture
 - blocking
 - burst tests
 - confinement
 - retaining
 - sealing
 - stopping

contaminants

- UF *noxious materials*
 - pollutants*
- GS **contaminants**
 - . radioactive contaminants
 - . trace contaminants
- RT biofilms
 - biomass burning
 - chlorofluorocarbons
 - chlorofluoromethane
 - contamination
 - decontamination
 - diluents
 - dirt
 - dust
 - effluents
 - environment effects
 - environmental quality
 - fuel contamination
 - hazardous materials
 - hazardous wastes
 - heavy metals
 - impurities
- ∞ materials
 - nonpoint sources
 - particulates
 - pollution
 - purity
 - quality
 - soil pollution
 - volatile organic compounds
 - wastes
 - water treatment

contamination

- GS **contamination**
 - . fuel contamination
 - . spacecraft contamination
- RT air pollution
 - antifouling
 - antiinfectives and antibacterials
 - biological hazards
 - contaminants
 - decontamination
 - environment effects
 - fouling
 - intrusion
 - molecular shields
 - nonpoint sources
 - planetary protection
 - pollution
 - purity
 - radioactive wastes
 - water pollution

content

- GS **content**
 - . bone mineral content
- RT ∞ components
 - ∞ composition

ingredients

content-addressable memory
(added December 1999)

USE **associative memory**

context

DEF The composition, structure, or manner in which something is put together. Also refers to the situation or environment of an event.

- RT natural language (computers)
- pattern recognition

context free languages

- GS languages
 - . programming languages
 - . . **context free languages**
- RT computer programming
 - symbolic programming

continental drift

- RT continents
 - Earth crust
 - Earth planetary structure
 - geomagnetism
 - geophysics
 - paleomagnetism

continental margins

USE **continental shelves**

continental shelves

DEF The ocean floor that is between the shoreline and the abyssal ocean floor, including various provinces; the continental shelf; continental borderland; continental slope; and the continental rise. Used for continental margins.

UF *continental margins*

- RT geology
 - ocean bottom
 - seamounts
- ∞ shelves

continents

- GS **continents**
 - . Africa
 - . Asia
 - . Australia
 - . Europe
 - . . Central Europe
 - . North America
 - . South America
- RT Antarctic regions
 - Central Europe
 - continental drift
 - cratons
 - geography
 - mountains
 - transcontinental systems

contingency

- RT confidence limits
 - correlation
 - estimates
 - expectation
 - materials handling
 - predictions
 - reserves
 - risk

continuity

- RT continuity (mathematics)
 - coordination
 - scheduling
 - topology
 - variability

continuity (mathematics)

- GS analysis (mathematics)
 - . calculus
 - . . **continuity (mathematics)**
- RT continuity
 - functions (mathematics)
 - isoperimetric problem
 - normal density functions
 - Poisson density functions
 - probabilistic density functions
 - regularity
 - statistical analysis
 - symmetry

topology

continuity equation

- RT conservation equations
- continuum mechanics
- Crocco-Lee theory
- ∞ equations
- equations of motion
- equations of state
- fluid dynamics
- nonconservative forces
- steady flow

*continuous flow electrophoresis*USE **electrophoresis****continuous noise**

- RT ∞ noise
- noise propagation
- sound generators

continuous radiation

- UF *continuous waves*
- GS **continuous radiation**
- . modulated continuous radiation
- RT absorption spectra
- background radiation
- coherent radiation
- corpuscular radiation
- elastic waves
- electromagnetic radiation
- emission spectra
- pulsed radiation
- ∞ radiation
- ∞ rays

continuous spectra

DEF Spectra in which wavelengths, wave numbers, and frequencies are represented by the continuum of real numbers or a portion thereof, rather than by a discrete sequence of numbers. For electromagnetic radiation, spectra that exhibit no detailed structure and represent a gradual variation of intensity with wavelength from one end to the other, as the spectra of incandescent solids. For particles, spectra that exhibit a continuous variation of the momentum or energy.

- GS spectra
- . **continuous spectra**
- RT astronomical spectroscopy
- solar spectra
- spectral emission
- stellar spectra

continuous wave lasers

- GS stimulated emission devices
- . lasers
- . . **continuous wave lasers**
- RT argon lasers
- carbon dioxide lasers
- carbon monoxide lasers
- chemical oxygen-iodine lasers
- laser stability
- solid state lasers

continuous wave radar

- UF *CW radar*
- GS radar
- . **continuous wave radar**
- RT coherent radar
- Doppler radar
- pulse radar
- radar detection
- radar range
- search radar
- surveillance radar
- tracking radar

*continuous waves*USE **continuous radiation****continuum flow**

- GS fluid flow
- . gas flow
- . . **continuum flow**
- RT free molecular flow
- molecular flow
- rarefied gas dynamics

slip flow

continuum mechanics

- GS mechanics (physics)
- . **continuum mechanics**
- RT Burger equation
- classical mechanics
- computational mechanics
- continuity equation
- continuum modeling
- ∞ dynamics
- flow theory
- fluid mechanics
- Maxwell bodies
- multipolar fields
- solid mechanics
- statistical mechanics
- stress tensors

continuum modeling

- RT continuum mechanics
- continuum
- large space structures
- mathematical models
- structural analysis

continuum

DEF Things that are continuous, which have no discrete parts as the continuum of real numbers as opposed to the sequence of discrete integers, as the background continuum of a spectrogram due to thermal radiation.

- RT continuum modeling
- probability theory
- real variables
- relativity
- topology

*CONTOUR (mission)**(added February 1999)*USE **Comet Nucleus Tour****contour sensors**

DEF The sensing of image coincidences by means of optical processing techniques.

- RT boundaries
- concavity
- contours
- convexity
- imagery
- images
- ∞ sensors
- shapes
- topography

contours

- UF *curved surfaces*
- RT concavity
- contour sensors
- convexity
- curved panels
- datum (elevation)
- elevation
- flatness
- geomorphology
- hypsography
- mapping
- roughness
- shapes
- topography

contract incentives

- GS incentives
- . **contract incentives**
- motivation
- . **contract incentives**

contract management

- GS management
- . **contract management**
- RT contracts
- decision making
- decisions
- PERT
- project management
- schedules
- subcontracts

systems engineering

contract negotiation

- RT contractors
- contracts
- decision making
- government/industry relations
- industries
- management
- manufacturing
- subcontracts

contraction

- RT cooling
- ∞ reduction
- shrinkage
- spasms

contractors

- RT columns (process engineering)
- construction
- construction industry
- contract negotiation
- contracts
- government/industry relations
- industries
- qualifications
- subcontracts
- transportation

contracts

- GS **contracts**
- . insurance (contracts)
- . subcontracts
- RT agreements
- cancellation
- constrictions
- construction
- contract management
- contract negotiation
- contractors
- estimates
- estimating
- extensions
- federal budgets
- government procurement
- government/industry relations
- grants
- leasing
- legal liability
- options
- procurement
- projects
- proposals
- revisions
- supplements

contrails

DEF Condensation trails. Artificial clouds made by the exhaust of jet aircraft.

- UF *condensation trails*
- vapor trails*
- RT condensates
- wakes

contralateral functions

- RT ∞ functions

contrarotating propellers

DEF Two propellers mounted on concentric shafts having a common drive and rotating in opposite directions.

- GS propellers
- . **contrarotating propellers**
- RT propeller drive
- propeller efficiency
- turboprop engines

contrast

DEF In general, the degree of differentiation between different tones in an image.

- GS **contrast**
- . image contrast
- . phase contrast
- RT character recognition
- color
- legibility
- perception
- printing
- resolution

control

∞ sharpness
visibility
vision

∞ control

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *control systems*
controlled stability
regulation

RT access control
active control
adaptive control
air navigation
air traffic control
aircraft control
altitude control
approach control
astrionics
attitude control
automatic control
automatic control valves
automatic flight control
automatic frequency control
automatic gain control
avionics
biofeedback
boundary layer control
cascade control
chemical reaction control
circulation control airfoils
circulation control rotors
combustion control
command and control
control boards
control configured vehicles
control data (computers)
control equipment
control moment gyroscopes
control rockets
control rods
control simulation
control stability
control sticks
control surfaces
control systems design
control theory
control units (computers)
control valves
controllability
controlled atmospheres
controlled fusion
controllers
critical path method
cybernetics
direct lift controls
directional control
dynamic characteristics
dynamic control
electric control
electronic control
elevators (control surfaces)
engine control
environmental control
feedback control
feedforward control
fire control
fire control circuits
flaps (control surfaces)
flight control
flood control
fluidics
fly by tube control
fly by wire control
frequency control
fuel control
ground based control
harmonic control
helicopter control
hydraulic control
integrated mission control center
interactive control
inventory controls
jet control
lateral control
linear parameter-varying control
linear quadratic Gaussian control
linear quadratic regulator
longitudinal control

magnetic control
manual control
MIMO (control systems)
missile control
model reference adaptive control
multivariable control
network control
nuclear reactor control
numerical control
off-on control
optical control
optimal control
payload control
phase control
plasma control
pneumatic control
pointing control systems
pollution control
porous boundary layer control
process control (industry)
proportional control
quality control
radar approach control
radio control
∞ reaction control
regulations
regulators
regulatory mechanisms (biology)
remote control
robot control
rocket engine control
satellite attitude control
satellite control
scheduling
self adaptive control systems
sequential control
servocontrol
servomechanisms
shape control
shock wave control
SISO (control systems)
spacecraft control
spectral shift control
spectral shift control reactor
speed control
stabilization
steering
Submarine Integrated Control project
systems engineering
tabs (control surfaces)
temperature control
thermal control coatings
thrust control
thrust vector control
time optimal control
traffic control
trajectory control
Transit Attitude Control satellite
transponder control group
turbojet engine control
variable stream control engines
visual control
voice control
wave incidence control
weather modification

control boards

UF *control panels*
RT consoles

∞ control
display devices
manual control
remote control

control configured vehicles

RT aircraft configurations
aircraft design
∞ control
flight control
technology utilization
∞ vehicles

control data (computers)

RT computers
∞ control
∞ data

data systems

control devices

USE **control equipment**

control equipment

UF *control devices*
GS **control equipment**
. control sticks
. pressure switches
. regulators
. . . automatic control valves
. . . pressure regulators
. . . relief valves
. . cryostats
. . current regulators
. . flow regulators
. . . fuel flow regulators
. . oxygen regulators
. . speed regulators
. . thermostats
. . voltage regulators
. servoamplifiers
. teleoperators

RT aircraft control
automatic control

∞ control

∞ effectors
electric control
electronic control
feedback control
manipulators
manual control
nonlinear systems
off-on control
optical control
pneumatic control
proportional control
recording instruments
speed control
transducers

control moment gyroscopes

GS gyroscopes
. **control moment gyroscopes**

RT attitude control
attitude gyros
attitude indicators

∞ control

equations of motion
gimbals
gyrodampers
indicating instruments
measuring instruments
nutation dampers
servocontrol
servomechanisms

control panels

USE **control boards**

control rockets

DEF Vernier engines, retrorockets, or other such rockets, used to change the attitude of, guide, or make small changes in the speed of a rocket, spacecraft, or the like. Used for steering rockets.

UF *steering rockets*

GS engines
. rocket engines
. . Vernier engines
. . . **control rockets**
. torpedo engines
. . Vernier engines
. . . **control rockets**

RT ∞ control

retrorocket engines
steering
thrust control
variable thrust

control rods

GS rods
. **control rods**
RT ∞ control
neutron absorbers
nuclear reactor control
nuclear reactors
poisoning (reaction inhibition)
reactor cores

reactor safety

control simulation

- GS simulation
 - . **control simulation**
- RT aircraft control
 - computerized simulation
- ∞ control
 - control theory
 - flight simulation
 - flight simulators
 - hardware-in-the-loop simulation
 - motion simulators
 - spacecraft control
 - spacecraft maneuvers
 - training simulators

control stability

- GS dynamic characteristics
 - . dynamic stability
 - . . **control stability**
 - stability
 - . dynamic stability
 - . . **control stability**
- RT aircraft control
 - aircraft spin
 - aircraft stability
- ∞ control
 - controllability
 - flight control
 - loop transfer recovery
 - MIMO (control systems)
 - motion stability
 - Nyquist diagram
 - pilot induced oscillation
 - robustness (mathematics)
 - sampled data systems
 - SISO (control systems)
 - spacecraft motion
 - spacecraft stability
 - stability augmentation
 - systems stability

control sticks

- GS control equipment
 - . **control sticks**
- RT aircraft control
 - ∞ control
 - flight control
 - manual control

control surfaces

- GS **control surfaces**
 - . ailerons
 - . . flaperons
 - . . spoiler slot ailerons
 - . elevators (control surfaces)
 - . elevons
 - . flaps (control surfaces)
 - . . externally blown flaps
 - . . . upper surface blown flaps
 - . . flaperons
 - . . jet flaps
 - . . split flaps
 - . . wing flaps
 - . . . leading edge flaps
 - . . . leading edge slats
 - . . . trailing edge flaps
 - . . . vortex flaps
 - . guide vanes
 - . . jet vanes
 - . horizontal tail surfaces
 - . rudders
 - . . aerial rudders
 - . . marine rudders
 - . spoilers
 - . tabs (control surfaces)
- RT aerodynamic brakes
 - aerodynamic configurations
 - aerodynamic interference
 - aerodynamics
 - aircraft parts
 - aircraft structures
 - airfoils
 - airframes
 - blunt trailing edges
 - boundary layer control
 - canard configurations
 - ∞ control
 - drag devices

- fins
- fires
- flight control
- free wing aircraft
- guidance (motion)
- nose fins
- stabilizers (fluid dynamics)
- ∞ surfaces
 - sweptback tail surfaces
 - T tail surfaces
 - tail assemblies
 - tail surfaces
 - trapezoidal tail surfaces
 - vanes
 - wings

control systems

USE **control**

control systems design

- GS systems engineering
 - . **control systems design**
- RT aerospace systems
 - automatic control
 - ∞ automation
 - bionics
 - bond graphs
 - ∞ control
 - control theory
 - controllers
 - cybernetics
 - ∞ design
 - design analysis
 - electric control
 - electronic control
 - feedback control
 - frequency domain analysis
 - genetic algorithms
 - H-2 control
 - H-infinity control
 - linear parameter-varying control
 - linear quadratic Gaussian control
 - linear quadratic regulator
 - loop transfer functions
 - loop transfer recovery
 - mathematical models
 - membership functions
 - MIMO (control systems)
 - numerical control
 - operations research
 - optimal control
 - parameter identification
 - robot control
 - SISO (control systems)
 - system identification
 - systems analysis
 - systems integration
 - time domain analysis
 - uncertain systems

control theory

- RT adaptive control
 - closed cycles
- ∞ control
 - control simulation
 - control systems design
 - controllability
 - distributed parameter systems
 - dynamic control
 - dynamical systems
 - feedback
 - feedback control
 - feedforward control
 - games
 - H-2 control
 - H-infinity control
 - interactive control
 - linear quadratic Gaussian control
 - linear quadratic regulator
 - loop transfer recovery
 - MIMO (control systems)
 - model reference adaptive control
 - multivariable control
 - observability (systems)
 - off-on control
 - optimal control
 - robot control
 - robustness (mathematics)
 - sampled data systems
 - servocontrol

- shape control
- SISO (control systems)
- ∞ theories
 - tracking problem
 - uncertain systems

control units (computers)

DEF Those parts of computers that cause the arithmetic unit, storage, and transfer of a computer to operate in proper sequence.

- RT central processing units
 - computer components
 - computers
- ∞ control
 - data processing equipment

control valves

- GS valves
 - . **control valves**
- RT actuators
 - ∞ control
 - pneumatic control

controllability

DEF The capability of an aircraft, rocket, or other vehicle to respond to control, especially in direction or attitude. Used for handling qualities.

- UF *handling qualities*
- RT aircraft control
 - aircraft performance
 - aircraft specifications
 - aircraft spin
 - aircraft stability
- ∞ control
 - control stability
 - control theory
 - directional stability
 - flight characteristics
 - helicopter control
 - helicopter performance
 - liquid sloshing
 - low speed stability
 - maneuverability
 - pilot ratings
 - quality
 - spacecraft reliability
 - stability
 - steering
 - wheel brakes

controlled atmospheres

- GS **controlled atmospheres**
 - . argon-oxygen atmospheres
 - . cabin atmospheres
 - . . spacecraft cabin atmospheres
 - . helium-oxygen atmospheres
 - . inert atmosphere
- RT air conditioning
 - ∞ atmospheres
 - ∞ blankets
 - clean rooms
 - ∞ control
 - environments
 - furnaces
 - gas mixtures
 - gnotobiotics
 - oxygen supply equipment
 - spacecraft environments

controlled avalanche transit time devices

USE **CATT devices**

controlled fusion

- SN (CONTROLLED NUCLEAR FUSION)
- GS nuclear reactions
 - . thermonuclear reactions
 - . . nuclear fusion
 - . . . **controlled fusion**
- RT ∞ control
 - Joint European Torus
 - limiters (fusion reactors)
 - plasma compression
 - plasma cooling
 - plasma currents
 - plasma physics
 - relativistic electron beams
 - strongly coupled plasmas
 - thermonuclear power generation

controllers

zeta pinch

controlled stability
USE **control**

controllers

SN (LIMITED TO DEVICES AND CONTROL THEORY)

GS controllers

. power factor controllers
. servomechanisms
. . . servoamplifiers
. . . servomotors

RT

actuators
analyzers
automatic control
∞ automation
∞ control
control systems design
cryostats
current regulators
cybernetics
electronic control
H-2 control
H-infinity control
instrument receivers
instrument transmitters
∞ instruments
linear quadratic regulator
measuring instruments
optical control
pneumatic control
pressure regulators
programmable logic devices
propellant actuated instruments
regulators
remote control
rocket-borne instruments
speed control
speed regulators
temperature control
thermostats
voltage regulators

Convair 340 aircraft

USE **CV-340 aircraft**

Convair 440 aircraft

USE **CV-440 aircraft**

Convair 880 aircraft

USE **CV-880 aircraft**

Convair 990 aircraft

USE **CV-990 aircraft**

convection

DEF In general, mass motion within a fluid resulting in transport and mixing of the properties of that fluid. Specifically, in meteorology, atmospheric motions that are predominately vertical.

GS

convection

. forced convection
. free convection
. . . Rayleigh-Benard convection
. . . Benard cells
. stellar convection
. . . solar convection (astronomy)
. surface tension driven convection
. . . Marangoni convection

RT

advection
base heating
Boussinesq approximation
buoyancy-driven flow
∞ conduction
convection cells
convection-diffusion equation
fluid dynamics
Grashof number
heat transmission
heating
meteorology
mixing height
mixing layers (fluids)
stellar interiors

convection cells

(added June 1990)

RT atmospheric circulation
convection

convection currents
convective flow
convective heat transfer

convection clouds

GS clouds (meteorology)
. **convection clouds**
. . . arc clouds
. . . cumulonimbus clouds
. . . . anvil clouds
. . . cumulus clouds
. . . . anvil clouds
RT air currents
cloud physics
meteorology
nephanalysis
supercooling
vertical air currents

convection currents

RT air currents
Benard cells
convection cells
convection-diffusion equation
electron bunching
fluid flow
free convection
mixing height
Rayleigh-Benard convection
solar convection (astronomy)
solar granulation
stellar convection
vertical air currents

convection-diffusion equation

(added August 1991)

DEF An equation for convection and diffusion, in which the rate of change with respect to time of the density (concentration) of the convecting/diffusing substance at a fixed point in space plus the product of the divergence of the velocity field and the density of the convecting/diffusing substance equals the product of the diffusion coefficient and the differential of the density of the convecting/diffusing substance.

UF *diffusion-convection equation*

RT

Benard cells
computational fluid dynamics
convection
convection currents
convective flow
diffusion
diffusion coefficient
∞ equations
flow equations
flow theory
Rayleigh-Benard convection
reaction-diffusion equations

convective flow

UF *thermal currents*

GS

fluid flow
. **convective flow**
. . . Rayleigh-Benard convection
. . . . Benard cells
. . . buoyancy-driven flow

RT

convection cells
convection-diffusion equation
free convection
gas density
geophysical fluid flow cells
heat transmission
Marangoni convection
mass flow rate
mass transfer
porous boundary layer control
solar convection (astronomy)
stellar convection
surface tension driven convection
temperature
thermal diffusion

convective heat transfer

GS transmission
. heat transmission
. . . heat transfer
. . . . **convective heat transfer**
RT aerodynamic heating
boundary layer combustion
boundary layer flow

Brinkman number
conductive heat transfer
convection cells
cooling fins
forced convection
free convection
laminar heat transfer
mass transfer
Nusselt number
radiative heat transfer
Rayleigh-Benard convection
surface cooling
temperature gradients
thermohydraulics
thermosiphons
turbulent heat transfer

conventions

RT agreements
air law
compatibility
conferences
∞ cooperation
international cooperation
international law
outer space treaty
standards

convergence

DEF Approach to a limit, e.g., by an infinite sequence. Used for confluence.

UF *confluence*

RT

divergence
patch tests
regularity
tapering
variability

convergent nozzles

RT conical nozzles
fluid amplifiers
nozzle geometry
nozzle walls
∞ nozzles
turbine engines
turbojet engines

convergent-divergent nozzles

UF *de Laval nozzles*
GS exhaust nozzles
. **convergent-divergent nozzles**
RT conical nozzles
nozzle geometry
nozzle inserts
∞ nozzles
rocket nozzles
supersonic nozzles
transonic nozzles
turbine exhaust nozzles
wind tunnel nozzles

conversation

GS communicating
. verbal communication
. . . **conversation**
speech
. **conversation**
RT voice communication
words (language)

∞ conversion

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bioconversion
conversion tables
data conversion routines
electric generators
energy conversion
energy conversion efficiency
exchanging
frequency converters
geothermal energy conversion
internal conversion
isomerization
liquefaction
metrification
ocean thermal energy conversion
organic wastes (fuel conversion)
ortho para conversion
photothermal conversion

- photovoltaic conversion
 refining
 satellite solar energy conversion
 solar energy conversion
 solar total energy systems
 thermionic power generation
 thermoelectric power generation
 turbogenerators
 waterwave energy conversion
- conversion tables**
 GS tables (data)
 . **conversion tables**
 RT ∞ conversion
 data converters
 International System of Units
 units of measurement
- convertiplanes*
 USE **V/STOL aircraft**
- ∞ **converters**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Rotary devices for changing alternating current to direct current. Transducers whose output is a different frequency from its input.
 RT analog to digital converters
 binary to decimal converters
 current converters (AC to DC)
 data converters
 digital to analog converters
 direct power generators
 down-converters
 electric generators
 frequency converters
 image converters
 instrument transformers
 inverted converters (DC to AC)
 parametric frequency converters
 power converters
 pulse width amplitude converters
 pyrometallurgy
 solar blankets
 thermionic converters
 torque converters
 transducers
 transformers
 up-converters
 voltage converters (AC to AC)
 voltage converters (DC to DC)
- convertible fan-shaft engines**
 GS engines
 . air breathing engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **convertible fan-shaft engines**
 . aircraft engines
 . . **convertible fan-shaft engines**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **convertible fan-shaft engines**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 turbojet engines
 turbofan engines
 **convertible fan-shaft engines**
 RT helicopter engines
 jet thrust
 propulsion system configurations
 rotary wings
 TF-34 engine
 turboshafts
 V/STOL aircraft
 variable cycle engines
 vertical takeoff aircraft
- convexity**
 GS shapes
- . **convexity**
 RT concavity
 contour sensors
 contours
 flatness
 lenticular bodies
 ∞ surface geometry
- conveyors**
 RT automated guideway transit vehicles
 automated transit vehicles
 chutes
 cranes
 elevators (lifts)
 feeders
 forks
 ∞ lifts
 materials handling
 ribbons
 rollers
 scoops
 ∞ tracks
 transportation
- convolution integrals**
 UF *convolutions (mathematics)*
 GS analysis (mathematics)
 . functional analysis
 . . **convolution integrals**
 integrals
 . **convolution integrals**
 RT integral transformations
 trellis coding
- convolutions (mathematics)*
 USE **convolution integrals**
- convulsions**
 RT human pathology
 muscles
 psychotherapy
 séizures
 ∞ shock
- Con-X observatory*
 (added February 2006)
 USE **Constellation-X**
- Cook Inlet (AK)**
 GS landforms
 . inlets (topography)
 . . **Cook Inlet (AK)**
 RT Alaska
- Cookpot aircraft*
 USE **TU-124 aircraft**
- cool stars**
 GS celestial bodies
 . stars
 . . late stars
 . . . **cool stars**
 carbon stars
 flare stars
 K stars
 M stars
 Van Biesbroeck star
 Mira variables
 Omicron Ceti star
 S stars
 RT brown dwarf stars
 giant stars
 R Coronae Borealis stars
 stellar atmospheres
 stellar envelopes
 stellar spectra
 stellar temperature
- coolant loss*
 USE **loss of coolant**
- coolants**
 DEF Liquids of gases used to cool something, as a rocket combustion chamber.
 GS **coolants**
 . engine coolants
 . organic coolants
 RT air conditioning
 air cooling
 brines
- coolers
 cooling
 cooling systems
 freon
 gas cooling
 heat exchangers
 liquid cooling
 loss of coolant
 nuclear reactors
 reactor materials
 refrigerants
 sodium cooling
- coolers**
 RT air conditioning
 air conditioning equipment
 air cooling
 compressors
 coolants
 cooling
 cooling systems
 cryogenic cooling
 refrigerating
 refrigerating machinery
 refrigerators
- cooling**
 UF *chilling*
 heat dissipation
 heat dissipation chilling
 GS **cooling**
 . absorption cooling
 . air cooling
 . evaporative cooling
 . . film cooling
 . . sweat cooling
 . gas cooling
 . laser cooling
 . liquid cooling
 . . film cooling
 . magnetic cooling
 . plasma cooling
 . precooling
 . quenching (cooling)
 . . rapid quenching (metallurgy)
 . cryogenic cooling
 . radiant cooling
 . regenerative cooling
 . sodium cooling
 . solar cooling
 . solid cryogen cooling
 . space cooling (buildings)
 . supercooling
 . surface cooling
 . thermoelectric cooling
 . thermomagnetic cooling
 RT ablation
 ablative materials
 air conditioning
 bathing
 condensing
 contraction
 coolants
 coolers
 cooling flows (astrophysics)
 cryogenics
 engine coolants
 film condensation
 freezing
 freon
 geothermal energy utilization
 heat exchangers
 heat radiators
 heat shielding
 heat transfer
 heating
 Hilsch tubes
 jackets
 low temperature
 melting
 mushy zones
 refrigerating
 reusable heat shielding
 spacecraft radiators
 temperature control
 temperature distribution
 thermal cycling tests
 thermal shock
 thermal stresses

cooling fins

transpiration
ventilation
ventilation fans
venting
wetting

cooling fins

GS fins
. **cooling fins**
RT condensers (liquefiers)
convective heat transfer
finned bodies
heat exchangers
heat radiators
radiative heat transfer

cooling flows (astrophysics)

GS fluid flow
. gas flow
. . **cooling flows (astrophysics)**
RT accretion disks
cooling
cosmic gases
dark matter
galactic clusters
galactic evolution
intergalactic media
interstellar gas
star formation
x ray sources

cooling systems

RT absorbers (equipment)
air conditioning
air conditioning equipment
air cooling
air filters
blowers
capillary pumped loops
closed cycles
condensers (liquefiers)
coolants
coolers
dehumidification
engine coolants
Ettingshausen effect
evaporative cooling
evaporators
exhaust systems
freon
heat exchangers
heat pumps
heat radiators
heat sinks
infrared suppression
intake systems
liquid cooling
lubrication systems
refrigerants
refrigerating
refrigerating machinery
registers (air circulation)
solar cooling
solid cryogenes
space cooling (buildings)
spacecraft radiators
∞ systems
temperature control
temperature distribution
thermoacoustic refrigerators
transpiration
ventilation
ventilation fans
vents

∞ cooperation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT conventions
employee relations
international cooperation
public relations
sea law

Cooper-Harper ratings

(added August 1999)
GS flight characteristics
. pilot ratings
. . **Cooper-Harper ratings**

ratings
. pilot ratings
. . **Cooper-Harper ratings**
RT aircraft performance
helicopter performance

coordinate geometry language

USE **COGO (programming language)**

coordinate systems

USE **coordinates**

coordinate transformations

GS functions (mathematics)
. **coordinate transformations**
transformations (mathematics)
. **coordinate transformations**
RT conformal mapping
invariant imbeddings
isoparametric finite elements
isotropic turbulence
Joukowski transformation
Schwarzschild metric
Theodorsen transformation

coordinates

DEF Sets of measures defining points in space. Used for axes (coordinates) and coordinate systems.

UF *axes (coordinates)*
coordinate systems

GS coordinates

. astronomical coordinates
. Cartesian coordinates
. computational grids
. . structured grids (mathematics)
. . . multiblock grids
. . unstructured grids (mathematics)
. cylindrical coordinates
. geodetic coordinates
. Hylleraas coordinates
. hyperbolic coordinates
. inertial coordinates
. Lagrange coordinates
. oblique coordinates
. planetocentric coordinates
. . geocentric coordinates
. polar coordinates
. spherical coordinates

RT algebra
analytic geometry
axes (reference lines)
celestial reference systems
Earth axis
equators
Euclidean geometry
fractals
Fujita method
geomagnetic latitude
geometry
grid generation (mathematics)
∞ grids
half planes
half spaces
latitude
line of sight
longitude
manifolds (mathematics)
maps
∞ nets
∞ origins
position (location)
∞ reference systems

coordination

RT continuity
correlation
interfaces
sequencing
time sharing

coordination number

(added June 2002)
DEF In any system with a lattice structure, the number of neighboring units for any given unit.

RT crystal lattices
crystal structure
ligands
molecular structure

∞ numbers
x ray spectroscopy

coordination polymers

RT ∞ polymers

Copernicus spacecraft

USE **OA0 3**

copilots

USE **aircraft pilots**

coplanarity

GS analysis (mathematics)
. calculus
. . vector analysis
. . . **coplanarity**
. real variables
. . vector analysis
. . . **coplanarity**
geometry
. vector analysis
. . **coplanarity**

copolymerization

GS chemical reactions
. **copolymerization**
synthesis (chemistry)
. polymerization
. . **copolymerization**
RT block copolymers
dimerization
∞ polymers
vinyl copolymers

copolymers

DEF Polymers formed from two or more types of monomers.

GS **copolymers**
. block copolymers
. vinyl copolymers
. Viton rubber (trademark)
RT KEL-F
polymer blends
∞ polymers

copper

GS chemical elements
. **copper**
. . copper isotopes
metals
. transition metals
. . **copper**
. . . copper isotopes
RT amines
constantan
heavy metals
selenium alloys

copper alloys

GS alloys
. **copper alloys**
. . babbitt metal
. . brasses
. . bronzes
. . Manganin (trademark)
RT aluminum-lithium alloys
bearing alloys
gold alloys
lamella (metallurgy)
lithium alloys

copper chlorides

GS copper compounds
. **copper chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **copper chlorides**
. halides
. . chlorides
. . . **copper chlorides**
. . metal halides
. . . **copper chlorides**

copper compounds

GS **copper compounds**
. copper chlorides
. copper fluorides
. copper oxides

- . copper selenides
- . . copper indium selenides
- . copper sulfides
- . cuprates
- RT ∞ chemical compounds
- ∞ Group 1B compounds
- ∞ metal compounds

copper fluorides

- GS copper compounds
- . **copper fluorides**
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . metal fluorides
- **copper fluorides**
- . halides
- . . fluorides
- . . . metal fluorides
- **copper fluorides**
- . metal halides
- . . metal fluorides
- **copper fluorides**

copper indium selenides
(added June 1995)

- GS chalcogenides
- . selenides
- . . copper selenides
- . . . **copper indium selenides**
- . . indium selenides
- **copper indium selenides**
- copper compounds
- . copper selenides
- . . **copper indium selenides**
- indium compounds
- . indium selenides
- . . **copper indium selenides**
- selenium compounds
- . selenides
- . . copper selenides
- . . . **copper indium selenides**
- . . indium selenides
- **copper indium selenides**

- RT semiconductors (materials)
- solar cells
- thin films

copper isotopes

- GS chemical elements
- . copper
- . . **copper isotopes**
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- **copper isotopes**
- metals
- . transition metals
- . . copper
- . . . **copper isotopes**

copper oxides

- GS chalcogenides
- . oxides
- . . metal oxides
- . . . **copper oxides**
- copper compounds
- . **copper oxides**

- RT BSCCO superconductors
- cuprates
- thermites
- YBCO superconductors

copper selenides

- GS chalcogenides
- . selenides
- . . **copper selenides**
- . . . copper indium selenides
- copper compounds
- . **copper selenides**
- . . copper indium selenides
- selenium compounds
- . selenides
- . . **copper selenides**
- . . . copper indium selenides

copper sulfides

- GS chalcogenides
- . sulfides
- . . inorganic sulfides

- . . . **copper sulfides**
- copper compounds
- . **copper sulfides**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . **copper sulfides**

copyrights

- GS intellectual property
- . **copyrights**

- RT documents
- licensing
- patent applications
- policies
- regulations

coral heads

- USE **coral reefs**

coral reefs

- UF *atoll reefs*
- coral heads*

- RT atolls
- coasts
- islands
- keys (islands)
- reefs

cordage

- RT cables (ropes)
- ceramic fibers
- connectors
- cotton
- fibers
- ∞ filaments
- strands
- strings
- wire
- yarns

Cordelia
(added January 1996)

- DEF A natural satellite of Uranus orbiting at a mean distance of 49,750 kilometers.
- GS celestial bodies
- . natural satellites
- . . Uranus satellites
- . . . **Cordelia**

- RT Uranus (planet)

cordierite

- GS aluminum compounds
- . **cordierite**
- iron compounds
- . **cordierite**
- magnesium compounds
- . **cordierite**
- minerals
- . **cordierite**
- silicon compounds
- . silicates
- . . **cordierite**

cordite

- USE **colloidal propellants**
- double base propellants**

core flow

- GS fluid flow
- . **core flow**

- RT flow geometry
- magnetohydrodynamic flow
- one dimensional flow
- plasmas (physics)
- shear flow

core sampling

- GS sampling
- . **core sampling**

- RT cores
- depth measurement
- drilling
- Earth crust
- hydrogeology
- mines (excavations)
- ocean bottom
- ocean currents
- oceanography
- particle tracks

- salinity
- samplers

core storage

- UF *machine storage*
- GS computer components
- . computer storage devices
- . . random access memory
- . . . **core storage**
- magnetic storage
- . **core storage**
- memory (computers)
- . random access memory
- . . **core storage**

- RT bubble memory devices
- buffer storage
- data storage
- magnetic disks
- magnetic drums
- ∞ storage

core-mantle boundary
(added August 1994)

- GS boundaries
- . **core-mantle boundary**

- RT boundary layers
- Earth core
- Earth mantle
- lunar mantle
- planetary boundary layer
- planetary cores
- planetary mantles
- regolith
- tectonics

cores

- GS **cores**
- . honeycomb cores
- . lunar core
- . magnetic cores
- . planetary cores
- . . Earth core
- . . reactor cores
- . stellar cores

- RT ∞ cells
- core sampling
- mandrels
- molding materials

Coriolis effect

- DEF The physiological effect felt by a person moving radially in a rotating system, as a rotating space station resulting in nausea vertigo, dizziness, etc. Named after Gaspard G. Coriolis (d 1843), French civil engineer.
- RT disorientation
- ∞ effects
- gyres
- Kelvin waves
- meteorology
- planetary waves
- rotating environments
- rotation
- vestibular tests

cork (materials)

- GS wood
- . **cork (materials)**

- RT ∞ materials
- organic materials
- thermal insulation

corn

- UF *zea mays*
- GS farm crops
- . grains (food)
- . . **corn**
- plants (botany)
- . **corn**

- RT agriculture
- blight
- bollworms
- botany
- crop growth
- ∞ crops
- curing
- Earth resources
- ∞ food
- irrigation

cornea

seeds

cornea
GS anatomy
. sense organs
. eye (anatomy)
. . . **cornea**
RT keratitis
vision

corner flow
GS fluid flow
. **corner flow**
RT cavity flow
channel flow
ducted flow
 ∞ flow
nozzle flow
secondary flow

corners
RT angles (geometry)
antennas
joints (junctions)
shapes

Corona Borealis constellation
GS constellations
. **Corona Borealis constellation**
RT celestial bodies
celestial sphere
stars

corona discharges
USE **electric corona**

coronagraphs
RT astronomical photography
solar observatories
spectroheliographs
Starsat telescope
telescopes

coronal holes
DEF Solar areas where extreme UV and x ray coronal emission is abnormally low or absent. These are coronal regions apparently associated with diverging magnetic fields.
GS coronas
. stellar coronas
. . . solar corona
. . . **coronal holes**
RT decametric waves
 ∞ holes
radio astronomy
solar radio emission
solar wind
solar x-rays
stellar structure
ultraviolet radiation

coronal loops
DEF Loop like structures revealed in soft x ray images of the solar limb and believed to evolve from the introduction of energy and density perturbations at the top of an arched, cylindrical magnetic flux tube initially in equilibrium in the coronal plasma.
GS coronas
. stellar coronas
. . . solar corona
. . . **coronal loops**
RT chromosphere
coronal mass ejection
solar flares
solar limb

coronal mass ejection
(added June 1997)
GS ejection
. stellar mass ejection
. . . **coronal mass ejection**
RT coronal loops
interplanetary shock waves
solar corona
solar flares
solar wind
stellar coronas

STEREO (observatory)

coronary artery disease
GS diseases
. heart diseases
. . . **coronary artery disease**
RT angina pectoris
arteriosclerosis
myocardial infarction

coronary circulation
GS circulation
. blood circulation
. . . **coronary circulation**
RT heart
heart valves

coronas
GS **coronas**
. electric corona
. stellar coronas
. . . solar corona
. . . coronal holes
. . . coronal loops
RT electric arcs
electric discharges
halos
ionization
solar spectra

corotation
GS gyration
. rotation
. . . **corotation**
RT astronomical models
Earth magnetosphere
galactic rotation
galactic structure
spiral galaxies
stellar motions
stellar rotation

Corporal missile
GS missiles
. surface to surface missiles
. . . **Corporal missile**
RT liquid propellant rocket engines

corpuscles (blood)
USE **blood cells**

corpuscular radiation
SN (LIMITED TO NONELECTROMAGNETIC RADIATION CONSISTING OF ENERGETIC CHARGED OR NEUTRAL PARTICLES)
DEF Nonelectromagnetic radiation consisting of energetic charged or neutral particles.
Used for penetrating particles.
UF *penetrating particles*
GS particles

. **corpuscular radiation**
. . electron precipitation
. . electron radiation
. . . beta particles
. . . electron beams
. . . relativistic electron beams
. . energetic particles
. . . electrons
. . . . conduction electrons
. . . . free electrons
. . . . high energy electrons
. relativistic electron beams
. . . . hot electrons
. . . . N electrons
. . . . negatrons
. . . . photoelectrons
. . . . pi-electrons
. . . . polarons
. . . . solar electrons
. . . nuclei (nuclear physics)
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. . . plasmas (physics)
. . . . argon plasma
. . . . beta particles

. . . . boundary layer plasmas
. . . . cold plasmas
. . . . collisional plasmas
. strongly coupled plasmas
. . . . collisionless plasmas
. . . . cosmic plasma
. . . . cylindrical plasmas
. . . . dense plasmas
. plasma focus
. strongly coupled plasmas
. . . . electron plasma
. . . . electron-positron plasmas
. . . . elliptical plasmas
. . . . helium plasma
. . . . high temperature plasmas
. . . . hydrogen plasma
. deuterium plasma
. . . . laser plasmas
. . . . metallic plasmas
. cesium plasma
. uranium plasmas
. . . . microplasmas
. . . . nitrogen plasma
. . . . nonequilibrium plasmas
. . . . nonuniform plasmas
. . . . oxygen plasma
. . . . rarefied plasmas
. . . . relativistic plasmas
. . . . rotating plasmas
. . . . semiconductor plasmas
. . . . space plasmas
. solar wind
. stellar winds
. dusty plasmas
. . . . spherical plasmas
. . . . thermal plasmas
. . . . toroidal plasmas
. . . primary cosmic rays
. . . solar cosmic rays
. . . radiation belts
. . . artificial radiation belts
. . . inner radiation belt
. . . outer radiation belt
. . . proton belts
. . . solar corpuscular radiation
. . . solar electrons
. . . solar neutrinos
. . . solar neutrons
. . . solar protons
RT alpha particles
atmospheric radiation
background radiation
beams (radiation)
Cerenkov radiation
charged particles
coherent radiation
continuous radiation
cosmic rays
electromagnetic radiation
extraterrestrial radiation
flux (rate)
galactic radiation
incident radiation
interstellar radiation
ionizing radiation
ions
mesons
neutrons
nuclear particles
nuclear radiation
nuclei (nuclear physics)
particle production
phonon beams
pulsed radiation
 ∞ radiation
radiation distribution
radiation pressure
radiation sources
 ∞ rays
reflected waves
refracted waves
solar radiation
solar terrestrial interactions
stratosphere radiation

correction
DEF A quantity, equal in absolute magnitude to the error, added to a calculated or observed value to obtain a true value.
GS **correction**

. atmospheric correction
 . optical correction procedure
 RT accommodation
 accuracy
 adaptation
 adjusting
 alignment
 error correcting devices
 errors
 improvement
 information theory
 intercalibration
 parity
 redundancy
 revisions
 vegetative index

correlation

DEF In statistics, a relationship between two occurrences which is expressed as a number between minus one (-1) and plus one (+1). Used for correlation functions.

UF *correlation functions*

GS **correlation**

. angular correlation
 . autocorrelation
 . correlation coefficients
 . correlation detection
 . cross correlation
 . data correlation
 . spectral correlation
 . statistical correlation

RT bivariate analysis
 collating
 confidence
 contingency
 coordination
 covariance
 ∞ estimators
 evaluation
 factor analysis
 forecasting
 information theory
 least squares method
 multivariate statistical analysis
 optimization
 probability theory
 quality control
 regression analysis
 regression coefficients
 significance
 statistical analysis
 teleconnections (meteorology)
 time series analysis
 validity
 variability
 variance (statistics)

correlation coefficients

GS coefficients
 . **correlation coefficients**
 correlation
 . **correlation coefficients**
 statistical analysis
 . **correlation coefficients**

RT quality control
 statistical correlation

correlation detection

DEF A method of detection in which a signal is compared, point-to-point, with an internally generated reference.

GS correlation
 . **correlation detection**
 detection
 . signal detection
 . . **correlation detection**

RT ∞ detectors
 electromagnetic wave filters
 phase lock demodulators
 signal to noise ratios

correlation functions

USE **correlation**

correlators

SN (LIMITED TO DEVICES THAT DETECT WEAK SIGNALS IN NOISE BY PERFORMING AN ELECTRONIC OPERATION)

DEF Devices that detect weak signals in

noise by performing an electronic operation.

Used for synchronous detectors.

UF *synchronous detectors*

GS **correlators**

. image correlators

. optical correlators

RT synchrosopes

corridorsGS **corridors**

. Great Plains Corridor (North America)

. St Louis-Kansas City Corridor (MO)

RT passageways

corrosion

DEF The deterioration of a metal by chemical or electrochemical reaction with its environment. Used for metal corrosion.

UF *metal corrosion*

GS **corrosion**

. cavitation corrosion
 . electrochemical corrosion
 . fretting corrosion
 . fuel corrosion
 . hot corrosion
 . intergranular corrosion
 . rusting
 . scale (corrosion)
 . stress corrosion
 . . stress corrosion cracking
 . transgranular corrosion

RT chemical attack
 chemical reactions
 coatings
 damage
 degradation
 deposits
 deterioration
 dissolving
 durability
 electrochemistry
 electrolysis
 erosion
 etchants
 etching
 failure
 finishes
 fouling
 gas-metal interactions
 humidity
 impingement
 incompatibility
 metal coatings
 ∞ metallurgy
 metal-water reactions
 oxidation
 passivity
 pitting
 protective coatings
 salt spray tests
 sterilization effects
 surface properties
 tribology
 wear
 weathering

corrosion prevention

GS prevention
 . **corrosion prevention**
 protection
 . **corrosion prevention**

RT aeration
 antifouling
 antioxidants
 cavitation corrosion
 chemical attack
 cleaning
 coating
 coatings
 desensitizing
 ∞ films

fuel tanks

∞ inhibition

inhibitors

metal coatings

nickel coatings

packaging

passivity

preserving

propellant additives
 sensitizing
 siliconizing
 surface finishing
 surface treatment
 water treatment
 weatherproofing

corrosion resistanceGS **corrosion resistance**

. oxidation resistance

RT antioxidants

cavitation corrosion

chemical attack

chemical tests

passivity

pitting

∞ resistance

rusting

salt spray tests

siliconizing

sulfidation

surface finishing

corrosion test loops

GS environmental tests

. corrosion tests

. . **corrosion test loops**

loops

. **corrosion test loops**

RT ∞ tests

corrosion tests

GS environmental tests

. **corrosion tests**

. . corrosion test loops

. . salt spray tests

RT cavitation corrosion

chemical attack

destructive tests

fuel tests

∞ materials tests

pitting

propellant tests

stability tests

stress corrosion cracking

∞ tests

transgranular corrosion

underwater tests

weathering

corrugated plates

GS structural members

. plates (structural members)

. . **corrugated plates**

RT corrugating

reinforced plates

corrugated shells

GS shells (structural forms)

. **corrugated shells**

RT anisotropic shells

corrugating

reinforced shells

corrugated waveguides

(added February 1998)

GS waveguides

. **corrugated waveguides**

RT gratings (spectra)

optical waveguides

waveguide antennas

corrugating

RT corrugated plates

corrugated shells

deformation

grooves

∞ plates

∞ ridges

∞ waves

Corsair aircraft

USE **A-7 aircraft**

∞ **cortexes**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT cerebral cortex

cortexes (botany)

cortexes (botany)

cortexes (botany)
RT ∞ cortexes
plants (botany)

Corti organ
GS anatomy
. sense organs
. . ear
. . . labyrinth
. . . . cochlea
. **Corti organ**

corticosteroids
GS organic compounds
. lipids
. . steroids
. . . **corticosteroids**
. . . . aldosterone
. . . . hydroxycorticosteroid
. cortisone
. glucocorticoids
secretions
. endocrine secretions
. . hormones
. . . **corticosteroids**
. . . . aldosterone
. . . . hydroxycorticosteroid
. cortisone
. glucocorticoids
RT adrenal metabolism

cortisone
GS drugs
. **cortisone**
organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . hydroxycorticosteroid
. **cortisone**
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . hydroxycorticosteroid
. **cortisone**
RT adrenal metabolism
carbohydrate metabolism

corundum
USE **aluminum oxides**

Corvus missile
GS missiles
. **Corvus missile**
RT liquid propellant rocket engines

COS-B satellite
GS artificial satellites
. ESA satellites
. . **COS-B satellite**
ESA spacecraft
. ESA satellites
. . **COS-B satellite**
RT Europa 2 launch vehicle
European space programs
gamma ray sources (astronomy)

cosine series
GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **cosine series**
. . real variables
. . differential equations
. . . **cosine series**
. . periodic functions
. . . trigonometric functions
. . . . **cosine series**
. . series (mathematics)
. . . **cosine series**
functions (mathematics)
. transcendental functions
. . periodic functions
. . . trigonometric functions
. . . . **cosine series**

RT wavelet analysis

Cosmic Background Explorer satellite
DEF A NASA satellite launched on November 18, 1989 on a Delta I expendable launch vehicle. It is designed to measure background radiation in order to confirm or deny the big bang theory. Used for COBE.
UF *COBE*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Cosmic Background Explorer satellite**
RT background radiation
radiation spectra
spaceborne astronomy

cosmic dust
DEF Finely divided solid matter with particle sizes smaller than a micrometeorite, thus with diameters much smaller than a millimeter, moving in interplanetary space.
GS extraterrestrial matter
. interstellar matter
. . **cosmic dust**
. . . interplanetary dust
. . . . meteoroid dust clouds
. zodiacal dust
particles
. dust
. . **cosmic dust**
. . . interplanetary dust
. . . . meteoroid dust clouds
. zodiacal dust
RT infrared cirrus (astronomy)
intergalactic media
meteoroids
micrometeorites
micrometeoroids
molecular clouds
organic solids
polycyclic aromatic hydrocarbons
reflection nebulae
space debris
terrestrial dust belt
Venus fly trap rocket vehicle

cosmic gamma ray bursts
USE **gamma ray bursts**

cosmic gases
GS extraterrestrial matter
. **cosmic gases**
. . interplanetary gas
. . interstellar gas
gases
. rarefied gases
. . **cosmic gases**
. . . interplanetary gas
. . . interstellar gas
RT cooling flows (astrophysics)
degenerate matter
electron gas
intergalactic media
ionized gases
neutral gases
Sunyaev-Zeldovich effect

cosmic microwave background radiation
(added July 2000)
UF *CMBR (astronomy)*
GS background radiation
. **cosmic microwave background radiation**
electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . **cosmic microwave background radiation**
. . short wave radiation
. . . microwaves
. . . . **cosmic microwave background radiation**
extraterrestrial radiation
. extraterrestrial radio waves
. . **cosmic microwave background radiation**
RT cosmology
Microwave Anisotropy Probe

radio astronomy
relic radiation
Sunyaev-Zeldovich effect

cosmic noise
DEF Interference caused by cosmic radio waves.
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **cosmic noise**
RT Alouette project
background noise
background radiation
centimeter waves
electromagnetic noise measurement
galactic radiation
galactic radio waves
interstellar radiation
microwave emission
microwaves
noise storms
solar radiation
solar radio emission

cosmic plasma
GS extraterrestrial matter
. **cosmic plasma**
particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **cosmic plasma**
. . . . corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **cosmic plasma**
RT intergalactic media
interplanetary gas
plasma clouds
plasmopause
relativistic plasmas
solar wind
stellar winds
strongly coupled plasmas

cosmic radiation
USE **cosmic rays**

cosmic radio waves
USE **extraterrestrial radio waves**

cosmic ray albedo
GS albedo
. **cosmic ray albedo**
RT absorptance
 ∞ absorption
atmospheric attenuation
Earth albedo
lunar albedo
primary cosmic rays
reflectance
secondary cosmic rays

cosmic ray showers
UF *air showers*
Auger showers
Moliere formula
GS ionizing radiation
. cosmic rays
. . **cosmic ray showers**
RT Auger effect
 ∞ cascades
electron photon cascades
secondary cosmic rays
 ∞ showers

cosmic rays
DEF The aggregate of extremely high energy subatomic particles which travel the solar system and bombard the earth from all directions. Cosmic ray primaries seem to be mostly protons, hydrogen nuclei, but also contain heavier nuclei. On colliding with atmospheric particles they produce many different kinds of lower energy secondary cosmic radiation. Used for cosmic radiation.
UF *cosmic radiation*
GS ionizing radiation
. **cosmic rays**

- . . cosmic ray showers
 - . . galactic cosmic rays
 - . . gamma ray bursts
 - . . primary cosmic rays
 - . . . solar cosmic rays
 - . . secondary cosmic rays
 - RT aerospace environments
 - albedo
 - Alpha Magnetic Spectrometer
 - alpha particles
 - big bang cosmology
 - Cerenkov radiation
 - corpuscular radiation
 - deuterons
 - electromagnetic radiation
 - electron acceleration
 - electrons
 - extraterrestrial radiation
 - Fermi Gamma-ray Space Telescope
 - Forbush decreases
 - galactic radiation
 - gamma ray telescopes
 - gamma rays
 - heliosphere
 - interstellar radiation
 - ion density (concentration)
 - mesons
 - neutrons
 - nuclear particles
 - nuclei (nuclear physics)
 - particle tracks
 - photons
 - protons
 - ∞ radiation
 - radiation belts
 - radiative transfer
 - scintillating fibers
 - single event upsets
 - solar radiation
 - stellar radiation
 - VLF emission recorders
 - x rays
- cosmic x rays**
- GS electromagnetic radiation
 - . x rays
 - . . **cosmic x rays**
 - ionizing radiation
 - . x rays
 - . . **cosmic x rays**
 - RT extraterrestrial radiation
 - galactic radiation
 - gamma ray astronomy
 - gamma ray bursts
 - gamma rays
 - x ray astronomy
 - x ray binaries
 - x ray sources
- cosmions*
(added November 1999)
- USE **weakly interacting massive particles**
- cosmochemistry**
- DEF The branch of chemistry that deals with the chemical composition and changes in the universe.
- RT ∞ chemistry
 - cosmology
 - extraterrestrial matter
 - geochemistry
 - interstellar chemistry
 - isotope ratios
 - laboratory astrophysics
 - meteoritic composition
- cosmogony*
- USE **cosmology**
- cosmology**
- UF *cosmogony*
 - GS **cosmology**
 - . big bang cosmology
 - . Hubble diagram
 - . missing mass (astrophysics)
 - RT astronomical models
 - astrophysics
 - cosmic microwave background radiation
- cosmochemistry
- dark energy
- dark matter
- event horizon
- existence
- galactic evolution
- grand unified theory
- gravitinos
- Hubble constant
- large-scale structure of the universe
- local group (astronomy)
- mass distribution
- naked singularities
- nuclear astrophysics
- planetary evolution
- Population III stars
- protoplanets
- red shift
- star distribution
- star formation
- stellar evolution
- stellar mass accretion
- string theory
- supergravity
- supersymmetry
- Tully-Fisher relation
- universe
- white holes (astronomy)
- cosmonauts**
- GS personnel
 - . flying personnel
 - . . **cosmonauts**
 - RT ∞ astronautics
 - astronauts
 - crew experiment stations
 - crew observation stations
 - crew workstations
 - crews
 - pilots (personnel)
 - Russian Space Program
 - spacecrews
- ∞ **cosmos**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT Cosmos satellites
 - universe
- Cosmos 2 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 2 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 2 satellite**
- Cosmos 3 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 3 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 3 satellite**
- Cosmos 5 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 5 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 5 satellite**
- Cosmos 6 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 6 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 6 satellite**
- Cosmos 14 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 14 satellite**
- . Soviet satellites
- . . Cosmos satellites
- . . . **Cosmos 14 satellite**
- Cosmos 44 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 44 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 44 satellite**
- Cosmos 54 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 54 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 54 satellite**
- Cosmos 71 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 71 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 71 satellite**
- Cosmos 110 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 110 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 110 satellite**
- Cosmos 137 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 137 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 137 satellite**
- Cosmos 144 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 144 satellite**
 - . meteorological satellites
 - . . **Cosmos 144 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 144 satellite**
- Cosmos 149 satellite**
- UF *Space Arrow satellite*
 - GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 149 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 149 satellite**
- Cosmos 166 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 166 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 166 satellite**
- Cosmos 186 satellite**
- GS artificial satellites
 - . geophysical satellites
 - . . Cosmos satellites
 - . . . **Cosmos 186 satellite**
 - . Soviet satellites
 - . . Cosmos satellites
 - . . . **Cosmos 186 satellite**
- Cosmos 188 satellite**
- GS artificial satellites

Cosmos 206 satellite

- . geophysical satellites
- .. Cosmos satellites
- ... **Cosmos 188 satellite**
- . Soviet satellites
- .. Cosmos satellites
- ... **Cosmos 188 satellite**

Cosmos 206 satellite

- GS artificial satellites
 - . geophysical satellites
 - .. Cosmos satellites
 - ... **Cosmos 206 satellite**
 - . Soviet satellites
 - .. Cosmos satellites
 - ... **Cosmos 206 satellite**

Cosmos 213 satellite

- GS artificial satellites
 - . geophysical satellites
 - .. Cosmos satellites
 - ... **Cosmos 213 satellite**
 - . Soviet satellites
 - .. Cosmos satellites
 - ... **Cosmos 213 satellite**

Cosmos 224 satellite

- GS artificial satellites
 - . geophysical satellites
 - .. Cosmos satellites
 - ... **Cosmos 224 satellite**
 - . Soviet satellites
 - .. Cosmos satellites
 - ... **Cosmos 224 satellite**

Cosmos 225 satellite

- GS artificial satellites
 - . geophysical satellites
 - .. Cosmos satellites
 - ... **Cosmos 225 satellite**
 - . Soviet satellites
 - .. Cosmos satellites
 - ... **Cosmos 225 satellite**

Cosmos 381 satellite

- GS artificial satellites
 - . geophysical satellites
 - .. Cosmos satellites
 - ... **Cosmos 381 satellite**
 - . Soviet satellites
 - .. Cosmos satellites
 - ... **Cosmos 381 satellite**

Cosmos 782 satellite

DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.

- GS artificial satellites
 - . Soviet satellites
 - .. **Cosmos 782 satellite**

- RT international cooperation

Cosmos 936 satellite

DEF One in a series of satellites launched by the USSR reportedly for geophysical observations.

- GS artificial satellites
 - . Soviet satellites
 - .. **Cosmos 936 satellite**

- RT international cooperation

Cosmos 954 satellite

DEF A Russian ocean surveillance satellite which reentered over Canada spreading radioactive debris.

- GS artificial satellites
 - . geophysical satellites
 - .. Cosmos satellites
 - ... **Cosmos 954 satellite**
 - . Soviet satellites
 - .. Cosmos satellites
 - ... **Cosmos 954 satellite**

- RT uncontrolled reentry (spacecraft)

Cosmos 1129 satellite

DEF Soviet VOSTOK biological spacecraft launched on September 25, 1979 carrying experiments from several nations. NASA contributed 13 experiments.

- GS artificial satellites
 - . geophysical satellites

- .. Cosmos satellites
- ... **Cosmos 1129 satellite**
- . Soviet satellites
- .. Cosmos satellites
- ... **Cosmos 1129 satellite**
- RT international cooperation

Cosmos satellites

- GS artificial satellites
 - . geophysical satellites
 - .. **Cosmos satellites**
 - ... Cosmos 2 satellite
 - ... Cosmos 3 satellite
 - ... Cosmos 5 satellite
 - ... Cosmos 6 satellite
 - ... Cosmos 14 satellite
 - ... Cosmos 44 satellite
 - ... Cosmos 54 satellite
 - ... Cosmos 71 satellite
 - ... Cosmos 110 satellite
 - ... Cosmos 137 satellite
 - ... Cosmos 144 satellite
 - ... Cosmos 149 satellite
 - ... Cosmos 166 satellite
 - ... Cosmos 186 satellite
 - ... Cosmos 188 satellite
 - ... Cosmos 206 satellite
 - ... Cosmos 213 satellite
 - ... Cosmos 224 satellite
 - ... Cosmos 225 satellite
 - ... Cosmos 381 satellite
 - ... Cosmos 954 satellite
 - ... Cosmos 1129 satellite
 - ... Intercosmos satellites
 - . Soviet satellites
 - .. **Cosmos satellites**
 - ... Cosmos 2 satellite
 - ... Cosmos 3 satellite
 - ... Cosmos 5 satellite
 - ... Cosmos 6 satellite
 - ... Cosmos 14 satellite
 - ... Cosmos 44 satellite
 - ... Cosmos 54 satellite
 - ... Cosmos 71 satellite
 - ... Cosmos 110 satellite
 - ... Cosmos 137 satellite
 - ... Cosmos 144 satellite
 - ... Cosmos 149 satellite
 - ... Cosmos 166 satellite
 - ... Cosmos 186 satellite
 - ... Cosmos 188 satellite
 - ... Cosmos 206 satellite
 - ... Cosmos 213 satellite
 - ... Cosmos 224 satellite
 - ... Cosmos 225 satellite
 - ... Cosmos 381 satellite
 - ... Cosmos 954 satellite
 - ... Cosmos 1129 satellite
 - ... Intercosmos satellites
- RT ∞ cosmos

COSPAR (committee)

USE **Committee on Space Research**

COSPAS

DEF The USSR satellite of the COSPAS-SarSat project which is a satellite-aided project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies.

- GS artificial satellites
 - .. **COSPAS**
- RT reconnaissance
 - rescue operations
 - SarSat
 - searching

Cosserat surfaces

- RT flat surfaces
 - ∞ surface geometry
 - surface properties
 - ∞ surfaces

cost analysis

- UF *cost benefit analysis*
- RT ∞ analyzing
 - budgeting
 - comparison
 - costs
 - design to cost

- economic analysis
- feasibility
- feasibility analysis
- financial management
- life cycle costs
- management
- management analysis
- management planning
- optical transfer function
- production costs
- proposals
- value engineering
- wage surveys

cost benefit analysis

(added April 2000)

- USE **cost analysis**
 - cost effectiveness**

cost effectiveness

- UF *cost benefit analysis*
- GS effectiveness
 - . **cost effectiveness**
- RT allocations
 - budgeting
 - commercial off-the-shelf products
 - life cycle costs

cost estimates

- GS estimates
 - . **cost estimates**
- RT aircraft production costs
 - appropriations
 - budgeting
 - costs
 - economic analysis
 - economy
 - ∞ estimators
 - federal budgets
 - financial management
 - management
 - production costs
 - value engineering
 - wage surveys

cost incentives

- RT efficiency
 - incentive techniques
 - management
 - value engineering

cost reduction

- RT commonality
 - efficiency
 - incentive techniques
 - launch costs
 - management
 - management methods
 - management planning
 - rapid prototyping
 - small satellite technology
 - value engineering
 - wage surveys

Costa Rica

- GS nations
 - . **Costa Rica**
- RT Central America

costs

- GS **costs**
 - . freight costs
 - . launch costs
 - . life cycle costs
 - . low cost
 - . operating costs
 - . production costs
 - .. aircraft production costs
- RT accounting
 - aircraft production
 - commerce
 - cost analysis
 - cost estimates
 - damage assessment
 - design to cost
 - economic analysis
 - economic factors
 - economic impact
 - economics
 - efficiency

- estimating
evaluation
feasibility
financial management
gross national product
revenue
task complexity
tasks
value
- Cote d'Ivoire**
(added September 1993)
UF *Ivory Coast*
GS nations
. **Cote d'Ivoire**
RT Africa
- COTS products*
(added March 2001)
USE **commercial off-the-shelf products**
- cotton**
GS farm crops
. **cotton**
plants (botany)
. **cotton**
RT boll weevils
bollworms
clothing
cordage
cotton fibers
Earth resources
fabrics
fibers
textiles
yarns
- cotton fibers**
GS clothing
. **cotton fibers**
fibers
. **cotton fibers**
textiles
. **cotton fibers**
RT cotton
crepe
organic materials
- couches**
RT beds
cushions
harnesses
seats
- Couette flow**
GS fluid flow
. steady flow
. . **Couette flow**
. 2 dimensional flow
. . **Couette flow**
. viscous flow
. . **Couette flow**
RT annular flow
axisymmetric flow
Brinkman number
Hartmann flow
internal flow
rotating cylinders
- Cougar aircraft*
USE **F-9 aircraft**
- cough**
GS reflexes
. respiratory reflexes
. . **cough**
signs and symptoms
. **cough**
RT expellants
- coulees*
USE **canyons**
- Coulomb collisions**
DEF The collisions of sets of two particles both of which are charged.
GS collisions
. **Coulomb collisions**
- RT charged particles
- Coulomb potential**
GS potential energy
. electric potential
. . **Coulomb potential**
RT charged particles
coulometry
electric field strength
electric fields
∞ potential
- coulometers**
DEF Electrolytic cells or electronic devices arranged to measure the quantity of electricity by the chemical action produced in accordance with Faraday's law.
GS measuring instruments
. **coulometers**
RT ammeters
chemical analysis
coulometry
electrical measurement
electrochemistry
electrodeposition
electrolysis
titration
voltmeters
- coulometry**
GS electrical measurement
. **coulometry**
electrochemistry
. electrolysis
. . **coulometry**
RT Coulomb potential
coulometers
- countdown**
DEF A step-by-step process that culminates in a climactic event, each step being performed in accordance with a schedule marked by a count in inverse numerical order; specifically, this process is used in leading up to the launch of a large of complicated rocket vehicle, or in leading up to a captive test, a readiness firing, a mock firing or other firing test.
GS preflight operations
. **countdown**
schedules
. **countdown**
RT checkout
crew procedures (preflight)
launching
liftoff (launching)
prelaunch problems
prelaunch tests
space vehicle checkout program
spacecraft launching
windows (intervals)
- counter rotation**
DEF Movement of sets of bodies or fluids around a common axis where movement in own rotational direction is opposed by movement in the opposite direction.
GS gyration
. rotation
. . **counter rotation**
RT boundary value problems
counterflow
counter-rotating wheels
rotating disks
rotating fluids
- counterbalances**
RT aircraft stability
ballast (mass)
dynamic stability
mass distribution
spacecraft stability
static stability
- counterflow**
GS fluid flow
. **counterflow**
RT axial flow
counter rotation
heat exchangers
heat transfer
- trapped vortices
turbulent diffusion
turbulent flow
vortices
- counterinsurgency aircraft*
USE **COIN aircraft**
- countermeasures**
GS **countermeasures**
. ballistic missile decoys
. electronic countermeasures
. . antiradar coatings
. . chaff
. jamming
. optical countermeasures
. reentry decoys
. stealth technology
RT antiradiation missiles
Blue Goose missile
decoys
protection
quail missile
radar absorbers
target masking
torpedoes
- counter-rotating wheels**
UF *inertia wheels*
GS wheels
. **counter-rotating wheels**
RT counter rotation
flywheels
gears
mechanical drives
reaction wheels
- counters**
UF *dekatrons*
gas discharge counters
pulse recorders
quantizer
GS measuring instruments
. **counters**
. . radiation counters
. . . Cerenkov counters
. . . electron counters
. . . Geiger counters
. . . neutron counters
. . . neutron spectrometers
. . . particle telescopes
. . . proportional counters
. . . quantum counters
. . . scintillation counters
. . . spark chambers
RT accumulators (computers)
computer components
counting
counting circuits
data recorders
ionization chambers
monitors
recording instruments
- countersinking**
RT grinding (material removal)
metal cutting
- counting**
RT counters
data acquisition
enumeration
estimating
∞ measurement
∞ numbers
observation
repetition
sampling
- counting circuits**
GS circuits
. **counting circuits**
. . scalars
RT anticoincidence detectors
counters
logic circuits
- counting rate computers**
GS data processing equipment
. computers

coupled modes

. . counting rate computers

coupled modes

DEF Modes of vibration that are not independent, but which influence one mode to the other. Used for mode coupling.

UF *mode coupling*
GS modes

. coupled modes

RT chemical bonds
couples
couplings
crosslinking
laser arrays
magnetosphere-ionosphere coupling
polymerization
strongly coupled plasmas
uncoupled modes

couplers

SN (EXCLUDES MECHANICAL DEVICE)

GS **couplers**
. antenna couplers
. . diplexers
. . directional couplers
. coupling circuits
RT antenna components
coupling
couplings
impedance matching
yokes

couples

RT antenna couplers
coupled modes
coupling circuits
cross coupling
diplexers
optical coupling
spin-spin coupling
uncoupled modes
yokes

coupling

SN (FOR MECHANICAL DEVICES, USE COUPLINGS)

GS **coupling**
. acoustic coupling
. cross coupling
. electromagnetic coupling
. . microwave coupling
. . optical coupling
. gyroscopic coupling
. magnetosphere-ionosphere coupling
. spin-spin coupling
. thermodynamic coupling
RT antenna couplers
Clebsch-Gordan coefficients
couplers
couplings
decoupling
directional couplers
linkages
mechanical drives
Racah coefficient
velocity coupling
wave interaction

coupling circuits

GS circuits
. **coupling circuits**
couplers
. **coupling circuits**
RT antenna couplers
couples
cross coupling
energy transfer
impedance matching
microwave coupling
RC circuits
RL circuits
transformers

coupling coefficients

GS coefficients
. **coupling coefficients**
RT form factors
magnetic induction

transfer functions

couplings

DEF Devices or contrivances for joining adjacent ends or parts of anything. Devices permitting transfer of energy from one electrical circuit to another, or from one mechanical device to another.

RT anchors (fasteners)
bolts
clips
closures
connectors
coupled modes
couplers
coupling
directional couplers
fasteners
fittings
∞ joining
joints (junctions)
linkages
mechanical drives
pins
rivets
screws
sleeves
splines
trailers
unions (connectors)

Courier aircraft

USE **U-10 aircraft**

Courier satellite

GS artificial satellites
. **Courier satellite**
RT Advent Project

courses

USE **paths**

covalence

RT chemical bonds
covalent bonds

covalent bonds

GS chemical bonds
. **covalent bonds**
RT covalence

covariance

GS statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . **covariance**
RT correlation
experiment design
factor analysis
orthogonality
quality control
regression analysis
significance
variability

coveralls

GS clothing
. **coveralls**
RT flight clothing
protective clothing

coverings

RT camouflage
∞ caps
∞ casing
closures
coatings
electrostatic bonding
enclosures
∞ envelopes
guards (shields)
housings
jackets
masking
netting (materials/structures)
preserving
sealing
shells (structural forms)
shrouds

spherical caps

coves

USE **bays (topographic features)**

Cowell method

USE **numerical integration**

cowlings

GS housings
. **cowlings**
RT air intakes
fairings
nacelles
pods (external stores)
protuberances
shells (structural forms)

CP violation

(added April 2002)

DEF Violation of the combined conservation laws associated with charge conjugation (C) and space inversion (P, parity) by the weak nuclear force. A symmetry violation thought to be responsible for the excess of matter over antimatter in the Universe.

GS symmetry
. broken symmetry
. . **CP violation**
RT conservation laws
parity
particle decay
standard model (particle physics)
weak interactions (field theory)

CPL (heat transfer)

(added September 2003)

USE **capillary pumped loops**

Crab nebula

GS celestial bodies
. nebulae
. . **Crab nebula**
RT Orion nebula
supernovae
Taurus constellation

crabs

GS animals
. invertebrates
. . arthropods
. . . **crabs**

crack arrest

RT crack initiation
crack propagation
crack tips
cracking (fracturing)

crack bridging

(added March 1995)

DEF The occurrence of unbroken material grains or reinforcing elements extending across the surfaces of a crack. A common occurrence in fiber composites and some ceramic materials, it contributes to improved crack growth resistance.

UF *fiber bridging*
grain bridging

RT ceramic matrix composites
crack opening displacement
crack propagation
fiber composites
fracture mechanics
metal matrix composites

crack closure

DEF Phenomenon which occurs when the cyclic plasticity of a material gives rise to the development of residual plastic deformations in the vicinity of a crack tip, causing the fatigue crack to close at positive load.

RT brittleness
cracking (fracturing)
cracks
Elber equation
fatigue (materials)
fractography
fracture mechanics
fracture strength

fracturing
Griffith crack
metal fatigue
microcracks
stress corrosion cracking
surface cracks

crack formation

USE **crack initiation**

crack geometry

DEF The shape and size of partial fractures or flaws in materials.

GS geometry
. **crack geometry**
RT cavities
crack tips
cracks
fatigue (materials)
fractography
microcracks
short cracks
surface cracks
voids

crack initiation

UF *crack formation*
RT brittleness
crack arrest
crack tips
cracks
critical loading
fracture mechanics
fracture strength
J integral
metal fatigue
metal surfaces
microcracks
short cracks
stress concentration
stress corrosion cracking
stress intensity factors
surface cracks
surface defects
toughness

crack opening displacement

(added September 1988)

DEF The displacement at the mouth of a crack in a material. Used for COD (cracks).

UF *COD (cracks)*
GS displacement
. **crack opening displacement**
RT crack bridging
crack propagation
cracking (fracturing)
cracks
fracture mechanics
fracture strength
fractures (materials)
fracturing
gaps
notch tests
notches
voids

crack propagation

GS propagation (extension)
. **crack propagation**
RT acoustic emission
bend tests
brittleness
Coffin-Manson law
crack arrest
crack bridging
crack opening displacement
crack tips
cracking (fracturing)
cracks
fatigue (materials)
fractography
fracture mechanics
fracture strength
fracturing
Griffith crack
J integral
metal fatigue
micromechanics
plane strain
 ∞ propagation

residual strength
 ∞ resistance
Segre characteristic
short cracks
strain distribution
stress corrosion cracking
stress distribution
stress intensity factors
surface cracks

crack tips

DEF The boundaries between cracked and uncracked material.

GS fractures (materials)
. cracks
. . **crack tips**
tips
. **crack tips**
RT crack arrest
crack geometry
crack initiation
crack propagation

cracking (chemical engineering)

DEF A process used to reduce the molecular weight of hydrocarbons by breaking molecular bonds by thermal, catalytic, or hydrocracking methods.

GS chemical reactions
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
decomposition
. **cracking (chemical engineering)**
. . hydrocracking
. . pyrolysis
RT ammonolysis
catalysis
catalytic activity
chemical engineering
coal gasification
electrolysis
hydrocarbons
hydrogenolysis
hydrolysis
nitrolysis
organic chemistry
photolysis
thermal dissociation

cracking (fracturing)

GS fracturing
. **cracking (fracturing)**
. . stress corrosion cracking
RT brittle materials
brittleness
crack arrest
crack closure
crack opening displacement
crack propagation
cracks
destruction
edge cracks
failure
fatigue (materials)
J integral
kinking
rupturing
stress concentration
stress corrosion
stress intensity factors
structural failure
structural strain
temperature inversions

cracks

UF *crevices*
GS fractures (materials)
. **cracks**
. . crack tips
. . edge cracks
. . microcracks
. . short cracks
. . surface cracks
RT cavities
crack closure
crack geometry
crack initiation
crack opening displacement
crack propagation

cracking (fracturing)
defects
Elber equation
failure modes
fatigue (materials)
interstices
leakage
openings
stresses
temperature inversions
ultrasonic spectroscopy

CRAF mission

USE **Comet Rendezvous Asteroid Flyby Mission**

craft

USE **vehicles**

Cramer-Rao bounds

(added June 1997)

GS analysis (mathematics)
. real variables
. . extremum values
. . . minima
. . . **Cramer-Rao bounds**
RT Fisher information
maximum likelihood estimates
variance (statistics)

cramps

RT epilepsy
muscular function
seizures

cranes

SN (EXCLUDES BIRDS)
GS handling equipment
. **cranes**
. . gantry cranes
RT booms (equipment)
conveyors
 ∞ lifts
logistics
materials handling
towers
winches

cranium

GS anatomy
. head (anatomy)
. . skull
. . . **cranium**
. . . . intracranial cavity
. . . . musculoskeletal system
. . . . bones
. . . . skull
. . . . **cranium**
. intracranial cavity
RT intercranial circulation
mastoids

cranked wings

USE **swept wings**

Crank-Nicholson method

DEF A method for solving parabolic partial differential equations, whose main feature is an implicit method which avoids the need for using very small time steps.

RT boundary value problems
differential equations
finite difference theory
finite element method
numerical analysis
problem solving

cranks

USE **eccentrics**

crash injuries

GS injuries
. **crash injuries**
RT accidents
burns (injuries)
hazards
whiplash injuries

crash landing

GS crashes
. **crash landing**

crashes

. . ditching (landing)
RT aircraft accidents
aircraft hazards
aircraft safety
aircraft spin
arresting gear
crashworthiness
emergency landing
flight hazards
glide landings
hard landing
horizontal spacecraft landing
lunar landing
pilot error
planetary landing
skid landings
soft landing
spacecraft landing
water landing

crashes
GS **crashes**
. crash landing
. ditching (landing)
RT accidents
air bag restraint devices
aircraft accidents
aircraft hazards
aircraft safety
collisions
crashworthiness
encounters
flight hazards
flight safety
highways
midair collisions
pilot error
runway incursions
safety
wreckage

crashworthiness
DEF The ability of a vehicle to withstand a crash.
RT aircraft accidents
aircraft landing
aircraft safety
crash landing
crashes
flight safety
impact resistance

cratering
GS **cratering**
. projectile cratering
RT craters
ejecta
impact damage
Mars craters
meteorite craters
meteoritic damage
nuclear explosions

craters
UF *maars*
GS **craters**
. lunar craters
. . Ptolemaeus Crater
. . Tycho crater
. meteorite craters
. planetary craters
. . Mars craters
RT asteroid collisions
calderas
cometary collisions
cones (volcanoes)
cratering
ejecta
impact damage
satellite surfaces

cratons
RT continents
Earth crust
Earth surface
ocean bottom

crawler tractors
GS surface vehicles
. motor vehicles

. . tractors
. . . **crawler tractors**
RT electric motor vehicles
ground support equipment
handling equipment
lunar surface vehicles
manned lunar surface vehicles
tracked vehicles
∞ transport vehicles
∞ vehicles

Cray computers
DEF Supercomputers built by Cray Research Inc. that require the supporting services of another front-end general purpose computer for operation. They incorporate very fast scalar and vector hardware, are used primarily for the simulation of physical phenomena, and are programmed in FORTRAN.
GS data processing equipment
. computers
. . supercomputers
. . . **Cray computers**

crayons
RT ∞ markers
temperature measurement

crazing
USE **surface cracks**

creatine
GS crystals
. **creatine**
RT juices

creatinine
RT diseases
urine

creation
USE **creativity**

creativity
UF *creation*
RT arts
education
morale

creep analysis
RT ∞ analyzing
stress analysis
stress relaxation
structural analysis

creep buckling
GS buckling
. **creep buckling**

creep diagrams
GS diagrams
. **creep diagrams**
RT stress relaxation
stress-strain-time relations

creep properties
GS mechanical properties
. **creep properties**
. . creep rupture strength
. . shear creep
. . steady state creep
. . tensile creep
RT anelasticity
deformation
dimensional stability
ductility
fatigue (materials)
∞ flow
plastic deformation
plastic flow
∞ properties
residual stress
shear flow
shear properties
static deformation
stress relaxation
stresses
structural failure
superplasticity

temperature inversions

creep resistance
USE **creep strength**

creep rupture strength
UF *stress rupture strength*
GS mechanical properties
. creep properties
. . **creep rupture strength**
RT fracture strength
J integral
∞ strength

creep strength
DEF The constant nominal stress that will cause a specified quantity of creep in a given time at constant temperature. Used for creep resistance.
UF *creep resistance*
GS mechanical properties
. **creep strength**
RT load carrying capacity
∞ resistance
∞ strength

creep tests
RT compression tests
fatigue tests
load tests
plastic deformation
static tests
∞ tests

crepe
GS fabrics
. **crepe**
RT cotton fibers
silk

cresols
GS hydroxyl compounds
. alcohols
. . phenols
. . . **cresols**

crestatrons
USE **traveling wave tubes**

crests
USE **waves**

Cretaceous Period
(added June 1989)
GS Mesozoic Era
. **Cretaceous Period**
RT Cretaceous-Tertiary boundary
geochronology
paleontology
Tertiary Period

Cretaceous-Tertiary boundary
(added June 1989)
UF *K-T boundary*
RT Cenozoic Era
cometary collisions
Cretaceous Period
extinction
geochronology
Mesozoic Era
paleobiology
paleontology
Tertiary Period

crevasses
GS **crevasses**
. glaciers
RT Earth movements
geological faults
recesses
seamounts

crevices
USE **cracks**

Crew Equipment Translation Aid (ISS)
(added December 2002)
DEF A human powered cart used by astronauts to conduct extravehicular-activity (EVA) maintenance on the International Space Station (ISS).

- UF *CETA cart (ISS)*
 GS carts
 . **Crew Equipment Translation Aid (ISS)**
 RT astronaut maneuvering equipment
 extravehicular activity
 extravehicular mobility units
 International Space Station
 orbital assembly
- crew experiment stations**
 GS stations
 . workstations
 . . crew workstations
 . . . **crew experiment stations**
 RT astronauts
 compartments
 cosmonauts
 crews
 personnel
 spacecraft cabins
 spacecrews
- Crew Exploration Vehicle**
(added July 2005)
 UF *Orion crew vehicle*
 GS lunar spacecraft
 . **Crew Exploration Vehicle**
 manned spacecraft
 . **Crew Exploration Vehicle**
 RT Ares 1 launch vehicle
 Ares 1 upper stage
 Constellation program
 long duration space flight
 lunar exploration
 manned Mars missions
 manned space flight
 Mars exploration
- crew observation stations**
 GS stations
 . workstations
 . . crew workstations
 . . . **crew observation stations**
 RT astronauts
 compartments
 cosmonauts
 crews
 personnel
 spacecraft cabins
 spacecrews
- crew procedures (inflight)**
 DEF Operations performed by crews aboard aircraft or spacecraft during flight. Includes flight operations as well as spaceborne experiment procedures.
 GS flight operations
 . **crew procedures (inflight)**
 procedures
 . **crew procedures (inflight)**
 RT display devices
 flight crews
 in-flight monitoring
 spacecrews
 tasks
 ∞ tests
- crew procedures (preflight)**
 DEF Operations performed by crews aboard aircraft or spacecraft and by ground support crews before flight or launching.
 GS procedures
 . **crew procedures (preflight)**
 RT countdown
 display devices
 flight crews
 flight operations
 ground handling
 ground tests
 in-flight monitoring
 onboard equipment
 preflight operations
 prelaunch tests
 spacecraft control
 spacecrews
 tasks
- ∞ tests
- crew size**
 DEF The number of people in a crew.
 RT flight crews
- crew stations*
 USE **crew workstations**
- crew workstations**
 UF *crew stations*
 GS stations
 . workstations
 . . **crew workstations**
 . . . crew experiment stations
 . . . crew observation stations
 RT astronauts
 compartments
 cosmonauts
 crews
 helmet mounted displays
 personnel
 spacecraft cabins
 spacecrews
- crews**
 GS personnel
 . **crews**
 . . flight crews
 . . . spacecrews
 RT astronauts
 cosmonauts
 crew experiment stations
 crew observation stations
 crew workstations
 flight nurses
 pilots (personnel)
- crickets**
 GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **crickets**
- crime**
 GS **crime**
 . air piracy
 . terrorism
 RT law (jurisprudence)
 police
 regulations
 security
 social factors
 surveillance
 violence
- crimping*
 USE **folding**
- criteria**
 DEF The minimum standards or limits on which judgments may be based.
 GS **criteria**
 . structural design criteria
 RT evaluation
 figure of merit
 ∞ measures
 standards
- critical current**
(added December 1999)
 DEF A current value in a superconductive material, at a particular constant temperature and in the absence of a magnetic field, below which the material is superconducting and above which the material behaves normally.
 GS electric current
 . **critical current**
 RT critical temperature
 current density
 superconductivity
 superconductors (materials)
- critical experiments**
 RT experimentation
 nuclear fission
 nuclear reactions
- critical flicker fusion**
 UF *flicker fusion frequency*
- GS perception
 . sensory perception
 . . visual perception
 . . . **critical flicker fusion**
 RT afterimages
 flicker
- critical flow**
 GS fluid flow
 . **critical flow**
 RT flow characteristics
 gas flow
 laminar flow
 liquid flow
 multiphase flow
 orifice flow
 pipe flow
 pressure gradients
 Ringleb flow
 single-phase flow
 steady flow
 steam flow
 subcritical flow
 supercritical flow
 turbulent flow
 unsteady flow
- critical frequencies**
 DEF The limiting frequencies below which magnetoionic wave components are reflected and above which they penetrate through, an ionized medium (plasma) at vertical incidence.
 GS frequencies
 . **critical frequencies**
 RT light (visible radiation)
 resonant frequencies
- critical loading**
 SN (LIMITED TO FORCE LOADS)
 UF *critical stress*
 GS loads (forces)
 . **critical loading**
 stresses
 . **critical loading**
 RT aerodynamic loads
 crack initiation
 dynamic loads
 load carrying capacity
 proportional limit
 shallow shells
 static loads
- critical Mach number*
 USE **critical velocity**
Mach number
- critical mass**
 DEF The amount of concentrated fissionable material that can just support a self-sustaining fission reaction.
 GS mass
 . **critical mass**
 RT nuclear fission
 nuclear fuel burnup
 nuclear reactions
 plasma core reactors
 subcritical mass
- critical path method**
 GS network analysis
 . **critical path method**
 RT ∞ control
 dynamic programming
 estimating
 GERT
 management methods
 ∞ methodology
 mission planning
 operations research
 ∞ paths
 PERT
 planning
 program trend line analysis
 programming (scheduling)
 project management
 research
 sequencing
 sneak circuit analysis

critical point

systems engineering

critical point

DEF The thermodynamic state in which liquid and gas phases of a substance coexist in equilibrium at the highest possible temperature. At higher temperature than the critical no liquid phase can exist.

GS thermodynamic properties
. thermophysical properties

. . . **critical point**
RT Mayer problem

critical pressure

DEF In rocketry, the pressure in the nozzle throat for which the isentropic weight flow rate is maximum. The pressure of a gas at the critical point, which is the highest pressure under which a liquid can exist in equilibrium with its vapor.

GS pressure
. **critical pressure**
thermodynamic properties
. thermophysical properties

. . . **critical pressure**
RT degenerate matter
high pressure
liquid phases
supercritical pressures
vapor phases

critical Reynolds number

USE **Reynolds number**

critical speed

USE **critical velocity**

critical stress

USE **critical loading**

critical temperature

DEF The temperature above which a substance cannot exist in the liquid state regardless of the pressure. As applied to reactor overheat or afterheat, the temperature at which the least resistant component of the reactor core begins to melt down. As applied to materials, the temperature at which a change in phase takes place causing an appreciable change in the properties of the material.

GS temperature
. **critical temperature**
thermodynamic properties
. thermophysical properties

. . . **critical temperature**
RT critical current
cryogenic temperature
heat treatment
high temperature superconductors
metallic hydrogen
noncondensable gases
phase diagrams
phase transformations

critical velocity

DEF In rocketry, the speed of sound at the conditions prevailing at the nozzle throat. Used for critical Mach number, critical Reynolds number, and critical speed.

UF *critical Mach number*
critical speed

GS rates (per time)
. **critical velocity**
velocity

. . . **critical velocity**
RT exhaust velocity
resonant frequencies
Reynolds number
tip speed

Croatia

(added October 1994)

GS nations
. **Croatia**
RT Bosnia and Herzegovina
Europe
Yugoslavia

Crocco method

RT axisymmetric flow
boundary layers

compressible flow
compressible fluids
entropy
inviscid flow
∞ methodology
shock wave propagation
steady flow
vorticity

Crocco-Lee theory

RT boundary layer separation
continuity equation
gas flow
inviscid flow
mass flow
multiphase flow
reattached flow
separated flow
∞ theories

Croloy

GS alloys
. iron alloys
. . . steels
. . . **Croloy**

crop calendars

DEF Schedules for the maturation and harvesting of seasonal crops.

GS calendars
. **crop calendars**

RT ∞ crops
farm crops
growth
scheduling
seasons

crop dusting

DEF The application of fungicides or insecticides in powder form to a crop, usually from a low flying aircraft.

GS spraying
. **crop dusting**
RT aerosols
agricultural aircraft
agriculture
dispersions
farm crops
pesticides
powder (particles)

crop growth

GS growth
. vegetation growth
. . . **crop growth**
RT agriculture
alfalfa
barley
blight
citrus trees
corn
∞ crops
Earth resources
farm crops
farmlands
germination
grasslands
Large Area Crop Inventory
Experiment
oats
orchards
photosynthesis
photosynthetically active radiation
plant diseases
plant stress
plants (botany)
sugar beets
sugar cane
thermal resources
vineyards
wheat

crop identification

GS identifying
. **crop identification**
RT agriculture
∞ crops
Earth resources
evaluation
farmlands

ground truth
imaging techniques
leaf area index
multispectral photography
plant diseases
recognition
remote sensors
∞ sensors
sorghum
spectral signatures
SPOT (French satellite)
sunflowers
timber identification
vegetative index

crop inventories

DEF Numerical estimates of vegetable, fruit, and other commercial farm products based on the analysis of photography or imagery from aircraft or satellites made during periodic passes during the growth cycle.

GS inventories
. **crop inventories**
RT agriculture
AgRISTARS project
farm crops
farmlands
Large Area Crop Inventory
Experiment
leaf area index
remote sensors
vegetative index

Crop Inventories by Remote Sensing

USE **AgRISTARS project**

crop vigor

RT agriculture
alfalfa
barley
blight
citrus trees
farm crops
farmlands
genetically modified plants
irrigation
normalized difference vegetation
index
oats
orchards
phototropism
plant diseases
plant stress
plants (botany)
sugar beets
sugar cane
thermal resources
vegetation growth
viability
vineyards
wheat

croplands

USE **farmlands**

∞ **crops**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT agriculture
alfalfa
barley
biomass energy production
citrus trees
corn
crop calendars
crop growth
crop identification
farm crops
farmlands
frost damage
Large Area Crop Inventory
Experiment
orchards
planting
sorghum
sunflowers
tomatoes
vineyards

- wheat
- cross correlation**
 - GS correlation
 - RT autocorrelation
 - data correlation
- cross coupling**
 - GS coupling
 - RT communication theory
 - couples
 - coupling circuits
 - microwave coupling
 - optical coupling
 - radio frequency interference
- cross faults*
- USE **geological faults**
- cross flow**
 - DEF A flow going across another flow, as a spanwise flow over a wing.
 - GS fluid flow
 - RT aerodynamic characteristics
 - ∞ flow
 - flow characteristics
 - flow geometry
 - spanwise blowing
 - water tunnel tests
- cross polarization**
 - DEF The component of the electric field vector normal to the desired polarization component.
 - GS polarization (waves)
 - RT optical coupling
 - optical properties
 - polarized electromagnetic radiation
 - polarons
 - rotation
- cross relaxation**
 - RT masers
 - ∞ relaxation
 - rutile
 - spin-spin coupling
- ∞ **cross sections**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF Measures of the effectiveness of particular processes expressed either as areas (geometric cross sections) which would produce the observed results, or as ratios.
 - RT absorption cross sections
 - airfoil profiles
 - area
 - atomic collisions
 - collision parameters
 - distribution (property)
 - drawings
 - geometry
 - gradients
 - ionization cross sections
 - mean free path
 - neutron cross sections
 - planforms
 - radar cross sections
 - scattering cross sections
 - shapes
 - stopping power
 - surveys
 - two dimensional bodies
- crossbedding (geology)**
 - GS geology
 - RT landforms
 - rocks
 - strata
 - stratification
 - stratigraphy
- crossed field amplifiers**
 - GS amplifiers
 - microwave amplifiers
- ∞ **crossed field amplifiers**
 - microwave equipment
 - microwave amplifiers
- ∞ **crossed field amplifiers**
 - RT electron tubes
 - magnetrons
 - traveling wave tubes
- crossed field guns**
 - RT electron guns
 - ∞ guns
 - plasma control
 - plasma guns
 - plasma jets
- crossed fields**
 - RT electric fields
 - field theory (physics)
 - magnetic fields
 - magnetrons
 - plasma control
 - waveguides
- crossings**
 - GS crossings
 - chiasm
 - RT bridges (structures)
 - crossovers
 - intersections
 - pipelines
 - ramps (structures)
- crosslinking**
 - GS crosslinking
 - vulcanizing
 - RT addition resins
 - coupled modes
 - curing
 - ∞ joining
 - netting (materials/structures)
 - phenolic epoxy resins
- crossovers**
 - RT bridges (structures)
 - crossings
 - intersections
- crosstalk**
 - DEF Electrical disturbances in a communication channel as a result of coupling with other communication channels.
 - GS electromagnetic interference
 - ∞ **crosstalk**
 - ionospheric cross modulation
 - RT communicating
 - electromagnetic compatibility
 - ∞ interference
 - telephony
 - wave diffraction
- crowding**
 - RT ∞ concentration
 - ∞ saturation
- CRRES (satellite)**
 - (added April 1993)
 - UF Combined Release and Radiation Effects Sat
 - GS artificial satellites
 - scientific satellites
 - ∞ **CRRES (satellite)**
 - RT chemical clouds
 - chemical release modules
 - Earth ionosphere
 - Earth magnetosphere
 - extraterrestrial radiation
 - orbital space tests
 - radiation effects
 - space plasmas
 - spaceborne experiments
- crucibles**
 - RT ∞ containers
 - heating equipment
- cruciform wings**
 - GS airfoils
 - wings
 - ∞ **cruciform wings**
 - RT fixed wings
- low aspect ratio wings
- crude oil**
 - UF petroleum
 - GS fuels
 - chemical fuels
 - ∞ hydrocarbon fuels
 - ∞ fossil fuels
 - ∞ **crude oil**
 - geophysical fluids
 - ∞ **crude oil**
 - oils
 - ∞ **crude oil**
 - resources
 - Earth resources
 - ∞ fossil fuels
 - ∞ **crude oil**
 - RT carbonaceous materials
 - deposits
 - energy policy
 - fuel production
 - offshore energy sources
 - oil exploration
 - oil fields
 - petroleum products
 - reserves
 - underwater resources
 - waxes
- cruise missiles**
 - DEF Guided missiles, the major portion of whose flight path to its target is conducted at approximately constant velocity - depends on the dynamic reaction of air for lift, and upon propulsive forces to balance drag.
 - GS missiles
 - surface to surface missiles
 - ∞ **cruise missiles**
 - ∞ Navaho missile
 - ∞ Tomahawk missiles
 - RT antiship missiles
 - terrain following
- cruising flight**
 - RT coasting flight
 - ∞ flight
 - horizontal flight
- Crusader aircraft*
- USE **F-8 aircraft**
- crushers**
 - RT comminution
 - crushing
 - disintegration
 - grinding mills
 - impactors
- crushing**
 - GS comminution
 - ∞ **crushing**
 - RT crushers
 - disintegration
 - grinding (comminution)
- crustal dynamics*
- USE **Earth crust geodynamics**
- crustal fractures**
 - GS fracturing
 - ∞ **crustal fractures**
 - RT Earth crust
 - Earth movements
 - Earth surface
 - earthquake resistance
 - earthquakes
 - geodynamics
 - geological faults
 - microseisms
 - P waves
 - S waves
 - San Andreas Fault
 - seismic waves
 - seismology
 - shatter cones
 - shock loads
 - shock waves
 - soil mechanics

crusts

surface waves

crusts

GS

crusts

- . lunar crust
- . planetary crusts
- . . Earth crust

RT

- lunar mantle
- planetary mantles

cryochemistry

DEF The study of chemical phenomena in very low temperature environment.

GS

- physical chemistry
- . **cryochemistry**

RT

- ∞ chemistry
- cryogenic equipment
- cryogenics
- low temperature physics

cryocycle principle

RT

- cryopumping
- spacecraft power supplies

cryodeposits

GS

- deposits
- . **cryodeposits**

RT

- coatings
- ∞ cryogenic storage
- cryogenics

cryogenic computer storage

GS

- computer components
- . computer storage devices
- . . **cryogenic computer storage**

RT

- ∞ cryogenic storage
- cryotrons
- ∞ equipment
- superconductors (materials)

cryogenic cooling

DEF Use of cryogenic fluids to reach temperatures near absolute zero.

GS

- cooling
- . **cryogenic cooling**

RT

- capillary pumped loops
- coolers
- cryogenics
- freezing
- heat transfer
- refrigerating

cryogenic equipment

UF

Dewar systems

RT

- cryochemistry
- cryogenics
- ∞ equipment
- gravitational wave antennas
- refrigerating
- refrigerating machinery
- solid cryogenics

cryogenic fluid storage

RT

- cold surfaces
- ∞ cryogenic storage
- cryogenic tanks
- evaporative cooling
- fluid management
- fuel tanks
- multilayer insulation
- space storage
- ∞ storage
- storage tanks
- thermal insulation

cryogenic fluids

GS

- liquids
- . **cryogenic fluids**
- . . Fermi liquids
- . . FLOX
- . . liquid helium
- . . . liquid helium 2
- . . liquid hydrogen
- . . liquid nitrogen
- . . liquid oxygen

RT

- cryogenic tanks
- cryogenic temperature
- cryogenics
- cryopumping
- fluid management

∞ fluids

- rocket oxidizers
- solid cryogen cooling
- solidified gases

cryogenic gyroscopes

GS

- gyroscopes
- . **cryogenic gyroscopes**

RT

- high temperature superconductors

cryogenic magnets

GS

- magnets
- . **cryogenic magnets**

RT

- high temperature superconductors
- superconducting magnets

cryogenic rocket propellants

DEF Rocket fuels, oxidizers, or propulsion fluids which are liquid only at very low temperatures.

GS

- propellants
- . rocket propellants
- . . liquid rocket propellants
- . . . **cryogenic rocket propellants**

RT

- cryogenics
- endothermic fuels
- fluid management
- gaseous rocket propellants
- gelled rocket propellants
- high energy fuels
- high energy propellants
- hybrid propellants
- hydrogen fuels
- hypergolic rocket propellants
- liquefied gases
- liquid hydrogen
- liquid oxygen
- RL-10 engines
- slush
- space storage
- storable propellants

∞ cryogenic storage

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

- cryodeposits
- cryogenic computer storage
- cryogenic fluid storage

cryogenic tanks

(added August 2003)

DEF Containers or other structures designed to hold cryogenic materials.

UF

cryotanks

GS

- tanks (containers)
- . **cryogenic tanks**

RT

- cryogenic fluid storage
- cryogenic fluids
- space storage
- storage tanks

cryogenic temperature

UF

ultralow temperature

GS

- temperature
- . low temperature
- . . **cryogenic temperature**

RT

- absolute zero
- cold traps
- critical temperature
- cryogenic fluids
- cryogenics
- Curie temperature
- solidified gases
- space temperature

cryogenic wind tunnels

DEF Wind tunnels employing a cryogenic environment and utilizing independent control over Mach number, Reynolds number, aeroelastic effects, and model-tunnel interactions.

GS

- test facilities
- . wind tunnels
- . . **cryogenic wind tunnels**

RT

- flight simulators
- test chambers

cryogenics

DEF The study of the methods of producing very low temperatures. The study of the behav-

ior of materials and processes at cryogenic temperatures.

RT

- absolute zero
- cold traps
- cooling
- cryochemistry
- cryodeposits
- cryogenic cooling
- cryogenic equipment
- cryogenic fluids
- cryogenic rocket propellants
- cryogenic temperature
- cryopumping
- cryosar
- cryostats
- cryotrons
- Fermi liquids
- high temperature superconductors
- Joule-Thomson effect
- liquefied gases
- low temperature
- low temperature physics
- refrigerating
- solid cryogen cooling
- solid cryogenics
- solid nitrogen
- solidified gases
- superconducting power transmission
- superconductivity
- thermoelectric cooling
- thermomagnetic cooling

cryolite

GS

- aluminum compounds
- . **cryolite**
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **cryolite**
- . . fluoro compounds
- . . . **cryolite**
- . halides
- . . fluorides
- . . . **cryolite**
- minerals
- . **cryolite**
- sodium compounds
- . **cryolite**

RT

- aluminum

cryopumping

DEF The process of removing gas from a system by condensing it on a surface maintained at very low temperatures.

RT

- cryocycle principle
- cryogenic fluids
- cryogenics
- ∞ pumping
- vacuum pumps

cryosar

GS

- electronic equipment
- . diodes
- . . semiconductor diodes
- . . . avalanche diodes
- **cryosar**
- . solid state devices
- . . semiconductor devices
- . . . avalanche diodes
- **cryosar**
- rectifiers
- . avalanche diodes
- . . **cryosar**

RT

- Barritt diodes
- computer storage devices
- cryogenics

cryosorption

USE **sorption**

∞ cryospheres

(added June 1996)

SN

((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW))

RT

- Earth cryosphere
- planetary cryospheres
- planetary environments

cryostats

GS

- control equipment

. regulators
 . . . **cryostats**
 RT controllers
 cryogenics
 electric switches
 high temperature tests
 liquid helium
 liquid helium 2
 low temperature tests
 temperature control
 thermostats

cryotanks
 (added August 2003)
 USE **cryogenic tanks**

cryotrapping
 GS trapping
 . **cryotrapping**
 RT cold traps

cryotrons
 DEF Devices based upon the principle that superconductivity established at temperatures near absolute zero is destroyed by the application of a magnetic field.
 GS electronic equipment
 . solid state devices
 . . **cryotrons**
 switches
 . electric switches
 . . **cryotrons**
 RT cryogenic computer storage
 cryogenics
 superconductivity
 superconductors (materials)

cryptography
 DEF The science of preparing messages in a form which cannot be read by those not privy to the secrets of the form.
 GS **cryptography**
 . quantum cryptography
 RT ∞ codes
 coding
 computer information security
 decoding
 information theory
 message processing
 steganography

crystal defects
 DEF Departure from the regular arrangement of atoms in the ideal crystal lattice.
 UF *lattice imperfections*
stacking faults
 GS defects
 . **crystal defects**
 . . crystal dislocations
 . . . edge dislocations
 . . . screw dislocations
 . . point defects
 . . . vacancies (crystal defects)
 Frenkel defects
 antisite defects
 RT crystallography
 embedded atom method
 holes (electron deficiencies)
 impurities
 interstitials
 lattice vibrations
 mechanical twinning
 order-disorder transformations
 pinning
 polygonization
 stacking fault energy
 stacks
 surface defects
 trapping
 twinning

crystal dislocations
 DEF Types of lattice imperfections whose existence in metals is postulated in order to account for the phenomenon of crystal growth and of slip, particularly for the low value of shear stress required to initiate slip.
 GS defects
 . crystal defects
 . . **crystal dislocations**

. . . edge dislocations
 . . . screw dislocations
 dislocations (materials)
 . **crystal dislocations**
 . . edge dislocations
 . . screw dislocations
 antiphase boundaries
 fatigue (materials)
 grain boundaries
 pinning
 point defects
 Portevin-le Chatelier effect
 superlattices
 superplasticity
 surface defects

RT

crystal field splitting
 USE **crystal field theory**

crystal field theory
 (added January 1993)
 UF *crystal field splitting*
crystal fields
 GS field theory (physics)
 . **crystal field theory**
 RT crystal lattices
 electric fields
 metal ions

crystal fields
 USE **crystal field theory**

crystal filters
 GS electromagnetic wave filters
 . bandpass filters
 . . **crystal filters**
 . electric filters
 . . **crystal filters**
 RT bandstop filters
 ∞ filters
 intermediate frequency amplifiers
 radio equipment
 radio filters
 tunable filters

crystal growth
 GS growth
 . **crystal growth**
 . . Czochralski method
 . . directional solidification (crystals)
 . . epitaxy
 . . . atomic layer epitaxy
 . . . electroepitaxy
 . . . liquid phase epitaxy
 . . . molecular beam epitaxy
 . . . vapor phase epitaxy
 . . hydrothermal crystal growth
 . . protein crystal growth
 . . traveling solvent method
 . . Verneuil process
 RT Aitken nuclei
 Bravais crystals
 Bridgman method
 buoyancy-driven flow
 containerless melts
 crystal morphology
 crystallization
 crystallography
 crystals
 doped crystals
 float zones
 inoculation
 laser deposition
 mechanical twinning
 melts (crystal growth)
 metalorganic chemical vapor deposition
 ∞ microgravity applications
 nanostructure growth
 netting (materials/structures)
 nucleation
 polygonization
 pulsed laser deposition
 rapid quenching (metallurgy)
 space processing
 twinning
 vapor deposition

crystal lattices
 DEF Three-dimensional, recurring patterns

in which the atoms of crystals are arranged.
 GS **crystal lattices**
 . close packed lattices
 . cubic lattices
 . . body centered cubic lattices
 . . face centered cubic lattices
 . superlattices
 RT antiphase boundaries
 atomic structure
 Bravais crystals
 Brillouin zones
 chemical bonds
 coordination number
 crystal field theory
 crystal morphology
 crystallography
 crystals
 doping (materials)
 epitaxy
 geometry
 graphoepitaxy
 hexagonal cells
 ionic crystals
 Ising model
 isomorphism
 Kossel pattern
 lattice energy
 lattice parameters
 lattice vibrations
 ∞ lattices
 Laue method
 Laves phases
 metal crystals
 metallography
 molecular chains
 molecular structure
 Mossbauer effect
 order-disorder transformations
 particle in cell technique
 Patterson map
 polymorphism
 rapid quenching (metallurgy)
 single crystals
 synthetic metals
 ultrapure metals

crystal morphology
 (added October 2002)
 DEF Characterization of a crystal by the shape and relative angular position of its faces.
 GS morphology
 . **crystal morphology**
 RT crystal growth
 crystal lattices
 crystal structure
 crystal surfaces
 crystallography
 crystals
 shapes

crystal optics
 RT aberration
 acousto-optics
 Bragg cells
 diffraction
 doped crystals
 fiber optics
 geometrical optics
 ∞ optics
 phase matching
 photorefractivity
 physical optics

crystal oscillators
 GS crystals
 . **crystal oscillators**
 . . piezoelectric crystals
 oscillators
 . **crystal oscillators**
 . . piezoelectric crystals
 RT electrical properties
 frequency control
 frequency stability
 oscillations
 piezoelectricity

crystal rectifiers
 UF *silicon rectifiers*
 GS electronic equipment
 . diodes

crystal structure

. . **crystal rectifiers**
. solid state devices
. . **crystal rectifiers**
rectifiers
. **crystal rectifiers**
RT current converters (AC to DC)
semiconductor devices

crystal structure
SN (AGGLOMERATIONS OF CRYSTALS--
EXCLUDES CRYSTAL LATTICES)
GS **crystal structure**
. Widmanstätten structure
RT Abrikosov theory
allotropy
anisotropy
antiphase boundaries
Bravais crystals
clathrates
coordination number
crystal morphology
crystallinity
crystallites
crystals
doped crystals
enantiomers
epitaxy
ferroelasticity
graphoepitaxy
interstitials
isomorphism
isotropy
Laves phases
liquid phase epitaxy
mechanical twinning
metal crystals
microstructure
molecular dynamics
nanocrystals
nanostructure (characteristics)
order-disorder transformations
packing density
Patterson map
phonons
polycrystals
polymorphism
rapid quenching (metallurgy)
spherulites
∞ structures
superlattices
twinning
vapor phase epitaxy

crystal surfaces
GS solid surfaces
. **crystal surfaces**
RT atomic force microscopy
crystal morphology
metal surfaces
surface layers
∞ surfaces

crystallinity
RT amorphous materials
crystal structure

crystallites
GS crystals
. **crystallites**
. . spherulites
RT crystal structure
microcrystals
minerals
rosette shapes

crystallization
UF *devitrification*
GS **crystallization**
. directional solidification (crystals)
. melt spinning
. recrystallization
RT agglomeration
concentrating
containerless melts
crystal growth
demineralizing
freezing
inoculation
liquidus
materials recovery

melts (crystal growth)
modulation
nucleation
Ostwald ripening
phase stability (materials)
phase transformations
precipitation (chemistry)
purification
refining
∞ separation
settling
solid state
solidification
sublimation
submarine hydrothermal vents
supercooling
supersaturation
zone melting

crystallography

RT Bragg angle
crystal defects
crystal growth
crystal lattices
crystal morphology
crystals
Debye-Scherrer method
directivity
isotropy
lamella (metallurgy)
lattice parameters
Laue method
metallography
∞ metallurgy
microbeams
microstructure
mineralogy
neutron diffraction
order-disorder transformations
∞ orientation
radiography
∞ solid state physics
x ray analysis
x ray diffraction

crystals

GS **crystals**
. bicrystals
. boules
. Bravais crystals
. creatine
. crystal oscillators
. . piezoelectric crystals
. crystallites
. . spherulites
. dendritic crystals
. doped crystals
. ionic crystals
. liquid crystals
. metal crystals
. microcrystals
. mixed crystals
. nanocrystals
. polycrystals
. quartz crystals
. single crystals
. whiskers (crystals)
RT anisotropy
body centered cubic lattices
clathrates
containerless melts
crystal growth
crystal lattices
crystal morphology
crystal structure
crystallography
electroepitaxy
face centered cubic lattices
∞ grains
isotropy
packing density
phase matching
ruby

spherules

CSM
USE **command service modules**

CT-114 aircraft
USE **CL-41 aircraft**

CTD
USE **charge transfer devices**

Cuba
GS landforms
. islands
. . West Indies
. . . **Cuba**
nations
. **Cuba**
RT Caribbean region
Caribbean Sea

cubane
GS organic compounds
. hydrocarbons
. . **cubane**

cubes (mathematics)
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **cubes (mathematics)**
RT blocks

cubic equations
GS algebra
. nonlinear equations
. . **cubic equations**
analysis (mathematics)
. real variables
. . nonlinear equations
. . . **cubic equations**
field theory (algebra)
. **cubic equations**
RT ∞ equations
polynomials

cubic lattices
GS crystal lattices
. **cubic lattices**
. . body centered cubic lattices
. . face centered cubic lattices
RT Laves phases

cues
GS **cues**
. zeitgebers
RT auditory signals
visual signals

cuestas
USE **ridges**

cuffs
RT clothing
seals (stoppers)

cultivation
GS **cultivation**
. plowing
ammonia
ammonium nitrates
ashes
culture media
culture techniques
fertilizers
planting
silviculture
soils
tissues (biology)

cultural resources
DEF Archaeological and historical sites.
RT archaeology
human beings

culture (social sciences)
RT American Indians
anthropology
artifacts
Eskimos
ethnic factors

- governments
 minorities
 politics
 race factors
 races (anthropology)
 regimes
 social factors
 sociology
- culture media**
(added August 2004)
 DEF Any liquid or solid preparation made specifically for the growth, storage, or transport of microorganisms or other types of cells. The variety of media that exists allow for the culturing of specific microorganisms and cell types, such as differential media, selective media, test media, and defined media.
 GS culture techniques
 . **culture media**
 RT cell culturing
 cells (biology)
 clone cells
 cloning (biology)
 cultivation
 cultured cells
 microbiology
 organ culturing
 tissue culturing
 tissue engineering
- culture techniques**
 GS **culture techniques**
 . cell culturing
 . culture media
 . organ culturing
 . tissue culturing
 RT Chlorella
 clone cells
 cloning (biology)
 cultivation
 cultured cells
 in vitro methods and tests
 in vivo methods and tests
 microbiology
 stem cells
 tissue engineering
- cultured cells**
(added August 2004)
 DEF Cells propagated in vitro in special media conducive to their growth. Cultured cells are used to study developmental, morphologic, metabolic, physiologic, and genetic processes, among others.
 UF *cell lines*
 GS cells (biology)
 . **cultured cells**
 . . clone cells
 RT biotechnology
 cell culturing
 cloning (biology)
 culture media
 culture techniques
 in vitro methods and tests
 microbiology
 organ culturing
 tissue culturing
- cumulative damage**
 GS damage
 . **cumulative damage**
 RT component reliability
 defects
 degradation
 durability
 failure
 operational hazards
 reliability
 structural reliability
 wear tests
- cumulonimbus clouds**
 DEF A cumuliform cloud type: heavy and dense, with considerable vertical extent in the form of massive towers. This form frequently exhibits tops in the shape of an anvil or massive plume. It is frequently accompanied by lightning, thunder, and sometimes hail; occasionally producing a tornado or a waterspout.
- GS clouds (meteorology)
 . convection clouds
 . . **cumulonimbus clouds**
 . . . anvil clouds
 RT cumulus clouds
 nimbostratus clouds
 precipitation (meteorology)
 thunderstorms
 tornadoes
- cumulus clouds**
 DEF Clouds in the form of individual detached domes or towers which are usually dense and well defined. These clouds develop vertically in the form of rising mounds. The sunlit parts are mostly brilliantly white; their bases are relatively dark and nearly horizontal.
 GS clouds (meteorology)
 . convection clouds
 . . **cumulus clouds**
 . . . anvil clouds
 RT cumulonimbus clouds
 stratocumulus clouds
- Cupola Module**
(added May 2008)
 DEF A permanent observation and control module for the International Space Station developed by the European Space Agency. The module's windows allow line-of-sight monitoring of outside activities, including spacewalks, docking operations and exterior equipment surveys.
 GS modules
 . space station modules
 . . **Cupola Module**
 RT European Space Agency
 International Space Station
 spacecraft modules
- cupolas**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT domes (structural forms)
 furnaces
 gun turrets
- cuprates**
(added April 1999)
 GS copper compounds
 . **cuprates**
 RT BSCCO superconductors
 copper oxides
 YBCO superconductors
- curare**
 GS poisons
 . **curare**
 RT alkaloids
 anticholinergics
 ∞ poisoning
 toxicology
- cures**
 RT diseases
 drugs
 first aid
 healing
 therapy
- Curie temperature**
 DEF The temperature in a ferromagnetic material above which the material becomes substantially nonmagnetic.
 GS magnetic properties
 . **Curie temperature**
 temperature
 . **Curie temperature**
 RT cryogenic temperature
 diamagnetism
 electrets
 ferroelectricity
 ferromagnetism
- Curie-Weiss law**
 RT ferromagnetism
 magnetic permeability
 magnetic properties
- paramagnetism
- curing**
 RT alfalfa
 autoclaving
 citrus trees
 corn
 crosslinking
 degradation
 drying
 farm crops
 glass transition temperature
 oats
 orchards
 preserving
 resin transfer molding
 ∞ setting
 vulcanizing
 weathering
- curium**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **curium**
 curium isotopes
 curium 242
 curium 244
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **curium**
 curium isotopes
 curium 242
 curium 244
 metals
 . actinide series
 . . transuranium elements
 . . . **curium**
 curium isotopes
 curium 242
 curium 244
- curium 242**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . curium
 curium isotopes
 **curium 242**
 nuclides
 isotopes
 radioactive isotopes
 transuranium elements
 curium
 curium isotopes
 **curium 242**
 metals
 . actinide series
 . . transuranium elements
 . . . curium
 curium isotopes
 **curium 242**
- curium 244**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . curium
 curium isotopes
 **curium 244**
 nuclides
 isotopes
 radioactive isotopes
 transuranium elements
 curium
 curium isotopes
 **curium 244**
 metals
 . actinide series
 . . transuranium elements
 . . . curium
 curium isotopes
 **curium 244**
- curium compounds**
 GS actinide series compounds
 . **curium compounds**
 RT ∞ chemical compounds

curium isotopes

∞ Group 3B compounds

curium isotopes

GS chemical elements
 . actinide series
 . . . transuranium elements
 curium
 **curium isotopes**
 curium 242
 curium 244
 nuclides
 isotopes
 radioactive isotopes
 transuranium elements
 curium
 **curium isotopes**
 curium 242
 curium 244
 metals
 . actinide series
 . . transuranium elements
 . . . curium
 **curium isotopes**
 curium 242
 curium 244

curl (materials)

RT dimensional stability
 folding
∞ materials
 textures

curl (vectors)

DEF A vector operation upon a vector field which represents the rotation of the field, related to the circulation of the field at each point.

GS analysis (mathematics)
 . calculus
 . . vector analysis
 . . . **curl (vectors)**
 vorticity
 real variables
 vector analysis
 **curl (vectors)**
 vorticity
 geometry
 . vector analysis
 . . **curl (vectors)**
 . . . vorticity

current algebra

GS algebra
 . **current algebra**
RT ∞ mathematics
 nuclear physics
 vector currents

current amplifiers

GS amplifiers
 . **current amplifiers**
 . . photomultiplier tubes
 . . . frequency modulation
 photomultipliers
RT transistor amplifiers
 voltage amplifiers

current converters (AC to DC)

RT alternating current
∞ converters
 crystal rectifiers
 direct current
 electric current
 inverted converters (DC to AC)
 rectifiers
 silicon controlled rectifiers
 thyratrons

current density

GS rates (per time)
 . flux density
 . . **current density**
RT critical current
 electric current
 electrolysis
 electroplating
 pinning

current distribution

GS distribution (property)
 . **current distribution**

RT charge distribution
 electron distribution
∞ hole distribution
 hole distribution (electronics)
 ion distribution
 magnetic annular arc
 neutral currents

current regulators

UF *current stabilizers*
GS control equipment
 . regulators
 . . **current regulators**
RT circuit protection
 controllers
 electric current
∞ electric equipment
 electric switches
 electronic control
 limiter circuits
 power factor controllers
 power supply circuits
 switching circuits
 transmission loss
 voltage regulators

current sheets

RT antennas
 electric current
 magnetic flux
 magnetic islands
∞ sheets

current stabilizers

USE **current regulators**

∞ currents

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air currents
 air flow
 beam currents
 circulation
 coastal currents
 electric current
 external surface currents
 fluid flow
 ocean currents
 water currents

currents (oceanography)

USE **water currents**

curtains

RT ∞ barriers
 dividers
 doors
 entrances
 openings
∞ partitions
 partitions (structures)
∞ screens
 separators
 walls
 windows (apertures)

Curtiss C-46 aircraft

USE **C-46 aircraft**

Curtiss-Wright aircraft

GS **Curtiss-Wright aircraft**
 . C-46 aircraft
 . X-19 aircraft
RT ∞ aircraft

curvature

GS geometry
 . **curvature**
RT camber
∞ curves
 curves (geometry)
 differential geometry
 flexing
∞ profiles
 shapes
 zero force curves

curve fitting

RT data compression
 data smoothing

forecasting
 least squares method
 minimax technique
 saddle points
 statistical distributions
 statistical tests
 time series analysis

curved beams

GS structural members
 . beams (supports)
 . . **curved beams**
RT camber
 I beams

curved panels

GS panels
 . **curved panels**
RT contours
 shapes
 wing panels

curved surfaces

USE **contours**
 shapes
 surfaces

∞ curves

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT curvature
 graphs (charts)
 learning curves
 light curve
 toroids
 trajectories
 zero force curves

curves (geometry)

GS geometry
 . **curves (geometry)**
 . . catenaries
 . . . cycloids
 . . . epicycloids
 . . . S curves
 . . . Gompertz curves
RT analytic geometry
∞ arcs
 chords (geometry)
 circles (geometry)
 curvature
 cusps (mathematics)
 differential geometry
 Euclidean geometry
 geodesic lines
∞ helices
 homotopy theory
 inflection points
 line shape
 manifolds (mathematics)
 menisci
 segments
∞ spirals

curvilinear coordinates

USE **spherical coordinates**

Cushioncraft ground effect machine

GS ground effect machines
 . **Cushioncraft ground effect machine**
RT hovering
 vertical takeoff aircraft

cushions

RT air cushion landing systems
 bumpers
 couches
 ground effect (aerodynamics)
 hydraulic equipment
∞ pad
 pneumatic equipment
 seats
 shock absorbers
 vibration isolators

∞ cusps

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cusps (landforms)

- cusps (mathematics)
double cusps
polar cusps
- cusps (landforms)**
GS landforms
. **cusps (landforms)**
RT beaches
coasts
∞ cusps
topography
- cusps (mathematics)**
GS geometry
. **cusps (mathematics)**
. . double cusps
RT curves (geometry)
∞ cusps
epicycloids
maxima
minima
- custom integrated circuits*
USE **application specific integrated circuits**
- cutaneous perception*
USE **touch**
- ∞ **cut-off**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF An act or instance of shutting something off; specifically, in rocketry, an act or instance of shutting off the propellant flow in a rocket, or stopping the combustion of the propellant.
RT burnout
engine failure
machining
- cut-outs*
USE **openings**
- cutters**
SN (EXCLUDES SHIPS)
GS **cutters**
. blades (cutters)
. . razor blades
. drill bits
. drills
. saws
. shears
RT cutting
dies
laser cutting
machine tools
scrapers
taps
tools
- cutting**
GS **cutting**
. blanking (cutting)
. laser cutting
. metal cutting
. milling (machining)
. planing
. scarfing
. shearing
. slicing
. spark machining
RT abrasion
chipping
comminution
cutters
drilling
flaking
forming techniques
fracturing
grinding (material removal)
grooving
machining
micromachining
peeling
perforating
piercing
∞ separation
shredding
splitting
- torches
- CV-2 aircraft*
USE **DHC 4 aircraft**
- CV-7 aircraft*
USE **DHC 5 aircraft**
- CV-340 aircraft**
UF *Convair 340 aircraft*
GS commercial aircraft
. **CV-340 aircraft**
General Dynamics aircraft
. **CV-340 aircraft**
monoplanes
. **CV-340 aircraft**
passenger aircraft
. **CV-340 aircraft**
RT ∞ aircraft
- CV-440 aircraft**
UF *Convair 440 aircraft*
Metropolitan aircraft
GS commercial aircraft
. **CV-440 aircraft**
General Dynamics aircraft
. **CV-440 aircraft**
monoplanes
. **CV-440 aircraft**
passenger aircraft
. **CV-440 aircraft**
RT ∞ aircraft
- CV-880 aircraft**
UF *Convair 880 aircraft*
GS commercial aircraft
. **CV-880 aircraft**
General Dynamics aircraft
. **CV-880 aircraft**
jet aircraft
. **CV-880 aircraft**
monoplanes
. **CV-880 aircraft**
passenger aircraft
. **CV-880 aircraft**
transport aircraft
. **CV-880 aircraft**
RT ∞ aircraft
- CV-990 aircraft**
UF *Convair 990 aircraft*
GS commercial aircraft
. **CV-990 aircraft**
General Dynamics aircraft
. **CV-990 aircraft**
jet aircraft
. turbofan aircraft
. . **CV-990 aircraft**
monoplanes
. **CV-990 aircraft**
passenger aircraft
. **CV-990 aircraft**
RT ∞ aircraft
- CVD (deposition)*
USE **vapor deposition**
- CVI (fabrication)*
USE **chemical vapor infiltration**
- CVM (solid state)*
(added July 1997)
USE **cluster variation method**
- CW radar*
USE **continuous wave radar**
- cyanamides**
GS nitrogen compounds
. amides
. . **cyanamides**
. cyano compounds
. . **cyanamides**
- cyanates**
RT esters
- urethanes
- cyanide emission*
USE **CN emission**
- cyanides**
GS **cyanides**
. acetonitrile
. cyanogen
. iron cyanides
. malononitrile
. succinonitrile
RT cyano compounds
cyanoacetylene
nitrogen compounds
- cyano compounds**
GS nitrogen compounds
. **cyano compounds**
. . cyanamides
. . cyanoacetylene
. . isocyanates
. . . diisocyanates
. . . fulminates
RT ∞ chemical compounds
cyanides
nitriles
- cyanoacetylene**
GS nitrogen compounds
. cyano compounds
. . **cyanoacetylene**
organic compounds
. hydrocarbons
. . **cyanoacetylene**
RT acetylene
cyanides
- cyanocobalamin**
UF *vitamin B 12*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **cyanocobalamin**
vitamins
. **cyanocobalamin**
- cyanogen**
GS cyanides
. **cyanogen**
- Cyanophyta*
USE **blue green algae**
- cyanosis**
GS diseases
. **cyanosis**
RT blood circulation
heart function
- cyanurates**
GS esters
. **cyanurates**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . **cyanurates**
pyrazines
. azines
. . **cyanurates**
- cyanuric acid**
GS acids
. **cyanuric acid**
hydroxyl compounds
. alcohols
. . triols
. . . **cyanuric acid**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . azines
. . . . **cyanuric acid**
pyrazines
. azines

. . cyanuric acid

Cyber 74 computer
USE CDC Cyber 74 computer

cybernetics

DEF The study of methods of control and communication which are common to living organisms and machines.

- RT adaptive control
- automata theory
- ∞ automation
- biomimetics
- bionics
- communication theory
- computers
- ∞ control
- control systems design
- controllers
- depersonalization
- feedback
- human factors engineering
- information theory
- machine learning
- man machine systems
- management
- model reference adaptive control
- neural nets
- psychology
- ∞ systems
- systems engineering

cycles

DEF The complete sequences of values of a periodic quantity that occur during a period. Used for cycling and periodic processes.

- UF *cycling*
- periodic processes*
- GS **cycles**
- . activity cycles (biology)
- . carbon cycle
- . hydrological cycle
- . solar cycles
- . . sunspot cycle
- . stress cycles
- . thermodynamic cycles
- . . Brayton cycle
- . . Carnot cycle
- . . Otto cycle
- . . Rankine cycle
- . . Stirling cycle
- . photoperiod
- . work-rest cycle
- RT alternations
- amplitudes
- annual variations
- cyclic loads
- diurnal variations
- fatigue (materials)
- frequency distribution
- harmonics
- intermittency
- long term effects
- periodic variations
- ∞ phases
- reciprocation
- rhythm (biology)
- starting
- superharmonics

cyclic accelerators

- GS particle accelerators
- . **cyclic accelerators**
- . . betatrons
- . . synchrocyclotrons
- . . synchrotrons
- . . . bevatron
- . . . storage rings (particle accelerators)
- RT ∞ accelerators

cyclic adenosine monophosphate
USE **cyclic AMP**

cyclic AMP

DEF A nucleotide which is implicated as an intracellular messenger in a wide variety of cellular processes. Prototypically it acts as a molecular transducer of nonsteroid signals from outside the cell to relevant cellular enzymes by a

series of reactions. Used for cyclic adenosine monophosphate.

- UF *cyclic adenosine monophosphate*
- GS organic compounds
- . coenzymes
- . . **cyclic AMP**
- . . cyclic compounds
- . . heterocyclic compounds
- . . . adenosines
- . . . **cyclic AMP**
- . . nucleotides
- . . adenosines
- . . . **cyclic AMP**
- phosphorus compounds
- . phosphates
- . . **cyclic AMP**
- RT adenosine monophosphate
- adrenergics
- alkynes
- amino acids
- cholinergics
- guanines
- pharmacology

cyclic compounds

DEF In organic chemistry, compounds containing a ring of atoms.

- GS organic compounds
- . **cyclic compounds**
- . . cyclic hydrocarbons
- . . . anthracene
- . . . benzene
- . . . chlorobenzenes
- . . . colchicine
- . . . cyclobutane
- . . . cyclohexane
- . . . cyclopropane
- . . . durene
- . . . indene
- . . . menthol
- . . . naphthalene
- . . . naphthenes
- . . . polycyclic aromatic hydrocarbons
- . . heterocyclic compounds
- . . . acriflavine
- . . . adenosines
- adenosine diphosphate
- adenosine monophosphate
- adenosine triphosphate
- cyclic AMP
- . . . alkaloids
- . . . atropine
- betaines
- caffeine
- colchicine
- ergotamine
- hyoscine
- lysergine
- morphine
- nicotinamide
- nicotine
- pilocarpine
- reserpine
- strychnine
- tropanyl compounds
- . . . anisole
- . . . ascorbic acid
- . . . azines
- cyanurates
- cyanuric acid
- meclizine
- methylene blue
- phenothiazines
- . . . azoles
- acetazolamide
- oxazole
- pyrroles
- carbazoles
- . . . azulene
- . . . bioflavonoids
- . . . biotin
- . . . carnitine
- . . . cyanocobalamin
- . . . cytidylic acid
- . . . dimenhydrinate
- . . . endrin
- . . . ethylene oxide
- . . . folic acid
- . . . furans

- tetrahydrofuran
- guanethidine
- HMX
- nicotinic acid
- phthalocyanin
- phylloquinone
- piperidine
- promethazine
- purines
- adenines
- xanthines
- caffeine
- guanines
- uric acid
- pyridines
- pyridoxine
- pyrimidines
- alloxan
- thymidine
- thymine
- uracil
- indoles
- RDX
- retinene
- riboflavin
- tetracyclines
- tetrazoles
- thiamine
- thiazine (trademark)
- thiophenes
- tocopherol
- trimethadione
- tryptamines
- tryptophan
- melatonin
- serotonin
- imidazoles
- rhodamine
- RT ∞ chemical compounds
- cycloaddition
- organic chemistry

cyclic hydrocarbons

- GS organic compounds
- . cyclic compounds
- . . **cyclic hydrocarbons**
- . . . anthracene
- . . . benzene
- . . . chlorobenzenes
- . . . colchicine
- . . . cyclobutane
- . . . cyclohexane
- . . . cyclopropane
- . . . durene
- . . . indene
- . . . menthol
- . . . naphthalene
- . . . naphthenes
- . . . polycyclic aromatic hydrocarbons
- . hydrocarbons
- . . **cyclic hydrocarbons**
- . . . anthracene
- . . . benzene
- . . . chlorobenzenes
- . . . colchicine
- . . . cyclobutane
- . . . cyclohexane
- . . . cyclopropane
- . . . durene
- . . . indene
- . . . menthol
- . . . naphthalene
- . . . naphthenes
- . . . polycyclic aromatic hydrocarbons
- RT alkynes

cyclic loads

- SN (LIMITED TO FORCE LOADS)
- GS loads (forces)
- . dynamic loads
- . . **cyclic loads**
- RT cycles
- Eiber equation
- inelastic stress
- S-N diagrams
- stress cycles
- structural design criteria
- transient loads
- variable amplitude loading
- vibration

- vibratory loads
- cycling*
USE **cycles**
- cycloaddition**
(added June 1998)
DEF Pericyclic chemical reaction in which unsaturated molecules combine to form a cyclic compound under the influence of heat or light.
GS chemical reactions
 . **cycloaddition**
 . Diels-Alder reactions
RT cyclic compounds
photochemical reactions
polymerization
synthesis (chemistry)
- cyclobutane**
GS organic compounds
 . cyclic compounds
 . cyclic hydrocarbons
 . . . **cyclobutane**
 . hydrocarbons
 . cyclic hydrocarbons
 . . . **cyclobutane**
- cyclogenesis**
RT arc clouds
atmospheric circulation
atmospheric pressure
cyclones
hurricanes
low pressure
storms (meteorology)
- cyclohexane**
GS organic compounds
 . cyclic compounds
 . cyclic hydrocarbons
 . . . **cyclohexane**
 . hydrocarbons
 . cyclic hydrocarbons
 . . . **cyclohexane**
RT benzene
hexenes
hydrogenation
- cycloids**
GS geometry
 . curves (geometry)
 . . **cycloids**
 . Euclidean geometry
 . analytic geometry
 . . . **cycloids**
- cyclones**
SN (METEOROLOGICAL--EXCLUDES EQUIPMENT)
DEF Areas of low pressure with a closed circulation that rotate counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
GS storms
 . storms (meteorology)
 . . **cyclones**
 . . . hurricanes
 Anna hurricane
 . . . typhoons
RT anticyclones
atmospheric pressure
baroclinic waves
cyclogenesis
ground wind
low pressure
meteorology
precipitation (meteorology)
storm damage
synoptic meteorology
tornadoes
tropical storms
wind (meteorology)
- cyclones (equipment)*
USE **centrifuges**
- cyclopropane**
GS drugs
 . anesthetics
 . . **cyclopropane**
 . organic compounds
- . cyclic compounds
 . . cyclic hydrocarbons
 . . . **cyclopropane**
 . hydrocarbons
 . cyclic hydrocarbons
 . . . **cyclopropane**
RT propane
- Cyclops plasma accelerator**
GS plasma accelerators
 . **Cyclops plasma accelerator**
RT ∞ accelerators
plasmas (physics)
- cyclotetramethylene tetranitramine*
USE **HMX**
- cyclotrimethylene trinitramine*
USE **RDX**
- cyclotron frequency**
DEF Frequency at which a charged particle orbits in a uniform magnetic field. It depends on the charge to mass ratio of the particle times the magnetic field. While the frequency is independent of the particle energy, Larmor orbit increases with energy.
GS frequencies
 . **cyclotron frequency**
RT charged particles
Larmor precession
- cyclotron radiation**
DEF The electromagnetic radiation emitted by charged particles as they orbit in a magnetic field. The radiation arises from the centripetal acceleration of the particle as it moves in a circular orbit.
GS electromagnetic radiation
 . nonthermal radiation
 . . **cyclotron radiation**
 . . . ion cyclotron radiation
RT charged particles
Larmor precession
Larmor radius
∞ radiation
- cyclotron resonance**
DEF Energy transfer to charged particles in a magnetic field from an alternating-current electric field whose frequency is equal to the cyclotron frequency.
GS resonance
 . **cyclotron resonance**
 . . electron cyclotron resonance
RT charged particles
diamagnetism
energy transfer
Fermi surfaces
ion cyclotron radiation
plasma resonance
- cyclotron resonance devices**
DEF Microwave amplifiers based on the interaction between electromagnetic waves and transverse electron streams moving along helical trajectories. Used for gyrotrons.
UF *gyrotrons*
GS amplifiers
 . microwave amplifiers
 . . **cyclotron resonance devices**
 . electron tubes
 . vacuum tubes
 . . microwave tubes
 . . . **cyclotron resonance devices**
 . microwave equipment
 . microwave amplifiers
 . . **cyclotron resonance devices**
 . microwave tubes
 . . **cyclotron resonance devices**
RT cavity resonators
∞ devices
diffraction radiation
electron cyclotron resonance
klystrons
millimeter waves
power amplifiers
- traveling wave tubes
- cyclotrons**
UF *calutrons*
GS particle accelerators
 . **cyclotrons**
 . . geocyclotrons
 . . microtrons
 . . Oak Ridge isochronous cyclotron
 . . omegatrons
 . . synchrocyclotrons
RT synchrotrons
- Cygnus constellation**
GS constellations
 . **Cygnus constellation**
RT celestial bodies
celestial sphere
stars
- ∞ **cylinders**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT analytic geometry
circular cylinders
concentric cylinders
cylindrical bodies
cylindrical chambers
cylindrical shells
∞ drums
drums (containers)
elastic cylinders
elliptical cylinders
hemisphere cylinder bodies
monocoque structures
orthotropic cylinders
oscillating cylinders
plasma cylinders
rotating cylinders
viscoelastic cylinders
- cylindrical afterbodies*
USE **afterbodies**
cylindrical bodies
- cylindrical antennas**
GS antennas
 . **cylindrical antennas**
RT antenna radiation patterns
radio equipment
- cylindrical bodies**
UF *cylindrical afterbodies*
cylindroids
GS symmetrical bodies
 . bodies of revolution
 . . **cylindrical bodies**
 . . . rotating cylinders
RT afterbodies
Airy function
centerbodies
circular cylinders
∞ cylinders
cylindrical coordinates
elastic cylinders
elliptical cylinders
forebodies
fuselages
hemisphere cylinder bodies
orthotropic cylinders
oscillating cylinders
plasma cylinders
plastic bodies
rollers
viscoelastic cylinders
- cylindrical chambers**
RT brakes (for arresting motion)
∞ chambers
∞ cylinders
- cylindrical coordinates**
GS coordinates
 . **cylindrical coordinates**
RT astronomical coordinates
Cartesian coordinates
cylindrical bodies
- cylindrical plasmas**
DEF Magnetic self-attraction of parallel

cylindrical shells

electric currents causing constriction of a conducting plasma through which a large current is flowing.

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **cylindrical plasmas**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **cylindrical plasmas**
 - plasma cylinders
 - . **cylindrical plasmas**
- RT pinch effect

cylindrical shells

- GS shells (structural forms)
 - . **cylindrical shells**
- RT circular cylinders
- circular shells
- circular tubes
- concentric cylinders
- ∞ cylinders
 - elastic cylinders
 - elliptical cylinders
 - metal shells
 - orthotropic cylinders
 - orthotropic shells
 - oscillating cylinders
 - plasma cylinders
 - plastic shells
 - reinforced shells
 - rotating cylinders
 - thin walled shells
 - viscoelastic cylinders

cylindrical tanks

- GS tanks (containers)
 - . **cylindrical tanks**
- RT fuel tanks
- propellant tanks
- storage tanks

cylindrical waves

- DEF Waves in which the wave fronts are coaxial cylinders.
- RT axisymmetric flow
- elastic waves
- electromagnetic radiation
- plane waves
- spherical waves
- ∞ waves

cylindroids

- USE **cylindrical bodies**

Cyprus

- GS landforms
 - . islands
 - . . **Cyprus**
- nations
 - . **Cyprus**
- RT Greece
- Mediterranean Sea

Cyrillid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Cyrillid meteoroids**
 - . meteoroids
 - . . bolides
 - . . . **Cyrillid meteoroids**
- RT natural satellites
- tektites

cysteamine

- GS drugs
 - . antiradiation drugs
 - . . **cysteamine**
- organic compounds
 - . amines
 - . . **cysteamine**

- RT amino acids
- proteins
- radiation protection

cysteine

- GS acids
 - . amino acids
 - . . **cysteine**
- drugs
 - . **cysteine**
- organic compounds
 - . amino acids
 - . . **cysteine**
- sulfur compounds
 - . thiols
 - . . **cysteine**
- RT proteins

cystic fibrosis

- GS diseases
 - . fibrosis
 - . . **cystic fibrosis**
- RT tissues (biology)

cysts

- GS **cysts**
 - . mucocoeles
- RT neoplasms
- tissues (biology)
- tumors

cytidylic acid

- GS acids
 - . **cytidylic acid**
- organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **cytidylic acid**

cytochromes

- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **cytochromes**
- organic compounds
 - . proteins
 - . . enzymes
 - . . . **cytochromes**
- pigments
 - . **cytochromes**
- RT cyto genesis
- skin (anatomy)

cytogenesis

- GS **cytogenesis**
 - . cell division
 - . differentiation (biology)
 - . hematopoiesis
 - . mitosis
 - . osteogenesis
- RT ∞ biology
- cells (biology)
- cytochromes
- cytology
- cytoplasm
- ∞ differentiation
 - genetics
 - heredity
 - osteoblasts
 - physiology

cytology

- UF *cell physiology*
- RT animal models
- apoptosis
- biochemistry
- biological diversity
- ∞ biology
 - blood cell count
 - cell membranes (biology)
 - cells (biology)
 - chromatin
 - chromosomes

- clone cells
- cytogenesis
- cytometry
- eukaryotes
- in vitro methods and tests
- in vivo methods and tests
- lysosomes
- mitochondria
- mitosis
- monocytes
- necrosis
- nuclei (cytology)
- organelles
- plasmolysis
- plastids
- prokaryotes
- sarcoplasmic reticulum
- stem cells
- tissue engineering

cytometry

- (added February 1990)
- UF *cytophotometry*
- RT cells (biology)
- cytology
- microscopy

cytophotometry

- USE **cytometry**

cytoplasm

- RT calmodulin
- cells (biology)
- chloroplasts
- cytogenesis
- endoplasmic reticulum
- eosinophils
- fibroblasts
- mitosis
- neutrophils
- nuclei (cytology)
- organelles
- plastids
- ribosomes
- sarcoplasmic reticulum

Czech Republic

- (added December 1995)
- GS nations
 - . **Czech Republic**
- RT Czechoslovakia
- Europe
- Slovakia

Czechoslovakia

- GS nations
 - . **Czechoslovakia**
- RT Central Europe
- Czech Republic
- Czechoslovakian space program
- Czechoslovakian spacecraft
- Europe
- Slovakia

Czechoslovakian space program

- (added March 1989)
- GS programs
 - . space programs
 - . . European space programs
 - . . . **Czechoslovakian space program**
- RT Czechoslovakia

Czechoslovakian spacecraft

- DEF Spacecraft of Czechoslovakia.
- RT Czechoslovakia
- ∞ spacecraft

Czoehrsalski method

- GS growth
 - . crystal growth
 - . . **Czoehrsalski method**
- RT ∞ methodology
- Verneuil process

D

D layer
 USE **D region**

D lines
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **D lines**
 RT absorption spectra
 emission spectra
 H lines
 solar spectra

D region
 SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 50 AND 90 KM)
 UF *D layer*
 GS Earth atmosphere
 . upper atmosphere
 . . Earth ionosphere
 . . . lower ionosphere
 **D region**
 regions
 . **D region**
 RT Earth-ionosphere waveguide

D-1 satellite
 GS artificial satellites
 . French satellites
 . . **D-1 satellite**

D-2 satellites
 UF *D-2B satellite*
Polaire satellite
Tournesole satellite
 GS artificial satellites
 . French satellites
 . . **D-2 satellites**
 . meteorological satellites
 . . **D-2 satellites**

D-2B satellite
 USE **D-2 satellites**

D-558 aircraft
 UF *Douglas D-558 aircraft*
Skyrocket aircraft
Skystreak aircraft
 GS jet aircraft
 . **D-558 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **D-558 aircraft**
 monoplanes
 . **D-558 aircraft**
 research vehicles
 . research aircraft
 . . **D-558 aircraft**
 supersonic aircraft
 . **D-558 aircraft**
 RT ∞ aircraft

Dacron (trademark)
 GS fabrics
 . **Dacron (trademark)**
 fibers
 . synthetic fibers
 . . **Dacron (trademark)**
 RT polyester resins
 reinforcing fibers

Dactyl
 USE **natural satellites**

DAD Explorer
 USE **Dual Air Density Explorer**

DAEMO (data analysis)
 USE **data processing**
data reduction
data transmission

Dahomey
 USE **Benin**

Dakota aircraft
 USE **C-47 aircraft**

Dalton law
 DEF The empirical generalization that for

many so-called perfect gases, a mixture of these gases will have a pressure equal to the sum of the partial pressures that each of the gases would have as a sole component with the same volume and temperature, provided there is no chemical interaction.
 RT gas composition
 gas dynamics
 gas-gas interactions
 ideal gas
 partial pressure
 vapor pressure

DAMA
 USE **demand assignment multiple access**

damage
 GS **damage**
 . cumulative damage
 . earthquake damage
 . fire damage
 . flood damage
 . frost damage
 . impact damage
 . . meteoritic damage
 . . rain impact damage
 . proton damage
 . radiation damage
 . . laser damage
 . storm damage
 RT burnthrough (failure)
 corrosion
 damage assessment
 decay
 decomposition
 defects
 deformation
 degradation
 destruction
 deterioration
 discoloration
 disintegration
 durability
 fatigue (biology)
 fatigue (materials)
 fractures (materials)
 hot corrosion
 immobilization
 impairment
 injuries
 lethality
 losses
 radiation effects
 sabotage
 space weathering
 warpage
 wear
 weathering

damage assessment
 DEF Estimate of injury or loss to components, subsystems, or entire systems, as well as the cost of repairs or replacement to restore serviceability.
 GS assessments
 . **damage assessment**
 RT casts
 costs
 damage
 estimates
 maintenance
 recoverability
 replacing
 spare parts
 structural health monitoring
 value

damage threshold
 USE **yield point**

Damkohler number
 RT activation energy
 combustion physics
 diffusion flames
 flame propagation
 ∞ numbers

reaction kinetics

DAMP program
 USE **Downrange Antimissile Measurement Program**

∞ **dampers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT blankets (fission reactors)
 dampers (valves)
 nutation dampers
 oscillation dampers
 vibration isolators

dampers (valves)
 GS valves
 . butterfly valves
 . . **dampers (valves)**
 RT automatic control valves
 ∞ dampers
 gas valves
 vibration isolators

damping
 DEF The suppression of oscillations or disturbances; the dissipation of energy with time. Used for damping factor, damping in pitch, damping in roll, damping in yaw, elastic stability, and jet damping.
 UF *damping factor*
damping in pitch
damping in roll
damping in yaw
elastic stability
jet damping
 GS **damping**
 . elastic damping
 . . viscoelastic damping
 . Landau damping
 . vibration damping
 . viscous damping
 . . viscoelastic damping
 . magnetic damping
 RT ∞ absorption
 attenuation
 baffles
 deceleration
 dissipation
 dynamic characteristics
 dynamic response
 dynamic stability
 energy absorption
 gyroscope fluids
 gyroscopic pendulums
 gyroscopic stability
 hysteresis
 impedance
 insulation
 internal friction
 mechanical impedance
 mufflers
 negative feedback
 oscillations
 ∞ reduction
 ∞ resistance
 ∞ resonant frequencies
 resonant vibration
 retarding
 roll
 sea keeping
 shock absorbers
 silencers
 stability derivatives
 stopping
 subharmonic generators
 suppressors
 time constant
 transfer functions
 transient oscillations
 transient response
 vibration isolators

damping tests

wave interaction

damping factor

USE **damping**

damping in pitch

USE **damping pitch (inclination)**

damping in roll

USE **damping**

damping in yaw

USE **damping yaw**

damping tests

- GS vibration tests
 - . **damping tests**
 - . . stroking tests
- RT resonance testing
- stability tests
- ∞ tests
- vibration measurement

dampness

USE **moisture content**

dams

- RT ∞ barrages
- ∞ barriers
- flood control
- hydroelectricity
- reservoirs
- wharves

danger

USE **hazards**

Danish space program

(added August 1990)

- GS programs
 - . space programs
 - . . European space programs
 - . . . **Danish space program**
- RT Denmark

dark adaptation

DEF The process by which the iris and retina of the eye adjust to allow maximum vision in dim illumination, following exposure of the eye to a relatively brighter illumination.

- GS adaptation
 - . retinal adaptation
 - . . **dark adaptation**
- RT darkness
- night vision
- pupillometry
- vision
- visual pigments

dark current

(added October 1997)

- UF *electrode dark current*
- GS electric current
 - . **dark current**
- RT low currents
- photocathodes
- photodiodes
- photoelectric cells
- phototubes
- signal to noise ratios

dark energy

(added February 2004)

DEF A hypothetical form of energy that permeates all of space and is believed to be responsible for accelerating the expansion of the Universe.

- RT astrophysics
- cosmology
- dark matter
- ∞ energy
- gravitation theory
- universe

dark matter

- GS extraterrestrial matter
 - . interstellar matter
 - . . **dark matter**
 - . . . matter (physics)

. dark matter

- RT Alpha Magnetic Spectrometer
- baryons
- cooling flows (astrophysics)
- cosmology
- dark energy
- galactic evolution
- galactic halos
- intergalactic media
- large-scale structure of the universe
- massive compact halo objects
- missing mass (astrophysics)
- neutrinos
- Population III stars
- universe
- weakly interacting massive particles

darkening

- GS **darkening**
 - . limb darkening
- RT darkness
- ∞ illumination
- night
- visibility

darkness

- RT color
- dark adaptation
- darkening
- diurnal variations
- illuminating
- ∞ illumination
- light (visible radiation)
- night
- night flights (aircraft)
- optical properties
- shadows
- zeitgebers

darkrooms

- GS rooms
 - . **darkrooms**
- RT photographic processing
- photographic processing equipment
- photography

Darkstar unmanned aerial vehicle

(added August 1998)

USE **pilotless aircraft reconnaissance aircraft**

Dart turboprop engines

USE **turboprop engines**

Dash helicopter

USE **QH-50 helicopter**

Dassault aircraft

- GS **Dassault aircraft**
 - . Mirage aircraft
 - . . Mirage 3 aircraft
 - . . . Mystere 20 aircraft
 - Mystere 50 aircraft
- RT ∞ aircraft

Dassault Mirage 3 aircraft

USE **Mirage 3 aircraft**

Dassault Mystere 20 aircraft

USE **Mystere 20 aircraft**

Dassault Mystere 50 aircraft

USE **Mystere 50 aircraft**

DAST program

SN (DRONES FOR AERODYNAMIC AND STRUCTURAL TESTING)

DEF A NASA program which uses the Firebee 2 target drone aircraft as a test bed for getting flight data on research wings. The drone is launched from the wing of a B52 and recovered by parachute. The program's purpose is the study of flight loads and load control. Used for drones for aerodynamic and struct test.

UF *Drones for Aerodynamic and Struct Test*

- GS programs
 - . NASA programs
 - . . **DAST program**
- RT aeroelasticity
- aircraft control

aircraft design

drone aircraft

flight tests

flutter

remotely piloted vehicles

vibration damping

∞ data

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT analog data
- audio data
- binary data
- biomedical data
- censored data (mathematics)
- channels (data transmission)
- control data (computers)
- data acquisition
- data base management systems
- data bases
- data collection platforms
- data compression
- data conversion routines
- data converters
- data correlation
- data links
- data management
- data processing
- data processing equipment
- data processing terminals
- data recorders
- data recording
- data reduction
- data retrieval
- data sampling
- data smoothing
- data storage
- data systems
- data transmission
- datum (elevation)
- digital data
- end-to-end data systems
- information
- interservice data exchange program
- ∞ measurement
- metadata
- ocean data acquisitions systems
- onboard data processing
- optical data processing
- optical data storage materials
- optical memory (data storage)
- printers (data processing)
- radar data
- records
- site data processors
- Space Flight Tracking and Data Network
- statistical analysis
- statistical tests
- ∞ statistics
- tables (data)
- video data
- voice data processing
- weather data recorders
- world data centers

data acquisition

- GS acquisition
 - . **data acquisition**
- RT Advanced Range Instrumentation Aircraft
- Alouette project
- analog to digital converters
- automatic weather stations
- counting
- ∞ data
- Deep Space Instrumentation Facility
- detection
- Earth observations (from space)
- end-to-end data systems
- forms (paper)
- Global Tracking Network
- ground stations
- infrared radiometers
- meteorological research aircraft
- needs (data system)
- news media
- observation
- ocean data acquisitions systems

optical data processing
 optical scanners
 remote sensors
 ∞ sensors
 Space Flight Tracking and Data Network
 STDN (network)
 surveys
 tables (data)
 tracking networks

data adaptive evaluator/monitor

USE **data processing**
data reduction
data transmission

data analysis

USE **data processing**
data reduction

data base management systems

DEF Software products that control data structures containing interrelated data stored so as to optimize accessibility and control, minimize redundancy, and offer multiple views of the data to various applications programs.

RT ∞ data
 data bases
 data management
 information management
 management information systems
 relational data bases
 ∞ systems

data bases

GS **data bases**
 . knowledge bases (artificial intelligence)
 . numerical data bases
 . relational data bases

RT ∞ bases
 CD-ROM
 ∞ data
 data base management systems
 data structures
 metadata
 software engineering

data busses

USE **channels (data transmission)**

data collection platforms

RT Argos system
 automatic weather stations
 ∞ data
 ground stations
 instrument packages
 integrated global ocean station systems
 ∞ platforms
 remote sensors

data compaction

USE **data compression**

data compression

DEF Any technique used to reduce the amount of storage required to store data.

UF *data compaction*
 GS **data compression**
 . video compression

RT curve fitting
 ∞ data
 decoding
 discrete cosine transform
 Fourier analysis
 telecommunication
 telemetry
 vector quantization

data conversion routines

GS **data conversion routines**
 . subroutines

RT algorithms
 compilers
 computer programs
 ∞ conversion
 ∞ data

∞ routines

data converters

GS **data converters**
 . analog to digital converters
 . binary to decimal converters
 . decimal to binary converters
 . digital to analog converters

RT analog circuits
 analog data
 computers
 conversion tables
 ∞ converters
 ∞ data
 decoders
 digital data
 transducers
 video data

data correlation

GS correlation
 . **data correlation**
 data processing
 . **data correlation**
 RT angular correlation
 autocorrelation
 cross correlation
 ∞ data
 statistical analysis
 statistical correlation
 teleconnections (meteorology)
 temperature ratio

data flow analysis

RT computer programs
 computer systems programs
 data simulation
 data transfer (computers)
 flow charts
 network analysis
 sequential control

data fusion

USE **multisensor fusion**

data handling systems

USE **data systems**

data integration

DEF Taking data from multiple sources and merging the data into a single data file.

RT data management
 data simulation
 multisensor fusion

data links

DEF Communications channels or circuits used to transmit data from a sensor to a computer; a readout device or a storage device.

GS telecommunication
 . **data links**
 RT channels (data transmission)
 communication networks
 ∞ data
 decommutators
 discrete address beacon system
 frequency reuse
 ∞ links
 networks
 protocol (computers)
 radio receivers
 radio relay systems
 remote consoles
 site data processors
 telemetry
 VSAT (network)
 wireless communication

data management

GS management
 . **data management**
 RT ∞ data
 data base management systems
 data integration
 data simulation
 frames (data processing)
 information resources management
 metadata
 on-line systems
 records management

relational data bases
 surveys
 tables (data)
 virtual memory systems

data mining

(added April 2000)

DEF The extraction of patterns from large data sets in order to discover previously unknown and potentially useful information.

UF *knowledge discovery*
knowledge extraction

GS data processing
 . **data mining**
 information analysis
 . **data mining**
 RT cluster analysis
 data retrieval
 machine learning
 trend analysis

data processing

SN (LIMITED TO MECHANICAL OR ELECTRONIC MANIPULATION OF DATA)
 DEF Application of procedures, mechanical, electrical, computational, or other whereby data are changed from one form to another. Used for automatic data processing, DAEMO (data analysis), data adaptive evaluator/monitor, and data analysis.

UF *automatic data processing*
DAEMO (data analysis)
data adaptive evaluator/monitor
data analysis

GS **data processing**
 . associative processing (computers)
 . batch processing
 . censored data (mathematics)
 . Central Electronic Management System

. concurrent processing
 . data correlation
 . data reduction
 . . data smoothing
 . data retrieval
 . data storage
 . data transfer (computers)
 . distributed processing
 . . grid computing (computer networks)

. Karhunen-Loeve expansion
 . multiprocessing (computers)
 . onboard data processing
 . optical data processing
 . parallel processing (computers)
 . pipelining (computers)
 . scene analysis
 . signal analysis
 . . cepstral analysis
 . signal processing
 . . space-time adaptive processing
 . vector processing (computers)
 . voice data processing
 . . cepstral analysis
 . data mining

RT access time
 adjoints
 airborne/spaceborne computers
 analog data
 Atmospheric & Oceanographic Inform Sys

∞ automation
 binary data
 binary to decimal converters
 bubble memory devices
 channels (data transmission)
 computation
 computer information security
 computer programs
 computer systems programs
 computers

∞ data
 data products
 data structures
 decimal to binary converters
 digital computers
 digital data
 editing
 editing routines (computers)
 end-to-end data systems

data processing equipment

fixed point arithmetic
 floating point arithmetic
 frames (data processing)
 image processing
 information resources management
 information retrieval
 information theory
 interrogation
 language programming
 mechanization
 microprocessors
 natural language (computers)
 needs (data system)
 on-line systems
 peripheral equipment (computers)
 preprocessing
 ∞ processing
 protocol (computers)
 RCA computers
 records
 response time (computers)
 site data processors
 symbols
 systems engineering
 tables (data)
 tabulation processes
 telecommunication
 word processing

data processing equipment

DEF Machines for handling information in a sequence of reasonable operations. Used for data processors.

UF *data processors*

GS data processing equipment

. computers
 . . analog computers
 . . . EAI 680 computer
 . . . Honeywell 600/6000 computer
 . . . SIGMA 5 computer
 . . . Univac 1100 series computers
 Univac 1105 computer
 Univac 1106 computer
 Univac 1107 computer
 Univac 1108 computer
 Univac 1110 computer
 . . CDC computers
 . . . CDC 160-A computer
 . . . CDC 1604 computer
 . . . CDC 3100 computer
 . . . CDC 3200 computer
 . . . CDC 3600 computer
 . . . CDC 3800 computer
 . . . CDC 6000 series computers
 CDC 6400 computer
 CDC 6600 computer
 CDC 6700 computer
 . . . CDC 7000 series computers
 CDC 7600 computer
 . . . CDC 8090 computer
 . . . CDC Cyber 170 series computers
 CDC Cyber 175 computer
 . . . CDC Cyber 74 computer
 . . . CDC Cyber 174 computer
 . . . CDC Cyber 203 computer
 . . . CDC Cyber 205 computer
 . . . CDC Star 100 computer
 . . counting rate computers
 . . DDP computers
 . . . DDP 516 computer
 . . digital computers
 . . . CDC 160-A computer
 . . . CDC 1604 computer
 . . . CDC 3100 computer
 . . . CDC 3200 computer
 . . . CDC 3600 computer
 . . . CDC 3800 computer
 . . . CDC 6000 series computers
 CDC 6400 computer
 CDC 6600 computer
 CDC 6700 computer
 . . . CDC 7000 series computers
 CDC 7600 computer
 . . . CDC 8090 computer
 . . . CDC Cyber 170 series computers
 CDC Cyber 175 computer
 . . . CDC Cyber 74 computer
 . . . CDC Cyber 174 computer
 . . . CDC Cyber 203 computer

. . . CDC Cyber 205 computer
 . . . CDC Star 100 computer
 . . . EAI 680 computer
 . . . EAI 8400 computer
 . . . EAI 8900 computer
 . . . EMR 6050 computer
 . . . Ferranti Mercury computer
 . . . GE computers
 GE 625 computer
 GE 635 computer
 . . . Hewlett-Packard computers
 . . . Honeywell computers
 DDP 516 computer
 Honeywell 600/6000 computer
 Honeywell ADEPT computer
 Honeywell DDP 116 computer
 . . . IBM 360 computer
 . . . IBM 370 computer
 . . . IBM 650 computer
 . . . IBM 704 computer
 . . . IBM 709 computer
 . . . IBM 1130 computer
 . . . IBM 1401 computer
 . . . IBM 1410 computer
 . . . IBM 1620 computer
 . . . IBM 2250 computer
 . . . IBM 7030 computer
 . . . IBM 7040 computer
 . . . IBM 7044 computer
 . . . IBM 7070 computer
 . . . IBM 7074 computer
 . . . IBM 7090 computer
 . . . IBM 7094 computer
 . . . ICL computers
 . . . Illiac computers
 Illiac 3 computer
 Illiac 4 computer
 . . . microcomputers
 personal computers
 IBM personal computers
 Macintosh personal computers
 . . . minicomputers
 Nova computers
 Modcomp II computer
 . . . Modcomp IV computer
 . . . parallel computers
 massively parallel processors
 Connection Machine
 MIMD (computers)
 SIMD (computers)
 . . . PDP 15 computer
 . . . PDP computers
 PDP 7 computer
 PDP 8 computer
 PDP 9 computer
 PDP 10 computer
 PDP 11 computer
 PDP 11/20 computer
 PDP 11/40 computer
 PDP 11/45 computer
 PDP 11/50 computer
 PDP 11/70 computer
 PDP 12 computer
 . . . Philco 2000 computer
 . . . Raytheon computers
 . . . RCA spectra 70 computer
 . . . SDS 900 series computers
 SDS 930 computer
 . . . SDS 9300 computer
 . . . SEL computers
 . . . sequential computers
 . . . SIGMA 5 computer
 . . . SIGMA computers
 SIGMA 9 computer
 . . . Solomon computers
 Univac 1100 series computers
 Univac 1105 computer
 Univac 1106 computer
 Univac 1107 computer
 Univac 1108 computer
 Univac 1110 computer
 . . . Univac 80 computer
 . . . Univac 418 computer
 . . . Univac 490 computer
 . . . Univac 494 computer
 . . . Univac Larc computer
 . . . VAX computers
 VAX-11 series computers

. . . . VAX-11/780 computer
 . . embedded computer systems
 . . . airborne/spaceborne computers
 . . hybrid computers
 . . hypercube multiprocessors
 . . IBM computers
 . . . IBM 360 computer
 . . . IBM 370 computer
 . . . IBM 650 computer
 . . . IBM 704 computer
 . . . IBM 709 computer
 . . . IBM 1130 computer
 . . . IBM 1401 computer
 . . . IBM 1410 computer
 . . . IBM 1620 computer
 . . . IBM 2250 computer
 . . . IBM 7030 computer
 . . . IBM 7040 computer
 . . . IBM 7044 computer
 . . . IBM 7070 computer
 . . . IBM 7074 computer
 . . . IBM 7090 computer
 . . . IBM 7094 computer
 . . . IBM personal computers
 . . . MINOS computer
 . . . optical computers
 . . . Pegasus computer
 . . . RCA computers
 RCA spectra 70 computer
 RCA-110 computers
 . . . Siemens 2002 computer
 . . site data processors
 . . supercomputers
 . . . Connection Machine
 . . . Cray computers
 . . transputers
 . . Univac computers
 . . . Univac 1100 series computers
 Univac 1105 computer
 Univac 1106 computer
 Univac 1107 computer
 Univac 1108 computer
 Univac 1110 computer
 . . . Univac 80 computer
 . . . Univac 418 computer
 . . . Univac 490 computer
 . . . Univac 494 computer
 . . . Univac 1230 computer
 . . . Univac Larc computer
 . . quantum computers
 . . data processing terminals
 . . . VSAT (network)
 . . microprocessors
 . . Intel 8080 microprocessor
 . . peripheral equipment (computers)
 . . printers (data processing)
 . . remote consoles
 RT batch processing
 computer compatible tapes
 computer systems simulation
 control units (computers)
 ∞ data
 digital radar systems
 ∞ equipment
 interfaces
 multiprocessing (computers)
 optical data processing
 pipelining (computers)
 printers
 simulation

data processing terminals

GS data processing equipment
 . **data processing terminals**
 . . VSAT (network)
 RT computer graphics
 consoles
 ∞ data
 human-computer interface
 man machine systems
 remote consoles
 ∞ terminals

data processors

USE **data processing equipment**

data products

(added June 2005)

DEF Processed data from the same source,

normally compiled into a set according to shared characteristics.

- GS products
 - . **data products**
- RT Aqua spacecraft
 - Aura spacecraft
 - CERES (experiment)
 - data processing
 - Earth Observing System (EOS)
 - image processing
 - Landsat satellites
 - MISR (radiometry)
 - MODIS (radiometry)
 - remote sensing
 - remote sensors
 - satellite imagery
 - satellite-borne instruments
 - space commercialization
 - Surface Meteorology and Solar Energy project
 - Surface Radiation Budget project
 - technology utilization
 - Terra spacecraft
 - thematic mapping

data readout systems

- USE **data systems**
- display devices**

data recorders

- GS **data recorders**
 - . flight recorders
 - . . flight load recorders
 - . weather data recorders
- RT bubble memory devices
 - bubble technique
 - counters
- ∞ data
 - display devices
 - monitors
 - punched cards
- ∞ recorders
 - recording instruments
 - tape recorders
 - video disks

data recording

- GS recording
 - . **data recording**
- RT bubble memory devices
 - ∞ data
 - magnetic recording
 - magnetic storage
 - optical data storage materials
 - photographic recording
 - punched cards
 - punched tapes
 - recording heads
 - records
 - tables (data)
 - tabulation processes
 - video disks

data reduction

DEF Transformation of observed values into useful, ordered, or simplified information. Used for DAEMO (data analysis), data adaptive evaluator/monitor, data analysis, and TARE (data reduction).

- UF *DAEMO (data analysis)*
 - data adaptive evaluator/monitor*
 - data analysis*
 - TARE (data reduction)*
- GS data processing
 - . **data reduction**
 - . . data smoothing
- RT computation
 - ∞ data
 - editing
 - preprocessing
 - ∞ reduction
 - tables (data)

data retrieval

- GS data processing
 - . **data retrieval**
 - retrieval
 - . **data retrieval**
- RT ∞ data
 - data mining

- data transfer (computers)
- documentation
- information management
- information retrieval
- interservice data exchange program
- libraries
- management information systems
- microfilms
- relational data bases
- search profiles
- tables (data)
- telemetry
- world data centers

data sampling

- GS sampling
 - . **data sampling**
- RT computer systems performance
 - ∞ data
 - quality control
 - sampled data systems
 - telecommunication
 - time series analysis

data simulation

DEF The use of statistical or physical models to produce synthetic data for testing purposes.

- GS simulation
 - . **data simulation**
- RT data flow analysis
 - data integration
 - data management

data smoothing

DEF The mathematical process of fitting a smooth curve to dispersed data points.

- GS data processing
 - . data reduction
 - . . **data smoothing**
 - recording
 - . **data smoothing**
 - smoothing
 - . **data smoothing**
- RT curve fitting
 - ∞ data

data storage

- GS data processing
 - . **data storage**
- RT bubble memory devices
 - buffer storage
 - cards
 - core storage
 - ∞ data
 - data transfer (computers)
 - document storage
 - flip-flops
 - holography
 - information management
 - interservice data exchange program
 - magnetic storage
 - management information systems
 - microfilms
 - microphotographs
 - optical data storage materials
 - optical disks
 - punched cards
 - selective dissemination of information
 - ∞ storage
 - video disks
 - virtual memory systems
 - white light holography
 - world data centers

data structures

DEF The organization of computer memory used to represent information in a computer program or database.

- RT computer programming
 - data bases
 - data processing
 - knowledge based systems
 - structured programming

data systems

- UF *data handling systems*
 - data readout systems*
- GS **data systems**
 - . air data systems

- . needs (data system)
- RT Atmospheric & Oceanographic Inform Sys
 - control data (computers)
- ∞ data
 - data transfer (computers)
 - digital systems
 - Earth Resources Information System
 - end-to-end data systems
 - geographic information systems
 - management information systems
 - ∞ systems

data transfer (computers)

DEF The technique used by the hardware manufacturer to transmit data from computer to storage device or from storage device to computer, usually under specialized program control.

- GS data processing
 - . **data transfer (computers)**
- RT asynchronous transfer mode
 - computer programs
 - data flow analysis
 - data retrieval
 - data storage
 - data systems
 - data transmission
 - input/output routines
 - interoperability

data transmission

- UF *DAEMO (data analysis)*
 - data adaptive evaluator/monitor*
 - information transmission*
- GS transmission
 - . signal transmission
 - . . **data transmission**
 - . . . automatic picture transmission
 - . . . multiple access
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - frequency division multiple access
 - time division multiple access
 - . . . packet transmission
 - Aloha system
 - . . . single channel per carrier transmission
- RT access control
 - Argos system
 - asynchronous transfer mode
 - audio data
 - automatic repeat request
 - carrier to noise ratios
 - channels (data transmission)
 - code division multiplexing
 - coding
 - communication theory
 - concatenated codes
 - ∞ data
 - data transfer (computers)
 - Deep Space Instrumentation Facility
 - electronic mail
 - FM/PM (modulation)
 - frequency division multiplexing
 - information theory
 - intersymbolic interference
 - laser applications
 - local area networks
 - modems
 - multiplexing
 - packet switching
 - packets (communication)
 - protocol (computers)
 - pulse communication
 - radio telemetry
 - radio transmission
 - reading
 - redundancy encoding
 - satellite transmission
 - ship to shore communication
 - TDR satellites
 - telecommunication
 - telemetry
 - transmission efficiency

datum (elevation)

transmission rate (communications)
video data
VSAT (network)
wireless communication

data visualization

USE **scientific visualization**

dating

USE **chronology**
time measurement

datum (elevation)

RT clearances
contours
∞ data
elevation angle
hypsography
leveling
maps
surveys

dawn chorus

UF *chorus (dawn phenomenon)*
chorus phenomenon
GS atmospheric radiation
. **dawn chorus**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospheric
. . . . ionospheric
. **dawn chorus**
RT auroras
magnetic storms
whistlers

dawsonite

DEF A mineral consisting of aluminum sodium carbonate.
GS minerals
. **dawsonite**
RT aluminum
sodium
sodium carbonates

dayglow

GS atmospheric radiation
. sky radiation
. . **dayglow**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . **dayglow**
RT glare
light sources
sky
solar radiation
twilight glow
ultraviolet radiation

daytime

RT diurnal variations
evening
morning
night
noon
sky brightness

DBR lasers

(added November 1991)
UF *distributed Bragg reflector lasers*
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **DBR lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **DBR lasers**
RT Bragg angle
Bragg reflectors
distributed feedback lasers
semiconductor lasers

tunable lasers

DBS (satellites)

USE **direct broadcast satellites**

DC 3 aircraft

UF *Douglas DC-3 aircraft*
GS commercial aircraft
. **DC 3 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 3 aircraft**
monoplanes
. **DC 3 aircraft**
transport aircraft
. cargo aircraft
. . **DC 3 aircraft**
RT ∞ aircraft

DC 7 aircraft

UF *Douglas DC-7 aircraft*
GS commercial aircraft
. **DC 7 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 7 aircraft**
monoplanes
. **DC 7 aircraft**
transport aircraft
. cargo aircraft
. . **DC 7 aircraft**
RT ∞ aircraft
passenger aircraft

DC 8 aircraft

UF *Douglas DC-8 aircraft*
GS commercial aircraft
. **DC 8 aircraft**
jet aircraft
. turbofan aircraft
. . **DC 8 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 8 aircraft**
monoplanes
. **DC 8 aircraft**
passenger aircraft
. **DC 8 aircraft**
transport aircraft
. **DC 8 aircraft**
RT ∞ aircraft

DC 9 aircraft

UF *Douglas DC-9 aircraft*
GS commercial aircraft
. **DC 9 aircraft**
jet aircraft
. **DC 9 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 9 aircraft**
transport aircraft
. **DC 9 aircraft**
RT ∞ aircraft
MD 80 aircraft

DC 10 aircraft

GS commercial aircraft
. **DC 10 aircraft**
jet aircraft
. **DC 10 aircraft**
McDonnell Douglas aircraft
. Douglas aircraft
. . **DC 10 aircraft**
McDonnell aircraft
. . **DC 10 aircraft**
passenger aircraft
. **DC 10 aircraft**
transport aircraft
. **DC 10 aircraft**
RT ∞ aircraft
turbofan engines

DC 11 aircraft

USE **MD 11 aircraft**

DC (current)

USE **direct current**

DC generators

(added July 1991)

UF *direct current generators*
GS electric generators
. direct power generators
. . **DC generators**
. . . homopolar generators
RT ∞ generators
rotating generators

DCT (mathematics)

USE **discrete cosine transform**

DDP 516 computer

GS data processing equipment
. computers
. . DDP computers
. . . **DDP 516 computer**
. . digital computers
. . . Honeywell computers
. . . . **DDP 516 computer**

DDP computers

GS data processing equipment
. computers
. . **DDP computers**
. . . DDP 516 computer
RT digital computers

DDT

UF *dichlorodiphenyltrichloroethane*
GS halogen compounds
. chlorine compounds
. . **DDT**
poisons
. pesticides
. . insecticides
. . . **DDT**

de Broglie wavelengths

GS wavelengths
. **de Broglie wavelengths**
RT elementary particles
mass
momentum
Plancks constant
quantum theory
velocity
Wentzel-Kramer-Brillouin method

de Havilland aircraft

GS **de Havilland aircraft**
. Comet 4 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. DHC 2 aircraft
. DHC 4 aircraft
. DHC 5 aircraft
RT ∞ aircraft

de Havilland DH 106 aircraft

USE **Comet 4 aircraft**

de Havilland DH 112 aircraft

USE **DH 112 aircraft**

de Havilland DH 115 aircraft

USE **DH 115 aircraft**

de Havilland DH 121 aircraft

USE **DH 121 aircraft**

de Havilland DH 125 aircraft

USE **DH 125 aircraft**

de Havilland DHC 4 aircraft

USE **DHC 4 aircraft**

de Havilland DHC 5 aircraft

USE **DHC 5 aircraft**

de Havilland Venom aircraft

USE **DH 112 aircraft**

de Laval nozzles

USE **convergent-divergent nozzles**

deacclimatization

USE **acclimatization**

deactivation

UF *inactivation*

RT activation
passivity
polarization (charge separation)
polarization (spin alignment)
sabotage
shutdowns

dead reckoning
DEF In navigation, determination of position by advancing a previous known position for courses and distances.
GS navigation
. **dead reckoning**
RT air navigation
digital navigation
Doppler navigation
inertial navigation
polar navigation
radar navigation
radio navigation
surface navigation

deadweight
USE **static loads**

deafness
USE **auditory defects**

death
RT apoptosis
casualties
expiration
injuries
life span
mortality
necrosis

Death Valley (CA)
GS landforms
. **Death Valley (CA)**
valleys
. **Death Valley (CA)**
RT arid lands
California
desertification
deserts
river basins

Debonair aircraft
USE **C-33 aircraft**

debonding (materials)
(added July 1992)
SN (LIMITED TO THE SEPARATION OF BONDED MATERIALS; NOT TO BE USED FOR THE BREAKUP OF ATOMIC/MOLECULAR BONDS)
RT anodic stripping
bonding
delaminating
fiber composites
fiber pushout
laminates
matrix materials
peeling
reinforcing fibers
∞ separation

debris
GS **debris**
. space debris
RT ejecta
environment effects
fragments
glacial drift
pollution
∞ radioactive debris
scrap
wastes

debugging
USE **checkout**

Debye length
DEF A theoretical length which describes the maximum separation at which a given electron will be influenced by the electric field of a given positive ion.
GS distance
. **Debye length**

RT plasmas (physics)

Debye temperature
USE **specific heat**

Debye-Huckel theory
RT dissociation
electrolytes
plasma potentials
∞ theories

Debye-Scherrer method
RT crystallography
diffraction
∞ methodology

decametric waves
GS electromagnetic radiation
. radio waves
. . **decametric waves**
RT coronal holes
high frequencies
very high frequencies

decarbonation
GS chemical reactions
. **decarbonation**
RT carbonization

decarboxylation
GS chemical reactions
. **decarboxylation**
RT carboxylation

decarburation
RT carbon
carburiizing
heating
metal working

decay
DEF Decrease of a radioactive substance because of nuclear emission of alpha or beta particles, positrons, or gamma rays.
GS **decay**
. particle decay
. . neutron decay
. plasma decay
. radioactive decay
. . alpha decay
. . neutron emission
. spacecraft glow
. weak energy interactions
. . weak interactions (field theory)
RT beta particles
biodegradability
biodegradation
damage
degradation
deterioration
disintegration
emission
gamma rays
half life
hot atoms
nuclear fission
radiative lifetime

decay rates
GS rates (per time)
. **decay rates**
. . electron decay rate

Decca navigation
DEF A long range, ambiguous, two dimensional navigation system using continuous wave transmission to provide hyperbolic lines of position through the radio frequency phase comparison techniques from four transmitters.
GS navigation
. radio navigation
. . hyperbolic navigation
. . . **Decca navigation**
RT distance measuring equipment
loran
loran C
loran D
navigation aids
Shoran
solar compasses

surface navigation

deceleration
DEF The act or process of moving, or cause to move, with decreasing speed.
GS rates (per time)
. acceleration (physics)
. . **deceleration**
. . . spin reduction
RT angular acceleration
braking
damping
impact
impact acceleration
landing loads
physiological acceleration
∞ reduction
retarding
retrofiring
retrothrust
stopping
tapering
thrust reversal

decelerators
USE **brakes (for arresting motion)**

deception
RT air defense
chaff
electronic countermeasures
electronic warfare
optical countermeasures
simulation

deciduous trees
GS plants (botany)
. trees (plants)
. . **deciduous trees**
RT conifers
Earth resources
foliage
forests
leaves
timber identification

decimal to binary converters
GS data converters
. **decimal to binary converters**
RT binary data
binary to decimal converters
computer components
data processing

decimals
RT digits
number theory
∞ numbers

decimeter waves
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . **decimeter waves**
RT millimeter waves
planetary radiation
solar radio emission
ultrahigh frequencies

decision aids
(added October 1997)
USE **decision support systems**

decision elements
USE **logical elements**

decision making
RT cognition
command and control
contract management
contract negotiation
decision support systems
decisions
economy
judgments
management
management methods
management planning
problem solving

decision support systems

risk assessment
risk management
Starsite program
systems engineering
tradeoffs

decision support systems

(added October 1997)

UF *decision aids*

GS information systems
. **decision support systems**
support systems
. **decision support systems**

RT artificial intelligence
computer techniques
decision making
expert systems
knowledge based systems
pilot support systems
problem solving
situational awareness

decision theory

GS **decision theory**
. statistical decision theory

RT dynamic programming
expectation
game theory
information theory
martingales
mathematical models
operations research
probability theory
recommendations
risk
scheduling
statistical analysis
stochastic processes
strategy
∞ synthesis
systems engineering
∞ theories

decisions

RT ∞ commands
contract management
decision making
judgments
logic circuits
management
procurement policy
project planning
selection

decks (floors)

USE **floors**

declination

DEF Angular distance north or south of the celestial equator; the arc of an hour circle between the celestial equator and a point on the celestial sphere, measured northward or southward from the celestial equator through 90 degrees, and labeled N or S to indicate the direction of measurement.

RT mapping
navigation

decoders

DEF Devices for translating electrical signals into predetermined functions. In computer operations, networks or devices in which one of two or more possible outputs results from a prescribed combination of inputs.

GS **decoders**
. Viterbi decoders
RT BCH codes
coders
data converters
decoding
demodulators
Reed-Solomon codes
∞ translators

decoding

GS coding
. **decoding**
RT BCH codes
concatenated codes
cryptography

data compression
decoders
demodulation
dictionaries
∞ interpretation
translating
Viterbi decoders

decommissioning

DEF Disposal or deactivation of equipment or sites whose usefulness has diminished to a point where it is no longer required for its original purpose.

RT radioactive wastes
underground storage

decommutators

DEF Equipment for separation, demodulation, or demultiplexing commutated signals.

GS commutators
. **decommutators**
RT data links
demodulators
differential pulse code modulation
electric motors
∞ generators
pulse code modulation
telemetry

decomposition

GS **decomposition**
. ammonolysis
. cracking (chemical engineering)
. . hydrocracking
. . pyrolysis
. glycolysis
. hydrogenolysis
. . hydrocracking
. nitrolysis
. photodecomposition
. photodissociation
. photolysis
. propellant decomposition
. radiolysis
. thermal decomposition
. . pyrolysis
RT ablation
biodegradability
biodegradation
charring
damage
degradation
deterioration
disintegration
dissociation
electrolysis
laterites
overvoltage
storage stability
thermal dissociation

decompression

USE **pressure reduction**

decompression sickness

DEF A disorder experienced by deep sea divers and aviators caused by reduced atmospheric pressure and evolved gas bubbles in the body, marked by pain in the extremities, pain in the chest (chokes), occasionally leading to severe central nervous system symptoms and neurocirculatory collapse. Used for bends (physiology).

UF *bends (physiology)*
GS sicknesses
. **decompression sickness**
RT aeroembolism
altitude sickness
barotrauma
diving (underwater)

deconditioning

GS behavior
. **deconditioning**
RT learning
reflexes

decongestants

GS drugs
. **decongestants**

RT antihistaminics

decontamination

GS **decontamination**
. spacecraft sterilization
RT air purification
antiseptics
carbon dioxide concentration
carbon dioxide removal
cleaning
contaminants
contamination
dewaxing
disposal
dissipation
elimination
environmental cleanup
ethylene oxide
exhausting
extensions
∞ food
planetary protection
pollution
purging
purification
purity
∞ reduction
∞ separation
spacecraft contamination
sterilization
sterilization effects
washing

decoupling

GS **decoupling**
. spin decoupling
RT coupling
disconnect devices
gravitinos
releasing

decoys

GS **decoys**
. ballistic missile decoys
. Blue Goose missile
. quail missile
. reentry decoys
RT countermeasures
dummies

decrementing

USE **reduction**

deduction

RT derivation
inference

deep drawing

RT bulging
cold drawing
cold working
explosive forming
magnetic forming
metal working
stretching

Deep Impact Mission

(added July 2005)

DEF Flyby mission designed to observe the collision of a solid impactor with comet Tempel 1. The mission consists of a flyby spacecraft, which releases a guided impactor. The flyby spacecraft is equipped with two telescopes, the High Resolution Instrument, and the Medium Resolution Instrument, for imaging and spectroscopy of the collision and its effects.

GS space missions
. flyby missions
. . **Deep Impact Mission**
RT cometary collisions
comets
hypervelocity impact
hypervelocity projectiles
projectile cratering
space probes
Tempel 1 comet

deep scattering layers

RT acoustic scattering
echo sounding

- ∞ layers
 - oceanography
 - organisms
 - scattering
 - sound waves
 - underwater acoustics
- deep space**
 - GS environments
 - . aerospace environments
 - . . **deep space**
 - . . . interplanetary space
 - . . . interstellar space
 - . extraterrestrial environments
 - . . **deep space**
 - . . . interplanetary space
 - . . . interstellar space
 - RT cislunar space
 - frictionless environments
 - long duration space flight
 - ∞ space
- Deep Space 1 Mission**
(added October 1998)
 - DEF First of several technology demonstration missions supporting the NASA New Millennium Program. Advanced technologies include an ion propulsion system, solar concentrator arrays, autonomous navigation and control systems, an integrated camera and imaging spectrometer, and several telecommunications and microelectronics devices. The mission plan includes a flyby of Asteroid 1992 KD.
 - UF *DS1 (space mission)*
 - GS space missions
 - . **Deep Space 1 Mission**
 - RT asteroid missions
 - autonomous navigation
 - flyby missions
 - interplanetary spacecraft
 - ion propulsion
 - NASA space programs
 - solar electric propulsion
- Deep Space Instrumentation Facility**
 - UF *DSIF (instrumentation facility)*
 - GS stations
 - . ground stations
 - . . **Deep Space Instrumentation Facility**
 - . tracking stations
 - . . **Deep Space Instrumentation Facility**
 - RT data acquisition
 - data transmission
 - radio control
- Deep Space Network**
 - DEF A communications network managed by the Jet Propulsion Laboratory for command and control of all planetary flights.
 - UF *DSN (space network)*
 - GS networks
 - . communication networks
 - . . **Deep Space Network**
 - . tracking networks
 - . . **Deep Space Network**
 - RT spacecraft tracking
- deep water**
 - GS water
 - . **deep water**
 - RT ocean bottom
 - oceanography
 - oceans
 - seas
 - submarine hydrothermal vents
- deep well injection (wastes)**
 - DEF Storage of liquid wastes, particularly chlorohydrocarbons, by injection into subsurface geologic strata for long term isolation from the environment.
 - GS injection
 - . fluid injection
 - . . liquid injection
 - . . . **deep well injection (wastes)**
- RT waste disposal
- deep-sea hydrothermal vents*
(added April 2005)
 - USE **submarine hydrothermal vents**
- deepwater terminals**
 - RT artificial harbors
 - cargo ships
 - marine technology
 - marine transportation
 - oceanography
 - offshore docking
 - offshore energy sources
 - offshore platforms
 - ∞ ports
 - ship terminals
 - tanker ships
 - tanker terminals
 - ∞ tankers
 - terminal facilities
 - transportation
- deer**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . **deer**
 - caribous
 - RT grazing
 - livestock
- defects**
 - UF *flaws*
 - imperfections*
 - GS **defects**
 - . auditory defects
 - . crystal defects
 - . . crystal dislocations
 - . . . edge dislocations
 - . . . screw dislocations
 - . . point defects
 - . . . vacancies (crystal defects)
 - Frenkel defects
 - antisite defects
 - . hyperopia
 - . inclusions
 - . speech defects
 - . surface defects
 - RT castings
 - cavities
 - cracks
 - cumulative damage
 - damage
 - inhomogeneity
 - irregularities
 - leakage
 - pinholes
 - porosity
 - scoring
 - vignetting
 - voids
 - x ray analysis
- Defender project**
 - GS programs
 - . projects
 - . . **Defender project**
- ∞ **defense**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT air defense
 - antimissile defense
 - civil defense
 - Defense Communications Satellite System
 - defense communications system (DCS)
 - defense industry
 - defense program
 - DMSP satellites
 - missile defense
 - physiological defenses
- Defense Communications Satellite System**
 - GS telecommunication
 - . **Defense Communications Satellite System**
- . . Fleet Satellite Communication System
 - RT communication satellites
 - ∞ defense
 - radio relay systems
 - space communication
 - ∞ systems
- defense communications system (DCS)**
 - GS networks
 - . **defense communications system (DCS)**
 - telecommunication
 - . **defense communications system (DCS)**
 - RT communication networks
 - ∞ defense
 - military technology
 - ∞ systems
- defense industry**
 - GS industries
 - . **defense industry**
 - . . weapons industry
 - RT antimissile defense
 - ∞ defense
 - military technology
 - missile defense
- Defense Meteorological Satellite Program*
 - USE **DMSP satellites**
- defense program**
 - GS programs
 - . **defense program**
 - RT air defense
 - antimissile defense
 - armed forces (United States)
 - civil defense
 - ∞ defense
 - DMSP satellites
 - military technology
 - missile defense
 - space transportation system
 - weapons delivery
- definition**
 - RT accuracy
 - delineation
 - descriptions
 - dictionaries
 - ∞ measurement
 - nomenclatures
 - precision
 - resolution
- deflagration**
 - DEF A sudden or rapid burning, as opposed to a detonation or explosion.
 - GS combustion
 - . **deflagration**
 - RT backfire
 - fires
 - flashback
- deflating*
 - USE **inflatable structures**
 - pressure reduction**
- deflection**
 - RT bending
 - bending diagrams
 - camber
 - deformation
 - diffraction
 - dispersing
 - displacement
 - distortion
 - elastic deformation
 - flexing
 - Maxwell-Mohr method
 - reflection
 - refraction
 - scattering
 - structural strain
 - temperature inversions
 - torsion
 - variations
 - wave dispersion

deflectors

yokes

deflectors

DEF Plates, baffles, or the like that divert something in its movement or flow.

GS

deflectors
. blast deflectors
. flame deflectors

RT

attenuators
baffles
∞ diffusers
diverters
flow deflection
gust alleviators
reflectors
safety devices
shielding
spoilers

defluorination

GS chemical reactions

. **defluorination**

RT

fluorination
halogenation

defocusing

GS focusing

. **defocusing**

RT

∞ optics

defoliant

RT defoliation

foliage
forests
herbicides
leaves
plants (botany)
trees (plants)

defoliation

RT brush (botany)

defoliant
deforestation
forests
grasses
leaves
plants (botany)
trees (plants)

deforestation

RT biological diversity
biomass burning
clearings (openings)
conservation
defoliation
environment effects
forests

deformable mirrors

(added May 1998)

GS

mirrors
. **deformable mirrors**

RT

adaptive optics
light modulation
phase modulation
segmented mirrors

deformation

DEF A change in the shape or size of a solid body.

GS

deformation
. axial strain
. elastic deformation
. . elastic bending
. . elastic buckling
. nuclear deformation
. plastic deformation
. static deformation
. tensile deformation
. wave front deformation

RT

bending
buckling
camber
collapse
corrugating
creep properties
damage
deflection
deformers
displacement

distortion
elongation
failure
flexing
fractures (materials)
indentation
kinking
mechanical properties
Portevin-le Chatelier effect
set
skewness
stiffness
strain distribution
structural failure
structural strain
temperature inversions
topology
torsion
twisting
volumetric strain
warpage
wrinkling

deformers

GS measuring instruments

. **deformers**

RT

deformation
dimensional measurement
extensometers
mechanical measurement
strain gages
stress measurement
tensometers

defrosting

RT deicing

heating
ice prevention
melting
refrigerating
refrigerators

degassing

DEF The deliberate removal of gas from a material, usually by application of heat under high vacuum. Used for bakeout.

UF

bakeout

GS

degassing

. deoxygenation
RT absorbers (equipment)
aeration
baking
castings
deoxidizing
desorption
gas evolution
occlusion
offgassing
outgassing
purging
scavenging
∞ separation

degenerate matter

DEF A state of matter found in white dwarf stars and other ultrahigh-density objects in which the electrons follow Fermi-Dirac statistics, i.e., the matter reaches a density high enough so that the pressure increases more and more rapidly to the point where it becomes independent of the temperature and is a function of the density only, thereby departing from the classical laws of physics.

GS

matter (physics)
. **degenerate matter**

RT

antimatter
astrophysics
black holes (astronomy)
cosmic gases
critical pressure
density (mass/volume)
extraterrestrial matter
Fermi-Dirac statistics
high pressure
massive stars
naked singularities
neutron stars
nuclear fusion
∞ physics
pulsars

rotating matter
stellar cores
stellar evolution
stellar mass
supermassive stars
white dwarf stars

degeneration

RT atrophy
deterioration
negative feedback

degenerative feedback

USE **negative feedback**

degradation

DEF Gradual deterioration in performance.

GS

degradation

. biodegradation
. thermal degradation
. wave degradation

RT

chemical attack
corrosion
cumulative damage
curing
damage
decay
decomposition
depolymerization
deterioration
discoloration
durability
embrittlement
erosion
hot corrosion
oxidation
pitting
preserving
rusting
scale (corrosion)
sterilization effects
thermal dissociation
weathering

degrees of freedom

DEF A mode of motion, either angular or linear, with respect to a coordinate system, independent of any other mode. A body in motion has six possible degrees of freedom, three linear and three angular.

RT

equipartition theorem
experiment design
factor analysis
null hypothesis
phase rule
quality control
significance
three dimensional motion
torquers
∞ variance

DEHP

USE **diethyl hydrogen phosphite (DEHP)**

dehumidification

DEF The reduction, by any process, of the quantity of water vapor within a given space.

GS

drying
. **dehumidification**

RT

condensing
cooling systems
dehydration
diffusion
humidity
refrigerating
∞ separation
silica gel

dehydrated food

RT consumables (spacecrew supplies)

dehydration
drying apparatus
∞ food
food processing
freeze drying
preserving
space flight feeding

dehydration

GS drying

. **dehydration**
 RT columns (process engineering)
 dehumidification
 dehydrated food
 dewatering
 evaporation
 freeze drying
 hydration
 plasmolysis
 ∞ separation
 silica gel
 thermogravimetry
 water loss

dehydrogenases

(added June 2004)

DEF Class of oxidoreductase enzymes that catalyze the transfer of hydrogen atoms from a substrate to an acceptor other than oxygen.

GS biopolymers
 . proteins
 . . enzymes
 . . . **dehydrogenases**
 organic compounds
 . proteins
 . . enzymes
 . . . **dehydrogenases**

RT oxidase

dehydrogenation

GS chemical reactions
 . **dehydrogenation**
 RT columns (process engineering)
 hydroforming
 hydrogenation
 hydrogenolysis
 oxidation
 reduction (chemistry)

deicers

UF *deicing systems*
 RT aircraft icing
 airfoils
 antiicing additives
 deicing
 ∞ heaters
 heating equipment
 ice prevention

deicing

RT aircraft icing
 airfoils
 antiicing additives
 defrosting
 deicers
 ∞ heaters
 heating equipment
 ice prevention
 melting

deicing systems

USE **deicers**

Deimos

DEF A satellite of Mars orbiting at a mean distance of 23,500 kilometers.

GS celestial bodies
 . natural satellites
 . . Mars satellites
 . . . **Deimos**
 RT Charon
 Mars (planet)
 Nozomi Mars Orbiter
 Phobos

deionization

DEF The removal of ions from a solution by ion exchange.

GS chemical reactions
 . **deionization**
 RT atomic recombination
 demineralizing
 exchanging
 ion recombination
 radiative recombination
 ∞ separation

softening

dekatrons

USE **counters**

delaminating

RT anodic stripping
 debonding (materials)
 interlaminar stress
 peeling
 ∞ separation

Delaware

GS nations
 . United States
 . . **Delaware**
 RT Delaware River Basin (US)
 Delmarva Peninsula (DE-MD-VA)

Delaware Bay (US)

GS bays (topographic features)
 . **Delaware Bay (US)**
 RT Atlantic Ocean
 gulfs
 inlets (topography)
 New Jersey
 Pennsylvania

Delaware River Basin (US)

GS landforms
 . structural basins
 . . river basins
 . . . **Delaware River Basin (US)**
 RT Delaware
 New Jersey
 New York
 Pennsylvania
 rivers
 streams
 valleys

delay

RT dwell
 ∞ holding
 lateness
 stopping
 time lag
 ∞ time response
 transmission rate (communications)

delay circuits

GS circuits
 . **delay circuits**
 . . phantastrons
 RT acoustic delay lines
 circulators (phase shift circuits)
 comparator circuits
 phase shift circuits

delay lines

GS **delay lines**
 . acoustic delay lines
 . delay lines (computer storage)
 RT ∞ lines
 time lag

delay lines (computer storage)

DEF In electronic computers, devices for producing a time delay of a signal.

GS computer components
 . computer storage devices
 . . **delay lines (computer storage)**
 delay lines
 . **delay lines (computer storage)**
 RT shift registers

deletion

GS elimination
 . **deletion**
 RT disposal
 removal

Delfin aircraft

USE **L-29 jet trainer**

Delft camera

GS optical equipment
 . cameras
 . . **Delft camera**
 photographic equipment
 . cameras

. . **Delft camera**

delineation

RT boundaries
 definition
 ∞ profiles

delivery

GS **delivery**
 . payload delivery (STS)
 . weapons delivery
 RT air drop operations
 airdrops
 cargo
 circulation
 hauling
 materials handling
 output
 ∞ receiving
 transportation
 trucks

Delmarva Peninsula (DE-MD-VA)

GS landforms
 . peninsulas
 . . **Delmarva Peninsula (DE-MD-VA)**
 RT Delaware
 Maryland
 Virginia

Delphi method (forecasting)

GS management methods
 . **Delphi method (forecasting)**
 predictions
 . forecasting
 . . technological forecasting
 . . . **Delphi method (forecasting)**
 RT estimating
 ∞ methodology
 operations research
 pattern method (forecasting)
 planning
 probe method (forecasting)
 profile method (forecasting)
 technology assessment

Delrin (trademark)

GS plastics
 . **Delrin (trademark)**
 RT resins

Delta 3 launch vehicle

(added October 1998)

GS launch vehicles
 . Delta launch vehicle
 . . **Delta 3 launch vehicle**

Delta 4 Heavy launch vehicle

(added September 2005)

DEF Member of the Boeing Delta 4 family of launch vehicles designed to launch heavy payloads (~28,124 pounds) into geosynchronous transfer orbit (GTO) using three common booster cores (CBCs). The first stage CBC is powered by the RS-68 engine; the two second stages are powered by the RL10B-2 engine with two sizes of expanded fuel and oxidizer tanks.

GS launch vehicles
 . Delta launch vehicle
 . . **Delta 4 Heavy launch vehicle**
 . heavy lift launch vehicles
 . . **Delta 4 Heavy launch vehicle**
 RT booster rocket engines
 Delta 4 launch vehicle
 liquid propellant rocket engines
 rocket launching
 spacecraft launching

Delta 4 launch vehicle

(added October 1998)

GS launch vehicles
 . Delta launch vehicle
 . . **Delta 4 launch vehicle**
 RT Delta 4 Heavy launch vehicle

delta antennas

GS antennas
 . **delta antennas**
 RT antenna design
 resonators

transmission lines

Delta Clipper

(added September 1994)

- GS launch vehicles
 - . reusable launch vehicles
 - . . single stage to orbit vehicles
 - . . . **Delta Clipper**
- reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . single stage to orbit vehicles
 - **Delta Clipper**
- RT aerospace planes
 - liquid propellant rocket engines
 - space transportation

Delta Dagger aircraft

USE **F-102 aircraft**

Delta Dart aircraft

USE **F-106 aircraft**

delta function

- GS analysis (mathematics)
 - . real variables
 - . . **delta function**
- functions (mathematics)
 - . **delta function**

Delta launch vehicle

- GS launch vehicles
 - . **Delta launch vehicle**
 - . . Delta 3 launch vehicle
 - . . Delta 4 Heavy launch vehicle
 - . . Delta 4 launch vehicle
- RT Anik 1
 - Anik 2
 - Anik satellites
 - Beacon Explorer A
 - ESSA 1 satellite
 - ESSA 2 satellite
 - ESSA 3 satellite
 - ESSA 4 satellite
 - ESSA 5 satellite
 - ESSA 6 satellite
 - ESSA 7 satellite
 - ESSA 8 satellite
 - ESSA 9 satellite
 - Explorer 10 satellite
 - Explorer 12 satellite
 - Explorer 14 satellite
 - Explorer 15 satellite
 - Explorer 17 satellite
 - Explorer 18 satellite
 - Explorer 21 satellite
 - Explorer 26 satellite
 - Explorer 28 satellite
 - Explorer 29 satellite
 - Explorer 32 satellite
 - Explorer 33 satellite
 - Explorer 38 satellite
 - Explorer 43 satellite
 - Explorer 49 satellite
 - Explorer 55 satellite
 - International Magnetospheric Explorer
 - OSO-1
 - OSO-2
 - OSO-4
 - OSO-C
 - outer planets explorers
 - Pioneer 6 space probe
 - Pioneer 7 space probe
 - RCA Satcom satellites
 - Space Shuttle upper stage D
 - SYNCOM 1 satellite
 - SYNCOM 2 satellite
 - SYNCOM 3 satellite
 - TIROS 2 satellite
 - TIROS 3 satellite
 - TIROS 4 satellite
 - TIROS 5 satellite
 - TIROS 6 satellite
 - TIROS 7 satellite
 - TIROS 8 satellite
 - TIROS 9 satellite
 - TIROS 10 satellite

delta modulation

- GS coding

- . signal encoding
 - . . pulse modulation
 - . . . pulse code modulation
 - **delta modulation**
- modulation
- . pulse modulation
 - . . pulse code modulation
 - . . . **delta modulation**
- RT pulse communication

delta wings

- DEF Triangularly shaped wings of aircraft.
Used for triangular wings.
- UF *triangular wings*
 - GS airfoils
 - . wings
 - . . low aspect ratio wings
 - . . . **delta wings**
 - . . swept wings
 - . . . sweptback wings
 - **delta wings**
- planforms
- . wing planforms
 - . . sweptback wings
 - . . . **delta wings**
- RT arrow wings
AVRO 707 aircraft
caret wings
FD 2 aircraft
GA-5 aircraft
variable sweep wings
VATOL aircraft
waveriders
wing rock

deltas

- GS landforms
 - . **deltas**
 - . . Mississippi Delta (LA)
 - . . Rhone Delta (France)
- RT alluvium
 - fans (landforms)
 - rivers
 - sands
 - soils

demagnetization

- DEF The reduction of residual magnetism to an acceptable level.
- RT magnetic fields
 - ∞ reduction

demand (economics)

- GS economics
 - . **demand (economics)**
- RT consumption
 - supplying

demand assignment multiple access

DEF A technique of assigning communication resources on an "as needed basis" such as in satellite communications. Used for DAMA.

- UF *DAMA*
 - GS telecommunication
 - . multiple access
 - . . **demand assignment multiple access**
- transmission
- . signal transmission
 - . . data transmission
 - . . . multiple access
 - **demand assignment multiple access**
- RT channel capacity
communication networks
communication satellites
satellite networks

demineralizing

- GS **demineralizing**
 - . bone demineralization
- RT crystallization
 - deionization
 - desalinization
 - distillation
 - ion exchanging
 - osmosis
 - purification
 - reverse osmosis
 - ∞ separation

- softening
- water treatment

Democratic Peoples Republic of Korea

USE **North Korea**

Democratic Republic of Congo

- SN (REPLACED THE TERM "ZAIRE" IN 1997; ALL OLDER RECORDS HAVE BEEN UPDATED WITH THE NEW FORM OF THE TERM)
- UF *Belgian Congo*
Congo (Kinshasa)
Zaire
- GS nations
 - . **Democratic Republic of Congo**
- RT Africa

demodulation

- RT amplitude modulation
 - decoding
 - demodulators
- ∞ detectors
 - frequency modulation
 - heterodyning
 - intermodulation
 - modulation
 - phase modulation
 - pulse modulation
 - remodulation
 - telecommunication

demodulators

DEF Electronic devices which operate on an input of a modulated carrier to recover the modulating wave as an output.

- GS **demodulators**
 - . frequency compression demodulators
 - . modems
 - . phase demodulators
 - . phase lock demodulators
- RT amplitude modulation
 - decoders
 - decommutators
 - demodulation
 - frequency modulation
 - matched filters
 - modulation
 - modulators
 - phase modulation
 - pulse modulation

demography

DEF Statistical study of human populations, especially with reference to size, density, distribution, and vital data.

- RT adults
 - census
 - communities
- ∞ density
- ∞ distribution
 - human beings
 - inhabitants
 - megalopolises
 - nations
 - sociology
- ∞ statistics

demonstration

USE **proving**

demultiplexing

DEF Separation of two or more signals that were previously combined by a compatible multiplexer and transmitted over a single channel.

- GS transmission
 - . **demultiplexing**
- RT code division multiplexing
 - frequency division multiplexing
 - multiplexing
 - time division multiplexing
 - wavelength division multiplexing

denaturation (biopolymers)

USE **biopolymer denaturation**

dendrimers

(added October 2000)

DEF A class of polymeric macromolecules characterized by a regular highly-branched mo-

lecular architecture resembling a spherical starburst, and a synthesis process that permits nearly complete control over critical molecular design parameters, such as size, shape, surface/interior chemistry, flexibility, and topology. Because of these characteristics, dendrimers are seen as important elements in the manufacture of nanoscale materials and devices.

- UF *dendritic polymers*
hyperbranched polymers
- GS molecules
 - . macromolecules
 - . . **dendrimers**
- RT conducting polymers
dendritic crystals
nanostructure (characteristics)
organometallic polymers
- ∞ polymers
synthetic metals

dendrites

(added August 2004)

DEF Extensions of the nerve cell body. They are short and branched and receive stimuli from other neurons.

- GS cells (biology)
 - . neurons
 - . . **dendrites**
- RT nerves
nervous system

dendritic crystals

- GS crystals
 - . **dendritic crystals**
- RT dendrimers
isotropy
needles
whiskers (crystals)

dendritic drainage

USE **drainage patterns**

dendritic polymers

(added October 2000)

USE **dendrimers**

dendrochronology

DEF The use of annual growth rings in plant tissue to determine the age of the plant or tree. Used for tree ring dating.

- UF *tree ring dating*
- RT climatology
geochronology
periodic variations
timberline
trees (plants)

denitrogenation

- GS chemical reactions
 - . **denitrogenation**
- RT nitration

Denmark

- GS nations
 - . **Denmark**
- RT Danish space program
Europe
Greenland
Scandinavia

dense plasmas

- GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **dense plasmas**
 - plasma focus
 - strongly coupled plasmas
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **dense plasmas**
 - plasma focus
 - strongly coupled plasmas
- RT astrophysics
beta factor
electron scattering
high temperature plasmas
nuclear fusion
particle collisions

plasma compression
spheromaks
stellar structure

densification

- GS pressure
 - . **densification**
- RT agglomeration
chemical vapor infiltration
compacting
compressing
consolidation
Ludox (trademark)
pressurizing

densimeters

DEF Instruments for measuring the density or specific gravity of liquids, gases, or solids.

- GS measuring instruments
 - . **densimeters**
 - . . ultrasonic densimeters
- RT density (mass/volume)
density measurement
- ∞ instruments
- ∞ measurement

densitometers

DEF Instruments for the measurement of optical density (photographic transmission, photographic reflection, visual transmission, etc.) of a material, generally of a photographic image.

- GS measuring instruments
 - . **densitometers**
 - . . microdensitometers
- RT gamma ray absorptiometry
gravimeters
optical equipment
optical measurement
optical measuring instruments
photometers
photon absorptiometry
transmissometers

∞ density

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT atmospheric density
atom concentration
biomass
demography
density (mass/volume)
density (number/volume)
flux density
optical density
porosity
Rankine-Hugoniot relation

density (mass/volume)

DEF The mass per unit volume of a material at a specified temperature.

- UF *specific gravity*
- GS **density (mass/volume)**
 - . atmospheric density
 - . gas density
 - . space density
- RT absorptance
absorptivity
bulk modulus
buoyancy
compressibility
degenerate matter
densimeters
- ∞ density
density measurement
hydrometers
internal friction
isopycnic processes
Lewis numbers
opacity
permeability
- ∞ physical properties
porosity
pycnometers
stopping power
transmissivity
transmittance
transparence
ultrasonic densimeters
viscosity

void ratio
weight measurement

density (number/volume)

- GS **density (number/volume)**
 - . meteoroid concentration
 - . packing density
 - . particle density (concentration)
 - . . electron density (concentration)
 - . . . carrier density (solid state)
 - . . . electron density profiles
 - . . . ionospheric electron density
 - . . . magnetospheric electron density
 - . . electron distribution
 - . . . electron density profiles
 - . . ion density (concentration)
 - . . . ionospheric ion density
 - . . . magnetospheric ion density
 - . . . magnetospheric proton density
 - . . . proton density (concentration)
 - magnetospheric proton density
 - . . plasma density
 - . space density
- RT atmospheric density
- ∞ density

density (rate/area)

USE **flux density**

density distribution

- RT baroclinic waves
Fokker-Planck equation
Maxwell-Boltzmann density function
shock discontinuity
Taylor instability

density functional theory

(added February 2007)

DEF A quantum mechanical method used in physics and chemistry to investigate the electronic structure of many-body systems, in particular molecules and the condensed phases.

- RT atomic structure
electron density (concentration)
electron distribution
electron states
electronic structure
ground state
Hartree approximation
many body problem
quantum mechanics
- ∞ theories
- wave functions

density measurement

- GS **density measurement**
 - . gamma ray absorptiometry
 - . photon absorptiometry
 - . x ray density measurement
- RT chemical analysis
densimeters
density (mass/volume)
hydrometers
- ∞ measurement
mechanical measurement
ultrasonic densimeters
wind tunnel tests

density wave model

- GS models
 - . astronomical models
 - . . **density wave model**
- RT galactic structure
mass distribution
spiral galaxies
wave equations

dental calculi

- GS deposits
 - . calculi
 - . . **dental calculi**
- RT lithiasis
teeth
tooth diseases

dentistry

- GS medical science
 - . **dentistry**
- RT medical equipment
oral hygiene

deoxidizing

teeth
tooth diseases

deoxidizing

GS chemical reactions
. reduction (chemistry)
. . . **deoxidizing**
RT degassing
∞ deoxygenation
deoxygenation
scavenging

∞ deoxygenation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT deoxidizing
deoxygenation
sterilization effects

deoxygenation

GS degassing
. **deoxygenation**
RT deoxidizing
∞ deoxygenation
∞ reduction
∞ separation

deoxyribonucleic acid

DEF The molecule that encodes genetic information - a double-stranded molecule held together by weak bonds between base pairs of nucleotides. Used for DNA.

UF *DNA*
recombinant DNA

GS acids
. nucleic acids
. . . **deoxyribonucleic acid**
. . . complementary DNA
biopolymers
. nucleic acids
. . . **deoxyribonucleic acid**
. . . complementary DNA
organic compounds
. nucleic acids
. . . **deoxyribonucleic acid**
. . . complementary DNA
RT adenosine monophosphate
apoptosis
chromatin
cloning (biology)
gene expression
gene therapy
genes
genome
mutagenesis
plasmids
polymerase chain reaction
thymidine
thymine
transcription (genetics)

dependence

UF *dependency*
GS **dependence**
. spatial dependencies
. temperature dependence
. time dependence
RT group dynamics
sociology

dependency

USE **dependence**

dependent variables

DEF Variables considered as a function of other variables, the latter being called independent.

GS analysis (mathematics)
. **dependent variables**
RT complex variables
independent variables
observability (systems)
parameterization
real variables
∞ variable

depersonalization

RT artificial intelligence
automata theory
automatic control

∞ automation
cybernetics
detachment
disorders
man machine systems
mechanization
personality
personnel

depletion

GS **depletion**
. ozone depletion
RT consumption
depreciation
dissipation
elimination
energy policy
exhaustion
exploitation
life (durability)
losses
∞ reduction
removal
resources
utilization

deployment

RT game theory
logistics
military operations
military technology
∞ operations
personnel
strategy
tactics

depolarization

SN (EXCLUDES CONSIDERATION OF OPTICAL DEPOLARIZATION AND PARTICLE SPIN MISALIGNMENT)
DEF A decrease in the polarization of an electrode at a specified current density. Used for depolarizers.
UF *depolarizers*
RT electrolytic polarization
electrophysiology
polarization (charge separation)
∞ reduction
spike potentials

depolarizers

USE **depolarization**

depolymerization

GS chemical reactions
. **depolymerization**
RT degradation
deterioration
polymerization

deposition

UF *accretion*
GS **deposition**
. anodizing
. electrodeposition
. . . electroplating
. electroless deposition
. laser deposition
. . . pulsed laser deposition
. vapor deposition
. . . metalorganic chemical vapor deposition
. . . vacuum deposition
RT accumulations
coagulation
coating
coatings
deposits
electroforming
electron bombardment
forming techniques
fouling
magnetron sputtering
metal coatings
plating
precipitation (chemistry)
sediments
∞ separation
settling
sputtering

thermophoresis

deposits

SN (EXCLUDES BANK MINERAL AND GEOLOGICAL DEPOSITS)
GS **deposits**
. calculi
. . . dental calculi
. cryodeposits
RT coatings
corrosion
crude oil
deposition
plating
sediments
sludge

depreciation

RT depletion
deterioration
investments
life (durability)
wear

depressants

GS **depressants**
. central nervous system depressants
RT anesthesiology

∞ depression

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT detachment
disorders
emotions
∞ hollow
introversion
lethargy
low pressure
neurotic depression
psychotic depression
recession
schizophrenia
tectonics
topography

depressions (topography)

USE **structural basins**

depressurization

USE **pressure reduction**

deprivation

GS **deprivation**
. sensory deprivation
. sleep deprivation
. water deprivation
RT confining
isolation
stress (biology)
stress (physiology)

depth

GS dimensions
. **depth**
RT distance
height
thickness

depth measurement

RT bathymeters
core sampling
distance measuring equipment
echo sounding
∞ measurement
mechanical measurement
sounding

depth perception

USE **space perception**

derivation

RT deduction
∞ induction
∞ origins
parameterization

∞ sources

*derivation calculus*USE **differential calculus****dermatitis**

GS diseases
 . infectious diseases
 . . **dermatitis**
 . . . contact dermatitis

RT bacterial diseases
 dermatology
 fungal diseases
 itching
 radiation hazards
 radiation sickness
 skin (anatomy)

dermatology

GS medical science
 . **dermatology**

RT contact dermatitis
 dermatitis
 skin (anatomy)

desalination

RT demineralizing
 distillation
 osmosis
 purification
 reverse osmosis
 salinity
 vaporizing
 water treatment

desaturation

RT drying
 ∞ saturation

descaling

RT chemical cleaning
 cleaning
 metal finishing
 pickling (metallurgy)
 scale (corrosion)
 ∞ separation
 shot peening

descent

GS **descent**
 . parachute descent

RT approach
 ascent
 flight paths
 gliding
 reentry
 uncontrolled reentry (spacecraft)

descent propulsion systems

GS propulsion
 . **descent propulsion systems**
 propulsion system configurations
 . **descent propulsion systems**

RT spacecraft propulsion
 ∞ systems

descent trajectories

GS trajectories
 . **descent trajectories**
 . . reentry trajectories

RT ascent trajectories
 atmospheric entry
 ballistic trajectories
 coasting flight
 falling
 flight mechanics
 manned reentry
 midcourse trajectories
 missile trajectories
 parabolic flight
 reentry
 reentry guidance
 spacecraft trajectories
 terminal guidance

descriptions

RT characterization
 definition
 nomenclatures

representations

descriptive geometry

GS geometry
 . Euclidean geometry
 . . **descriptive geometry**

RT analytic geometry
 engineering drawings
 layouts
 ∞ projection
 projective geometry
 toruses

desensitizing

RT corrosion prevention
 protective coatings
 rusting

desert adaptation

GS adaptation
 . **desert adaptation**

RT survival

desertification

DEF The formation of a desert or the gradual expansion of a desertline into previously usable land, due to man-made or natural causes.

RT arid lands
 barren land
 Death Valley (CA)
 desertline
 deserts
 drought
 Earth environment
 Gobi desert
 land
 land use
 man environment interactions
 Mojave Desert (CA)
 oases
 remote sensing
 Sahara Desert (Africa)
 steppes
 wadis

desertline

RT arid lands
 climatology
 desertification
 land
 topography

deserts

GS land
 . **deserts**
 . . Gobi desert
 . . Libyan desert
 . . Mojave Desert (CA)
 . . Sahara Desert (Africa)

RT arid lands
 barren land
 climatology
 Coachella Valley (CA)
 Death Valley (CA)
 desertification
 dunes
 Earth resources
 Imperial Valley (CA)
 Kalahari Basin (Africa)
 oases
 Palo Verde Valley (CA)
 playas
 remote regions
 Salton Sea (CA)
 topography
 wilderness

desiccants

DEF Chemicals used to absorb moisture.

RT absorbents
 adsorbents

*desiccation*USE **drying****desiccators**

GS separators
 . drying apparatus

. . desiccators

∞ design

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

UF *tailoring*

RT aerodynamic configurations
 aircraft design
 amplifier design
 antenna design
 computer aided design
 computer design
 computer systems design
 construction
 control systems design
 design analysis
 design optimization
 design to cost
 dimensions
 drafting machines
 engine design
 engineering drawings
 equipment specifications
 estimating
 experiment design
 factorial design
 functional design specifications
 helicopter design
 IPAD
 layouts
 lens design
 logic design
 missile design
 nozzle design
 optimization
 planning
 plant design
 pressure vessel design
 product development
 reactor design
 reliability
 research
 research and development
 rocket engine design
 satellite design
 shape optimization
 spacecraft design
 structural design
 structural design criteria
 ∞ synthesis
 systems engineering

design analysis

RT ∞ analyzing
 control systems design
 ∞ design
 design optimization
 logic design
 maintainability
 multidisciplinary design optimization
 optimization
 reliability
 reliability analysis
 reverse engineering
 safety factors
 sensitivity analysis
 shape optimization
 Taguchi methods
 value engineering

*design of experiments*USE **experiment design****design optimization***(added February 2001)*

GS optimization
 . **design optimization**
 . . shape optimization

RT aircraft design
 computer aided design
 ∞ design
 design analysis
 evolvable hardware
 genetic algorithms
 sensitivity analysis
 structural analysis
 structural design
 structural design criteria

design to cost

systems engineering

design to cost

DEF A process whereby cost factors are determined and calculated for the life cycle of a product as an integral part of its design.

- RT concurrent engineering
- cost analysis
- costs
- ∞ design
- life cycle costs
- production costs

desorption

DEF The process of removing sorbed gas.

- RT ∞ absorption
- adsorption
- degassing
- evolution (liberation)
- mischmetal
- outgassing
- permeating
- ∞ separation
- sublimation

despinning

USE **spin reduction**

destabilization

- RT spin reduction
- tumbling motion

Destiny Laboratory Module

(added February 2001)

DEF Component of the International Space Station providing equipment and support systems for research and technology development. Also provides support and control for the US segment of the Space Station.

- UF *US Laboratory Module (ISS)*
- GS laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Destiny Laboratory Module**
- manned spacecraft
 - . manned orbital laboratories
 - . . **Destiny Laboratory Module**
- modules
 - . space station modules
 - . . **Destiny Laboratory Module**
- RT International Space Station
- spaceborne experiments

Destroyer aircraft

USE **B-66 aircraft**

destruction

- RT aborted missions
- accidents
- breaking
- cracking (fracturing)
- damage
- destructive tests
- failure
- fatigue (materials)
- flight hazards
- flight safety
- lethality
- spacecraft breakup
- stresses

destructive tests

- GS **destructive tests**
 - . burst tests
- RT bend tests
- compression tests
- corrosion tests
- destruction
- drop tests
- fatigue tests
- fiber pushout
- impact tests
- load tests
- ∞ materials tests
- nondestructive tests
- tensile tests
- ∞ tests
- vibration tests

wear tests

desulfurizing

- GS chemical reactions
 - . **desulfurizing**
- RT flue gases
- refining
- roasting

desynchronization (biology)

DEF The loss of synchronization between two or more rhythms so that they show independent periods.

- GS biological effects
 - . **desynchronization (biology)**
 - disorientation
 - . **desynchronization (biology)**
 - psychological effects
 - . **desynchronization (biology)**
- RT jet lag
- physiological responses
- rhythm (biology)
- zeitgebers

desynchronized sleep

USE **rapid eye movement state**

detachment

DEF A particular state of isolation in which man is separated or detached from his accustomed behavioral environment by inordinate physical and psychological distances. This condition may compromise his performance.

- RT anxiety
- boredom
- depersonalization
- ∞ depression
- disorders
- disorientation
- emotional factors
- human behavior
- ∞ inhibition
- introversion
- lethargy
- psychology
- psychoses

detection

- UF *sensing*
- GS **detection**
 - . aircraft detection
 - . change detection
 - . edge detection
 - . fault detection
 - . forest fire detection
 - . haze detection
 - . high altitude nuclear detection
 - . missile detection
 - . radar detection
 - . remote sensing
 - . signal detection
 - . . correlation detection
 - . asteroid detection
 - . chemical detection
 - . planet detection
 - . target recognition
 - . ultrasonic flaw detection
 - . . explosives detection
- RT acquisition
- data acquisition
- ∞ detectors
- early warning systems
- examination
- exploration
- gas detectors
- identifying
- inspection
- marking
- ∞ measurement
- missile signatures
- observation
- position (location)
- radar signatures
- signature analysis
- signatures
- sound localization
- sound ranging
- space observations (from Earth)
- surveillance
- target acquisition

targets

tracking (position)

warning

warning systems

∞ detectors

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF sensor.
- RT aircraft detection
- analyzers
- anticoincidence detectors
- autodynes
- character recognition
- correlation detection
- demodulation
- detection
- display devices
- FLIR detectors
- forest fire detection
- gas detectors
- hazards
- helmet mounted displays
- indicating instruments
- infrared detectors
- instrument receivers
- laser target designators
- life detectors
- measuring instruments
- mine detectors
- monitors
- multispectral linear arrays
- phase detectors
- radiation detectors
- radiation measuring instruments
- readers
- receivers
- remote sensors
- safety
- signal detection
- signal detectors
- squid (detectors)
- telecommunication
- transducers
- ultrasonic flaw detection
- ultraviolet detectors
- Venturi tubes
- warning
- warning systems

detergents

- RT ethylenediaminetetraacetic acids
- lubricating oils
- soaps
- surfactants

deterioration

- RT atrophy
- biodegradability
- biodegradation
- corrosion
- damage
- decay
- decomposition
- degeneration
- degradation
- depolymerization
- depreciation
- disintegration
- durability
- erosion
- erosive burning
- failure
- hot corrosion
- rusting
- soil erosion
- system failures
- wear
- wear resistance
- weathering

determinants

- GS algebra
- . **determinants**
- RT linear equations

- matrices (mathematics)
- determination*
USE **measurement**
- detonable gas mixtures**
GS gases
. gas mixtures
. . **detonable gas mixtures**
mixtures
. solutions
. . gas mixtures
. . . **detonable gas mixtures**
RT chemical explosions
firing (igniting)
flammability
flammable gases
gas explosions
gas-gas interactions
oxyacetylene
reacting flow
- detonation**
DEF A rapid chemical reaction which propagates at a supersonic velocity. Used for Chapman-Jouget flame.
UF *Chapman-Jouget flame*
RT chemical explosions
combustion
∞ discharge
explosions
firing (igniting)
flame propagation
initiation
percussion
primers (explosives)
propellant explosions
pulse detonation engines
pulsejet engines
rocket firing
shock waves
- detonation waves**
DEF Shock waves that accompany detonation and have a shock front followed by a region of decreasing pressure in which the reaction occurs.
GS elastic waves
. shock waves
. . **detonation waves**
RT combustible flow
flame propagation
gas explosions
ram accelerators
seismic waves
sound waves
∞ waves
- detonators**
GS explosive devices
. initiators (explosives)
. . **detonators**
igniters
. initiators (explosives)
. . **detonators**
RT caps (explosives)
exploding wires
explosives
fulminates
fuses (ordnance)
primers (explosives)
sodium azides
- deuterides**
GS hydrogen compounds
. deuterium compounds
. . **deuterides**
RT hydrides
- deuterium**
DEF A heavy isotope of hydrogen having one proton and one neutron in the nucleus. Used for hydrogen 2.
UF *hydrogen 2*
GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **deuterium**
. nuclides
. . isotopes
- . . . hydrogen isotopes
. . . . **deuterium**
gases
. hydrogen
. . hydrogen isotopes
. . . **deuterium**
heavy water
hydrogen fuels
hydrogen plasma
nuclear fuels
- RT
- deuterium compounds**
GS hydrogen compounds
. **deuterium compounds**
. . deuterides
. . deuterium fluorides
. . heavy water
RT ∞ chemical compounds
- deuterium fluoride lasers*
USE **DF lasers**
- deuterium fluorides**
DEF Fluorides of deuterium, a heavy isotope of hydrogen. Used for DF.
UF *DF*
GS halogen compounds
. fluorine compounds
. . fluorides
. . . **deuterium fluorides**
. halides
. . fluorides
. . . **deuterium fluorides**
hydrogen compounds
. deuterium compounds
. . **deuterium fluorides**
RT DF lasers
- deuterium oxides*
USE **heavy water**
- deuterium plasma**
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . hydrogen plasma
. **deuterium plasma**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . hydrogen plasma
. **deuterium plasma**
RT deuterons
hydrogen
- deuteron irradiation**
GS irradiation
. ion irradiation
. . **deuteron irradiation**
RT alpha particles
charged particles
nuclear fusion
particles
plasmas (physics)
proton irradiation
- deuterons**
DEF The nuclei of deuterium atoms.
GS ions
. **deuterons**
particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **deuterons**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **deuterons**
. elementary particles
. . **deuterons**
RT alpha particles
cosmic rays
deuterium plasma
photomagnetic effects
plasmas (physics)
Pomeranchuk theorem
- protons
- developers (photography)*
USE **photographic developers**
- developing nations**
RT Caribbean region
economic development
economic factors
nations
United Nations
- ∞ **development**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT angiogenesis
energy policy
evolution (development)
exploitation
growth
land use
management planning
missile design
personnel development
photographic developers
product development
rural land use
Starsite program
training analysis
urban development
- deviation**
DEF The variation from a specified dimension or design requirement, usually defining upper and lower limits.
RT aberration
abnormalities
asymmetry
∞ dispersion
distortion
divergence
∞ drift
eccentricity
heterogeneity
irregularities
nonsynchronization
variations
- ∞ **devices**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air bag restraint devices
alpha plasma devices
antiskid devices
bulk acoustic wave devices
chips (memory devices)
cyclotron resonance devices
error correcting devices
explosive devices
lift devices
lifting bodies
mechanical devices
nanostructures (devices)
NDM semiconductor devices
nuclear devices
photoelectrochemical devices
plasma display devices
positioning devices (machinery)
safety devices
self erecting devices
self repairing devices
solid state devices
surface acoustic wave devices
training devices
TRAPATT devices
- devitrification*
USE **crystallization**
- dew**
RT acid rain
frost
hydrometeors
precipitation (meteorology)
water vapor
- dew point**
DEF Temperature at which water vapor begins to condense.

dewatering

RT atmospheric moisture
condensing
hygrometers
saturation (chemistry)

Dewar systems

USE **cryogenic equipment**

dewatering

DEF Removal of water by draining, pumping, or other means.

RT dehydration
drying
pollution control
waste disposal
water reclamation

dewaxing

RT decontamination
refining

dewetting

USE **drying**

dextrans

GS biopolymers
. polysaccharides
. . **dextrans**
organic compounds
. carbohydrates
. . polysaccharides
. . . **dextrans**
. . sugars
. . . **dextrans**

DF

USE **deuterium fluorides**

DF lasers

DEF Gas lasers in which the active material is deuterium fluoride. Used for deuterium fluoride lasers.

UF *deuterium fluoride lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **DF lasers**
RT deuterium fluorides

DH 106 aircraft

USE **Comet 4 aircraft**

DH 112 aircraft

UF *de Havilland DH 112 aircraft*
de Havilland Venom aircraft
Venom aircraft
GS attack aircraft
. fighter aircraft
. . **DH 112 aircraft**
de Havilland aircraft
. **DH 112 aircraft**
Hawker Siddeley aircraft
. **DH 112 aircraft**
jet aircraft
. **DH 112 aircraft**
monoplanes
. **DH 112 aircraft**
RT ∞ aircraft

DH 115 aircraft

UF *de Havilland DH 115 aircraft*
Vampire aircraft
GS attack aircraft
. **DH 115 aircraft**
de Havilland aircraft
. **DH 115 aircraft**
Hawker Siddeley aircraft
. **DH 115 aircraft**
jet aircraft
. **DH 115 aircraft**
monoplanes
. **DH 115 aircraft**
RT ∞ aircraft

DH 121 aircraft

UF *de Havilland DH 121 aircraft*
Trident aircraft
GS commercial aircraft
. **DH 121 aircraft**
de Havilland aircraft
. **DH 121 aircraft**

Hawker Siddeley aircraft

. **DH 121 aircraft**
jet aircraft
. turbofan aircraft
. . **DH 121 aircraft**
monoplanes
. **DH 121 aircraft**
passenger aircraft
. **DH 121 aircraft**
transport aircraft
. **DH 121 aircraft**
RT ∞ aircraft

DH 125 aircraft

UF *de Havilland DH 125 aircraft*
HS-125 aircraft
Jet Dragon aircraft
GS de Havilland aircraft
. **DH 125 aircraft**
general aviation aircraft
. **DH 125 aircraft**
Hawker Siddeley aircraft
. **DH 125 aircraft**
jet aircraft
. **DH 125 aircraft**
light aircraft
. **DH 125 aircraft**
monoplanes
. **DH 125 aircraft**
passenger aircraft
. **DH 125 aircraft**
transport aircraft
. **DH 125 aircraft**
RT ∞ aircraft

DHC 2 aircraft

DEF De Havilland Canada STOL utility aircraft. Used for DHC Beaver aircraft.

UF *DHC Beaver aircraft*
GS de Havilland aircraft
. **DHC 2 aircraft**
general aviation aircraft
. **DHC 2 aircraft**
jet aircraft
. **DHC 2 aircraft**
monoplanes
. **DHC 2 aircraft**
transport aircraft
. **DHC 2 aircraft**
RT ∞ aircraft

DHC 4 aircraft

UF *AC-1 aircraft*
Caribou aircraft
CV-2 aircraft
de Havilland DHC 4 aircraft
GS de Havilland aircraft
. **DHC 4 aircraft**
monoplanes
. **DHC 4 aircraft**
transport aircraft
. **DHC 4 aircraft**
utility aircraft
. **DHC 4 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 4 aircraft**
RT ∞ aircraft

DHC 5 aircraft

UF *Buffalo aircraft*
CV-7 aircraft
de Havilland DHC 5 aircraft
GS de Havilland aircraft
. **DHC 5 aircraft**
jet aircraft
. turboprop aircraft
. . **DHC 5 aircraft**
monoplanes
. **DHC 5 aircraft**
transport aircraft
. **DHC 5 aircraft**
utility aircraft
. **DHC 5 aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **DHC 5 aircraft**

RT ∞ aircraft

DHC Beaver aircraft

USE **DHC 2 aircraft**

diabetes mellitus

GS diseases
. **diabetes mellitus**
RT carbohydrate metabolism
enzyme activity
insulin
pancreas
urinalysis

Diademe satellites

GS artificial satellites
. **Diademe satellites**

diagnosis

RT ∞ analyzing
anesthesiology
behavior
biomarkers
clinical medicine
diseases
examination
injuries
medical equipment
medical science
pathology
prognosis
psychology
psychometrics
telemedicine
veterinary medicine

diagrams

GS **diagrams**
. bending diagrams
. block diagrams
. circuit diagrams
. color-color diagram
. color-magnitude diagram
. creep diagrams
. Feynman diagrams
. Hertzsprung-Russell diagram
. Mollier diagram
. Nyquist diagram
. phase diagrams
. S-N diagrams
. stress-strain diagrams
. tephigrams
. Venn diagrams
. Voronoi diagrams
RT charts
drawings
geometry
graphic arts
visual aids

DIAL (lidar)

USE **differential absorption lidar**

DIAL satellite

GS artificial satellites
. scientific satellites
. . **DIAL satellite**
RT aeronomy
astronomical photometry
European space programs
satellite-borne instruments

diallyl compounds

RT allyl compounds
∞ chemical compounds

dials

UF *pointers*
RT display devices
indicating instruments

dialysis

GS **dialysis**
. electro dialysis
RT diaphragms (mechanics)
diffusion
extraction
permeating

- ∞ separation
- diamagnetism**
 UF *Meissner effect*
 GS magnetic properties
 . **diamagnetism**
 RT Curie temperature
 cyclotron resonance
 electrical properties
 ferromagnetism
 paramagnetism
- Diamant launch vehicle**
 GS launch vehicles
 . **Diamant launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . **Diamant launch vehicle**
 RT liquid propellant rocket engines
 solid propellant rocket engines
- diameters**
 DEF Lengths of the longest straight lines through the centers of the largest cross sections.
 GS dimensions
 . **diameters**
 RT circumferences
 geometry
 radii
 thickness
- diamines**
 GS organic compounds
 . amines
 . . **diamines**
 . . . ethylenediamine
 . . . guanidines
 guanethidine
 triamino guanidinium azide
- diamond films**
 (added November 1991)
 GS thin films
 . **diamond films**
 RT amorphous silicon
 coatings
 diamonds
 metal films
 semiconducting films
 space processing
 vacuum deposition
 vapor deposition
- diamond pyramid hardness*
 (added October 2001)
 USE **Vickers hardness**
- diamond wings*
 USE **low aspect ratio wings**
swept wings
- diamonds**
 DEF (A) An isometric mineral, representing a naturally occurring crystalline form of carbon dimorphous with graphite and being the hardest natural substance known. (B) Artificially produced crystallized carbon similar to the native form. (C) A crystalline mineral that resembles diamonds in brilliance.
 GS **diamonds**
 . meteoritic diamonds
 RT abrasives
 carbon
 diamond films
 single crystals
- diaphragm (anatomy)**
 DEF Musculomembranous partition separating the abdominal and thoracic cavities.
 GS anatomy
 . musculoskeletal system
 . . muscles
 . . . **diaphragm (anatomy)**
 . . . respiratory system
 . . **diaphragm (anatomy)**
 RT ∞ diaphragms
- thorax
- ∞ **diaphragms**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT diaphragm (anatomy)
 diaphragms (mechanics)
 electrolytic cells
 membranes
- diaphragms (mechanics)**
 SN (NON-ANATOMICAL)
 UF *bladders (mechanics)*
 GS **diaphragms (mechanics)**
 . expulsion bladders
 RT catholytes
 dialysis
 ∞ diaphragms
 electrolytic cells
 membrane structures
 membranes
 optical filters
 osmosis
 thin plates
 thin walls
 webs (sheets)
 webs (supports)
- diastole**
 GS heart function
 . **diastole**
 RT blood circulation
 blood flow
 blood pressure
 cardiovascular system
 diastolic pressure
 heart
 heart rate
 systole
- diastolic pressure**
 GS pressure
 . blood pressure
 . . **diastolic pressure**
 RT cardiac ventricles
 diastole
- diatomic gases**
 GS gases
 . molecular gases
 . . polyatomic gases
 . . . **diatomic gases**
- diatomic molecules**
 GS molecules
 . polyatomic molecules
 . . **diatomic molecules**
 RT low molecular weights
 methylidyne
 Morse potential
 triatomic molecules
- diatoms (unicellular plants)*
 USE **algae**
- DIB**
 (added February 1997)
 USE **diffuse interstellar bands**
- dibasic compounds**
 RT ∞ chemical compounds
 monomers
- diborane**
 GS boron compounds
 . **diborane**
 hydrogen compounds
 . hydrides
 . . **diborane**
- dibromides**
 GS halogen compounds
 . bromine compounds
 . . bromides
 . . . **dibromides**
 . halides
 . . bromides
- . . . **dibromides**
- dibutyl compounds**
 GS alkyl compounds
 . **dibutyl compounds**
 RT ∞ chemical compounds
 tetrabutyls
- dicarboxylic acids**
 GS acids
 . carboxylic acids
 . . **dicarboxylic acids**
 organic compounds
 . carboxylic acids
 . . **dicarboxylic acids**
 RT terephthalate
- dichlorides**
 GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **dichlorides**
 . halides
 . . chlorides
 . . . **dichlorides**
- dichlorodiphenyltrichloroethane*
 USE **DDT**
- dichotomies**
 GS classifications
 . hierarchies
 . . **dichotomies**
- dichroism**
 GS electromagnetic properties
 . optical properties
 . . **dichroism**
 RT color
 isochromatics
 light (visible radiation)
 photoelasticity
- dichromates*
 USE **chromates**
- Dicke radiometers**
 UF *Dicke type radiometers*
 GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers
 **Dicke radiometers**
 RT bolometers
 thermopiles
- Dicke type radiometers*
 USE **Dicke radiometers**
- dictionaries**
 UF *glossaries*
 GS documents
 . **dictionaries**
 RT abbreviations
 coding
 decoding
 definition
 nomenclatures
 space glossaries
 terminology
- didymium**
 DEF A mixture of rare earth elements that is freed from cerium. It was once regarded as an element but contains chiefly neodymium and praseodymium and is usually associated with lanthanum. It is used in coloring glass for optical filters.
 RT lanthanum
 neodymium
 optical filters
 praseodymium
- dieldrin**
 GS poisons
 . pesticides
 . . insecticides

dielectric loss

... **dieldrin**

dielectric constant
USE **permittivity**

dielectric loss
(added April 2000)
DEF The electric energy that is converted into heat in a dielectric material subjected to a changing electric field.
GS electrical properties
. dielectric properties
. . **dielectric loss**
losses
. **dielectric loss**
RT dielectrics
energy dissipation
permittivity

dielectric materials
USE **dielectrics**

dielectric permeability
GS permeability
. **dielectric permeability**
RT magnetic permeability

dielectric polarization
GS polarization (charge separation)
. **dielectric polarization**
RT dielectrics
electrets
electric fields

dielectric properties
GS electrical properties
. **dielectric properties**
. . dielectric loss
. . permittivity
RT antiferroelectricity
capacitance
ferroelectricity
 ∞ properties
Sommerfeld waves

dielectric waveguides
(added February 1998)
GS waveguides
. **dielectric waveguides**
RT dielectrics
microwave transmission
optical waveguides
waveguide antennas
waveguide filters

dielectrics
DEF Substances that contain few or no free charges and which can support electrostatic stresses. Used for dielectric materials.
UF *dielectric materials*
GS **dielectrics**
. lossless materials
. radome materials
RT barium titanates
capacitance switches
capacitive fuel gages
capacitors
ceramics
dielectric loss
dielectric polarization
dielectric waveguides
electrets
electric conductors
electrical insulation
electromagnetic surface waves
field mode theory
 ∞ insulated structures
insulators
magnetoelectric media
screen effect
spark gaps
sulfur hexafluoride

dielectronic satellite lines
USE **resonance lines**

Diels-Alder reactions
GS chemical reactions
. cycloaddition
. . **Diels-Alder reactions**

RT organic chemistry

diencephalon
GS anatomy
. nervous system
. . central nervous system
. . . brain
. . . . **diencephalon**
. hypothalamus
. pineal gland
. thalamus
RT embryology

dienes
GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . **dienes**
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene

dies
RT casting
coining
cutters
extruding
injection molding
machine tools
molds
pultrusion
punches
rheocasting
stamping

diesel engines
GS engines
. internal combustion engines
. . **diesel engines**
. . piston engines
. . . **diesel engines**
RT locomotives

diesel fuels
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . **diesel fuels**
. . liquid fuels
. . . **diesel fuels**
products
. petroleum products
. . **diesel fuels**
RT automobile fuels
gasoline
internal combustion engines
kerosene

diethyl compounds
(added July 1992)
GS organic compounds
. **diethyl compounds**
. . diethyl ether
. . diethyl hydrogen phosphite (DEHP)
RT ethyl compounds
triethyl compounds

diethyl ether
GS ethers
. **diethyl ether**
organic compounds
. diethyl compounds
. . **diethyl ether**

diethyl hydrogen phosphite (DEHP)
UF *DEHP*
GS organic compounds
. diethyl compounds
. . **diethyl hydrogen phosphite (DEHP)**
phosphorus compounds
. **diethyl hydrogen phosphite (DEHP)**
RT ethyl compounds

diets
RT caloric requirements
fasting
 ∞ food

nutrition
space flight feeding

difference equations
GS analysis (mathematics)
. numerical analysis
. . **difference equations**
RT approximation
differences
differential equations
 ∞ equations
finite difference theory
linear evolution equations
nonlinear evolution equations
numerical stability

differences
RT difference equations
divergence
finite difference theory
gradients
variations

differential absorption lidar
(added September 1992)
UF *DIAL (lidar)*
GS radar
. optical radar
. . **differential absorption lidar**
RT absorption spectra
atmospheric sounding
backscattering
radar measurement
remote sensing

differential algebra
USE **differential calculus matrices (mathematics)**

differential amplifiers
GS amplifiers
. **differential amplifiers**
RT analog computers
error signals
operational amplifiers
transistor amplifiers

differential analyzers
DEF Analog computers designed and used primarily for solving differential equations.
RT algorithms
analog computers
computerized simulation
differential equations
digital computers
digital integrators

differential calculus
UF *derivation calculus*
differential algebra
GS analysis (mathematics)
. calculus
. . **differential calculus**
RT ∞ differentiation
differentiators
integral calculus
limits (mathematics)
minima
numerical differentiation
optimization
real variables

differential equations
UF *differential operators*
integrodifferential equations
GS analysis (mathematics)
. real variables
. . **differential equations**
. . . Blasius equation
. . . Chandrasekhar equation
. . . cosine series
. . . Duffing differential equation
. . . Falkner-Skan equation
. . . hyperbolic differential equations
. . . Lamé wave equations
. . . partial differential equations
. . . biharmonic equations
. . . . Burger equation
. . . . Cauchy-Riemann equations
. . . . elliptic differential equations

. . . . Monge-Ampere equation
 Euler-Cauchy equations
 Ffowcs Williams-Hawkings equation
 Fokker-Planck equation
 Gauss equation
 Helmholtz vorticity equation
 Liouville equations
 parabolic differential equations
 Poisson equation
 vlasov equations
 Riccati equation
 vorticity equations
 Helmholtz vorticity equation
 RT Airy function
 alternating direction implicit methods
 asymptotic properties
 backward differencing
 Bessel functions
 Bethe-Salpeter equation
 bond graphs
 boundary layer equations
 boundary value problems
 calculus
 calculus of variations
 Cauchy problem
 Crank-Nicholson method
 difference equations
 differential analyzers
 Dirichlet problem
 distributed parameter systems
 ∞ equations
 Floquet theorem
 Fourier analysis
 Fourier-Bessel transformations
 functional integration
 Green's functions
 half planes
 Hankel functions
 Hill determinant
 ill-conditioned problems (mathematics)
 ill-posed problems (mathematics)
 integral equations
 integrals
 Lagrange multipliers
 Lamé functions
 Laplace transformation
 Liapunov functions
 linear equations
 linearity
 Lipschitz condition
 Mathieu function
 maximum principle
 Milne method
 Neumann problem
 nonlinear equations
 nonlinearity
 numerical analysis
 numerical differentiation
 numerical integration
 numerical stability
 operational calculus
 Pfaff equation
 potential theory
 predictor-corrector methods
 Riemann waves
 Riesz theorem
 Schauder fixpoint theorem
 Schmidt method
 spectral methods
 stability derivatives
 Sturm-Liouville theory
 vector analysis
 Whittaker functions

differential games
(added October 1998)

GS games
 . **differential games**
 RT minimax technique
 optimal control
 pursuit-evasion games
 stochastic processes
 zero sum games

differential geometry
 UF *nonEuclidian geometry*
 GS geometry

. **differential geometry**
 . . lie groups
 . . . spinor groups
 . . Riemann manifold
 . . tensor analysis
 RT analytic geometry
 ∞ analyzing
 curvature
 curves (geometry)
 invariant imbeddings
 lofting
 relativity

differential interferometry
 GS interferometry
 . **differential interferometry**
 RT flow visualization
 holography
 Schlieren photography

differential operators
 USE **differential equations operators (mathematics)**

differential pressure
 GS pressure
 . **differential pressure**
 RT pressure distribution
 pressure gradients
 pressure measurement

differential pulse code modulation
 DEF An efficient signal encoding method of reducing the transmission rate of digital signals. The basic principle of DPCM is to quantize code and transmit the difference between the actual sample and prediction value. Used for DPCM (modulation).
 UF *DPCM (modulation)*
 GS coding
 . signal encoding
 . . pulse modulation
 . . . pulse code modulation
 **differential pulse code modulation**
 modulation
 . pulse modulation
 . . pulse code modulation
 . . . **differential pulse code modulation**
 RT biternary code
 decommutators
 linear prediction
 P.A.C.M. telemetry
 PCM telemetry
 pulse communication
 pulse frequency modulation
 telemetry
 unified S band

differential thermal analysis
 USE **thermal analysis**

∞ **differentiation**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT TERMS LISTED BELOW)
 RT anatomy
 cytogenesis
 differential calculus
 differentiation (biology)
 discrimination

differentiation (biology)
 GS cytogenesis
 . **differentiation (biology)**
 RT anatomy
 biological diversity
 ∞ biology
 ∞ differentiation
 embryology
 interleukins
 morphology
 physiology

differentiators
 DEF In computer operations, devices whose output is proportional to the derivative of an input signal. In electronics, a transducer whose output waveform is the time derivative of its input waveform.

RT circuits
 differential calculus
 integrators

diffraction
 DEF The process by which the direction of radiation is changed so that it spreads into the geometric shadow region of an opaque or refractive object that lies in a radiation field. Used for interference monochromatization and Kirchhoff-Huygens principle.

UF *interference monochromatization Kirchhoff-Huygens principle*

GS **diffraction**
 . electron diffraction
 . Fresnel diffraction
 . neutron diffraction
 . pulse diffraction
 . wave diffraction
 . x ray diffraction

RT atmospheric scattering
 attenuation
 Bragg angle
 caustics (optics)
 crystal optics
 Debye-Scherrer method
 deflection
 diffractometers
 echelette gratings
 echelle gratings
 electromagnetic radiation
 geometrical theory of diffraction
 Huygens principle
 isochromatics
 Laue method
 Moire effects
 mosaics
 optical properties
 ray tracing
 refraction
 transmission
 wave dispersion
 wave propagation

diffraction gratings
 USE **gratings (spectra)**

diffraction limited cameras
 GS optical equipment
 . cameras
 . . **diffraction limited cameras**
 photographic equipment
 . cameras
 . . **diffraction limited cameras**
 RT astronomical photography
 spaceborne photography
 spaceborne telescopes

diffraction optics
 USE **diffractive optics**

diffraction paths
 RT Bragg angle
 electron trajectories
 holographic optical elements
 multipath transmission
 optical paths
 ∞ paths
 spherical waves

diffraction patterns
 UF *fringe patterns*
 GS distribution (property)
 . radiation distribution
 . . **diffraction patterns**
 . . . Kossel pattern
 . . . rainbows
 RT diffractometers
 Fresnel integrals
 Fresnel region
 fringe multiplication
 geometrical theory of diffraction
 holographic interferometry
 interferometry
 Moire fringes
 Moire interferometry
 null zones
 ∞ optics
 ∞ patterns
 phase contrast

diffraction propagation

Pomeranchuk theorem
signal fading
speckle holography
speckle interferometry
speckle patterns
underwater optics
very long base interferometry

diffraction propagation

DEF Wave propagation around objects, or over the horizon, by diffraction.

GS transmission
. wave propagation
. . **diffraction propagation**
RT diffraction radiation
geometrical optics
∞ optics
∞ propagation
spherical waves
underwater optics

diffraction radiation

DEF Electromagnetic radiation excited by an electron flux passing near a diffractive, periodic structure, such as a wiggler magnet in a free electron laser.

GS electromagnetic radiation
. **diffraction radiation**
RT bremsstrahlung
cyclotron resonance devices
diffraction propagation
electron beams
electron diffraction
free electron lasers
gratings (spectra)
laser outputs
light emission
maser outputs
masers
microwave emission
microwave oscillators
microwave tubes
microwaves
nonuniform magnetic fields
particle motion
relativistic electron beams
stimulated emission devices
transferred electron devices
tunable lasers
wave diffraction
wave excitation
wiggler magnets

diffraction telescopes

USE **spectroscopic telescopes**

diffractive optics

(added July 1995)

DEF Optical elements that add up scattered light from a multiple of disturbances in amplitude or phase to generate a transformed wavefront.

UF *diffraction optics*
RT display devices
holography
∞ optics
photopolymers

diffractionometers

GS measuring instruments
. optical measuring instruments
. . **diffractionometers**
optical equipment
. optical measuring instruments
. . **diffractionometers**
RT chemical analysis
diffraction
diffraction patterns
etalons
goniometers
interferometers
Mach-Zehnder interferometers
optical measurement
photogoniometers
spectrometers
wave front reconstruction

diffuse interstellar bands

(added February 1997)

UF *DIB*
GS spectra

. spectral bands
. . **diffuse interstellar bands**
RT interstellar chemistry
interstellar extinction
interstellar matter
molecular clouds
polycyclic aromatic hydrocarbons

diffuse radiation

DEF Radiant energy propagating in many different directions through a given small volume of space; to be contrasted with parallel radiation. Used for lunar scattering.

UF *lunar scattering*
RT heat transfer
light scattering
point sources
∞ radiation
specular reflection

∞ diffusers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Specially designed ducts, chambers, or sections, sometimes equipped with guide vanes, that decrease the velocity of a fluid, as air, and increases its pressure, as in jet engines, wind tunnels, etc. Used for shock diffusers.
UF *shock diffusers*
RT air conditioning
air conditioning equipment
attenuators
baffles
boundary layer separation
ceilings (architecture)
chokes
conical flow
deflectors
diffusion
diverters
engine inlets
exhaust diffusers
hypersonic inlets
∞ illumination
inlet flow
inlet nozzles
louvers
mixers
mufflers
∞ nozzles
porous walls
pressure recovery
separators
sprayers
supersonic diffusers
vaneless diffusers
ventilators

diffusion

DEF In an atmosphere, or in any gaseous system, the exchange of fluid parcels between regions, in apparently random motions of a scale too small to be treated by the equations of motion. In materials, the movement of atoms of one material into the crystal lattice of an adjoining material, e.g., penetration of the atoms in a ceramic coating into the lattice of the protected metal. In ion engines, the migration of neutral atoms through a porous structure incident to ionization at the emitting surface. Used for diffusion effect and perfusion.

UF *diffusion effect*
perfusion
GS **diffusion**
. ambipolar diffusion
. atmospheric diffusion
. gaseous diffusion
. . gaseous self-diffusion
. magnetic diffusion
. molecular diffusion
. particle diffusion
. . electron diffusion
. . ionic diffusion
. plasma diffusion
. self diffusion (solid state)
. self propagation
. species diffusion
. surface diffusion
. thermal diffusion

. turbulent diffusion
RT ∞ absorption
adsorption
air pollution
atmospheric scattering
chemical engineering
circulation
convection-diffusion equation
dehumidification
dialysis
∞ diffusers
diffusion length
diffusivity
dilution
dispersing
∞ dispersion
dissipation
dissolving
distillation
drying
∞ effects
Einstein equations
∞ equilibrium
evaporation
extraction
Ficks equation
gas-metal interactions
kinetic theory
mixing
nonpoint sources
osmosis
penetration
percolation
permeability
permeating
∞ propagation
radial flow
reflection
scattering
self absorption
∞ separation
sound propagation
sound waves
spraying
spreading
sublimation
surface properties
thermophoresis
transport properties

diffusion bonding

USE **diffusion welding**

diffusion coefficient

DEF The absolute value of the ratio of the molecular flux per unit area to the concentration gradient of a gas diffusing through a gas or a porous medium where the molecular flux is evaluated across a surface perpendicular to the direction of the concentration gradient.

GS coefficients
. **diffusion coefficient**
. . Soret coefficient
transport properties
. **diffusion coefficient**
. . Soret coefficient
RT attenuation coefficients
convection-diffusion equation
∞ equilibrium
Ficks equation
gaseous diffusion
Lewis numbers
mass flow rate
molecular diffusion
particle diffusion
reaction-diffusion equations

diffusion effect

USE **diffusion**

diffusion electrodes

GS electrodes
. **diffusion electrodes**
RT electrolytic cells
semiconductor devices

diffusion flames

GS flames
. **diffusion flames**
RT boundary layer combustion

- combustion
 - ... difluoro compounds
 - ... perfluoroalkane
 - ... polytetrafluoroethylene
 - ... teflon (trademark)
- Damkohler number
- diffusion length**
 - GS dimensions
 - . length
 - . . **diffusion length**
 - distance
 - . **diffusion length**
 - RT carrier transport (solid state)
 - diffusion
 - electron diffusion
 - minority carriers
 - particle diffusion
 - semiconductor devices
 - solar cells
- diffusion pumps**
 - GS pumps
 - . **diffusion pumps**
 - RT vacuum apparatus
 - vacuum pumps
- diffusion theory**
 - RT Einstein equations
 - Fokker-Planck equation
 - Jacobi integral
 - kinetic theory
 - Kirkendall effect
 - Monte Carlo method
 - ∞ theories
 - transport theory
- diffusion waves**
 - RT elastic waves
 - electron diffusion
 - electrostatic waves
 - ionic diffusion
 - kinetic theory
 - molecular diffusion
 - plasma diffusion
 - plasma waves
- diffusion welding**
 - UF *diffusion bonding*
 - GS welding
 - . pressure welding
 - . . **diffusion welding**
 - RT bonding
 - burners
 - Kirkendall effect
 - metal bonding
 - metal-metal bonding
- diffusion-convection equation*
- USE **convection-diffusion equation**
- diffusivity**
 - DEF A measure of the rate of diffusion of a substance, expressed as the diffusivity coefficient K.
 - RT diffusion
 - fluid mechanics
 - impedance
 - Kirkendall effect
 - mobility
 - NDM semiconductor devices
 - permeability
 - ∞ physical properties
 - ∞ resistance
 - solubility
 - thermodynamic properties
- difluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **difluorides**
 - calcium fluorides
 - fluorspar
 - . halides
 - . . fluorides
 - . . . **difluorides**
 - calcium fluorides
 - fluorspar
- difluoro compounds**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluoro compounds
- RT ∞ chemical compounds
- difluorourea**
 - GS nitrogen compounds
 - . amides
 - . . ureas
 - . . . **difluorourea**
 - organic compounds
 - . amines
 - . . **difluorourea**
- digesting**
 - RT eating
 - enzymology
 - ∞ food
 - lysine
 - mastication
 - physiology
 - softening
- digestive system**
 - GS anatomy
 - . **digestive system**
 - . . esophagus
 - . . gastrointestinal system
 - . . . appendix (anatomy)
 - . . . intestines
 - rectum
 - stomach
 - . . . mouth
 - . . . lips (anatomy)
 - . . . pancreas
 - . . . salivary glands
 - . . . teeth
 - . . . tongue
 - RT abdomen
 - enzyme activity
 - enzymology
 - gall
 - organs
 - saliva
 - ∞ systems
- digital cameras**
 - (added July 1998)
 - GS optical equipment
 - . cameras
 - . . **digital cameras**
 - photographic equipment
 - . cameras
 - . . **digital cameras**
 - RT CCD cameras
 - digital systems
 - digital techniques
 - photogrammetry
 - television cameras
 - video equipment
- digital circuits*
- USE **digital electronics**
- digital command systems**
 - RT numerical control
 - remote control
 - servocontrol
 - ∞ systems
- digital communication*
- USE **pulse communication**
- digital computers**
 - DEF Computers which operate with information, numerical or otherwise, represented in a digital form.
 - GS data processing equipment
 - . computers
 - . . **digital computers**
 - . . . CDC 160-A computer
 - . . . CDC 1604 computer
 - . . . CDC 3100 computer
 - . . . CDC 3200 computer
 - . . . CDC 3600 computer
 - . . . CDC 3800 computer
 - . . . CDC 6000 series computers
 - CDC 6400 computer
 - CDC 6600 computer
 - . . . CDC 6700 computer
 - . . . CDC 7000 series computers
 - . . . CDC 7600 computer
 - . . . CDC 8090 computer
 - . . . CDC Cyber 170 series computers
 - . . . CDC Cyber 175 computer
 - . . . CDC Cyber 74 computer
 - . . . CDC Cyber 174 computer
 - . . . CDC Cyber 203 computer
 - . . . CDC Cyber 205 computer
 - . . . CDC Star 100 computer
 - . . . EAI 680 computer
 - . . . EAI 8400 computer
 - . . . EAI 8900 computer
 - . . . EMR 6050 computer
 - . . . Ferranti Mercury computer
 - . . . GE computers
 - GE 625 computer
 - GE 635 computer
 - . . . Hewlett-Packard computers
 - . . . Honeywell computers
 - DDP 516 computer
 - Honeywell 600/6000 computer
 - Honeywell ADEPT computer
 - Honeywell DDP 116 computer
 - . . . IBM 360 computer
 - . . . IBM 370 computer
 - . . . IBM 650 computer
 - . . . IBM 704 computer
 - . . . IBM 709 computer
 - . . . IBM 1130 computer
 - . . . IBM 1401 computer
 - . . . IBM 1410 computer
 - . . . IBM 1620 computer
 - . . . IBM 2250 computer
 - . . . IBM 7030 computer
 - . . . IBM 7040 computer
 - . . . IBM 7044 computer
 - . . . IBM 7070 computer
 - . . . IBM 7074 computer
 - . . . IBM 7090 computer
 - . . . IBM 7094 computer
 - . . . ICL computers
 - . . . Iliac computers
 - Iliac 3 computer
 - Iliac 4 computer
 - . . . microcomputers
 - personal computers
 - IBM personal computers
 - Macintosh personal computers
 - minicomputers
 - Nova computers
 - Modcomp II computer
 - Modcomp IV computer
 - parallel computers
 - massively parallel processors
 - Connection Machine
 - MIMD (computers)
 - SIMD (computers)
 - PDP 15 computer
 - PDP computers
 - PDP 7 computer
 - PDP 8 computer
 - PDP 9 computer
 - PDP 10 computer
 - PDP 11 computer
 - PDP 11/20 computer
 - PDP 11/40 computer
 - PDP 11/45 computer
 - PDP 11/50 computer
 - PDP 11/70 computer
 - PDP 12 computer
 - Philco 2000 computer
 - Raytheon computers
 - RCA spectra 70 computer
 - SDS 900 series computers
 - SDS 930 computer
 - SDS 9300 computer
 - SEL computers
 - sequential computers
 - SIGMA 5 computer
 - SIGMA computers
 - SIGMA 9 computer
 - Solomon computers
 - Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer

digital data

- Univac 1110 computer
- . . . Univac 80 computer
- . . . Univac 418 computer
- . . . Univac 490 computer
- . . . Univac 494 computer
- . . . Univac 1230 computer
- . . . Univac Larc computer
- . . . VAX computers
 - VAX-11 series computers
 - VAX-11/780 computer
- RT analog computers
- analog to digital converters
- associative processing (computers)
- CDC computers
- computer compatible tapes
- computer program integrity
- computer programs
- computer systems programs
- data processing
- DDP computers
- differential analyzers
- hybrid computers
- IBM computers
- logic circuits
- Turing machines
- Univac computers

digital data

- GS **digital data**
 - . digital elevation models
- RT analog data
- binary data
 - ∞ data
 - data converters
 - data processing
 - video compression
 - video data

digital electronics

DEF The use of circuits in which there are usually only two states possible at any point. The two states can represent any of a variety of binary digits (bits) of information. Used for digital circuits.

- UF *digital circuits*
- RT analog to digital converters
- binary digits
- circuits
- computer components
- digital systems
- digital techniques
- digital to analog converters
- ∞ electronics
- logical elements

digital elevation models

(added September 2002)

DEF Digital data files consisting of terrain elevations for ground positions at regularly spaced horizontal intervals.

- GS digital data
 - . **digital elevation models**
 - models
 - . **digital elevation models**
- RT elevation
- radar maps
- relief maps
- satellite altimetry
- terrain
- terrain analysis
- topography

digital filters

DEF Computational means of attenuating undesired frequencies in sets of time-dependent data.

- GS electromagnetic wave filters
 - . electric filters
 - . . **digital filters**
 - . . . FIR filters
 - . . . IIR filters
- RT ∞ filters
- microwave filters

digital integrators

- GS circuits
 - . **digital integrators**
 - integrators
 - . **digital integrators**
- RT binary integration

- differential analyzers
- functional integration
- numerical integration

digital navigation

- GS digital systems
 - . **digital navigation**
 - navigation
 - . **digital navigation**
- RT air navigation
- dead reckoning
- inertial navigation
- polar navigation
- space navigation
- surface navigation

digital radar systems

- GS digital systems
 - . **digital radar systems**
- RT airborne radar
- antiradiation missiles
- data processing equipment
- radar detection
- radar equipment
- radar receivers
- radar scanning
- radar targets
- radar tracking
- radar transmission
- signal analysis
- surveillance radar
- tracking radar

digital simulation

- GS models
 - . mathematical models
 - . . **digital simulation**
 - simulation
 - . computerized simulation
 - . . **digital simulation**
- RT analog simulation
- biological models (mathematics)
- computer systems simulation
- war games

digital spacecraft television

- GS communication equipment
 - . spacecraft television
 - . . **digital spacecraft television**
 - telecommunication
 - . pulse communication
 - . . **digital spacecraft television**
 - . spacecraft television
 - . . **digital spacecraft television**
 - television systems
 - . digital television
 - . . **digital spacecraft television**
 - . spacecraft television
 - . . **digital spacecraft television**
- RT wireless communication

digital systems

- UF *binary systems (digital)*
- ternary systems (digital)*
- GS **digital systems**
 - . digital navigation
 - . digital radar systems
- RT analog to digital converters
- binary codes
- binary digits
- biternary code
- data systems
- digital cameras
- digital electronics
- ∞ systems
- systems integration
- telecommunication

digital techniques

- RT BCH codes
- bistable circuits
- coding
- computer programming
- digital cameras
- digital electronics
- error correcting codes
- error detection codes
- ∞ methodology
- numerical control
- shift registers

- terminal area energy management
- vector quantization

digital television

DEF Television in which picture redundancy is reduced or eliminated by transmitting only the data needed to define motion in the picture, as represented by changes in the areas of continuous white or black.

- GS television systems
 - . **digital television**
 - . . digital spacecraft television
- RT high definition television
- pulse communication
- television transmission
- video compression

digital to analog converters

- GS data converters
 - . **digital to analog converters**
- RT analog to digital converters
 - ∞ converters
 - digital electronics
 - peripheral equipment (computers)
 - plotters
 - signal encoding
 - x-y plotters

digital to voice translators

- UF *DIVOT (voice translators)*
- RT computers
 - ∞ translators
 - vocoders
 - voice data processing

digital transducers

- GS transducers
 - . **digital transducers**
- RT interdigital transducers

digitalis

- GS drugs
- . **digitalis**

digitizers

USE **analog to digital converters**

digits

- SN (EXCLUDES FINGERS AND TOES)
- GS symbols
 - . alphanumeric characters
 - . . **digits**
 - . . . binary digits
- RT ∞ codes
- decimals
- integers
- number theory
- ∞ numbers

dihedral angle

- GS geometry
 - . Euclidean geometry
 - . . angles (geometry)
 - . . . **dihedral angle**
- RT lateral stability

dihedral effect

USE **lateral stability**

dihydrazine

- GS hydrazines
 - . **dihydrazine**

dihydrides

- GS hydrogen compounds
 - . hydrides
 - . . **dihydrides**

dihydroxyphenylalanine

USE **dopa**

diisocyanates

- GS esters
 - . isocyanates
 - . . **diisocyanates**
 - nitrogen compounds
 - . cyano compounds
 - . . isocyanates

- . . . **diisocyanates**
- dikes (geology)*
- USE **rock intrusions**
- dilatation*
- USE **stretching**
- dilatational waves**
- GS elastic waves
- . **dilatational waves**
- RT longitudinal waves
- P waves
- S waves
- seismic waves
- ∞ shear
- stretching
- ∞ waves
- dilatometers*
- USE **extensometers**
- dilatometry**
- RT extensometers
- ∞ measurement
- thermal expansion
- diluents**
- RT additives
- ∞ agents
- combustion products
- contaminants
- dispersions
- exhaust gases
- solvents
- dilution**
- GS **dilution**
- . geometric dilution of precision
- RT attenuation
- concentration (composition)
- diffusion
- dispersing
- disposal
- dissipation
- dissolving
- low concentrations
- mixing
- purity
- ∞ reduction
- waste disposal
- dimenhydrinate**
- GS drugs
- . antihistaminics
- . . **dimenhydrinate**
- organic compounds
- . amines
- . . **dimenhydrinate**
- . cyclic compounds
- . . heterocyclic compounds
- . . . **dimenhydrinate**
- dimensional analysis**
- RT ∞ applications of mathematics
- aspect ratio
- dimensionless numbers
- dimensions
- fibers (mathematics)
- fineness ratio
- fluid flow
- parameterization
- scaling laws
- similarity numbers
- thickness ratio
- units of measurement
- dimensional measurement**
- RT deformeters
- distance measuring equipment
- ellipsometry
- ∞ measurement
- micrometers
- size determination
- dimensional stability**
- GS mechanical properties
- . **dimensional stability**
- . . structural stability
- . . . shell stability
- stability
- . static stability
- . . **dimensional stability**
- . . . structural stability
- shell stability
- RT aspect ratio
- creep properties
- curl (materials)
- dynamic stability
- Roche limit
- thermal stability
- tolerances (mechanics)
- dimensionless numbers**
- GS **dimensionless numbers**
- . Biot number
- . Froude number
- . Grashof number
- . Hartmann number
- . Laval number
- . Lewis numbers
- . Mach number
- . mixing ratios
- . Nusselt number
- . Peclet number
- . Prandtl number
- . Rayleigh number
- . Reynolds number
- . . high Reynolds number
- . . low Reynolds number
- . Bond number
- . Brinkman number
- . Richardson number
- . Schmidt number
- . similarity numbers
- . Stanton number
- . Strouhal number
- RT dimensional analysis
- fluid flow
- heat transfer
- ∞ numbers
- scaling laws
- dimensions**
- GS **dimensions**
- . depth
- . diameters
- . film thickness
- . fractals
- . height
- . . scale height
- . length
- . . diffusion length
- . radii
- . . Larmor radius
- . target thickness
- . width
- RT amplitudes
- ∞ design
- dimensional analysis
- distance
- drawings
- engineering drawings
- fineness ratio
- geometry
- magnitude
- particle size distribution
- relativistic effects
- ∞ span
- thickness
- topology
- units of measurement
- volume
- dimercaprol**
- GS sulfur compounds
- . thiols
- . . **dimercaprol**
- dimerization**
- GS synthesis (chemistry)
- . polymerization
- . . **dimerization**
- RT copolymerization
- dimers**
- GS oligomers
- . **dimers**
- prepolymers
- . **dimers**
- RT monomers
- trimers
- dimethyl compounds**
- (added July 1992)
- GS organic compounds
- . **dimethyl compounds**
- . . dimethylhydrazines
- RT methyl compounds
- trimethyl compounds
- dimethylhydrazines**
- GS hydrazines
- . **dimethylhydrazines**
- organic compounds
- . amines
- . . **dimethylhydrazines**
- . dimethyl compounds
- . . **dimethylhydrazines**
- RT aeroxine
- methylhydrazine
- monomethylhydrazines
- diminution*
- USE **reduction**
- dimming**
- RT brightness
- light emission
- ∞ reduction
- dimpling**
- RT bulging
- metal working
- stamping
- Dining Philosophers Problem**
- RT distributed processing
- interprocessor communication
- problem solving
- synchronism
- dinitrates**
- GS nitrogen compounds
- . nitrates
- . . **dinitrates**
- diodes**
- UF *p-i-n diodes*
- GS electronic equipment
- . **diodes**
- . . crystal rectifiers
- . . plasma diodes
- . . semiconductor diodes
- . . . avalanche diodes
- cryosar
- Barritt diodes
- . . . germanium diodes
- . . . Gunn diodes
- transferred electron devices
- . . . junction diodes
- MIM diodes
- step recovery diodes
- . . . light emitting diodes
- . . . parametric diodes
- . . . photodiodes
- . . . Schottky diodes
- . . . tunnel diodes
- resonant tunneling diodes
- . . . varactor diodes
- . . thermionic diodes
- . . . cesium diodes
- RT electron tubes
- ion implantation
- p-i-n junctions
- rectifiers
- semiconductor devices
- solions
- TRAPATT devices
- triodes
- varactor diode circuits
- Diode-Transistor-Logic integ circuits*
- USE **DTL integrated circuits**
- Dione**
- DEF One of the natural satellites of Saturn orbiting at a mean distance of 378,000 kilometers.
- GS celestial bodies
- . natural satellites

diophantine equation

. . icy satellites
. . . **Dione**
. . Saturn satellites
. . . **Dione**

RT Saturn (planet)

diophantine equation

GS number theory
. diophantine equation
RT ∞ equations

diorite

GS rocks
. igneous rocks
. . **diorite**

RT minerals
soils

dioxides

GS chalcogenides
. oxides
. . **dioxides**
. . . carbon dioxide
. . . flint
. . . hydrogen peroxide
. . . silicon dioxide
. . . quartz
. coesite
. stishovite
. . . sulfur dioxides

RT Karl Fischer reagent
peroxides
sulfur oxides
thorium oxides
titanium oxides

diphenyl compounds

GS organic compounds
. hydrocarbons
. . **diphenyl compounds**
. . . diphenyl hydantoin

RT ∞ chemical compounds

diphenyl hydantoin

GS drugs
. antihistaminics
. . **diphenyl hydantoin**
organic compounds
. amines
. . **diphenyl hydantoin**
. hydrocarbons
. . diphenyl compounds
. . . **diphenyl hydantoin**

diphosphates

GS phosphorus compounds
. phosphates
. . **diphosphates**
. . . adenosine diphosphate

diphtheria

GS diseases
. infectious diseases
. . bacterial diseases
. . . **diphtheria**

RT toxic diseases

diplexers

GS antenna components
. antenna couplers
. . **diplexers**
circuits
. **diplexers**
communication equipment
. **diplexers**
couplers
. antenna couplers
. . **diplexers**

RT couples
radar antennas
radar equipment
television equipment
transformers

dipolar ions

(added October 2001)
USE **zwitterions**

dipole antennas

SN (SINGLE DIPOLE ANTENNAS)
DEF A straight radiator, usually fed in the

center, and producing a maximum of radiation in the plane normal to its axis. The length specified is the overall length. SN (single dipole antennas)

GS antennas
. directional antennas
. . **dipole antennas**

RT antenna arrays
antenna design
backfire antennas
 ∞ dipoles
directors (antenna elements)
lens antennas
linear arrays
log periodic antennas
log spiral antennas
monopole antennas
omnidirectional antennas
parasitic elements (antennas)
radar antennas
turnstile antennas
Yagi antennas

dipole moments

GS moments
. **dipole moments**
. . electric moments
. . magnetic moments

RT domains
electrical properties
magnetic domains
magnetic properties
Van der Waals forces

∞ dipoles

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Systems composed of two, separated, equal electric or magnetic charges of opposite sign.

RT dipole antennas
electric charge
electric dipoles
magnetic dipoles
magnetic poles
monopoles
orbiting dipoles
polarity
 ∞ poles
quadrupoles
zwitterions

dipping

RT baths
coatings
quenching (cooling)
submerging
wetting

Dirac equation

GS wave equations
. **Dirac equation**

RT ∞ equations
field theory (physics)
Klein-Gordon equation
Lorentz transformations
quantum theory

direct broadcast satellites

DEF Domestic satellites used for direct TV transmission to home receivers. Used for DBS (satellites).

UF *DBS (satellites)*
GS artificial satellites
. communication satellites
. . **direct broadcast satellites**

RT broadcasting
domestic satellite communications systems
satellite television
satellite transmission
space commercialization
space law
telecommunication
television transmission

direct current

UF *DC (current)*
GS electric current
. **direct current**

RT alternating current

current converters (AC to DC)
homopolar generators
inverted converters (DC to AC)
voltage converters (DC to DC)

direct current generators

USE **DC generators**

direct lift controls

RT ∞ control
lift devices

direct numerical simulation

(added October 1997)
DEF A computationally intensive numerical approach used in computational fluid dynamics, which leads to the nearly exact solution of a system of nonlinear, unsteady, time-dependent, three-dimensional equations. Applications include aerodynamics, turbulent combustion, energy transfer theory and non-Newtonian effects.

UF *DNS (numerical analysis)*

GS analysis (mathematics)
. numerical analysis
. . **direct numerical simulation**
simulation

direct numerical simulation

RT computational fluid dynamics
low Reynolds number
Navier-Stokes equation
reacting flow
turbulent flow

direct power generators

UF *energy converters*
GS electric generators
. **direct power generators**
. . DC generators
. . . homopolar generators
. . electrostatic generators
. . fuel cells
. . . biochemical fuel cells
. . . hydrogen oxygen fuel cells
. . . molten carbonate fuel cells
. . . phosphoric acid fuel cells
. . . regenerative fuel cells
. . . solid oxide fuel cells
. . magnetohydrodynamic generators
. . photoelectric generators
. . . photovoltaic cells
. . . solar cells
. vertical junction solar cells
. . primary batteries
. . . alkaline batteries
. . . dry cells
. magnesium cells
. nickel zinc batteries
. . . metal air batteries
. zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
. . radioisotope batteries
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . thermionic converters
. . . SNAP 13
. . . solar blankets
. . . thermoelectric generators
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 10A
. . . SNAP 11
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . solar sea power plants

RT auxiliary power sources
 ∞ converters
 electric batteries
 electric cells
 electric energy storage
 energy absorption films
 energy conversion
 energy conversion efficiency
 ∞ generators
 heat generation
 photoelectric cells
 solar generators
 solar total energy systems
 spacecraft power supplies

∞ **direction**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT autonomy
 azimuth
 bearing (direction)
 directivity
 line of sight
 management
 reversing

direction finders (radio)
 USE **radio direction finders**

direction finding
 DEF A procedure or process for locating or localizing the origin of radar, acoustical, or optical emissions.
 RT bearing (direction)
 radio direction finders
 signal processing

directional antennas
 DEF Antennas that radiate or receive radio signals more efficiently in some directions than in others. Used for tracking antennas.
 UF *tracking antennas*
 GS antennas
 . **directional antennas**
 . . dipole antennas
 . . helical antennas
 . . horn antennas
 . . lens antennas
 . . log periodic antennas
 . . loop antennas
 . . radar antennas
 . . . radant
 . . reflector antennas
 . . . parabolic antennas
 . . . two reflector antennas
 . . rhombic antennas
 . . slot antennas
 . . steerable antennas
 . . . inertialess steerable antennas
 . . Yagi antennas

RT antenna arrays
 antenna gain
 antenna radiation patterns
 backlobes
 boresight error
 boresights
 endfire arrays
 microwave antennas
 microwave coupling
 missile antennas
 monopulse antennas
 omnidirectional antennas
 parasitic elements (antennas)
 radio antennas
 Sommerfeld approximation

directional control
 UF *vector control*
 GS attitude control
 . **directional control**
 . . thrust vector control

RT aircraft control
 automatic control
 ∞ control
 helicopter control
 jet control
 lateral control
 longitudinal control
 manual control

missile control
 ∞ reaction control
 rocket engine control
 satellite attitude control
 satellite control
 yaw

directional couplers
 GS antenna components
 . antenna couplers
 . . **directional couplers**
 couplers
 . antenna couplers
 . . **directional couplers**

RT coupling
 couplings
 impedance matching
 microstrip transmission lines
 microwave coupling
 transmission lines
 yokes

directional solidification (crystals)
 DEF Controlled solidification (crystal growth) of molten metal in a casting so as to provide feed metal to the solidifying front of the casting.
 GS crystallization
 . **directional solidification (crystals)**
 growth
 . crystal growth
 . . **directional solidification (crystals)**
 solidification
 . **directional solidification (crystals)**

RT containerless melts
 eutectic composites
 phase transformations

directional stability
 DEF The property of an aircraft, rocket, etc., enabling it to restore itself from a yawing or sideslipping condition.
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **directional stability**
 gyroscopic stability
 stability
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **directional stability**
 gyroscopic stability

RT aerodynamic stability
 aircraft stability
 controllability
 flow stability
 horizontal orientation
 hovering stability
 lateral oscillation
 lateral stability
 longitudinal stability
 rotary stability
 spacecraft stability
 stability augmentation
 vertical orientation
 yaw

directivity
 DEF The ability of an antenna to radiate or receive more energy in some directions.
 RT alignment
 anisotropy
 collimation
 crystallography
 ∞ direction
 field strength
 instrument orientation
 isotropy
 look angles (electronics)
 ∞ orientation

directories
 DEF Alphabetical, geographical, or classified listings by field of persons, organizations, programs and/or objects such as instruments, devices, and products. Use of this term excludes directories in computers.

RT handbooks
 manuals

directors (antenna elements)
 GS antenna components
 . parasitic elements (antennas)
 . . **directors (antenna elements)**
 antennas
 . parasitic elements (antennas)
 . . **directors (antenna elements)**

RT dipole antennas
 radio receivers
 reflectometers
 reflectors
 rods
 Yagi antennas

Dirichlet problem
 GS boundary value problems
 . **Dirichlet problem**
 differential equations
 hyperbolic differential equations
 ∞ problems

dirigibles
 USE **airships**

dirt
 GS soils
 . **dirt**

RT contaminants
 dust
 impurities
 particles
 rocks

DIS
 (added December 1996)
 USE **distributed interactive simulation**

disabilities
 UF *handicaps*
 RT auditory defects
 blindness
 frustration
 ∞ inhibition
 paralysis
 wheelchairs

disarmament
 RT armed forces (foreign)
 armed forces (United States)
 international cooperation
 weapons

disasters
 DEF Large-scale drought, glacier movement, floods, fires, storms, etc.
 RT accidents
 casualties
 emergencies
 first aid
 sabotage

∞ **discharge**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT detonation
 dispersing
 disposal
 drainage
 effluents
 ejection
 electric discharges
 electrodeless discharges
 elimination
 emission
 exhausting
 expellants
 explosions
 outlets
 releasing
 relieving
 ring discharge
 unloading
 venting

discharge coefficient
 GS coefficients
 . flow coefficients

dischargers

- . . **discharge coefficient**
- RT axial flow
- flow velocity
- influence coefficient
- mass flow factors
- nozzle flow
- nozzle geometry
- nozzle thrust coefficients
- wall flow

discharge tubes

- USE **gas discharge tubes**

dischargers

- GS **dischargers**
 - . static dischargers
- RT dissipation
- neutralizers

disciplining

- RT liabilities
- morale
- penalties

discoloration

- RT color
- damage
- degradation
- fading
- staining

disconnect devices

- UF *disconnectors*
- RT circuit breakers
- connectors
- decoupling
- dumping
- ejection
- electric connectors
- electric fuses
- electric relays
- ∞ relay
- releasing

disconnectors

- USE **disconnect devices**

discontinuity

DEF A break in sequence or continuity of anything.

- GS **discontinuity**
 - . shock discontinuity
- RT analysis (mathematics)
- catastrophe theory
- Gibbs phenomenon
- incoherence
- vortex streets

Discos (satellite attitude control)

DEF A satellite orbit "Disturbance COmpensation System" designed to maintain an object (proof object) in correct orbit by detecting forces and compensating for them by using thrusters.

- RT attitude stability
- Nova satellites
- satellite perturbation
- spacecraft stability
- Transit satellites

Discoverer recovery capsules

- UF *DRC (capsule)*
- GS space capsules
- . **Discoverer recovery capsules**
- RT recovery parachutes
- spacecraft recovery

Discoverer satellites

- GS artificial satellites
- . **Discoverer satellites**
- RT Agena A rocket vehicle
- Agena B rocket vehicle
- Agena rocket vehicles
- Thor Agena launch vehicle

discovering

- USE **exploration**

Discovery (Orbiter)

- UF *Space Shuttle Orbiter 103*
- GS manned spacecraft
- . space shuttles

- . . Space Shuttle orbiters
- . . . **Discovery (Orbiter)**
- reentry vehicles
- . recoverable spacecraft
- . . reusable spacecraft
- . . . space shuttles
- Space Shuttle orbiters
- **Discovery (Orbiter)**

- RT manned space flight
- Space Shuttle mission 41-D
- Space Shuttle mission 51-A
- Space Shuttle mission 51-C
- Space Shuttle mission 51-D
- Space Shuttle mission 51-G
- Space Shuttle mission 51-I
- ∞ spacecraft

discrete address beacon system

DEF Radar beacon system with discretely addressable transponders and a ground-air-ground data link for automated air traffic control (FAA).

- GS landing aids
- . airport beacons
- . . **discrete address beacon system**
- navigation aids
- . beacons
- . . airport beacons
- . . . **discrete address beacon system**
- . . radar beacons
- . . . **discrete address beacon system**
- radar equipment
- . radar beacons
- . . **discrete address beacon system**
- RT air traffic control
- data links
- ground-air-ground communication
- secondary radar
- ∞ systems

discrete cosine transform

(added March 1994)

- UF *DCT (mathematics)*
- GS transformations (mathematics)
- . **discrete cosine transform**
- RT data compression
- discrete functions
- image processing
- signal processing
- video compression

discrete functions

- GS functions (mathematics)
- . **discrete functions**
- RT discrete cosine transform
- discretization (mathematics)
- distribution functions
- histograms
- normal density functions
- Poisson density functions
- probability density functions
- probability distribution functions
- statistical analysis

discretization (mathematics)

(added June 1997)

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . **discretization (mathematics)**
- RT discrete functions

discriminant analysis (statistics)

DEF A linear combination of a set of N variables that will classify (into two different classes) the events or items for which the measurements of the N variables are available, with the smallest proportion of misclassifications. Used for discriminant functions.

- UF *discriminant functions*
- GS functions (mathematics)
- . **discriminant analysis (statistics)**
- statistical analysis
- . **discriminant analysis (statistics)**
- RT ∞ classifying
- multivariate statistical analysis
- populations

temporal logic

discriminant functions

- USE **discriminant analysis (statistics)**

discrimination

- GS **discrimination**
 - . sensory discrimination
 - . . brightness discrimination
 - . . tactile discrimination
 - . . visual discrimination
 - . spectral mixture analysis
- RT acuity
- comparator circuits
- ∞ differentiation
- selectivity
- signal detection
- signal detectors
- target recognition

discriminators

DEF In general, a circuit in which output depends upon the difference between an input signal and a reference signal.

- GS circuits
- . **discriminators**
- . . Fraunhofer line discriminators
- . . frequency discriminators
- RT analog computers
- anticoincidence detectors
- comparators
- error signals
- intermodulation
- RC circuits

∞ discussion

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT conferences
- evaluation
- examination
- reports
- reviewing

diseased vegetation

- USE **plant diseases**

diseases

SN (RESTRICTED TO DISEASES IN ANIMALS INCLUDING MAN--FOR DISEASES IN PLANTS SEE PLANT DISEASES)

- GS **diseases**
 - . albinism
 - . anemias
 - . arteriosclerosis
 - . arthritis
 - . ataxia
 - . atelectasis
 - . bone demineralization
 - . colic
 - . cyanosis
 - . diabetes mellitus
 - . encephalitis
 - . epilepsy
 - . eye diseases
 - . . asthenopia
 - . . astigmatism
 - . . cataracts
 - . . conjunctivitis
 - . . glaucoma
 - . . keratitis
 - . . phoria
 - . fat embolisms
 - . fibrosis
 - . . cystic fibrosis
 - . . headache
 - . . heart diseases
 - . . . angina pectoris
 - . . . coronary artery disease
 - . . . infarction
 - . . . myocardial infarction
 - . . . infectious diseases
 - . . . airborne infection
 - . . . bacterial diseases
 - . . . cholera
 - . . . diphtheria
 - . . . keratitis
 - . . . syphilis
 - . . . tuberculosis
 - . . . typhoid

. . . typhus
 . . . conjunctivitis
 . . . dermatitis
 . . . contact dermatitis
 . . . fungal diseases
 . . . hepatitis
 . . . meningitis
 . . . parasitic diseases
 . . . viral diseases
 . . . acquired immunodeficiency syndrome
 . . . influenza
 . . . poliomyelitis
 . . . smallpox
 . kidney diseases
 . . kidney stones
 . . nephritis
 . lithiasis
 . metabolic diseases
 . narcolepsy
 . neurasthenia
 . neuritis
 . occupational diseases
 . osteoporosis
 . paralysis
 . Parkinson disease
 . pulmonary lesions
 . radiation sickness
 . respiratory diseases
 . . . aerosinusitis
 . . . asthma
 . . . emphysema
 . . . influenza
 . . . pneumonia
 . . . tuberculosis
 . rheumatic diseases
 . tachycardia
 . thrombopenia
 . thrombosis
 . tooth diseases
 . toxic diseases
 . . benzene poisoning
 . . beryllium poisoning
 . . carbon monoxide poisoning
 . . carbon tetrachloride poisoning
 . . hydrocarbon poisoning
 . . lead poisoning
 . tumors
 . . neoplasms
 . . . cancer
 leukemias
 . ulcers
 . urolithiasis
 RT animal models
 chronic conditions
 creatinine
 cures
 diagnosis
 disorders
 etiology
 immunosuppression
 medical science
 necrosis
 pathogenesis
 pathological effects
 plant diseases
 pneumothorax
 prophylaxis
 signs and symptoms
 symptomology
 therapy
 vaccines
 veterinary medicine

dishes

USE **parabolic reflectors****disilicides**

GS silicon compounds
 . silicides
 . . **disilicides**
 RT silanes
 silicates

disinfectants

USE **antiseptics****disintegration**

RT atomizing
 comminution

crushers
 crushing
 damage
 decay
 decomposition
 deterioration
 flaking
 grinding (comminution)
 ionization
 lysogenesis

disk galaxies

DEF Galaxies consisting of a central bulge of a spheroidal aggregation of stars and a surrounding disk of stars fanning outward in a thin layer.

GS celestial bodies
 . galaxies
 . . **disk galaxies**
 RT astrophysics
 barred galaxies
 blazars
 elliptical galaxies
 galactic clusters
 galactic evolution
 galactic halos
 galactic nuclei
 galactic rotation
 galactic structure
 local group (astronomy)
 radio galaxies
 spiral galaxies
 star clusters
 Virgo galactic cluster

disk operating system (DOS)

(added October 1988)

DEF A program with which the computer performs such mundane but useful tasks as storing, locating, and retrieving files on disk, reading the keyboard, and issuing display and print information.

GS computer programs
 . computer systems programs
 . . operating systems (computers)
 . . . **disk operating system (DOS)**
 RT assembler routines
 compilers
 computer information security
 computer systems design
 ∞ disks
 graphical user interface
 input/output routines
 magnetic disks
 ∞ routines
 ∞ systems

∞ **disks**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT actuator disks
 disk operating system (DOS)
 disks (shapes)
 intervertebral disks
 magnetic disks

disks (shapes)

GS **disks (shapes)**
 . actuator disks
 . intervertebral disks
 . rotating disks
 RT accretion disks
 aerodynamic configurations
 bodies of revolution
 circular plates
 ∞ disks
 ∞ plates
 video disks

dislocations (materials)

GS **dislocations (materials)**
 . crystal dislocations
 . . edge dislocations
 . . screw dislocations
 RT displacement
 flow theory
 ∞ materials

disorders

GS disorientation

. **disorders**

RT chronic conditions
 depersonalization
 ∞ depression
 detachment
 diseases
 ∞ disturbances
 dithers
 emotional factors
 human behavior
 jet lag
 psychology
 psychoses
 violence

disorientation

SN (EXCLUDES PHYSICAL OR MATHEMATICAL MISALIGNMENT)
 GS **disorientation**
 . desynchronization (biology)
 . disorders
 . jet lag
 RT biological effects
 Coriolis effect
 detachment
 dithers
 dizziness
 irrationality
 misalignment
 psychological effects
 psychology
 staggering
 weightlessness

dispatching

USE **distributing****dispensers**

RT distributors
 ejectors
 feeders
 materials handling
 rollers
 sprayers

dispersing

SN (OF MATERIALS OR PARTICLES)
 RT agitation
 assimilation
 chemical release modules
 circulation
 cloud dispersal
 colloid
 deflection
 diffusion
 dilution
 ∞ discharge
 ∞ dispersion
 dispersions
 disposal
 dissipation
 distributing
 ∞ distribution
 entrainment
 exhausting
 fog dispersal
 homogenizing
 Langevin formula
 permeating
 pollution transport
 ∞ reduction
 releasing
 scattering
 ∞ separation
 shaking
 spraying
 spreading
 stirring
 suspending (mixing)
 swirling

∞ **dispersion**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT deviation
 diffusion
 dispersing
 dispersions
 dust
 Kramers-Kronig formula

dispersion strengthening

magnetic dispersion
mixers
random errors
statistical analysis
variability
wave dispersion

dispersion precipitation hardening
USE **precipitation hardening**

dispersion strengthening

(added February 1994)

GS **dispersion strengthening**
. oxide dispersion strengthening

RT alloys
hardening (materials)
heat resistant alloys
∞ metallurgy
∞ strength

dispersions

DEF A two-phase system consisting of finely divided particles dispersed in a solid, liquid, or gas.

GS mixtures
. **dispersions**
. . colloids
. . . aerosols
. . . . fog
. . . colloidal propellants
. . emulsions
. . . photographic emulsions
. . . . nuclear emulsions
. . liquid-gas mixtures
. . . aerosols
. . . . fog
. plastisols
. smoke

RT Brownian movements
colloidal generators
crop dusting
diluent
dispersing
∞ dispersion
dust
ferrofluids
fog dispersal
fumes
mist
particles
particulates
slurries
slurry propellants
suspending (mixing)
∞ suspensions

displacement

DEF A vector quantity that specifies the change of position of a body the change of position of a body or particle usually measured from the mean position or position of rest.

GS **displacement**
. crack opening displacement

RT amplitudes
bending
bias
boresight error
deflection
deformation
dislocations (materials)
distortion
divergence
engines
flexible spacecraft
heaving
kinking
level (quantity)
magnitude
∞ motion
nutations
positioning
skewness
temperature inversions
variations
vibration

displacement measurement

SN (MEASUREMENT IN CHANGE OF POSITION)

GS mechanical measurement

. displacement measurement

RT boresight error
shearography

display devices

UF *data readout systems*
display systems
visual displays

GS display devices

. approach indicators
. flat panel displays
. flow direction indicators
. . wind vanes
. gyro horizons
. head-up displays
. helmet mounted displays
. kinoforn
. microvision landing aid
. plasma display devices
. position indicators
. . plan position indicators
. . radio direction finders
. . spacecraft position indicators
. radarscopes
. . plan position indicators
. speed indicators
. . tachometers

RT airborne surveillance radar
aircraft equipment
aircraft instruments
audio visual equipment
automatic typewriters
blinking
cancellation circuits
cathode ray tubes
charts
cockpit weather information systems
computer graphics
consoles
control boards
crew procedures (inflight)
crew procedures (preflight)
data recorders
∞ detectors
dials
diffractive optics
electrochromism
flight control
flight instruments
flying spot scanners
graphical user interface
human-computer interface
image reconstruction
image tubes
imagery
images
indicating instruments
instrument landing systems
instrument receivers
∞ instruments
light emitting diodes
lists
man machine systems
map matching guidance
monitors
navigation aids
perceptual errors
photographs
photopolymers
picture tubes
planetariums
∞ plots
plotters
plotting
printers (data processing)
promotion
radar
radar resolution
rapid ballistics identification
raster scanning
reading
readout
real time operation
receivers
remote consoles
scientific visualization
∞ screens
situational awareness
solar compasses

∞ strip
∞ systems
target simulators
TERCOM
video data
video equipment
viewing
visual aids
visual control
warning systems

display systems

USE **display devices**

disposal

GS disposal

. waste disposal
. . composting
. . hazardous material disposal (in space)

RT agitation

∞ containers
decontamination
deletion
dilution
∞ discharge
dispersing
dissipation
distributing
∞ distribution
dumping
ejection
elimination
emptying
exhausting
expulsion
isolation
jettisoning
materials handling
materials recovery
removal
sinks
spreading
∞ storage
unloading

disrupting

RT ∞ interference
rupturing

dissection

RT autopsies
pathology

dissipation

UF *dissipators*

GS dissipation

. energy dissipation
. ohmic dissipation
RT atmospheric turbulence
attenuation
damping
decontamination
depletion
diffusion
dilution
dischargers
dispersing
disposal
exhausting
pollution
purification
∞ reduction
removal
waste disposal

dissipators

USE **dissipation**

dissociation

DEF The separation of a complex molecule into constituents by collision with a second body, or by absorption of a photon. The product of dissociation of a molecule is two ions, one positively charged and one negatively charged. Used for molecular dissociation.

UF *molecular dissociation*

GS dissociation

. autoionization
. biodegradability

- . gas dissociation
- . photodissociation
- . radiolysis
- . thermal dissociation
- RT atomic recombination
- chemical equilibrium
- Debye-Huckel theory
- decomposition
- electrodissolution
- heat of dissociation
- ionization
- molecular diffusion
- molecular interactions

*dissolution*USE **dissolving****dissolved gases**

DEF Gases in solution.
 GS gases

- . **dissolved gases**

RT aeration
 dissolving
 mixtures
 oxygenation
 solubility
 solutions

dissolved organic matter*(added October 1997)*

UF *gelbstoff*

RT chlorophylls
 organic solids
 phytoplankton
 sea water
 sediments
 solutes
 water color
 water pollution

dissolving

UF *dissolution*

GS mixing

- . **dissolving**

RT aeration
 chemical attack
 chemical cleaning
 cleaning
 compounding
 corrosion
 diffusion
 dilution
 dissolved gases
 extraction
 homogenizing
 leaching
 precipitation (chemistry)

∞ separation
 softening
 solubility
 solutes

∞ solution
 solvent retention
 solvents
 washing

*dissymmetry*USE **asymmetry****distance**

GS **distance**

- . Debye length
- . diffusion length
- . miss distance
- . optical slant range
- . radar range
- . radio range
- . range and range rate tracking
- . reentry range

RT aircraft performance
 aircraft specifications
 altitude
 depth
 dimensions
 focusing
 geometry
 height
 length
 position (location)
 proximity

radar navigation

∞ range

- range (extremes)
- takeoff runs

∞ travel

- Tully-Fisher relation

distance measuring equipment

DEF A radio aid to navigation which provides distance information by measuring total round trip time of transmission from an integrator to a transponder and return.

GS measuring instruments

- . **distance measuring equipment**
- . . . altimeters
- laser altimeters
- radio altimeters
- . . . geodimeters
- . . . range finders
- optical range finders
- laser range finders
- . . . stadimeters
- . . . tellurometers

RT automatic flight control
 automatic landing control
 Decca navigation
 depth measurement
 dimensional measurement
 LORAC navigation system
 loran
 lunar rangefinding
 micrometers
 navigation
 navigation aids
 omnidirectional radio ranges
 position indicators
 radar
 radar equipment
 radar measurement
 radar navigation
 radio navigation
 range errors
 Shoran
 solar compasses
 sonar
 sound ranging

*distance perception*USE **space perception****distillation**

GS **distillation**

- . stripping (distillation)

RT chemical fractionation
 concentrating
 condensing
 demineralizing
 desalinization
 diffusion
 evaporation
 flashing (vaporizing)
 materials recovery
 purging
 purification
 rectification
 refining

∞ separation
 tar sands
 vaporizing
 washing

distillation equipment

RT columns (process engineering)
 condensers (liquefiers)

∞ equipment
 stills

distortion

DEF An undesired change in waveform. In a system used for transmission or reproduction of sound, a failure by the system to transmit or reproduce a received waveform with exactness. An undesired change in the dimensions or shape of a structure as, distortion of a fuel tank due to abnormal stresses or extreme temperature gradients.

GS **distortion**

- . flow distortion
- . signal distortion
- . surface distortion

RT aberration
 abnormalities
 astigmatism
 asymmetry
 bending
 buckling
 camber
 deflection
 deformation
 deviation
 displacement
 expansion
 failure
 flexing
 folding
 frequency pulling
 geometric accuracy
 ghosts
 heaving
 refraction
 skewness
 stretching
 swelling
 temperature inversions
 twisting
 variations
 warpage
 wrinkling

distributed amplifiers

GS amplifiers

- . **distributed amplifiers**

RT frequency response
 transmission lines

*distributed Bragg reflector lasers*USE **DBR lasers****distributed feedback lasers**

DEF Lasers containing a periodic medium which provides the necessary feedback for laser action.

GS stimulated emission devices

- . lasers
- . . **distributed feedback lasers**

RT DBR lasers
 feedback amplifiers
 feedback control
 heterojunction devices
 laser outputs
 lasing
 semiconductor lasers
 solid state lasers

distributed interactive simulation*(added December 1996)*

SN ((Multiple simultaneous use of simulation in networks))

UF *D/S*

GS simulation

- . computerized simulation
- . . **distributed interactive simulation**

RT computer networks
 distributed processing

distributed memory*(added April 1997)*

GS memory (computers)

- . **distributed memory**

RT architecture (computers)
 distributed processing
 interprocessor communication
 multiprocessing (computers)
 parallel processing (computers)

distributed parameter systems

RT control theory
 differential equations
 independent variables
 integral equations
 linear circuits
 linear systems
 network analysis
 nonlinear systems

∞ systems

distributed processing

DEF Processing with multiple small computers that are capable of operating independently but can communicate over a network with each

distributing

other and/or a central computer.

- GS data processing
 - . **distributed processing**
 - . . grid computing (computer networks)
- RT architecture (computers)
 - client server systems
 - computer networks
 - computer systems design
 - Dining Philosophers Problem
 - distributed interactive simulation
 - distributed memory
 - microprocessors
 - service oriented architecture
 - transputers
 - VSAT (network)
 - wide area networks

distributing

- UF *dispatching*
- RT allocations
 - assimilation
 - commercial energy
 - dispersing
 - disposal
- ∞ distribution
 - domestic energy
- ∞ food
 - industrial energy
 - inventory controls
 - materials handling
 - positioning
 - proportion
 - resource allocation
 - transportation
 - transportation energy

∞ distribution

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT allocations
 - assimilation
 - brightness distribution
 - circulation distribution
 - demography
 - dispersing
 - disposal
 - distributing
 - distribution (property)
 - geographic distribution
 - kurtosis
 - load distribution (forces)
 - mass distribution
 - materials handling
 - positioning
 - pressure distribution
 - spectral energy distribution
 - statistical distributions
 - thrust distribution
 - transportation

distribution (property)

- UF *pattern distribution*
- GS **distribution (property)**
 - . angular distribution
 - . Boltzmann distribution
 - . brightness distribution
 - . charge distribution
 - . current distribution
 - . electron distribution
 - . . electron distribution profiles
 - . energy distribution
 - . . spectral energy distribution
 - . flow distribution
 - . force distribution
 - . frequency distribution
 - . . kurtosis
 - . hole distribution (electronics)
 - . hole distribution (mechanics)
 - . interference lift
 - . ion distribution
 - . load distribution (forces)
 - . mass distribution
 - . moment distribution
 - . neutron distribution
 - . pressure distribution
 - . radial distribution
 - . radiation distribution
 - . . antenna radiation patterns

- . . . sidelobes
- . . diffraction patterns
- . . . Kossel pattern
- . . . rainbows
- . spatial distribution
- . . horizontal distribution
- . . vertical distribution
- . . . star distribution
- . . geographic distribution
- . strain distribution
- . stress distribution
- . . stress concentration
- . temperature distribution
- . velocity distribution
- RT chemical composition
- ∞ cross sections
- ∞ distribution
 - dynamic characteristics
 - field theory (physics)
 - gradients
 - jet lift
 - lift
- ∞ patterns
- ∞ profiles
 - rotor lift
 - statistical distributions
 - synthetic arrays
 - zero lift

distribution functions

DEF The density functions or number of particles per unit volume of phase space. The distribution functions are a function of the three space coordinates and the three velocity coordinates.

- GS functions (mathematics)
 - . **distribution functions**
 - . . probability distribution functions
- RT Chapman-Enskog theory
 - discrete functions
 - maximum entropy method
- ∞ nets
 - probability theory
 - statistical distributions

distribution moments

- UF *statistical moments*
- GS moments
 - . **distribution moments**
 - . . mean
 - . . orthogonality
 - . . standard deviation
- RT average
 - median (statistics)
 - method of moments
 - mode (statistics)
 - skewness
 - statistical distributions
 - variance (statistics)

distributors

- RT commutators
- dispensers
- feeders
- ignition systems
- internal combustion engines
- materials handling
- rollers
- sprayers

District of Columbia

- GS nations
 - . United States
 - . . **District of Columbia**
- RT Potomac River Valley (MD-VA-WV)

disturbance theory

USE **perturbation theory**

∞ disturbances

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT bursts
 - disorders
 - electromagnetic interference
 - ionospheric disturbances
 - ionospheric storms
 - magnetic disturbances
 - perturbation
 - radio auroras

- radio bursts
- solar activity
- storms
- sudden ionospheric disturbances
- vortices

disturbing functions

- GS functions (mathematics)
 - . **disturbing functions**
- RT perturbation theory

disulfides

- GS chalcogenides
 - . sulfides
 - . . **disulfides**
 - . . . carbon disulfide
 - sulfur compounds
 - . sulfides
 - . . **disulfides**
 - . . . carbon disulfide

ditches

- RT canals
- irrigation
- landforms
- troughs

∞ ditching

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ditching (landing)
 - excavation

ditching (excavation)

USE **excavation**

ditching (landing)

- GS crashes
 - . crash landing
 - . . **ditching (landing)**
 - landing
 - . **ditching (landing)**
- RT aircraft accidents
- ∞ ditching
 - glide landings
 - water landing

dithers

- GS shaking
 - . **dithers**
 - shivering
 - . **dithers**
- RT disorders
 - disorientation
 - emotional factors
 - human behavior
- ∞ inhibition
 - irrationality
 - vacillation

dithiols

USE **thiols**

diuresis

- RT body fluids
- edema
- urination
- vasopressins

diuretics

- GS **diuretics**
 - . aminophylline
- RT acetazolamide
- ureas

diurnal rhythms

USE **circadian rhythms**

diurnal variations

- GS variations
 - . periodic variations
 - . . **diurnal variations**
- RT cycles
 - darkness
 - daytime
 - magnetic variations
 - night
 - nocturnal variations
 - photoperiod
 - tropopause

wind variations

divergence

DEF The expansion or spreading out of a vector field; also a precise measure thereof. A static instability of a lifting surface or of a body on a vehicle wherein the aerodynamic loads tending to deform surface or body are greater than the elastic restoring forces.

GS **divergence**
 . magnetic charge density
 RT catastrophe theory
 convergence
 deviation
 differences
 displacement
 ∞ drift
 Fourier analysis
 functions (mathematics)
 geostrophic wind
 refraction
 series (mathematics)
 series expansion
 variations
 vortices

divergent nozzles

RT conical nozzles
 exhaust nozzles
 nozzle geometry
 nozzle walls
 ∞ nozzles
 rocket nozzles
 thrust chambers
 wind tunnel nozzles

diverters

GS **diverters**
 . divertors (fusion reactors)
 RT baffles
 blast deflectors
 bypasses
 deflectors
 ∞ diffusers
 dividers
 flame deflectors
 ∞ separation
 separators
 shielding
 valves

divertors (fusion reactors)

(added March 1995)
 GS diverters
 . **divertors (fusion reactors)**
 RT limiters (fusion reactors)
 magnetic field configurations
 plasma control
 tokamak devices

dividers

SN (EXCLUDES VOLTAGE AND FREQUENCY DIVIDERS)
 GS separators
 . **dividers**
 RT baffles
 ∞ barriers
 curtains
 diverters
 panels
 spacers

divides (landforms)

GS landforms
 . **divides (landforms)**
 RT drainage patterns
 mountains
 watersheds

dividing (mathematics)

GS number theory
 . **dividing (mathematics)**
 RT arithmetic
 computation
 congruences
 ∞ division
 quotients

diving (underwater)

GS submerged bodies
 . **diving (underwater)**

RT barotrauma
 decompression sickness
 human tolerances
 medical phenomena
 physiological effects
 underwater physiology
 underwater tests

∞ division

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cell division
 dividing (mathematics)
 number theory
 ∞ separation
 subdivisions
 subsidiaries

DIVOT (voice translators)

USE **digital to voice translators**

dizziness

(added August 2004)

DEF An imprecise term which may refer to a sense of spatial disorientation, motion of the environment, or lightheadedness.

GS signs and symptoms
 . **dizziness**
 RT acceleration stresses (physiology)
 disorientation
 motion sickness

Djibouti

(added February 1989)

GS nations
 . **Djibouti**
 RT Africa

DME-A satellite

USE **Explorer 31 satellite**

DMSP satellites

DEF Satellites of the defense meteorological satellite program, a program sponsored by the United States Air Force System Command's Space Division which provides timely global imagery and specialized meteorological data for supporting a variety of Department of Defense operations. Used for Defense Meteorological Satellite Program.

UF *Defense Meteorological Satellite Program*

GS artificial satellites
 . meteorological satellites
 . . **DMSP satellites**
 military spacecraft
 . **DMSP satellites**

RT air defense
 ∞ defense
 defense program
 meteorology
 NPOESS
 photomapping
 photoreconnaissance
 remote sensing
 satellite-borne photography

DNA

USE **deoxyribonucleic acid**

DNS (numerical analysis)

(added October 1997)

USE **direct numerical simulation**

DO-27 aircraft

UF *Domier DO-27 aircraft*
 GS Dornier aircraft
 . **DO-27 aircraft**
 general aviation aircraft
 . **DO-27 aircraft**
 light aircraft
 . **DO-27 aircraft**
 monoplanes
 . **DO-27 aircraft**
 passenger aircraft
 . **DO-27 aircraft**

RT ∞ aircraft

DO-28 aircraft

UF *Domier DO-28 aircraft*

GS Dornier aircraft
 . **DO-28 aircraft**
 general aviation aircraft
 . **DO-28 aircraft**
 light aircraft
 . **DO-28 aircraft**
 monoplanes
 . **DO-28 aircraft**
 passenger aircraft
 . **DO-28 aircraft**
 RT ∞ aircraft

DO-31 aircraft

UF *Dornier DO-31 aircraft*
 GS Dornier aircraft
 . **DO-31 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **DO-31 aircraft**
 monoplanes
 . **DO-31 aircraft**
 transport aircraft
 . **DO-31 aircraft**
 V/STOL aircraft
 . **DO-31 aircraft**
 RT ∞ aircraft

DO-328 aircraft

(added September 1994)

GS commercial aircraft
 . **DO-328 aircraft**
 Dornier aircraft
 . **DO-328 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **DO-328 aircraft**
 passenger aircraft
 . **DO-328 aircraft**
 transport aircraft
 . **DO-328 aircraft**
 RT ∞ aircraft

docking

(added May 2005)

GS maneuvers
 . **docking**
 . . autonomous docking
 . . offshore docking
 . . spacecraft docking
 RT interception
 mooring
 multiple docking adapters

document indexing

(added April 2000)

USE **indexing (information science)**

document markup languages

(added July 1995)

DEF Standardized nomenclatures that specify the organization of complex text (including technical and scientific notation, graphics, and images) and define the document type, data elements within the document, and the relationship between data elements for electronically prepared, stored, interchanged, and published documents.

UF *DSSSL*
HTML
HYTIME
markup languages
SGML
SPDL

GS languages
 . **document markup languages**
 RT documentation
 electronic publishing
 human-computer interface
 hypertext
 information transfer
 printing
 standards

document storage

RT data storage
 documentation
 ∞ files
 reproduction (copying)

documentation

∞ storage

documentation

SN (LIMITED TO WRITTEN MATERIAL THAT ACCOMPANIES, EXPLAINS, SPECIFIES OR DESCRIBES EQUIPMENT OR SYSTEMS)
 DEF The assembling, coding, and disseminating of recorded knowledge.
 GS literature
 RT acquisition
 bibliographies
 biography
 case histories
 catalogs (publications)
 conferences
 data retrieval
 document markup languages
 document storage
 documents
 histories
 indexes (documentation)
 information
 information dissemination
 information resources management
 information retrieval
 knowledge
 lessons learned
 libraries
 news
 records
 ∞ reference systems
 reports
 selective dissemination of information
 space glossaries
 summaries
 technical writing
 technology transfer
 translating

documents

UF *publications*
 GS **documents**
 . abstracts
 . bibliographies
 . catalogs (publications)
 . . astronomical catalogs
 . congressional reports
 . dictionaries
 . drawings
 . . engineering drawings
 . . . blueprints
 . handbooks
 . . user manuals (computer programs)
 . manuals
 . . installation manuals
 . . user manuals (computer programs)
 . papers
 . periodicals
 . postlaunch reports
 . Presidential reports
 . proposals
 . records
 . . video disks
 . supplements
 . textbooks
 . texts
 . theses
 RT conferences
 copyrights
 documentation
 electronic publishing
 format
 hardware utilization lists
 indexes (documentation)
 information retrieval
 libraries
 literature
 reports
 technology transfer

Dodge satellite

GS artificial satellites
 . **Dodge satellite**

doghouses (electronics)

DEF Small enclosures placed at the base of transmitting antenna towers to house antenna tuning equipment.
 GS housings

. doghouses (electronics)

radar equipment

. doghouses (electronics)

RT enclosures
 radar antennas

dogs

GS animals
 . vertebrates
 . . mammals
 . . . **dogs**
 RT wolves

dollies

GS surface vehicles
 . **dollies**
 RT carriages
 materials handling
 sleds
 trucks
 undercarriages

dolomite (mineral)

DEF A common rock-forming rhombohedral material consisting of calcium, magnesium, and carbonates. It is used for refractory products.

GS carbon compounds
 . carbonates
 . . **dolomite (mineral)**
 magnesium compounds
 . **dolomite (mineral)**
 minerals
 . **dolomite (mineral)**
 RT aggregates
 limestone
 rocks
 sedimentary rocks

dolphins

GS animals
 . vertebrates
 . . mammals
 . . . marine mammals
 **dolphins**

domain wall

RT domains
 ferroelasticity
 magnetic domains
 ∞ motion

domains

GS **domains**
 . magnetic domains
 RT dipole moments
 domain wall
 electrical properties
 range (extremes)

∞ domes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT domes (geology)
 domes (structural forms)

domes (geology)

GS geology
 . **domes (geology)**
 RT anticlines
 ∞ domes
 geosynclines
 synclines

domes (structural forms)

GS shells (structural forms)
 . **domes (structural forms)**
 . . radomes
 RT ∞ cupolas
 ∞ domes
 hemispherical shells
 housings
 pressure vessels
 protuberances

domestic energy

RT allocations
 commercial energy
 distributing
 economic factors
 ∞ energy

energy consumption
 energy conversion
 industrial energy
 solar cooling
 solar houses
 transportation energy
 water heating

domestic satellite communications systems

RT communication satellites
 direct broadcast satellites
 microwave transmission
 RCA Satcom satellites
 satellite networks
 satellite transmission
 ∞ systems

dominance

GS **dominance**
 . eye dominance
 RT genetics

Dominica

GS landforms
 . islands
 . . West Indies
 . . . **Dominica**
 nations
 . **Dominica**

Dominican Republic

GS nations
 . **Dominican Republic**
 RT Caribbean region
 Caribbean Sea

Domino propellants

GS propellants
 . high energy propellants
 . . **Domino propellants**
 RT plasticizers
 rocket oxidizers
 solid rocket propellants

Donatello Logistics Module (ISS)
 (added April 2005)

USE **Multi-Purpose Logistics Modules**

Donnell equations

RT buckling
 ∞ equations
 stress analysis

donor materials

GS semiconductors (materials)
 . **donor materials**
 RT antisite defects
 carrier density (solid state)
 doping (materials)
 electrons
 holes (electron deficiencies)
 ∞ materials
 modulation doping

doors

UF *exits (doors)*
 RT air locks
 apertures
 curtains
 egress
 entrances
 floors
 gates (openings)
 hatches
 ingress (spacecraft passageway)
 openings
 outlets
 ∞ thresholds
 windows (apertures)

dopa

DEF An intermediate organic compound produced by oxidation of tyrosine by tyramine; also, an intermediate product in the synthesis of both epinephrine and melanin. Used for dihydroxyphenylalanine.

UF *dihydroxyphenylalanine*
 GS acids
 . amino acids
 . . **dopa**

organic compounds
 . amino acids
 . . **dopa**
 RT ∞ chemical compounds
 dopamine
 melanin
 oxidation
 pigments

dopamine
 (added June 1997)
 RT catecholamine
 dopa
 drugs
 epinephrine
 neurophysiology
 neurotransmitters
 norepinephrine

doped crystals
 GS crystals
 . **doped crystals**
 RT crystal growth
 crystal optics
 crystal structure
 doping (materials)
 fullerides
 gadolinium-gallium garnet
 MODFETS
 modulation doping
 neutron transmutation doping

dopes
 RT additives
 fillers
 finishes
 gels
 primers (coatings)
 sealers

doping (additives)
 USE **additives**

doping (materials)
 (added June 2003)
 DEF The incorporation of impurities into silicon or other semiconductor materials in order to modify the conductivity or other electrical properties of these materials
 GS **doping (materials)**
 . modulation doping
 . neutron transmutation doping
 RT additives
 crystal lattices
 donor materials
 doped crystals
 ion implantation
 semiconductor devices
 semiconductors (materials)

Doppler effect
 DEF The change in frequency with which energy reaches a receiver when the receiver and the energy source are in motion relative to each other. Used for DOVAP and stellar Doppler shift.
 UF *DOVAP*
stellar Doppler shift
 GS **Doppler effect**
 . Doppler-Fizeau effect
 RT blue shift
 ∞ effects
 elastic waves
 electromagnetic radiation
 Fizeau effect
 frequency shift
 optical heterodyning
 radial velocity
 red shift
 satellite doppler positioning
 stellar motions

Doppler navigation
 DEF Dead reckoning performed automatically by a device which gives a continuous indication of position by integrating the speed derived from measurement of the Doppler effect of echoes from directed beams of radiant energy transmitted from the craft.
 GS navigation

. **Doppler navigation**
 RT air navigation
 all-weather air navigation
 dead reckoning
 radar navigation
 radio navigation
 satellite doppler positioning

Doppler radar
 DEF Radar which utilizes the Doppler effect to determine the radial component of velocities of relative radar targets or to select targets having particular radial velocities.
 GS radar
 . **Doppler radar**
 . . multistatic radar
 . . pulse Doppler radar
 . . . monopulse radar
 . . . Shuttle Imaging Radar
 RT airborne radar
 coherent radar
 continuous wave radar
 monopulse radar
 moving target indicators
 polystation doppler tracking system
 pulse radar
 radar detection
 radar equipment
 radar navigation
 radar networks
 radar tracking
 satellite doppler positioning
 sodar
 surveillance radar

Doppler-Fizeau effect
 DEF The Doppler effect applied to a source of light. When the distance between the observer and the source of light is diminishing, the lines of the spectrum are displaced towards the violet, and, when the distance is increasing, they are displaced toward the red, the displacement being proportional to the relative velocity of approach or recession.
 GS Doppler effect
 . **Doppler-Fizeau effect**
 RT blue shift
 ∞ effects
 Fizeau effect
 frequency shift
 radar navigation
 red shift
 stellar motions

Dornier aircraft
 GS **Dornier aircraft**
 . DO-27 aircraft
 . DO-28 aircraft
 . DO-31 aircraft
 . DO-328 aircraft
 RT ∞ aircraft

Dornier DO-27 aircraft
 USE **DO-27 aircraft**

Dornier DO-28 aircraft
 USE **DO-28 aircraft**

Dornier DO-31 aircraft
 USE **DO-31 aircraft**

Dornier paraglider rocket vehicle
 GS rocket vehicles
 . single stage rocket vehicles
 . . **Dornier paraglider rocket vehicle**
 . sounding rockets
 . . **Dornier paraglider rocket vehicle**
 RT liquid propellant rocket engines

dorsal sections
 RT anatomy
 posterior sections

dosage
 UF *dose*
 GS **dosage**
 . radiation dosage
 . sublethal dosage
 RT biological effects
 dosimeters

drugs
 radiation measurement

dose
 USE **dosage**

dosimeters
 DEF Instruments for measuring the ultraviolet in solar and sky radiation. Devices worn by persons working around radioactive material, which indicate the dose of radiation to which they have been exposed. Used for dosimetry.
 UF *dosimetry*
 GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . **dosimeters**
 threshold detectors (dosimeters)
 RT actinometers
 dosage
 exposure
 flux (rate)
 flux density
 Geiger counters
 ionization chambers
 irradiation
 neutron counters
 nuclear emulsions
 photographic measurement
 proportional counters
 radiant flux density
 radiation counters
 radiation dosage
 radiation effects
 radiation hazards
 radiation measurement
 radiobiology

dosimetry
 USE **dosimeters**

double base propellants
 DEF Solid rocket propellants using two unstable compounds, such as nitrocellulose and nitroglycerin. The unstable compounds used in a double based propellant do not require a separate oxidizer. Used for cordite.
 UF *cordite*
 GS propellants
 . **double base propellants**
 . . double base rocket propellants
 RT cellulose nitrate
 composite propellants
 endothermic fuels
 explosives
 nitroglycerin
 plastisols
 pyrotechnics

double base rocket propellants
 GS gels
 . **double base rocket propellants**
 propellants
 . double base propellants
 . . **double base rocket propellants**
 . rocket propellants
 . . solid rocket propellants
 . . . **double base rocket propellants**
 . solid propellants
 . . solid rocket propellants
 . . . **double base rocket propellants**
 RT cellulose nitrate
 composite propellants
 explosives
 nitroglycerin

double cusps
 UF *osculations*
 GS geometry
 . cusps (mathematics)
 . . **double cusps**
 RT ∞ cusps

double precision arithmetic
 GS number theory
 . arithmetic
 . . **double precision arithmetic**
 RT arithmetic and logic units

double sideband transmission

∞ numbers

double sideband transmission

- GS transmission
 - . electromagnetic wave transmission
 - . . radio transmission
 - . . . **double sideband transmission**
 - . signal transmission
 - . . radio transmission
 - . . . **double sideband transmission**
- RT modulation
 - sidebands
 - single sideband transmission
 - television transmission
 - wave propagation

double stars

DEF Stars which appear as single points of light to the eye but which can be resolved into two points by a telescope. A double star is not necessarily a binary, a two star system revolving about a common center, but may be an optical double, two unconnected stars in the same line of sight.

- GS celestial bodies
 - . stars
 - . . **double stars**
 - . . . binary stars
 - cataclysmic variables
 - companion stars
 - Nemesis (star)
 - eclipsing binary stars
 - dwarf novae
 - Lambda Tauri stars
 - Zeta Aurigae star
 - Sigma Orionis
 - symbiotic stars
 - x ray binaries
- RT astrometry
 - stellar motions

double-layer capacitors

(added September 2003)

USE **electrochemical capacitors**

doughnut shape wheels

USE **toroidal wheels**

Douglas aircraft

- GS McDonnell Douglas aircraft
 - . **Douglas aircraft**
 - . . A-1 aircraft
 - . . A-3 aircraft
 - . . A-4 aircraft
 - . . B-66 aircraft
 - . . C-9 aircraft
 - . . C-47 aircraft
 - . . C-54 aircraft
 - . . C-118 aircraft
 - . . C-124 aircraft
 - . . C-133 aircraft
 - . . D-558 aircraft
 - . . DC 3 aircraft
 - . . DC 7 aircraft
 - . . DC 8 aircraft
 - . . DC 9 aircraft
 - . . DC 10 aircraft
 - . . PD-808 aircraft
 - . . X-3 aircraft
- RT ∞ aircraft

Douglas D-558 aircraft

USE **D-558 aircraft**

Douglas DC-3 aircraft

USE **DC 3 aircraft**

Douglas DC-7 aircraft

USE **DC 7 aircraft**

Douglas DC-8 aircraft

USE **DC 8 aircraft**

Douglas DC-9 aircraft

USE **DC 9 aircraft**

Douglas PD-808 aircraft

USE **PD-808 aircraft**

DOVAP

USE **Doppler effect**

downbursts

(added March 1991)

- GS storms
 - . storms (meteorology)
 - . . **downbursts**
 - . . . microbursts (meteorology)
- RT aviation meteorology
 - flight hazards
 - thunderstorms
 - vertical air currents
 - wind shear

down-converters

- GS frequency converters
 - . **down-converters**
- RT ∞ converters
 - frequency dividers

downlinking

DEF The transmission of signals (data, information, etc.) from satellites to ground terminals.

- RT carrier to noise ratios
 - communication satellites
 - frequency reuse
 - ground stations
 - microwave transmission
 - satellite transmission
 - transmission efficiency
 - uplinking

downrange

DEF The airspace extending downstream on a given rocket test range.

- RT ballistic ranges
 - ballistic trajectories
 - flight tests
 - impact prediction
 - missile ranges
 - recovery zones
 - test ranges
 - touchdown
 - trajectories

Downrange Antimissile Measurement Program

- UF *DAMP program*
- GS programs
 - . **Downrange Antimissile Measurement Program**
- RT ∞ measurement

downrange measurement

- RT ∞ measurement
 - test ranges

downtime

DEF A period during which equipment is not operating correctly because of machine failure.

- GS time
 - . **downtime**
- RT failure
 - inventory management
 - logistics
 - maintenance
 - malfunctions
 - MTBF
 - reliability
 - spare parts
 - system failures
 - turnaround (STS)

downwash

- RT backwash
 - ∞ draft
 - ground effect (aerodynamics)
 - helicopter wakes
 - lift augmentation
 - peripheral jet flow
 - upwash
 - wakes

DPCM (modulation)

USE **differential pulse code modulation**

Draconid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Draconid meteoroids**
 - . meteoroids
 - . . **Draconid meteoroids**

RT Giacobini-Zinner comet

∞ draft

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boundary layers
 - downwash
 - draft (gas flow)
 - drafting (drawing)
 - upwash
 - wakes

draft (gas flow)

- RT ∞ draft
 - flues
 - ventilation

drafting (drawing)

- RT ∞ draft
 - ∞ drawing
 - drawings
 - graphic arts

drafting machines

- RT computer aided design
 - ∞ design
 - ∞ machinery

drag

DEF A retarding force acting upon the direction of motion of the body. It is a component of the total fluid forces acting on the body. Used for drag effect.

- UF *drag effect*
- GS dynamic characteristics
 - . **drag**
 - . . electrostatic drag
 - . . friction drag
 - . . . aerodynamic drag
 - supersonic drag
 - viscous drag
 - induced drag
 - minimum drag
 - pressure drag
 - supersonic drag
 - wave drag
 - interference drag
 - satellite drag
- RT aerodynamic configurations
 - aerodynamics
 - boundary layers
 - ∞ drag coefficients
 - drag measurement
 - friction
 - gravitation
 - ground effect (aerodynamics)
 - lift
 - skin friction
 - wakes

drag balance

USE **aerodynamic balance**
lift drag ratio

drag chutes

- UF *drogue parachutes*
- GS brakes (for arresting motion)
 - . aerodynamic brakes
 - . . **drag chutes**
 - drag devices
 - . aerodynamic brakes
 - . . **drag chutes**
 - parachutes
 - . **drag chutes**
- RT aircraft brakes
 - airdrops
 - ballutes
 - ribbon parachutes
 - towed bodies

∞ drag coefficients

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The ratios of drag to the products of dynamic pressures and reference areas.
- RT aerodynamic coefficients
 - aerodynamic drag
 - drag

- hydrodynamic coefficients
- drag devices**
 UF *dragulators*
 GS **drag devices**
 . aerodynamic brakes
 . . ballutes
 . . drag chutes
 . . split flaps
 . . wing flaps
 . . . leading edge flaps
 . . . leading edge slats
 . . . trailing edge flaps
 . . . vortex flaps
 . spoilers
 RT abort apparatus
 aircraft brakes
 boundary layer control
 brakes (for arresting motion)
 control surfaces
 flaps (control surfaces)
 lift devices
 skin friction
 vortex alleviation
- drag effect*
 USE **drag**
- drag force anemometers**
 DEF Instruments for measuring both the static and dynamic velocity head and flow in high frequency, unsteady flow.
 GS measuring instruments
 . anemometers
 . . **drag force anemometers**
 RT flow measurement
 ∞ instruments
 velocity measurement
- drag measurement**
 GS mechanical measurement
 . **drag measurement**
 RT aerodynamic drag
 drag
 electrostatic drag
 flow measurement
 ∞ measurement
 measuring instruments
- drag reduction**
 RT aerodynamic drag
 fluid flow
 friction
 induced drag
 lift drag ratio
 ∞ reduction
 riblets
 winglets
- dragulators*
 USE **brakes (for arresting motion)**
drag devices
- drainage**
 UF *draining*
runoffs
 RT ∞ discharge
 evacuating (vacuum)
 excavation
 flood control
 hydrology
 hydrology models
 irrigation
 liquid wastes
 mines (excavations)
 permeability
 ∞ pumping
 seepage
 sewers
 sumps
 tunneling (excavation)
 waste disposal
 water flow
 water runoff
 water tables
- drainage patterns**
 UF *dendritic drainage*
interlacing drainage
radial drainage patterns
- rectangular drainage*
 RT arroyos
 divides (landforms)
 flood damage
 hydrology
 irrigation
 Mississippi River (US)
 ∞ patterns
 precipitation (meteorology)
 tributaries
 water erosion
 water flow
 watersheds
- draining*
 USE **drainage**
- ∞ **drawing**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT bundle drawing
 cold drawing
 drafting (drawing)
 drawings
 extruding
 layouts
 metal drawing
 pulling
 records
 stretch forming
 stretching
 tempering
- drawings**
 UF *elevations (drawings)*
 GS documents
 . **drawings**
 . . engineering drawings
 . . . blueprints
 RT charts
 ∞ cross sections
 diagrams
 dimensions
 drafting (drawing)
 ∞ drawing
 graphic arts
 inks
 layouts
 ∞ plans
 ∞ projection
 representations
 reproduction (copying)
 specifications
 ∞ tracing
 visual aids
- DRC (capsule)*
 USE **Discoverer recovery capsules**
- dreams**
 RT rapid eye movement state
 sleep
- dredged materials**
 DEF Sand, mud, silt, gravel, etc., recovered from the bottoms of harbors, canals, etc., during dredging operations.
 RT channel flow
 ∞ channels
 ∞ materials
 sediments
- dredging**
 DEF Mechanical or hydraulic excavation of underwater material. Used in maintaining and building of channels and ports as well as underwater mining of sand, gravel, and minerals.
 RT artificial harbors
 harbors
 mineral deposits
 mining
 underwater resources
- ∞ **drift**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT deviation
 divergence
 drift (instrumentation)
- drift rate
 flight paths
 ionospheric drift
 stability
- drift (instrumentation)**
 UF *instrument drift*
 RT accuracy
 circuit reliability
 ∞ drift
 drift rate
 dynamic stability
 errors
 instrument errors
 static stability
 tolerances (mechanics)
- drift rate**
 DEF The amount of drift, in any of its several senses, per unit time. Drift rate has many specific meanings in different fields. The type of drift rate should always be specified.
 GS rates (per time)
 . **drift rate**
 RT ∞ drift
 drift (instrumentation)
 ionospheric drift
 mobility
 orbit perturbation
 orbital mechanics
 rotating plasmas
 stability
 trajectory control
- drill bits**
 GS cutters
 . **drill bits**
 tools
 . **drill bits**
 RT bits
 drilling
 drills
- drilling**
 GS **drilling**
 . laser drilling
 RT boreholes
 core sampling
 cutting
 drill bits
 drills
 exploration
 machining
 micromachining
 natural gas exploration
 offshore energy sources
 oil exploration
 oil fields
 penetration
 perforating
 piercing
 tunneling (excavation)
 wells
- drills**
 GS cutters
 . **drills**
 tools
 . **drills**
 RT boring machines
 compressed air
 drill bits
 drilling
 machine tools
 taps
- drinking**
 GS ingestion (biology)
 . **drinking**
 RT beverages
 swallowing
- ∞ **drives**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT mechanical drives
 motivation
 propulsion
 sex
 sleep

drone aircraft

wind tunnel drives

drogue parachutes

USE **drag chutes**

drogues

USE **towed bodies**

drone aircraft

DEF Remotely controlled aircraft. Used for drone helicopters.

UF *drone helicopters*

GS drone vehicles

. **drone aircraft**

. . target drone aircraft

. . . Firebee 2 target drone aircraft

. . . Jindivik target aircraft

. . . pilotless aircraft

. **drone aircraft**

. . target drone aircraft

. . . Firebee 2 target drone aircraft

. . . Jindivik target aircraft

RT ∞ aircraft

antisubmarine warfare aircraft

DAST program

light aircraft

∞ military aircraft

oblique wings

remotely piloted vehicles

research aircraft

V/STOL aircraft

drone helicopters

USE **drone aircraft**

helicopters

drone vehicles

GS **drone vehicles**

. drone aircraft

. . target drone aircraft

. . . Firebee 2 target drone aircraft

. . . Jindivik target aircraft

RT ∞ military aircraft

pilotless aircraft

Sandpiper target missile

∞ vehicles

∞ winged vehicles

Drones for Aerodynamic and Struct Test

USE **DAST program**

drooped airfoils

DEF A baseline airfoil with an abrupt change in cross-section at about midspan from the fuselage. The outboard portion of the wing has a cross-section with a nearly flat bottom and a drooped (downward) leading edge in relation to the inboard baseline wing.

GS aerodynamic configurations

. **drooped airfoils**

aircraft configurations

. **drooped airfoils**

airfoils

. **drooped airfoils**

RT body-wing configurations

wing roots

wings

∞ **drop**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT drops (liquids)

gradients

drop calorimeters

GS measuring instruments

. calorimeters

. . **drop calorimeters**

RT bomb calorimeters

flame calorimeters

heat measurement

high temperature tests

temperature measuring instruments

drop size

DEF The diameter of a drop if it is approximately spherical; otherwise, the approximate shape and appropriate dimensions must be described.

RT cloud physics

clouds (meteorology)

condensates

condensing

fog

humidity

hydrogen clouds

nucleation

particle diffusion

∞ particle size distribution

∞ precipitation

∞ precipitation particle measurement

raindrops

size distribution

drop tests

UF *drop weight tests*

RT Charpy impact test

destructive tests

impact testing machines

impact tests

notch tests

shock tests

∞ tests

drop towers

DEF Large devices for low gravity processing of molten material which consist of either a capsule which is dropped, or a drop tube where containerless low gravity studies are conducted or both. Used for drop tubes.

UF *drop tubes*

RT falling spheres

gravitational effects

low gravity manufacturing

microgravity

weightlessness

drop transfer

GS transferring

. **drop transfer**

RT arc melting

melting

plasma jets

refining

drop tubes

USE **drop towers**

drop weight tests

USE **drop tests**

dropouts

DEF Discrete variations in signal levels during the reproduction of recorded data which result in data reduction errors.

RT circuit breakers

electric contacts

electric switches

switches

drops (liquids)

DEF Small bodies of liquid held together primarily by surface tension. Used for liquid drops.

UF *liquid drops*

GS particles

. **drops (liquids)**

. . raindrops

RT air pollution

Bond number

condensation nuclei

condensing

∞ drop

hydrometers

sprayers

thermocapillary migration

dropsondes

DEF Radiosondes equipped with a parachute, dropped from an aircraft to transmit measurements of atmospheric conditions as it descends.

GS measuring instruments

. meteorological instruments

. . **dropsondes**

. sondes

. . **dropsondes**

RT meteorological balloons

radiosondes

rawinsondes

Drosophila

GS animals

. invertebrates

. . arthropods

. . . insects

. . . . **Drosophila**

RT

chironomus flies

drought

UF *drought conditions*

RT arid lands

conservation

desertification

floods

hydrology

potable water

precipitation (meteorology)

water consumption

water management

water pollution

water reclamation

drought conditions

USE **drought**

drowsiness

USE **sleep**

drug therapy

USE **chemotherapy**

drugs

UF *chemotherapeutic agents*

GS **drugs**

. adrenergics

. aminophylline

. anesthetics

. . chloroform

. . cyclopropane

. . methyl chloride

. . novocain

. . antiadrenergics

. . antibiotics

. . actinomycin

. . penicillin

. . pleurotin

. . streptomycin

. . tetracyclines

. . anticonvulsants

. . antidiuretics

. . antidotes

. . antiemetics and antinauseants

. . antihistaminics

. . dimenhydrinate

. . diphenyl hydantoin

. . promethazine

. . antihypertensive agents

. . antiinfectives and antibacterials

. . antiradiation drugs

. . cysteamine

. . central nervous system depressants

. . cholinergics

. . anticholinergics

. . cortisone

. . cysteine

. . decongestants

. . digitalis

. . epinephrine

. . ergotamine

. . hemostatics

. . histamines

. . insulin

. . methamphetamine

. . motion sickness drugs

. . muscle relaxants

. . narcotics

. . morphine

. . Nembutal (trademark)

. . pentobarbital sodium

. . reserpine

. . psychotropic drugs

. . marijuana

. . sedatives

. . stimulants

. . atropine

. . caffeine

. . central nervous system stimulants

. . norepinephrine

. tranquilizers
 . trimethadione
 . vasoconstrictor drugs
 . . hypertensin
 . . serotonin
 . vasodilator agents
 RT alkaloids
 analgesia
 anesthesiology
 bioflavonoids
 biotin
 chemical defense
 chemotherapy
 cures
 dopamine
 dosage
 ethers
 ∞ medicine
 pentobarbital
 pharmacology
 phenobarbital
 psychopharmacology
 quinoline
 salicylates
 sublethal dosage
 thiophenes
 vaccines
 vitamins

drumlins
 USE **glacial drift**

∞ **drums**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ∞ barrels
 ∞ cylinders
 drums (containers)
 magnetic drums
 magnetic storage

drums (containers)
 SN (EXCLUDE MAGNETIC COMPUTER MEMORIES)
 RT barrels (containers)
 ∞ buckets
 cans
 ∞ containers
 ∞ cylinders
 ∞ drums
 tanks (containers)

dry cells
 GS electric generators
 . direct power generators
 . . primary batteries
 . . . **dry cells**
 magnesium cells
 nickel zinc batteries
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . **dry cells**
 magnesium cells
 nickel zinc batteries
 RT metal air batteries
 nickel cadmium batteries
 storage batteries
 thermal batteries

dry friction
 GS friction
 . **dry friction**
 RT abrasion
 kinetic friction
 sliding friction
 static friction

dry heat
 GS heat
 . **dry heat**
 RT geothermal resources
 geothermal technology
 high temperature environments
 humidity
 ovens

drydocks
 RT ∞ ports

sea launching

dryers (equipment)
 USE **drying apparatus**

drying
 UF *desiccation*
dewetting
 GS **drying**
 . dehumidification
 . dehydration
 . freeze drying
 RT ∞ absorption
 baking
 concentrating
 curing
 desaturation
 dewatering
 diffusion
 enthalpy
 evaporation
 firing (igniting)
 roasting
 ∞ separation
 silica gel
 water loss

drying apparatus
 UF *dryers (equipment)*
 GS separators
 . **drying apparatus**
 . . desiccators
 RT absorbers (equipment)
 columns (process engineering)
 condensers (liquefiers)
 dehydrated food
 evaporators
 furnaces

DS1 (space mission)
 (added October 1998)
 USE **Deep Space 1 Mission**

DSIF (instrumentation facility)
 USE **Deep Space Instrumentation Facility**

DSN (space network)
 USE **Deep Space Network**

DSN helicopter
 USE **QH-50 helicopter**

DSSSL
 USE **document markup languages**

DTA (analysis)
 USE **thermal analysis**

DTL integrated circuits
 UF *Diode-Transistor-Logic integ circuits*
 GS circuits
 . integrated circuits
 . . **DTL integrated circuits**
 RT electronic packaging
 large scale integration
 microminiaturization
 molecular electronics
 transistor circuits

DTMB-111 ground effect machine
 USE **ground effect machines**

DTMB-430 ground effect machine
 USE **ground effect machines**

Dual Air Density Explorer
 UF *DAD Explorer*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Dual Air Density Explorer**

dual frequency radar
 USE **multispectral radar**

dual mode propulsion
 USE **hybrid propulsion**

dual spin spacecraft
 RT OSO-7

∞ spacecraft
 spacecraft stability
 spin stabilization

dual thrust nozzles
 GS rocket nozzles
 . **dual thrust nozzles**
 RT ∞ nozzles
 thrust

dual wing configurations
 DEF A configuration of two wings of nearly the same planform and area, one behind the other.
 RT biplanes
 joined wings
 tandem wing aircraft
 wings

duality principle
 DEF Principle that for any theorem in electric circuit analysis there is a dual theorem in which quantities are replaced with dual quantities. Examples are current and voltage or impedance and admittance.
 RT ∞ analyzing
 circuits
 equivalent circuits
 network analysis
 ∞ paths
 ∞ principles
 signal flow graphs

duality theorem
 DEF Theorem which states that if either of two dual linear programming problems has a solution, then so does the other.
 GS theorems
 . **duality theorem**
 RT homology
 isomorphism
 ∞ mathematics
 ∞ relationships

dubnium
 (added May 1998)
 GS chemical elements
 . **dubnium**
 RT rutherfordium
 seaborgium

duct geometry
 DEF The shape and dimensions of ports or other openings designed for passage of fluids (gases, liquids, or mixtures) in or external to engines.
 GS geometry
 . **duct geometry**
 RT air flow
 annular ducts
 circular tubes
 dump combustors
 fluid flow
 intake systems
 openings
 spatial marching

ducted bodies
 RT annular ducts
 axisymmetric bodies
 bluff bodies
 blunt bodies
 ∞ bodies
 ducts
 intake systems
 nacelles
 nose inlets
 shrouds
 slender bodies
 two dimensional bodies

ducted fan engines
 DEF Aircraft engines incorporating a fan or propeller enclosed in a duct; especially jet engines in which an enclosed fan or propeller is used to ingest ambient air to augment the gases of combustion in the jetstream.
 GS engines
 . air breathing engines
 . . gas turbine engines

ducted fans

- . . . jet engines
- turbojet engines
- **ducted fan engines**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **ducted fan engines**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **ducted fan engines**
- RT turbofan engines

ducted fans

DEF Fans enclosed in ducts.

RT blowers
fan blades

∞ fans

- lift fans
- propeller fans
- ring wings
- shrouded propellers
- turbofans
- ventilation fans

ducted flow

GS fluid flow

- . internal flow
- . . **ducted flow**
- . . . Knudsen flow

RT air flow
cavity flow
channel flow
choked flow
corner flow
dump combustors
flow geometry
flow noise
fuel flow
heat transmission
wall flow

ducted propellers

USE **shrouded propellers**

ducted rocket engines

GS engines

- . rocket engines
- . . **ducted rocket engines**

RT booster rocket engines

∞ hybrid rocket engines

- internal combustion engines
- liquid propellant rocket engines
- restartable rocket engines
- solid propellant rocket engines
- sustainer rocket engines

ductile-brittle transition

(added February 1994)

SN ((INCLUDES BOTH DUCTILE-TO-BRITTLE AND BRITTLE-TO-DUCTILE TRANSITIONS))

UF *brittle-ductile transition*

RT brittleness
ductility
fracture strength
plastic deformation

∞ transition

- transition temperature
- yield strength

ductility

GS mechanical properties

- . **ductility**

RT brittleness
compressive strength
creep properties
ductile-brittle transition
elongation
fatigue (materials)
flattening
fractography
fracture strength
hardness
impact strength
malleability
metal drawing
notch strength
plastic properties

- shear properties
- softness
- stress relaxation
- stretching
- temper (metallurgy)
- tensile strength
- toughness
- Tresca flow
- weldability

ducts

DEF Specifically, tubes or passages that confine and conduct fluids, as passages for the flow of air to compressors of gas turbine engines, or pipes leading air to superchargers.

GS ducts

- . acoustic ducts
- . air ducts
- . annular ducts

RT baffles
cavities

∞ channels

- ducted bodies
- exhaust systems
- flues
- intake systems
- nose inlets
- openings
- orifices
- outlets
- pipes (tubes)
- plenum chambers
- ports (openings)
- scoops
- throats

∞ tubes

- ventilation
- vents
- windows (apertures)

Duffing differential equation

GS algebra

- . nonlinear equations
- . . **Duffing differential equation**
- . . . analysis (mathematics)
- . . . real variables
- . . . differential equations
- **Duffing differential equation**
- nonlinear equations
- **Duffing differential equation**

RT ∞ equations
probability theory

dullness

USE **luster**

dummies

RT decoys
models
simulators

dummy loads

USE **impedance loading**
output

dump combustors

DEF Combustors having a means of reducing flow velocity and forming recirculation zones through the sudden enlargement area between the inlet duct and the combustion chamber.

GS combustion chambers

- . **dump combustors**

RT combustible flow
combustion efficiency
duct geometry
ducted flow
engine parts
flame holders
flow velocity
inlet flow
ramjet engines
rocket engines

dumping

RT disconnect devices
disposal
ejection
emptying
expulsion

- jettisoning
- materials handling
- oil slicks
- releasing
- spilling
- spreading
- unloading

Dunaliella

GS plants (botany)

- . algae
- . . **Dunaliella**

dunes

DEF Low mounds, ridges, banks, or hills of loose, windblown granular material, usually sand, capable of movement. Used for barchans, coastal dunes, and sand dunes.

UF *barchans*
coastal dunes
sand dunes

GS landforms

- . **dunes**

RT beaches
coasts
deserts
lagoons
Sahara Desert (Africa)
sands
topography
wind effects

Dungeys wind shear mechanism

USE **wind shear**

dunite

GS rocks

- . igneous rocks
- . . **dunite**

RT minerals
olivine
peridotite
soils

duochromators

RT electromagnetic radiation

∞ generators

- light sources
- measuring instruments
- monochromators
- radiation sources
- spectrophotometers

duoplasmatrons

GS ion sources

- . plasmatrons
- . . **duoplasmatrons**
- . . . plasma generators
- . . . plasmatrons
- . . . **duoplasmatrons**

RT electric discharges
ion propulsion
plasma propulsion
plasmas (physics)
sputtering

duplex operation

DEF The operation of associated transmitting and receiving apparatus in which the processes of transmission and reception are concurrent.

RT ∞ metallurgy
phase shift circuits
switching circuits

duplexers

DEF Devices which permit a single antenna system to be used for both transmitting and receiving. Duplexers should not be confused with diplexers, devices permitting an antenna system to be used simultaneously or separately by two transmitters.

RT circuits
circulators (phase shift circuits)
magic tees
monopulse radar
receivers
switching circuits

- transmitters
- duplicating*
USE **reproduction (copying)**
- durability**
RT aircraft survivability
corrosion
cumulative damage
damage
degradation
deterioration
∞ endurance
life (durability)
long term effects
mechanical properties
∞ physical properties
quality
reliability
∞ resistance
ruggedness
stability
vulnerability
wear
- duration*
USE **time**
- durene**
GS organic compounds
. cyclic compounds
. cyclic hydrocarbons
. . . **durene**
. hydrocarbons
. cyclic hydrocarbons
. . . **durene**
- dust**
DEF An imprecise term referring to particulates capable of temporary suspension in air or other gases - also particles smaller than an arbitrary selected size.
GS particles
. **dust**
. . . cosmic dust
. . . interplanetary dust
. . . . meteoroid dust clouds
. . . . zodiacal dust
. . . lunar dust
. . . terrestrial dust belt
RT aerosols
air pollution
Aitken nuclei
cleaning
∞ clouds
combustion products
contaminants
dirt
∞ dispersion
dispersions
dusty plasmas
fumes
particulates
pollen
powder (particles)
R Coronae Borealis stars
sands
smoke
space debris
- dust collectors**
GS accumulators
. **dust collectors**
separators
. **dust collectors**
RT air filters
electrostatic precipitators
exhaust systems
precipitators
- dust storms**
GS storms
. storms (meteorology)
. . . **dust storms**
RT atmospheric electricity
atmospheric physics
Mars (planet)
Mars environment
Mars surface
- wind effects
- dusty plasmas**
(added May 2001)
DEF Ionized gases containing small particles of solid matter, which are charged and interact through a Coulomb repulsion. They behave much like a colloidal suspension, exhibiting for example crystalline, liquid, and gas phases, and a melting/freezing phase transition.
GS particles
. charged particles
. . . energetic particles
. . . . plasmas (physics)
. **dusty plasmas**
. corpuscular radiation
. . . energetic particles
. . . . plasmas (physics)
. **dusty plasmas**
RT dust
planetary rings
plasma clouds
plasma composition
plasma-particle interactions
space plasmas
strongly coupled plasmas
- dwarf galaxies**
DEF Galaxies with low luminosity.
GS celestial bodies
. galaxies
. . . **dwarf galaxies**
RT local group (astronomy)
- dwarf novae**
DEF Short period binary systems in which a red quasi-main sequence star fills its Roche lobe and transfers matter, via an accretion disk, onto a white dwarf.
GS celestial bodies
. stars
. . . double stars
. . . . binary stars
. eclipsing binary stars
. **dwarf novae**
. . . main sequence stars
. . . . dwarf stars
. **dwarf novae**
. . . variable stars
. . . . novae
. **dwarf novae**
RT Hercules nova
stellar mass accretion
stellar mass ejection
superhumps (astronomy)
white dwarf stars
- dwarf planets**
(added September 2006)
DEF Celestial bodies that are in orbit around the Sun, have sufficient mass for their self-gravity to overcome rigid body forces so that they assume a hydrostatic equilibrium (nearly round) shape, have not cleared the neighborhood around their orbits, and are not satellites of a planet.
GS celestial bodies
. **dwarf planets**
. . . Ceres asteroid
. . . Pluto (planet)
RT asteroids
Kuiper belt
- dwarf stars**
GS celestial bodies
. stars
. . . main sequence stars
. . . . **dwarf stars**
. dwarf novae
. flare stars
. red dwarf stars
RT brown dwarf stars
cataclysmic variables
F stars
G stars
K stars
late stars
Nemesis (star)
subdwarf stars
subgiant stars
- white dwarf stars
- dwelling**
RT delay
ignition systems
timing devices
- dyadics**
GS algebra
. polynomials
. . . **dyadics**
RT vectors (mathematics)
- dye lasers**
GS stimulated emission devices
. lasers
. . . organic lasers
. . . . **dye lasers**
RT dyes
infrared lasers
laser outputs
liquid lasers
optical communication
rhodamine
tuning
two-wavelength lasers
- dyes**
GS **dyes**
. methylene blue
. rhodamine
. thiazine (trademark)
RT acriflavine
aniline
anthraquinones
azines
azo compounds
chromophores
dye lasers
∞ markers
methylene
phenanthrene
stilbene
- dynamic characteristics**
UF *dynamic properties*
GS **dynamic characteristics**
. drag
. . . electrostatic drag
. . . friction drag
. . . . aerodynamic drag
. supersonic drag
. viscous drag
. . . induced drag
. . . minimum drag
. . . pressure drag
. . . . supersonic drag
. wave drag
. interference drag
. satellite drag
. . . dynamic pressure
. . . dynamic stability
. . . combustion stability
. . . flame stability
. . . control stability
. . . frequency stability
. . . motion stability
. . . . aerodynamic stability
. aircraft stability
. hovering stability
. attitude stability
. directional stability
. gyroscopic stability
. lateral stability
. longitudinal stability
. flow stability
. boundary layer stability
. flame stability
. magnetohydrodynamic stability
. Weibel instability
. Goertler instability
. Taylor instability
. low speed stability
. rotary stability
. gyroscopic stability
. spacecraft stability
. gravitational instability
. . . flow characteristics
. . . flow distribution
. . . flow stability

dynamic control

- . . . boundary layer stability
- . . . flame stability
- . . . magnetohydrodynamic stability
- Weibel instability
- . . . Goertler instability
- . . . Taylor instability
- . . flow velocity
- . . . solar wind velocity
- . lift
- . . interference lift
- . . jet lift
- . . rotor lift
- . . zero lift
- . transient response

RT accuracy
aerodynamic balance
aerodynamic characteristics
amplification
automatic control
automatic control valves
bandwidth

- ∞ characteristics
- ∞ control
 - damping
 - distribution (property)
 - dynamic range
- ∞ dynamics
- ∞ equilibrium
- errors
- frequency response
- hysteresis
- impedance
- linearity
- ocean dynamics
- precision
- ∞ properties
- range (extremes)
- reaction time
- reliability
- remote control
- resolution
- resonant frequencies
- rotor dynamics
- sensitivity
- stability
- time constant
- transfer functions

dynamic control

GS automatic control
. **dynamic control**

RT adaptive control
aeroservoelasticity

- ∞ control
- control theory
- ∞ dynamics
- feedback control
- inverse kinematics
- model reference adaptive control
- robot control
- robot dynamics

dynamic loads

DEF Loads imposed by dynamic action, as distinguished from a static load. Specifically, with respect to aircraft, rockets, or spacecraft, a load due to an acceleration of craft, as imposed by gusts, by maneuvering, by landing, by firing rockets, etc.

GS loads (forces)
. **dynamic loads**

- . . aerodynamic loads
- . . . blast loads
- . . . gust loads
- . . cyclic loads
- . . rolling contact loads
- . . thrust loads
- . . transient loads
- . . . gust loads
- . . . impact loads
- . . . landing loads
- . . . shock loads
- blast loads
- . . variable amplitude loading
- . . vibratory loads
- . . wing loading

RT axial compression loads
axial loads
compression loads

- critical loading
- ∞ dynamics
- edge loading
- gas-solid interactions
- NASTRAN
- random loads
- static loads
- structural design criteria
- transverse loads
- wind pressure

dynamic models

DEF Models of aircraft or other objects having their linear dimensions and weight and moments of inertia reproduced in scale in proportion to the original.

GS models
. **dynamic models**

RT aircraft models
biological models (mathematics)
bond graphs

- ∞ dynamics
- large eddy simulation
- mathematical models
- ocean models
- Petri nets
- powered models
- similarity theorem
- spacecraft models
- static models
- systems simulation
- wind tunnel models

dynamic modulus of elasticity

GS mechanical properties
. elastic properties
. . modulus of elasticity
. . . **dynamic modulus of elasticity**

RT ∞ dynamics
ultrasonic tests

dynamic pressure

DEF The pressure of a fluid resulting from its motion, equal to one half the fluid density times the fluid velocity squared. In incompressible flow, dynamic pressure is the difference between total pressure and static pressure.

GS dynamic characteristics
. **dynamic pressure**
pressure

RT blast loads
contact loads

- ∞ dynamics
- impact loads
- kinetic theory
- overpressure
- Riemann waves

dynamic programming

GS optimization
. mathematical programming
. . **dynamic programming**
research

RT ∞ applications of mathematics
Bellman theory
constraints
critical path method
decision theory

- ∞ dynamics
- formalism
- linear programming
- mathematical models
- nonlinear systems
- operations research
- ∞ programming
- steepest descent method

dynamic properties

USE **dynamic characteristics**

dynamic range

(added August 1991)

SN (LIMITED TO SIGNAL
DETECTION/MODULATION)

DEF The range of a signal detector or transmitter between the smallest and largest detectable signal levels which can be detected without inducing changes in its gain characteristics;

usually expressed in decibels.

GS range (extremes)
. **dynamic range**

RT amplification
amplifiers
dynamic characteristics
equipment specifications
frequency ranges
frequency response
microchannel plates
modulation
ratios
signal detection
signal to noise ratios

dynamic response

GS responses
. **dynamic response**
. . transient response

RT aeroservoelasticity
amplification
damping

- ∞ dynamics
- fiber orientation
- frequency domain analysis
- frequency response
- impedance
- modal response
- parameter identification
- ramp functions
- reaction time
- response bias
- rotor dynamics
- sensitivity
- step functions
- stroking tests
- system identification
- time constant
- time domain analysis
- transfer functions

dynamic stability

DEF The characteristics of a body, such as an aircraft or rocket, that causes it, when disturbed from an original state of steady flight or motion, to damp the oscillations set up by restoring moments and gradually return to its original state; specifically, the aerodynamic characteristics.

GS dynamic characteristics
. **dynamic stability**

- . . combustion stability
- . . . flame stability
- . . control stability
- . . frequency stability
- . . motion stability
- . . . aerodynamic stability
- . . . aircraft stability
- hovering stability
- . . . attitude stability
- directional stability
- gyroscopic stability
- lateral stability
- longitudinal stability
- . . . flow stability
- boundary layer stability
- flame stability
- magnetohydrodynamic stability
- Weibel instability
- Goertler instability
- Taylor instability
- . . . low speed stability
- . . . rotary stability
- gyroscopic stability
- . . . spacecraft stability
- . . gravitational instability
- stability
- . **dynamic stability**
 - . . combustion stability
 - . . . flame stability
 - . . control stability
 - . . frequency stability
 - . . motion stability
 - . . . aerodynamic stability
 - . . . aircraft stability
 - hovering stability
 - . . . attitude stability
 - directional stability
 - gyroscopic stability

- lateral stability
- longitudinal stability
- flow stability
- boundary layer stability
- flame stability
- magnetohydrodynamic stability
- Weibel instability
- Goertler instability
- Taylor instability
- low speed stability
- rotary stability
- gyroscopic stability
- spacecraft stability
- gravitational instability

RT coning motion
counterbalances
damping
dimensional stability
drift (instrumentation)

∞ dynamics
horizontal orientation
missing mass (astrophysics)
resonant vibration
rotor dynamics
spacecraft motion
stable oscillations
static stability
surface stability
systems stability
transient response
vertical orientation

dynamic structural analysis

UF *structural dynamics*
GS structural analysis
. **dynamic structural analysis**
. . flutter analysis

RT aeroservoelasticity

∞ dynamics
Euler-Bernoulli beams
flat plates
Mindlin plates
shock spectra

dynamic tests

RT aerodynamic stability

∞ dynamics
flight tests
low speed stability
motion stability
spin dynamics
spin tests
static tests

∞ tests
vibration tests

dynamical systems

RT attractors (mathematics)
control theory
mathematical models
nonlinear systems
systems simulation

∞ **dynamics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Study of the motion of a system of material particles under the influence of forces, especially those which originate outside the system under consideration.

RT aerodynamics
aerostatics
aerothermodynamics
astrodynamics
biodynamics
chiral dynamics
computational fluid dynamics
continuum mechanics
dynamic characteristics
dynamic control
dynamic loads
dynamic models
dynamic modulus of elasticity

dynamic pressure
dynamic programming
dynamic response
dynamic stability
dynamic structural analysis
dynamic tests
elastodynamics
electrodynamics
equations of motion
field theory (physics)
fluid dynamics
fluid mechanics
gas dynamics
geodynamics
group dynamics
Hamiltonian functions
hemodynamics
hydrodynamics
kinematics
kinetics
magnetohydrodynamics
mechanics (physics)
molecular dynamics
momentum
momentum transfer
nutation
ocean dynamics
plasma dynamics
quantum chromodynamics
rarefied gas dynamics
resonant frequencies
resonant vibration
robot dynamics
rotor dynamics
spin dynamics
stabilizers (fluid dynamics)
statics
terradyamics
thermodynamics
variational principles
velocity
vibration

Dynamics Explorer 1 satellite

DEF A twin satellite of Dynamics Explorer 2 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Dynamics Explorer satellites
. . . . **Dynamics Explorer 1 satellite**

Dynamics Explorer 2 satellite

DEF A twin satellite of Dynamics Explorer 1 satellite designed to study the magnetosphere, ionosphere, and atmosphere coupling.

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . Dynamics Explorer satellites
. . . . **Dynamics Explorer 2 satellite**

Dynamics Explorer satellites

DEF Two satellites that have been designed to occupy different orbits and supply comparative data for studying the boundary region between earth and space. Of the 24 goals of the program, one half require both satellite's data, one fourth one satellite's data and one fourth the other satellite's data. The satellites were launched together in August of 1981.

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Dynamics Explorer satellites**
. . . . Dynamics Explorer 1 satellite
. . . . Dynamics Explorer 2 satellite

dynamite

GS explosives
. **dynamite**

RT nitroglycerin

dynamo theory

RT Earth core
geomagnetism
solar convection (astronomy)
stellar convection
telluric currents

∞ theories

dynamometers

DEF Instruments for measuring power or force; specifically, instruments for measuring the power, torque, or thrust of aircraft engines or rockets. Used for electrodynamicometers.

UF *electrodynamometers*
GS electric generators
. rotating generators
. . **dynamometers**
. measuring instruments
. **dynamometers**

RT ergometers
mechanical measurement

∞ test equipment
thrust measurement
torquemeters

dynamos

USE **rotating generators**

Dyna-Soar space glider

USE **X-20 aircraft**

dynodes

GS electrodes
. **dynodes**

RT camera tubes
photomultiplier tubes
secondary emission

Dyson theory

RT Heisenberg theory
quantum mechanics

∞ theories

dyspnea

DEF Difficult or labored breathing.

GS rates (per time)
. respiratory rate
. . **dyspnea**
. signs and symptoms
. **dyspnea**

dysprosium

GS chemical elements
. rare earth elements
. . **dysprosium**
. . . dysprosium isotopes
metals
. rare earth elements
. . **dysprosium**
. . . dysprosium isotopes

dysprosium 161

USE **dysprosium isotopes**

dysprosium compounds

GS rare earth compounds
. **dysprosium compounds**

RT ∞ chemical compounds

∞ metal compounds

dysprosium isotopes

UF *dysprosium 161*
GS chemical elements
. nuclides
. . isotopes
. . . **dysprosium isotopes**
. rare earth elements
. . dysprosium
. . . **dysprosium isotopes**
metals
. rare earth elements
. . dysprosium
. . . **dysprosium isotopes**

E

E glass

DEF A low alkali lime borosilicate glass made into glass fiber filaments used in composite materials.

- GS glass
 - . **E glass**
 - .. S glass
- RT composite materials
 - glass fiber reinforced plastics
 - glass fibers
 - silicon dioxide

E layers

USE **E region**

E region

SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 90 AND 150 KM)
 DEF A portion of the ionosphere extending from about 90 to 150 km. In daylight, the electron density has one maximum at about 105 km. and is dependent upon solar activity and the solar zenith angle. At night the E region nearly disappears except at high latitudes where particle precipitation can produce ionization at altitudes greater than those experienced under sunlight conditions.

- UF *E layers*
 - night E layer*
- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... **E region**
 - E-1 layer
 - E-2 layer
 - sporadic E layer regions
 - . **E region**
 - .. E-1 layer
 - .. E-2 layer
 - .. sporadic E layer
- RT lower ionosphere
 - upper ionosphere

E-1 layer

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... E region
 - **E-1 layer** regions
 - . E region
 - .. **E-1 layer**
- RT sporadic E layer

E-2 aircraft

- UF *Hawkeye aircraft*
 - W2F aircraft*
- GS AWACS aircraft
 - . **E-2 aircraft**
 - Grumman aircraft
 - . **E-2 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - .. **E-2 aircraft**
- RT ∞ aircraft
 - command and control
 - early warning systems
 - ∞ military aircraft
 - passenger aircraft
 - turboprop engines

E-2 layer

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... E region
 - **E-2 layer** regions
 - . E region
 - .. **E-2 layer**
- RT sporadic E layer

E-3A aircraft

- GS AWACS aircraft
 - . **E-3A aircraft**
 - Boeing aircraft
 - . **E-3A aircraft**
- RT ∞ aircraft

command and control
 early warning systems
 ∞ military aircraft

E-4A aircraft

- UF *AABNCP*
 - Advanced Airborne Command Post*
 - Boeing 747B aircraft*
- GS AWACS aircraft
 - . **E-4A aircraft**
 - Boeing aircraft
 - . **E-4A aircraft**
- RT ∞ aircraft
 - command and control
 - early warning systems
 - ∞ military aircraft

EAI 680 computer

- GS data processing equipment
 - . computers
 - .. analog computers
 - ... **EAI 680 computer**
 - .. digital computers
 - ... **EAI 680 computer**

EAI 8400 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - ... **EAI 8400 computer**

EAI 8900 computer

- GS data processing equipment
 - . computers
 - .. digital computers
 - ... **EAI 8900 computer**

EAM (physical chemistry)
(added February 1998)

USE **embedded atom method**

EAP (polymers)
(added June 2000)

USE **electroactive polymers**

ear

- GS anatomy
 - . sense organs
 - .. **ear**
 - ... eardrums
 - ... eustachian tubes
 - ... labyrinth
 - cochlea
 - Corti organ
 - otolith organs
 - semicircular canals
 - vestibules
 - .. middle ear
- RT artificial ears
 - auditory perception
 - endolymph
 - hearing
 - labyrinthectomy
 - mastoids
 - otolaryngology
 - otology

ear pressure test

- GS physiological tests
 - . **ear pressure test**
- RT middle ear pressure
 - pressure
 - vertigo
 - vestibular tests

ear protectors

- GS protectors
 - . **ear protectors**
- RT noise injuries
 - noise reduction

eardrums

- GS anatomy
 - . sense organs
 - .. ear
 - ... **eardrums**
- RT eustachian tubes
 - middle ear pressure

semicircular canals

Early Apollo Surface Experiments Package
 USE **EASEP**

Early Bird satellites

- GS artificial satellites
 - . active satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
 - . communication satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
 - . synchronous satellites
 - .. SYNCOM satellites
 - ... **Early Bird satellites**
- RT ATS
 - Comsat program

early stars

- GS celestial bodies
 - . stars
 - .. **early stars**
 - ... hot stars
 - A stars
 - B stars
 - shell stars
 - Sigma Orionis
 - blue stars
 - O stars
 - white dwarf stars
 - Wolf-Rayet stars
- RT late stars
 - main sequence stars
 - star formation

early warning systems

- GS warning systems
 - . **early warning systems**
 - .. Ballistic Missile Early Warning System
- RT air defense
 - AWACS aircraft
 - Cobra Dane (radar) detection
 - E-2 aircraft
 - E-3A aircraft
 - E-4A aircraft
 - missile detection
 - over-the-horizon radar
 - radar targets
 - radar tracking
 - Synchronous Earth Observatory satellite
 - ∞ systems
 - warning

earphones

DEF Electroacoustic transducers operating from an electrical system to an acoustical system and intended to be closely coupled acoustically to the ear. Used for headsets.

- UF *headsets*
- GS audio equipment
 - . **earphones**
- RT acoustics
 - auditory perception
 - interphones
 - sound transmission
 - telephones

Earth & Ocean Physics Applications Program

- UF *EOPAP*
- GS programs
 - . NASA programs
 - .. NASA space programs
 - ... **Earth & Ocean Physics Applications Program**
 - . projects
 - .. **Earth & Ocean Physics Applications Program**
 - . space programs
 - .. NASA space programs
 - ... **Earth & Ocean Physics Applications Program**
- RT oceanography

∞ research projects

Earth (planet)

DEF That planet of the solar system which is fifth in size of the 9 major planets, and third (between Venus and Mars) in order of distance from the sun (about 93 million miles). Major data for the Earth: equatorial radius: 6,378 kilometers (3,963. 5 miles); polar radius: 6,357 kilometers (3,941 miles); equatorial circumference: 40,075 kilometers (24,902 miles).

- UF *world*
- GS celestial bodies
 - . planets
 - . . terrestrial planets
 - . . . **Earth (planet)**
- RT asteroid collisions
 - Earth sciences
 - Eastern Hemisphere
 - geodesy
 - geoelectricity
 - geography
 - geology
 - geomagnetism
 - geophysics
 - ∞ globes
 - planetary craters
 - polar caps
 - terrestrial radiation
 - Western hemisphere

Earth albedo

DEF The fraction of the solar incident radiation that is reflected off the Earth and back into space.

- GS albedo
 - . **Earth albedo**
- RT absorptance
 - cosmic ray albedo
 - Earth radiation budget
 - Earth radiation budget experiment
 - Ebert spectrometers
 - lunar albedo
 - radiative forcing
 - reflectance
 - terrestrial radiation

Earth analogs

(added June 2004)

DEF Structures, processes, or phenomena that occur on Earth, or have occurred in the Earths geologic past, extrapolated to other planets.

- GS analogies
 - . **Earth analogs**
- RT astronomical models
 - comparison
 - Earth planetary structure
 - planetary atmospheres
 - planetary geology
 - simulation
 - terrain analysis

Earth atmosphere

- GS **Earth atmosphere**
 - . chemosphere
 - . free atmosphere
 - . heterosphere
 - . homosphere
 - . lower atmosphere
 - . . troposphere
 - . . . tropopause
 - . middle atmosphere
 - . . mesosphere
 - . . . mesopause
 - . . stratosphere
 - . . . ozonosphere
 - . . . stratopause
 - . midlatitude atmosphere
 - . primitive Earth atmosphere
 - . upper atmosphere
 - . . Earth ionosphere
 - . . . E region
 - E-1 layer
 - E-2 layer
 - sporadic E layer
 - . . . lower ionosphere
 - D region
 - . . . upper ionosphere
 - F region

- F 1 region
- F 2 region
- . . exosphere
- . . . thermosphere
- . . . turbopause
- RT acoustic sounding
 - aerospace environments
 - air
 - air pollution
 - air quality
 - airglow
 - ∞ atmospheres
 - atmospheric circulation
 - atmospheric composition
 - atmospheric electricity
 - atmospheric entry
 - Atmospheric General Circulation Experiment
 - auroras
 - bioastronautics
 - CERES (experiment)
 - Earth magnetosphere
 - environments
 - geopotential height
 - global air pollution
 - GRACE mission
 - greenhouse effect
 - meteor trails
 - MISR (radiometry)
 - OPEN Project
 - planetary atmospheres
 - plasmasphere
 - radiation belts
 - satellite atmospheres
 - scale height
 - superrotation
 - teleconnections (meteorology)
 - weathering

Earth axis

DEF Any one of a set of mutually perpendicular reference axes established with the upright axis (the Z axis) pointing to the center of the Earth, used in describing the position or performance of an aircraft or other body in flight. The Earth axes may remain fixed or may move with the aircraft or other object.

- GS axes (reference lines)
 - . axes of rotation
 - . . **Earth axis**
- RT Chandler wobble
 - coordinates
 - Earth orientation
 - geodesy
 - polar wandering (geology)

Earth core

- GS cores
 - . planetary cores
 - . . **Earth core**
 - lithosphere
 - . **Earth core**
- RT core-mantle boundary
 - dynamo theory
 - geophysical fluids
 - structural properties (geology)

Earth crust

- UF *crustal dynamics*
- GS crusts
 - . planetary crusts
 - . . **Earth crust**
 - lithosphere
 - . **Earth crust**
- RT coesite
 - continental drift
 - core sampling
 - cratons
 - crustal fractures
 - Earth mantle
 - earthquake damage
 - faults (geology)
 - lunar crust
 - massifs
 - plates (tectonics)
 - San Andreas Fault
 - sea floor spreading
 - stishovite

structural properties (geology)

Earth cryosphere

(added June 1996)

DEF The part of the Earths surface that is perennially frozen - the zone of the Earth where ice and frozen ground are formed.

- RT air land interactions
 - air water interactions
- ∞ cryospheres
 - ice environments
 - meteorology
 - permafrost
 - polar caps
 - snow cover

Earth currents

USE **telluric currents**

Earth Energy Budget Experiment

USE **LZEEBE satellite**

Earth environment

- GS environments
 - . **Earth environment**
- RT air pollution
 - arid lands
 - desertification
 - magnetosheath

Earth figure

USE **geodesy**

Earth gravitation

- GS gravitation
 - . **Earth gravitation**
- RT geomagnetism
 - geopotential
 - geopotential height
 - GRACE mission
 - gravitational fields
 - gravity anomalies

Earth hydrosphere

DEF That part of the Earth that consists of the oceans, seas, lakes, and rivers. Used for hydrosphere (Earth).

- UF *hydrosphere (Earth)*
- RT biosphere
 - hydrological cycle
 - hydrology
 - lakes
 - limnology
 - oceans
 - seas

Earth ionosphere

- SN (ALTITUDES ABOVE APPROXIMATELY 50 KM)
- GS Earth atmosphere
 - . upper atmosphere
 - . . **Earth ionosphere**
 - . . . E region
 - E-1 layer
 - E-2 layer
 - sporadic E layer
 - . . . lower ionosphere
 - D region
 - . . . upper ionosphere
 - F region
 - F 1 region
 - F 2 region
- RT atmospheric ionization
 - chemosphere
 - CRRES (satellite)
 - Earth magnetosphere
 - Earth-ionosphere waveguide
 - electrojets
 - exosphere
 - field aligned currents
 - heterosphere
 - homosphere
 - Intasat satellite
 - ion concentration
 - ion density (concentration)
 - ∞ ionospheres
 - ionospheric propagation
 - ionospheric storms
 - ∞ layers
 - magnetosphere-ionosphere coupling
 - mesosphere

Earth limb

midlatitude atmosphere
Polar/GGS spacecraft
regions
satellite atmospheres
shear layers
space weather
thermosphere

Earth limb

GS planetary limb
. **Earth limb**
RT astronomy
libration
∞ limbs

Earth magnetosphere

GS environments
. **Earth magnetosphere**
. . . geomagnetic tail
. . . magnetopause
. . . magnetosheath
RT AMPTE (satellites)
barium ion clouds
Chapman-Ferraro problem
Cluster Mission
corotation
CRRES (satellite)
Earth atmosphere
Earth ionosphere
exosphere
field aligned currents
geomagnetic hollow
geomagnetism
GEOS satellites (ESA)
heterosphere
IMAGE satellite
International Magnetospheric Explorer
International Magnetospheric Study
KP index
magnetic fields
magnetosphere-ionosphere coupling
∞ magnetospheres
neutral sheets
OPEN Project
planetary magnetospheres
plasma clouds
plasmopause
plasma sphere
polar cusps
Polar/GGS spacecraft
radiation belts
radiation trapping
satellite atmospheres
screen effect
solar planetary interactions
solar terrestrial interactions
solar wind velocity
space plasmas
space weather
thermosphere
Wind/GGS spacecraft

Earth magnetotail

USE **geomagnetic tail**

Earth mantle

DEF The zone of the Earth below the crust and above the core (to a depth of 3480 km), which is divided into the upper mantle and the lower mantle, with a transition zone between. Used for mantle (Earth structure).
UF *mantle (Earth structure)*
GS lithosphere
. **Earth mantle**
planetary mantles
. **Earth mantle**
RT asthenosphere
coesite
core-mantle boundary
Earth crust
lunar mantle
plates (tectonics)
regolith
sea floor spreading
siderophile elements
stishovite
structural properties (geology)

subduction (geology)

∞ Earth motion

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Chandler wobble
Earth movements
Earth orientation
Earth rotation
polar wandering (geology)
solar orbits

Earth movements

GS **Earth movements**
. earthquakes
. landslides
RT avalanches
crevasses
crustal fractures
∞ Earth motion
earthquake damage
geodynamics
large aperture seismic array
neotectonics
sea floor spreading
seismic waves
seismology
tectonics
tsunami waves

Earth observations (from space)

DEF The acquisition of Earth surface data from aircraft or spacecraft.
GS observation
. **Earth observations (from space)**
. . . satellite observation
RT aerial photography
Aqua spacecraft
Aura spacecraft
CALIPSO (Pathfinder satellite)
CERES (experiment)
CLARREO (observatory)
CloudSat
data acquisition
Earth Observing System (EOS)
Earthnet
Feature Identification and Location
Exper
International Geosphere-Biosphere
program
Landsat satellites
MODIS (radiometry)
multispectral band scanners
multispectral photography
observation scheduling
photography
Shuttle Imaging Radar
SPOT (French satellite)
Terra spacecraft

Earth Observing System (EOS)

DEF NASA's orbital multisensor observatory system for the long term acquisition of Earth sciences data to be operated in conjunction with an integrated ground-based science information system. This international system will become operational in 1995 when the first of four polar platforms will be launched. The first and third will be launched under U.S. auspices. The second under ESA auspices and the last under Japanese auspices.

UF *EOS*
GS **Earth Observing System (EOS)**
. Aqua spacecraft
. Aura spacecraft
. CALIPSO (Pathfinder satellite)
. CloudSat
. Terra spacecraft
RT Advanced Microwave Sounding Unit
CERES (experiment)
CLARREO (observatory)
data products
Earth observations (from space)
EOS data and information system
Ice, Cloud and Land Elevation
Satellite
information systems
Landsat 6
Landsat 7

MISR (radiometry)
Mission to Planet Earth
remote sensing
space platforms
space station payloads
space station polar platforms

Earth orbital environments

UF *GEO environments*
Geosynchronous Earth Orbital Environments
LEO environments
low Earth orbital environments
GS environments
. aerospace environments
. . . **Earth orbital environments**
. . . extraterrestrial environments
. . . **Earth orbital environments**
RT extraterrestrial radiation
low Earth orbits
microgravity
near Earth objects
space weather
spacecraft glow

Earth orbital rendezvous

UF *EOR (rendezvous)*
GS maneuvers
. orbital maneuvers
. . . orbital rendezvous
. . . **Earth orbital rendezvous**
rendezvous
. space rendezvous
. . . orbital rendezvous
. . . **Earth orbital rendezvous**
RT lunar orbital rendezvous
orbital mechanics
rendezvous trajectories
spacecraft trajectories
transfer orbits

Earth orbiting space stations

USE **space stations**

Earth orbits

SN (ORBITS AROUND THE EARTH)
GS orbits
. **Earth orbits**
. . . geosynchronous orbits
. . . low Earth orbits
. . . twenty-four hour orbits
RT apogees
Apollo asteroids
circular orbits
circumlunar trajectories
elliptical orbits
equatorial orbits
Hansen lunar theory
Hill lunar theory
Hill method
lunar orbits
Near Earth Asteroid Rendezvous
Mission
orbital lifetime
orbital mechanics
parking orbits
perigees
planetary orbits
polar orbits
satellite orbits
spacecraft orbits
stationary orbits
transfer orbits

Earth orientation

RT Chandler wobble
Earth axis
∞ Earth motion
Earth rotation
nutaton
polar wandering (geology)
precession

Earth planetary structure

RT asthenosphere
continental drift
Earth analogs
geology
geophysics
hydrology

- lithosphere
- oceanography
- planetary composition
- planetary structure
- plates (tectonics)
- primitive Earth atmosphere
- structural properties (geology)
- ∞ structures
- tectonics

Earth radiation

USE **terrestrial radiation**

Earth radiation budget

- GS energy budgets
 - . **Earth radiation budget**
- RT atmospheric heat budget
 - atmospheric radiation
- ∞ budgets
 - CERES (experiment)
 - Earth albedo
 - Earth radiation budget experiment
 - heat budget
 - radiative forcing
 - Surface Meteorology and Solar Energy project
 - Surface Radiation Budget project
 - terrestrial radiation
 - TRMM satellite

Earth radiation budget experiment

DEF Radiation measurements to determine the spatial and temporal variations of the Earth's radiance. The measurements have continued for the past two decades beginning with Explorer 7 in 1959 and through Nimbus 6 and 7. Used for ERBE.

- UF *ERBE*
- GS payloads
 - . Space Shuttle payloads
 - . . **Earth radiation budget experiment**
- RT albedo
 - CERES (experiment)
 - Earth albedo
 - Earth radiation budget
- ∞ radiation
 - radiation measuring instruments
 - terrestrial radiation

Earth resources

DEF Power sources and renewable or non-renewable materials occurring naturally on Earth.

- GS resources
 - . **Earth resources**
 - . . forests
 - . . . rain forests
 - . . fossil fuels
 - . . . coal
 - anthracite
 - lignite
 - solvent refined coal
 - . . . crude oil
 - . . . natural gas
 - . . . liquefied natural gas
 - . . . peat
 - . . . shale oil
 - . . glaciers
 - . . icebergs
 - . . kerogen
 - . . land ice
 - . . marine resources
 - . . oil fields
 - . . range resources
 - . . springs (water)
 - . . tar sands
 - . . thermal resources
 - . . . geothermal resources
 - geysers
 - . . underwater resources
 - . . water resources
 - . . . aquifers
- RT alfalfa
 - arid lands
 - Baltic Shield (Europe)
 - bedrock
 - birds
 - brush (botany)
 - chaparral

- coastal ecology
- coastal plains
- corn
- cotton
- crop growth
- crop identification
- deciduous trees
- deserts
- Earthnet
- energy policy
- energy technology
- environment management
- environment pollution
- environmental surveys
- EROS (satellites)
- farm crops
- farmlands
- fishes
- flats (landforms)
- ∞ food
 - forest management
 - geographic applications program
 - geothermal energy conversion
 - grains (food)
 - granite
 - grasslands
 - Great Basin (US)
 - Great Lakes (North America)
 - Great Salt Lake (UT)
 - ground water
 - habitats
 - hay
 - ice mapping
 - imagery
 - kettles (geology)
 - keys (islands)
 - land use
 - Large Area Crop Inventory Experiment
 - lava
 - leguminous plants
 - limestone
 - mammals
 - marshlands
 - millet
 - mineral deposits
 - minerals
 - Mississippi River (US)
 - NASA Interactive Planning System
 - oats
 - oceanography
 - photography
 - photomapping
 - plants (botany)
 - reconnaissance
 - regolith
 - remote sensing
 - remote sensors
 - resources management
 - rivers
 - rocks
 - rural land use
 - sands
 - sandstones
 - scanning
 - shales
 - soils
 - sorghum
 - spaceborne photography
 - spectral reconnaissance
 - SPOT (French satellite)
 - strip mining
 - sugar beets
 - sugar cane
 - sunflowers
 - surface water
 - surveillance
 - terrain analysis
 - thermal mapping
 - tidewater
 - timber identification
 - timber inventory
 - tributaries
 - vegetation
 - vineyards
 - waterwave energy
 - waterwave energy conversion
 - wharves

windpower utilization

Earth Resources Experiment Package
USE **EREP**

Earth Resources Information System

- GS information systems
 - . **Earth Resources Information System**
- RT data systems
 - EOS data and information system
 - NASA programs
 - programs
 - Skylab program
- ∞ systems

Earth Resources Observation Satellites

USE **EROS (satellites)**

Earth Resources Program

- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Earth Resources Program**
 - Earth Resources Survey Program
 - SEASAT program
 - . . space programs
 - . . NASA space programs
 - . . . **Earth Resources Program**
 - Earth Resources Survey Program
 - SEASAT program
- RT Apollo applications program
 - change detection
 - geographic applications program
 - infrared radiometers
 - Large Area Crop Inventory Experiment
 - plant stress
 - satellite observation
 - Skylab program

Earth resources shuttle imaging radar

USE **Shuttle Imaging Radar**

Earth Resources Survey aircraft

- RT aerial photography
 - aerial reconnaissance
- ∞ aircraft
 - photogeology
 - photoreconnaissance
 - reconnaissance aircraft

Earth Resources Survey Program

- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . Earth Resources Program
 - **Earth Resources Survey Program**
 - SEASAT program
 - . . space programs
 - . . NASA space programs
 - . . . Earth Resources Program
 - **Earth Resources Survey Program**
 - SEASAT program
- RT Apollo applications program
 - Skylab program

Earth Resources Technology Satellite 1

USE **Landsat 1**

Earth Resources Technology Satellite B

USE **Landsat 2**

Earth Resources Technology Satellite C

USE **Landsat 3**

Earth Resources Technology Satellite D

USE **Landsat 4**

Earth Resources Technology Satellite E

USE **Landsat E**

Earth Resources Technology Satellite F

USE **Landsat F**

Earth Resources Technology Satellites

USE **Landsat satellites**

Earth rotation

- GS gyration

Earth sciences

- . rotation
- . . **Earth rotation**
- RT Chandler wobble
- ∞ Earth motion
- Earth orientation
- sidereal time
- superrotation

Earth sciences
(added December 1991)

- RT atmospheric physics
- Earth (planet)
- ecology
- geochemistry
- geodynamics
- geology
- geomagnetism
- geophysics
- hydrodynamics
- hydrology
- meteorology
- oceanography
- seismology

Earth shape

- USE **geodesy**

Earth surface

- GS lithosphere
- . **Earth surface**
- RT cratons
- crustal fractures
- equatorial regions
- geodetic accuracy
- marshlands
- ocean surface
- planetary surfaces
- structural properties (geology)
- ∞ surfaces
- terradyamics
- topography

Earth terminal measurement system

DEF NBS system for measuring electromagnetic parameters of communication satellites and ground stations relative to antenna gain, ratio of carrier power to operating noise temperature, and satellite effective isotropic power.

- RT communication satellites
- electromagnetic measurement
- electronic equipment tests
- ground support equipment
- ∞ measurement
- radio relay systems
- ∞ systems
- ∞ test equipment

Earth terminals

DEF Portable or stationary ground-based equipment used to transmit and receive signals and other data via satellites in communications networks.

- GS stations
- . ground stations
- . . **Earth terminals**
- RT carrier to noise ratios
- communication equipment
- radio relay systems
- satellite communication
- satellite transmission
- spacecraft communication
- television systems
- VSAT (network)

Earth tides

- GS tides
- . **Earth tides**
- RT atmospheric tides
- lunar tides

Earth Viewing Applications Laboratory

- UF *EVAl*
- GS laboratories
- . space laboratories
- . . **Earth Viewing Applications Laboratory**
- payloads
- . Space Shuttle payloads

- . . **Earth Viewing Applications Laboratory**
- RT SAIL project

Earth-ionosphere waveguide
(added August 1991)

DEF A natural waveguide consisting of the atmospheric duct formed by the ionospheric D region and the surface of the Earth making possible long-range communications in the 10KHz frequency range.

- GS waveguides
- . **Earth-ionosphere waveguide**
- RT D region
- Earth ionosphere
- ionospheric propagation
- plasmaguides
- radio transmission
- very low frequencies

Earth-Mars trajectories

- GS trajectories
- . spacecraft trajectories
- . . interplanetary trajectories
- . . . **Earth-Mars trajectories**
- RT elliptical orbits
- Mars exploration
- Mars missions
- orbital mechanics
- transfer orbits

Earth-Mercury trajectories

- GS trajectories
- . spacecraft trajectories
- . . interplanetary trajectories
- . . . **Earth-Mercury trajectories**
- RT elliptical orbits
- orbital mechanics
- transfer orbits

Earth-Moon system

- RT Charon
- gravitational fields
- gravitational waves
- lunar retroreflectors
- moon
- natural satellites
- orbital mechanics
- solar system
- ∞ systems
- two body problem

Earth-Moon trajectories

- GS trajectories
- . spacecraft trajectories
- . . lunar trajectories
- . . . **Earth-Moon trajectories**
- RT Apollo 5 flight
- Apollo 6 flight
- Apollo 7 flight
- Apollo 8 flight
- Apollo 9 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- circumlunar trajectories
- cislunar space
- interplanetary trajectories
- lunar flight
- lunar orbits
- moon-Earth trajectories
- parking orbits
- rendezvous trajectories
- round trip trajectories
- transfer orbits

Earthnet

- RT Earth observations (from space)
- Earth resources
- ESA satellites
- European space programs
- Landsat satellites
- remote sensors

- synthetic aperture radar

earthquake damage

- GS damage
- . **earthquake damage**
- RT Earth crust
- Earth movements
- geological faults
- microseisms
- seismic energy
- seismic waves
- seismology
- shock waves
- tsunami waves

earthquake resistance

DEF Structural strength of natural geological formations reacting to seismic forces.

- GS mechanical properties
- . **earthquake resistance**
- RT crustal fractures
- earthquakes
- fracture strength
- impact strength
- landforms
- ∞ resistance
- seismic waves
- shock resistance
- shock waves
- tremors

earthquake resistant structures

DEF Buildings and other structures designed for maximum safety and protection from the effects of earthquakes.

- RT concrete structures
- elastic bending
- ∞ elastic systems
- seismic waves
- shock waves
- structural vibration
- ∞ structures

earthquakes

DEF Sudden motions or tremblings in the Earth caused by the abrupt release of slowly accumulated strain.

- GS Earth movements
- . **earthquakes**
- RT crustal fractures
- earthquake resistance
- geological faults
- large aperture seismic array
- microseisms
- planetary quakes
- plates (tectonics)
- Rouse belts
- San Andreas Fault
- San Andreas Fault experiment
- seismic waves
- seismology
- shock waves
- subduction (geology)
- tremors
- tsunami waves

Earth-Venus trajectories

- GS trajectories
- . spacecraft trajectories
- . . interplanetary trajectories
- . . . **Earth-Venus trajectories**
- RT ∞ astronautics
- flight optimization
- interplanetary flight
- ∞ missions
- orbits
- space missions
- space navigation
- spacecraft reentry
- transfer orbits

EASEP

- UF *Early Apollo Surface Experiments Package*
- GS packages
- . instrument packages
- . . **EASEP**
- RT ∞ instruments
- lunar exploration
- payloads

∞ surfaces

East Germany
 UF *German Democratic Republic*
Peoples Democratic Republic of Germany

GS nations
 . **East Germany**

RT Central Europe
 Europe
 German space program
 Germany
 West Germany

East Pakistan
 USE **Bangladesh**

Eastern Hemisphere
 RT Earth (planet)
 geography
 ∞ hemispheres
 Western hemisphere

eating
 GS ingestion (biology)
 . **eating**

RT digesting

∞ food
 mastication
 space flight feeding
 swallowing
 synthetic food

Ebert spectrometers
 GS measuring instruments
 . optical measuring instruments
 . . **Ebert spectrometers**
 . radiation measuring instruments
 . . **Ebert spectrometers**
 . spectrometers
 . . **Ebert spectrometers**
 optical equipment
 . optical measuring instruments
 . . **Ebert spectrometers**

RT Earth albedo
 filter wheel infrared spectrometers
 infrared spectrometers
 ultraviolet spectrometers

EBF
 USE **externally blown flaps**

EBR-1 reactor
 USE **Experimental Breeder Reactor 1**

EBR-2 reactor
 USE **Experimental Breeder Reactor 2**

ebullition
 USE **boiling**

EBWR (reactor)
 USE **experimental boiling water reactors**

EC-121 aircraft
 USE **C-121 aircraft**

EC-135 aircraft
 USE **C-135 aircraft**

Eccentric Geophysical Observatory
 USE **EGO**

Eccentric Orbit Geophysical Observatory
 USE **EGO**

eccentric orbits
 GS orbits
 . **eccentric orbits**

RT circular orbits
 elliptical orbits
 Exosat satellite
 Lissajous figures

eccentricity
 RT abnormalities
 asymmetry
 balancing
 concentricity
 deviation
 ellipticity

elongation
 skewness
 symmetry
 variability
 variations

eccentrics
 UF *cranks*
 RT cams
 linkages

echelette gratings
 GS gratings (spectra)
 . **echelette gratings**

RT diffraction
 echelle gratings
 reflection

echelle gratings
(added August 1988)
 GS gratings (spectra)
 . **echelle gratings**

RT diffraction
 echelette gratings
 reflection

echelon faults
 USE **geological faults**

Echo 1 carrier rocket
 USE **Thor Delta launch vehicle**

Echo 1 satellite
 UF *A-11 satellite*
 GS artificial satellites
 . passive satellites
 . . Echo satellites
 . . . **Echo 1 satellite**

RT Thor Delta launch vehicle

Echo 2 satellite
 UF *A-12 satellite*
 GS artificial satellites
 . passive satellites
 . . Echo satellites
 . . . **Echo 2 satellite**
 unmanned spacecraft
 . **Echo 2 satellite**

Echo project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Echo project**
 . projects
 . . **Echo project**
 . space programs
 . . NASA space programs
 . . . **Echo project**

RT communication satellites
 passive satellites

Echo satellites
 GS artificial satellites
 . passive satellites
 . . **Echo satellites**
 . . . Echo 1 satellite
 . . . Echo 2 satellite

RT Agena B rocket vehicle
 Agena rocket vehicles

echo sounding
 GS sounding
 . **echo sounding**

RT deep scattering layers
 depth measurement
 echoes
 navigation aids
 sodar
 sonar
 sound localization
 sound ranging
 underwater acoustics

echo suppressors
 GS circuits
 . **echo suppressors**
 suppressors
 . **echo suppressors**

RT noise reduction
 pulse radar

radiotelephones
 sonar
 switches
 telephony
 voice communication

echocardiography
 GS bioengineering
 . biometrics
 . . cardiology
 . . . phonocardiography
 **echocardiography**

RT cardiac ventricles
 heart diseases
 heart function

echoencephalography
 DEF A diagnostic technique in which pulses of ultrasonic waves are beamed through the head from both sides, and echoes from the midstructures of the brain are recorded as graphic tracings.

GS bioengineering
 . biometrics
 . . **echoencephalography**

RT bioinstrumentation
 brain
 electrophysiology
 medical electronics
 medical equipment

echoes
 DEF Waves that have been reflected or otherwise returned with sufficient magnitude and delay to be detected as a wave distinct from that directly transmitted. In radar, a pulse of reflected radiofrequency energy; the appearance on a radar indicator of the energy returned from a target.

GS **echoes**
 . auroral echoes
 . lunar echoes
 . . lunar radar echoes
 . radar echoes
 . . angels (radar)
 . . clutter
 . . lunar radar echoes
 . . solar radar echoes
 . . Venus radar echoes
 . radio echoes
 . signal reflection

RT acoustics
 cepstral analysis
 echo sounding
 ground effect (communications)
 noise (sound)
 reverberation

eclipse project
 GS programs
 . projects
 . . **eclipse project**

eclipses
 DEF The reductions in visibility or disappearances of nonluminous bodies by passing into the shadows cast by another nonluminous body. The apparent cutting off, wholly or partially, of the light from a luminous body by a dark body coming between it and the observer.

GS **eclipses**
 . lunar eclipses
 . solar eclipses

RT eclipsing binary stars
 lunar shadow
 occultation
 penumbras
 umbras

eclipsing binary stars
 GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 **eclipsing binary stars**
 dwarf novae
 Lambda Tauri stars
 Zeta Aurigae star

RT accretion disks
 cataclysmic variables

ecliptic

eclipses
stellar occultation
superhumps (astronomy)
symbiotic stars
variable stars
x ray binaries

ecliptic

DEF The apparent annual path of the sun among the stars; the intersection of the plane of the Earth's orbit with the celestial sphere. The ecliptic is a great circle of the celestial sphere inclined at an angle of about 23 degrees 27 minutes to the celestial equator.

RT planets
solar orbits
zodiac

eclogite

GS rocks
. igneous rocks
. . . **eclogite**
RT gadolinium-gallium garnet
garnets
pyroxenes
soils

ecological systems

USE **ecosystems**

ecology

DEF The study of the environmental relations of organisms. Used for ecological systems.

GS **ecology**
. coastal ecology
RT biochemical oxygen demand
∞ biology
biometeorology
carbon cycle
Central Atlantic Regional Ecol Test Site
closed ecological systems
coastal plains
Earth sciences
ecosystems
endangered species
energy policy
environments
Gaia hypothesis
habitability
habitats
phenology
predators
symbiosis
vegetation growth

e-commerce

(added April 2000)

USE **electronic commerce**

econometrics

DEF The application of mathematics and statistical techniques to the testing and quantifying of economic theories and the solution of economic problems.

RT ∞ applications of mathematics
economics
gross national product
statistical correlation

economic analysis

RT allocations
comparison
cost analysis
cost estimates
costs
economy
efficiency
management
operating costs
value engineering

economic development

RT commerce
developing nations
economy
geographic distribution
geography
industries
land use

manufacturing
resources
space industrialization
urban development

economic factors

RT allocations
budgeting
commercial energy
costs
developing nations
domestic energy
economy
efficiency
energy policy
feasibility analysis
industrial energy
insurance (contracts)
management
reserves
resources
transportation energy

economic impact

DEF The impact on the economy from whatever cause.

GS impact
. **economic impact**
RT costs
environments
industries
investments
resources

economics

DEF Study of the production, distribution, and consumption of goods and services.

GS **economics**
. demand (economics)
RT costs
econometrics
evaluation
fiduciaries
income
international trade
investments
prejudices
progress
recession
resources
statistical analysis

economy

RT cost estimates
decision making
economic analysis
economic development
economic factors
financial management
low cost
management planning
recycling

ecosystems

UF *ecological systems*
RT closed ecological systems
ecology
endangered species
food chain
Gaia hypothesis
predators
∞ systems

ECS

USE **European Communications Satellite**

Ecuador

GS nations
. **Ecuador**
RT South America

eddies

USE **vortices**

Eddington approximation

GS analysis (mathematics)
. numerical analysis
. . . approximation

. . . Eddington approximation

eddy currents

SN (LIMITED TO ELECTRIC CURRENTS)
DEF Electric currents caused to flow in a conductor by the time or space variation, or both, of an applied magnetic field.

GS electric current
. **eddy currents**
RT braking
electric conductors
electrical properties
hysteresis
losses
magnetic properties
∞ physical properties
plasma currents
vorticity transport hypothesis

eddy diffusion

USE **turbulent diffusion**

eddy viscosity

DEF The turbulent transfer of momentum by eddies giving rise to an internal fluid friction, in a manner analogous to the action of molecular viscosity in laminar flow, but taking place on a much larger scale.

GS transport properties
. viscosity
. . . **eddy viscosity**
RT Baldwin-Lomax turbulence model
flow characteristics
flow resistance
internal friction
large eddy simulation
turbulent flow
viscous drag
viscous flow

edema

GS signs and symptoms
. **edema**
RT body fluids
diuresis
water balance

edge cracks

(added October 1997)

GS fractures (materials)
. cracks
. . . **edge cracks**
RT cracking (fracturing)
edge loading
edges
stress intensity factors
surface cracks

edge detection

(added January 1990)

UF *boundary detection (imagery)*
GS detection
. **edge detection**
RT computer vision
image analysis
image processing
pattern recognition
scene analysis

edge dislocations

UF *slip bands*
GS defects
. crystal defects
. . . crystal dislocations
. . . **edge dislocations**
dislocations (materials)
. crystal dislocations
. . . **edge dislocations**
RT ∞ bands
kink bands
screw dislocations

edge loading

GS loads (forces)
. **edge loading**
RT aerodynamic loads
compression loads
dynamic loads
edge cracks
static loads

wing loading

edges

GS **edges**

- . leading edges
- . . blunt leading edges
- . . sharp leading edges
- . trailing edges
- . . blunt trailing edges

RT edge cracks

margins

rims

scalloping

sides

tips

editing

RT data processing

data reduction

editing routines (computers)

format

technical writing

editing routines (computers)

GS computer programs

- . **editing routines (computers)**

RT computer systems programs

data processing

editing

EDTA

USE **ethylenediaminetetraacetic acids**

education

UF *instructions*

teaching

training

GS **education**

- . ejection training
- . flight training
- . . pilot training
- . . space flight training
- . . . astronaut training
- . gunnery training
- . maintenance training
- . programmed instruction
- . . computer assisted instruction

RT behavior

communicating

creativity

educational resources

experience

human factors engineering

human resources

instructors

knowledge

learning

learning theory

lectures

memory

- ∞ orientation

psychometrics

qualifications

retraining

safety management

schools

students

- ∞ tests

textbooks

training analysis

training devices

transfer of training

universities

educational resources

(added April 2004)

DEF Products produced for educational or training purposes.

GS **educational resources**

- . textbooks

RT education

learning

manuals

educational television

GS telecommunication

- . **educational television**

television systems

- . **educational television**

RT closed circuit television

color television

communication equipment

learning

networks

stereotelevision

training devices

EEG (electroencephalograms)

USE **electroencephalography**

effective perceived noise levels

UF *EPNL*

GS level (quantity)

- . **effective perceived noise levels**

RT acoustic measurement

acoustics

loudness

- ∞ noise

noise (sound)

noise intensity

noise reduction

sound intensity

effectiveness

GS **effectiveness**

- . cost effectiveness
- . system effectiveness

RT antenna gain

efficiency

- ∞ **effectors**

(added September 1989)

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT actuators

control equipment

end effectors

manipulators

- ∞ **effects**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *affects*

RT atmospheric effects

Auger effect

Barkhausen effect

Bauschinger effect

biological effects

Brillouin effect

brown wave effect

capture effect

causes

Cerenkov radiation

chemical effects

Coanda effect

compressibility effects

Compton effect

Coriolis effect

diffusion

Doppler effect

Doppler-Fizeau effect

electro-optical effect

environment effects

Ettingshausen effect

Faraday effect

field effect transistors

Fizeau effect

Forbush decreases

galvanomagnetic effects

gravitational effects

green wave effect

greenhouse effect

ground effect (aerodynamics)

ground effect (communications)

ground effect machines

Gunn effect

Hall effect

hydrodynamic ram effect

isotope effect

Jahn-Teller effect

jet blast effects

Joule-Thomson effect

- ∞ Kerr effects

Kerr electrooptical effect

Kerr magneto-optical effect

Kirkendall effect

Kondo effect

long term effects

lunar effects

lunar gravitational effects

Luxembourg effect

magnetic effects

Magnus effect

Moire effects

Mossbauer effect

Nernst-Ettingshausen effect

nonohmic effect

nuclear explosion effect

Overhauser effect

pathological effects

Peltier effects

Penning effect

photoelectric effect

photoelectromagnetic effects

photomagnetic effects

photomechanical effect

photovoltaic effect

physiological effects

pinch effect

POGO effects

Portevin-le Chatelier effect

Poynting-Robertson effect

pressure effects

proximity effect (electricity)

psychological effects

radiation effects

Ramsauer effect

reentry effects

relativistic effects

scale effect

Schach effect

screen effect

Seebeck effect

solar activity effects

Stark effect

sterilization effects

Suhl effect

Sunyaev-Zeldovich effect

surface effect ships

surface roughness effects

sweep effect

temperature effects

thermoacoustic effects

thermomagnetic effects

turbulence effects

Umkehr effect

vacuum effects

vibration effects

view effects

Voigt effect

wind effects

Zeeman effect

Zener effect

efferent nervous systems

UF *motor systems (biology)*

GS anatomy

- . nervous system
- . . **efferent nervous systems**

RT sensorimotor performance

- ∞ systems

effervescence

RT boiling

bubbles

surface properties

efficiency

GS **efficiency**

- . charge efficiency
- . combustion efficiency
- . compressor efficiency
- . energy conversion efficiency
- . nozzle efficiency
- . power efficiency
- . propulsive efficiency
- . . propeller efficiency
- . thermodynamic efficiency
- . transmission efficiency

RT aircraft production costs

comfort

commonality

compression ratio

computer systems performance

cost incentives

cost reduction

costs

economic analysis

economic factors

effluents

effectiveness
 feasibility
 figure of merit
 human factors engineering
 incentive techniques
 indexes (ratios)
 optimization
 ∞ performance
 productivity
 ratios
 utilization

effluents

RT air pollution
 contaminants
 ∞ discharge
 environment protection
 exhaust gases
 filtration
 liquid wastes
 reaction products
 settling
 sewage
 sewers
 volcanic eruptions
 waste disposal
 wastes

efflux

RT emission
 output

effort

RT abilities
 consistency
 fatigue (biology)
 ∞ performance
 physical work

effusives

GS **effusives**
 . lava
 RT cones (volcanoes)
 igneous rocks
 Mars volcanoes
 rocks
 volcanoes
 volcanology

EGCR (reactor)

USE **experimental gas cooled reactors**

eggs

GS cells (biology)
 . gametocytes
 . . **eggs**
 . . . zygotes
 RT embryos
 fetuses
 ∞ food
 ovaries

EGO

UF *Eccentric Geophysical Observatory*
Eccentric Orbit Geophysical
Observatory
 EGO
 GS artificial satellites
 . geophysical satellites
 . . OGO
 . . . **EGO**
 observatories
 . geophysical observatories
 . . OGO
 . . . **EGO**
 RT Agena B rocket vehicle
 Atlas launch vehicles
 POGO

egress

RT air locks
 doors
 hatches
 ingress (spacecraft passageway)
 openings
 outlets

Egypt

GS nations
 . **Egypt**

RT Africa

EH-101 helicopter

(added April 1997)
 UF *Heliliner (helicopter)*
Merlin (helicopter)
 GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **EH-101 helicopter**
 RT ∞ aircraft
 commercial aircraft
 military helicopters

EHW (computers)

(added September 2001)
 USE **evolvable hardware**

eigenfunctions

USE **eigenvectors**

eigenstates

USE **eigenvectors**

eigenvalues

UF *characteristic equations*
characteristic functions
 GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **eigenvalues**
 RT eigenvectors
 flux vector splitting
 Hill determinant
 Jacobi matrix method
 Jordan form
 polynomials
 roots of equations

eigenvectors

UF *characteristic equations*
characteristic functions
eigenfunctions
eigenstates
 GS algebra
 . vector spaces
 . . matrices (mathematics)
 . . . **eigenvectors**
 . . vectors (mathematics)
 . . . **eigenvectors**
 RT eigenvalues
 Jacobi matrix method
 Mathieu function
 polynomials

eikonal equation

GS wave equations
 . **eikonal equation**
 RT ∞ equations
 geometrical optics
 Pomeranchuk theorem
 refracted waves
 wave fronts
 ∞ waves

Einstein equations

GS analysis (mathematics)
 . real variables
 . . **Einstein equations**
 RT Brownian movements
 diffusion
 diffusion theory
 ∞ equations
 equations of motion
 grand unified theory
 kinetic equations
 probability theory

Einstein Observatory

USE **HEAO 2**

einsteinium

GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **einsteinium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements

. . . . **einsteinium**
 metals
 . actinide series
 . . transuranium elements
 . . . **einsteinium**
 RT einsteinium compounds

einsteinium compounds

GS actinide series compounds
 . **einsteinium compounds**
 RT einsteinium

EISCAT radar system (Europe)

DEF The European Incoherent Scatter Radar system. Used for European Incoherent Scatter Radar.

UF *European Incoherent Scatter Radar*
 GS radar
 . incoherent scatter radar
 . . **EISCAT radar system (Europe)**

RT incoherent scattering
 international cooperation
 ionospheric propagation
 radar scattering
 radar transmission
 ∞ systems
 ultrahigh frequencies

ejecta

DEF Matter ejected during impact cratering processes, usually meteoritic.

RT cratering
 craters
 debris
 ejection
 fragments
 impact damage
 Mars craters
 meteorite craters
 meteoritic damage
 projectile cratering
 Wolf-Rayet stars

ejection

GS **ejection**
 . stellar mass ejection
 . . coronal mass ejection
 RT bailout
 ∞ discharge
 disconnect devices
 disposal
 dumping
 ejecta
 ejectors
 emission
 emptying
 escape (abandonment)
 escape systems
 evacuating (transportation)
 evacuating (vacuum)
 exhausting
 expulsion
 expulsion bladders
 flushing
 jettison systems
 jettisoning
 materials handling
 parachute descent
 releasing
 removal
 shedding
 throwing
 unloading

ejection injuries

GS injuries
 . **ejection injuries**
 RT bailout
 pilot training

ejection seats

GS onboard equipment
 . aircraft equipment
 . . **ejection seats**
 . . . flying ejection seats
 safety devices
 . **ejection seats**
 . . flying ejection seats
 seats
 . **ejection seats**

. . flying ejection seats
 RT abort apparatus
 aircraft safety
 bailout
 cockpits
 ejectors
 escape capsules
 escape systems
 jettison systems
 ∞ propellant actuated devices
ejection training
 GS education
 . **ejection training**
 RT astronaut training
 bailout
 escape (abandonment)
 flight training
 parachute descent
 pilot training
ejectors
 DEF Devices consisting of a nozzle, mixing tube, and diffuser utilizing the kinetic energy of a fluid from a low pressure region by direct mixing and ejecting both streams.
 RT dispensers
 ejection
 ejection seats
 exhaust diffusers
 exhaust nozzles
 exhaust systems
 flying ejection seats
 injectors
 jet engines
 jet pumps
 materials handling
 pumps
 rocket engines
 sprayers
 vacuum pumps
Ekman layer
 DEF The layer of transition between the surface boundary layer of the atmosphere, where the shearing stress is constant, and the free atmosphere, which is treated as an ideal fluid in approximate geostrophic equilibrium.
 RT atmospheric boundary layer
 boundary layer transition
 ∞ layers
 mixing layers (fluids)
 porous boundary layer control
 turbulent boundary layer
ekranoplanes
 (added December 1999)
 USE **wing-in-ground effect vehicles**
el Nino
 DEF A warming of the surface waters of the eastern equatorial Pacific Ocean that occurs at irregular intervals of 1-2 years, usually lasting 1-2 years.
 GS circulation
 . water circulation
 . . water currents
 . . . ocean currents
 **el Nino**
 RT air water interactions
 Madden-Julian Oscillation
 ocean temperature
 Pacific Ocean
 periodic variations
 quasi-biennial oscillation
 Southern Oscillation
 tropical meteorology
El Salvador
 GS nations
 . **El Salvador**
 RT Central America
Elara
 (added July 1995)
 DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,737,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites

. . . **Elara**
 RT Jupiter (planet)
elastic anisotropy
 GS anisotropy
 . plastic anisotropy
 . . **elastic anisotropy**
elastic bars
 GS bars
 . **elastic bars**
elastic bending
 GS bending
 . **elastic bending**
 deformation
 . elastic deformation
 . . **elastic bending**
 RT earthquake resistant structures
elastic bodies
 RT ∞ bodies
 ∞ elastic systems
 elastodynamics
 elastostatics
 plastic bodies
elastic buckling
 GS buckling
 . **elastic buckling**
 deformation
 . elastic deformation
 . . **elastic buckling**
 RT failure modes
elastic collisions
 USE **elastic scattering**
elastic constants
 USE **elastic properties**
elastic cylinders
 RT ∞ cylinders
 cylindrical bodies
 cylindrical shells
elastic damping
 GS damping
 . **elastic damping**
 . . viscoelastic damping
 elastodynamics
 . **elastic damping**
 . . viscoelastic damping
 RT resonance testing
 vibration damping
 viscous damping
elastic deformation
 GS deformation
 . **elastic deformation**
 . . elastic bending
 . . elastic buckling
 RT axial strain
 bending
 Bordoni peaks
 deflection
 elastodynamics
 elastostatics
 flexible spacecraft
 plane strain
 plastic deformation
 prestressing
 strain distribution
 strain energy release rate
 stress-strain relationships
 stretching
 structural strain
 tensile deformation
elastic media
 GS media
 . **elastic media**
 RT elastodynamics
 elastostatics
elastic modulus
 USE **modulus of elasticity**
elastic plates
 GS structural members
 . plates (structural members)

. . **elastic plates**
 RT plastic bodies
 plastic plates
elastic properties
 DEF Properties of materials by virtue of which they tend to recover their original size and shape immediately after removal of the forces causing deformation. Used for elastic constants and elasticity.
 UF *elastic constants*
elasticity
 GS mechanical properties
 . **elastic properties**
 . . aeroelasticity
 . . . aeroservoelasticity
 . . . aerothermoelasticity
 . . anelasticity
 . . elastoplasticity
 . . hydroelasticity
 . . hypoelasticity
 . . magnetostriction
 . . modulus of elasticity
 . . . dynamic modulus of elasticity
 . . photoelasticity
 . . . photoviscoelasticity
 . . proportional limit
 . . thermoelasticity
 . . . aerothermoelasticity
 . . viscoelasticity
 . . . photoviscoelasticity
 . . . thermoviscoelasticity
 . . ferroelasticity
 RT Airy function
 biharmonic equations
 compressive strength
 elastodynamics
 elastometers
 elastostatics
 Euler-Bernoulli beams
 flexibility
 Hookes law
 hybrid structures
 influence coefficient
 microsonics
 microyield strength
 ∞ physical properties
 piezoelectricity
 plastic properties
 Poisson ratio
 propellant properties
 ∞ properties
 resilience
 softness
 strain energy release rate
 stress tensors
 tensile properties
 tensile strength
 yield strength
elastic scattering
 UF *elastic collisions*
 GS scattering
 . **elastic scattering**
 RT atomic collisions
 ∞ coherence
 coherent scattering
 electron scattering
 Glauber theory
 inelastic scattering
 nuclear scattering
 photon-electron interaction
 Pomeranchuk theorem
elastic sheets
 RT girder webs
 ∞ sheets
 webs (sheets)
 webs (supports)
elastic shells
 GS shells (structural forms)
 . **elastic shells**
 RT anisotropic shells

elastic systems

- plastic shells
- elastic stability*
- USE **damping**
- elastic strength*
- USE **proportional limit**
- ∞ **elastic systems**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT earthquake resistant structures
- elastic bodies
- ∞ systems
- elastic waves**
- UF *expansion waves*
- loading waves*
- pressure waves*
- rarefaction waves*
- GS **elastic waves**
- . capillary waves
- . . gravity waves
- . . . baroclinic waves
- . . ripples
- . coherent acoustic radiation
- . compression waves
- . dilatational waves
- . ionic waves
- . magnetoelastic waves
- . . magnetoacoustic waves
- . magnetohydrodynamic waves
- . . plasma waves
- . . . electrostatic waves
- . P waves
- . phonons
- . . phonon beams
- . polarized elastic waves
- . S waves
- . . SH waves
- . seismic waves
- . . Love waves
- . . microseisms
- . . Rayleigh waves
- . shock waves
- . . detonation waves
- . . interplanetary shock waves
- . . Mach cones
- . . normal shock waves
- . . oblique shock waves
- . . Riemann waves
- . . sonic booms
- . sound waves
- . . electroacoustic waves
- . . ion acoustic waves
- . . Lamb waves
- . . noise (sound)
- . . . aircraft noise
- blade slap noise
- jet aircraft noise
- propeller noise
- sonic booms
- . . . engine noise
- rocket engine noise
- . . . flow noise
- . . . thermal noise
- aerodynamic noise
- blade slap noise
- propeller noise
- screech tones
- . stress waves
- . Tollmien-Schlichting waves
- . ultrasonic radiation
- . unloading waves
- RT acoustic propagation
- acoustic simulation
- acoustics
- aeolian tones
- background noise
- backward waves
- cnoidal waves
- coherent radiation
- combustion vibration
- continuous radiation
- cylindrical waves
- diffusion waves
- Doppler effect
- elastodynamics
- elastohydrodynamics
- Lame wave equations
- longitudinal waves
- magnetohydrodynamic stability
- plane waves
- polarized radiation
- pressure
- pulsed radiation
- ∞ radiation
- radiation distribution
- radiation pressure
- rarefaction
- reflected waves
- refracted waves
- sine waves
- solitary waves
- sound transmission
- spherical waves
- stress propagation
- surface waves
- transverse waves
- traveling waves
- tropospheric waves
- underwater acoustics
- vibration
- wave dispersion
- ∞ waves
- elasticity*
- USE **elastic properties**
- elasticizers*
- USE **plasticizers**
- elastin**
- GS biopolymers
- . proteins
- . . **elastin**
- organic compounds
- . proteins
- . . **elastin**
- RT albumins
- elastodynamics**
- GS **elastodynamics**
- . elastic damping
- . . viscoelastic damping
- . . . elastohydrodynamics
- RT ∞ dynamics
- elastic bodies
- elastic deformation
- elastic media
- elastic properties
- elastic waves
- elastostatics
- electrorheological fluids
- elastohydrodynamics**
- GS elastodynamics
- . **elastohydrodynamics**
- mechanics (physics)
- . fluid mechanics
- . . fluid dynamics
- . . . hydrodynamics
- **elastohydrodynamics**
- . . . hydromechanics
- . . . hydrodynamics
- **elastohydrodynamics**
- RT ball bearings
- elastic waves
- friction measurement
- lubrication
- rotating cylinders
- squeeze films
- water waves
- elastomers**
- DEF Macromolecular materials which, at room temperature, are capable of recovering substantially in size and shape after removal of a deforming force.
- GS **elastomers**
- . rubber
- . . synthetic rubbers
- . . . Adiprene (trademark)
- . . . Buna (trademark)
- . . . silicone rubber
- RTV-40 rubber (trademark)
- RTV-60 rubber (trademark)
- . . . Viton rubber (trademark)
- . . . vulcanized elastomers
- RTV-40 rubber (trademark)
- RTV-60 rubber (trademark)
- . . . chloroprene resins
- RT latex
- organic materials
- plastics
- ∞ polymers
- solithanes
- sponges (materials)
- thioplastics
- elastometers**
- GS measuring instruments
- . **elastometers**
- RT elastic properties
- extensometers
- strain gages
- elastoplasticity**
- GS mechanical properties
- . elastic properties
- . . **elastoplasticity**
- . plastic properties
- . . **elastoplasticity**
- RT J integral
- plastic bodies
- plastic plates
- plastic shells
- superplastic forming
- elastostatics**
- RT elastic bodies
- elastic deformation
- elastic media
- elastic properties
- elastodynamics
- statics
- Elber equation**
- DEF In fatigue crack propagation studies, the effective stress range ratio $U = 0.5 + 0.4R$, where R is the stress ratio.
- RT crack closure
- cracks
- cyclic loads
- ∞ equations
- fractography
- fracture mechanics
- microcracks
- stress concentration
- stress cycles
- elbow (anatomy)**
- GS anatomy
- . limbs (anatomy)
- . . arm (anatomy)
- . . . **elbow (anatomy)**
- . musculoskeletal system
- . . joints (anatomy)
- . . . **elbow (anatomy)**
- appendages
- . arm (anatomy)
- . . **elbow (anatomy)**
- RT humerus
- ulna
- Eldo launch vehicle**
- GS launch vehicles
- . **Eldo launch vehicle**
- rocket vehicles
- . multistage rocket vehicles
- . . **Eldo launch vehicle**
- RT Ariane launch vehicle
- Blue Streak launch vehicle
- Europa launch vehicles
- European 1 spacecraft
- European Space Agency
- Electra aircraft**
- GS commercial aircraft
- . **Electra aircraft**
- jet aircraft
- . turboprop aircraft
- . . **Electra aircraft**
- Lockheed aircraft
- . **Electra aircraft**
- monoplanes
- . **Electra aircraft**
- passenger aircraft
- . **Electra aircraft**

transport aircraft
 . **Electra aircraft**
 RT ∞ aircraft

electrets
 RT capacitors
 Curie temperature
 dielectric polarization
 dielectrics
 electric energy storage
 electric fields
 energy storage
 magnets
 polarization (charge separation)

electric aircraft
 USE **fly by wire control**

electric appliances
 USE **electric equipment**

electric arcs
 DEF (1) a luminous discharge of electricity through a gas. (2) A prolonged electrical discharge or series of prolonged discharges between two electrodes with no physical contact between them.

GS electric current
 . electric discharges
 . . **electric arcs**
 . . . carbon arcs
 . . . mercury arcs

RT arc chambers
 arc discharges
 arc generators

∞ arcs
 coronas
 electrical faults
 flashover
 gas discharges
 glow discharges
 ionization
 light sources
 lightning
 magnetohydrodynamics
 planotrons
 plasma generators
 plasmas (physics)
 Saha equations
 short circuits

electric automobiles
 GS surface vehicles
 . motor vehicles
 . . automobiles
 . . . **electric automobiles**
 . . electric motor vehicles
 . . . **electric automobiles**

RT transportation

electric batteries
 SN (INCLUDES BOTH RECHARGEABLE OR STORAGE BATTERIES AND NON-RECHARGEABLE BATTERIES FOR GENERATING CURRENT FROM A STORED CHEMICAL ENERGY SOURCE)
 UF *batteries*
 GS electrochemical cells
 . **electric batteries**
 . . nickel iron batteries
 . . primary batteries
 . . . alkaline batteries
 . . . dry cells
 magnesium cells
 nickel zinc batteries
 . . . metal air batteries
 zinc-oxygen batteries
 . . . sodium sulfur batteries
 . . thermal batteries
 . . Redox cells
 . . storage batteries
 . . lead acid batteries
 . . nickel cadmium batteries
 . . . nickel hydrogen batteries
 . . . nickel zinc batteries
 . . . silver cadmium batteries
 . . . silver hydrogen batteries
 . . . silver zinc batteries
 . . . zinc-bromide batteries
 . . . zinc-chlorine batteries
 . . lithium batteries

. . wet cells
 . . . lithium sulfur batteries

RT auxiliary power sources
 battery chargers
 charge efficiency
 chemical auxiliary power units
 direct power generators

∞ electric cells
 ∞ electric power
 electrodes
 electrolytes
 electrolytic cells
 electromotive forces

∞ energy sources
 energy storage
 nonaqueous electrolytes

∞ power supplies
 pulse charging
 radioisotope batteries
 roadway powered vehicles
 space station power supplies
 spacecraft power supplies
 voltage converters (DC to DC)

electric bridges
 GS circuits
 . **electric bridges**
 . . wire bridge circuits
 . . . Wheatstone bridges

RT ∞ bridges
 capacitors
 electrical measurement
 measuring instruments
 solid state devices

∞ **electric cells**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT amplifiers
 direct power generators
 electric batteries
 electric generators
 electrochemical cells
 electrolytic cells
 fission electric cells
 fuel cells
 Kerr cells
 lead acid batteries
 lithium sulfur batteries
 nonaqueous electrolytes
 photoelectric cells
 sodium sulfur batteries
 solar cells
 wet cells

electric charge
 GS **electric charge**
 . electric dipoles
 . . orbiting dipoles
 . electrostatic charge
 . ion charge
 . space charge
 . traveling charge

RT capacitance

∞ charging
 ∞ dipoles
 electrical properties
 electrometers
 polarity
 polarization (charge separation)
 pulse charging
 SCATHA satellite

electric choppers
 SN (DEVICES FOR CONVERTING DC TO AC)
 UF *choppers (electric)*
 RT amplifiers
 mechanical oscillators

electric circuits
 USE **circuits**

electric coils
 GS **electric coils**
 . magnetic coils
 . . field coils
 . . magnet coils

RT chokes

∞ coils
 ignition systems

impedance
 magnetic cores
 transformers

electric conductors
 UF *electrical leads*
 GS conductors
 . **electric conductors**
 . . beam leads
 . . conducting polymers
 . . electric wire

RT ∞ conduction
 dielectrics
 eddy currents
 electrical insulation
 electrical resistivity
 electrostatic shielding
 insulators
 resistors
 semiconductors (materials)
 Sommerfeld waves
 thermal conductors
 transmission lines

electric connectors
 DEF Connecting devices, ordinarily designed for use in a fixed location to which a wire or wires of a circuit may be attached and that are arranged for the insertion of a plug. Used for jacks (electrical).

UF *connectors (electric)*
jacks (electrical)

GS connectors
 . **electric connectors**

RT beam leads
 circuits
 disconnect devices
 electric terminals
 flat conductors

∞ jacks
 optical interconnects
 switches

electric contacts
 UF *contacts (electric)*
 RT brushes
 brushes (electrical contacts)
 commutators
 contact potentials
 contact resistance
 dropouts
 flat conductors

∞ relay
 ∞ sliding contact
 sliding friction
 switches

electric control
 UF *electrohydraulic control*
 RT automatic control

∞ control
 control equipment
 control systems design
 electronic control
 engine control
 numerical control
 optical control
 remote control
 solenoid valves
 voltage controlled oscillators

electric corona
 DEF A luminous, and often audible, electric discharge that is intermediate in nature between a spark discharge (with, usually, its single discharge channel) and a non point discharge (with its diffuse, quiescent, nonluminous character). Used for corona discharges.

UF *corona discharges*
 GS coronas
 . **electric corona**
 electric current
 electric discharges
 . . **electric corona**

RT atmospheric electricity
 electrohydrodynamics
 glow discharges
 ionization
 solar corona

electric current

static electricity

electric current

- UF *amperage*
- electroseismic effect*
- Hall currents*
- photocurrents*
- GS **electric current**
 - . alternating current
 - . beam currents
 - . Brillouin flow
 - . direct current
 - . eddy currents
 - . electric discharges
 - . . arc discharges
 - . . electric arcs
 - . . . carbon arcs
 - . . . mercury arcs
 - . . electric corona
 - . . electric sparks
 - . . electrodeless discharges
 - . . flashover
 - . . glow discharges
 - . . lightning
 - . . . ball lightning
 - . . . cloud-to-cloud discharges
 - . . . cloud-to-ground discharges
 - . . . intracloud discharges
 - . . . leaders (meteorology)
 - stepped leaders
 - . . . multipactor discharges
 - . . . Penning discharge
 - . . . radio frequency discharge
 - . . . Saint Elmo fire
 - . . . Townsend discharge
 - gas discharges
 - toroidal discharge
 - ring discharge
 - . external surface currents
 - . field aligned currents
 - . Birkeland currents
 - . high current
 - . ionospheric currents
 - . Birkeland currents
 - . electrojets
 - . . auroral electrojets
 - . . equatorial electrojet
 - . Pedersen currents
 - . critical current
 - . dark current
 - . line current
 - . low currents
 - . plasma currents
 - . ring currents
 - . short circuit currents
 - . telluric currents
 - . threshold currents
 - RT ammeters
 - circuits
 - current converters (AC to DC)
 - current density
 - current regulators
 - current sheets
 - ∞ currents
 - ∞ electric power
 - electrical resistivity
 - electricity
 - high voltages
 - hydroelectricity
 - inverted converters (DC to AC)
 - Kirchhoff law of networks
 - levitation melting
 - Lienard potential
 - low conductivity
 - micromilliammeters
 - Ohms law
 - power conditioning
 - system generated electromagnetic pulses
 - transmission lines
 - volt-ampere characteristics

electric dipoles

- GS electric charge
- . **electric dipoles**
 - . . orbiting dipoles
- RT ∞ dipoles
- magnetic dipoles

zwitterions

electric discharges

- DEF The flowing of electricity through a gas, resulting in the emission of radiation that is characteristic of the gas and the intensity of the current.
- GS electric current
- . **electric discharges**
 - . . arc discharges
 - . . electric arcs
 - . . . carbon arcs
 - . . . mercury arcs
 - . . electric corona
 - . . electric sparks
 - . . electrodeless discharges
 - . . flashover
 - . . glow discharges
 - . . lightning
 - . . . ball lightning
 - . . . cloud-to-cloud discharges
 - . . . cloud-to-ground discharges
 - . . . intracloud discharges
 - . . . leaders (meteorology)
 - stepped leaders
 - . . . multipactor discharges
 - . . . Penning discharge
 - . . . radio frequency discharge
 - . . . Saint Elmo fire
 - . . . Townsend discharge
 - . . . gas discharges
 - . . . toroidal discharge
 - ring discharge
 - RT avalanches
 - coronas
 - ∞ discharge
 - duoplasmatrons
 - electron emission
 - electrostatic charge
 - ∞ flash
 - ionization
 - lightning suppression
 - Molniya satellites
 - plasma currents
 - space charge
 - Zener effect

electric energy storage

- GS energy storage
- . **electric energy storage**
- RT capacitors
- direct power generators
- electrets
- electrochemical capacitors
- inductors
- potential energy

∞ electric equipment

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *electric appliances*
- RT airborne equipment
- circuits
- current regulators
- electric generators
- electric power transmission
- electricity
- electromechanical devices
- electronic equipment
- heating equipment
- homopolar generators
- lighting equipment
- logistics
- miniature electronic equipment
- motors
- solenoid valves
- utilities
- voltage converters (AC to AC)
- voltage converters (DC to DC)
- welding machines

electric equipment tests

- SN (CHECKOUT OF ELECTRICAL EQUIPMENT)
- RT electrical measurement
- electronic equipment tests
- ground tests

∞ tests

electric field strength

- GS field strength
- . **electric field strength**
- RT Coulomb potential
- ∞ force
- H waves
- ∞ strength

electric fields

- UF *electrostatic fields*
- RT barium ion clouds
- cavitons
- constitutive equations
- Coulomb potential
- crossed fields
- crystal field theory
- dielectric polarization
- electrets
- electrodynamics
- electromagnetism
- electromechanics
- electrostatic charge
- electrostatics
- external surface currents
- field emission
- field strength
- ∞ fields
- Lienard potential
- magnetic fields
- Pedersen currents
- permittivity
- polarity
- spacecraft charging
- spark gaps
- Stark effect
- static electricity

electric filters

- GS electromagnetic wave filters
- . **electric filters**
 - . . bandstop filters
 - . . crystal filters
 - . . digital filters
 - . . . FIR filters
 - . . . IIR filters
 - . . microwave filters
 - . . radar filters
 - . . radio filters
 - . . tracking filters
 - . . waveguide filters
- RT adaptive filters
- bandpass filters
- capacitors
- circuits
- electronic filters
- ∞ filters
- high pass filters
- infrared filters
- Kalman filters
- linear filters
- low pass filters
- nonlinear filters
- optical filters
- RC circuits
- receivers
- reduced order filters
- resistors
- transformers
- tunable filters
- ultraviolet filters
- Wiener filtering

electric furnaces

- DEF Furnaces whose heat is derived from electrical energy, generally achieved through resistance heating. Materials research and space processing are research uses.
- GS heating equipment
- . furnaces
- . . **electric furnaces**
- RT ∞ materials
- space processing

electric fuses

- RT circuit protection
- disconnect devices

- ∞ fuses
- electric generators**
 - UF *electric power conversion*
 - electrogenerators*
 - power generators*
 - GS **electric generators**
 - . AC generators
 - . . linear alternators
 - . . static alternators
 - . direct power generators
 - . . DC generators
 - . . . homopolar generators
 - . . electrostatic generators
 - . . fuel cells
 - . . . biochemical fuel cells
 - . . . hydrogen oxygen fuel cells
 - . . . molten carbonate fuel cells
 - . . . phosphoric acid fuel cells
 - . . . regenerative fuel cells
 - . . . solid oxide fuel cells
 - . . magnetohydrodynamic generators
 - . . photoelectric generators
 - . . . photovoltaic cells
 - solar cells
 - vertical junction solar cells
 - . . primary batteries
 - . . . alkaline batteries
 - . . . dry cells
 - magnesium cells
 - nickel zinc batteries
 - . . . metal air batteries
 - zinc-oxygen batteries
 - . . . sodium sulfur batteries
 - . . . thermal batteries
 - . . . radioisotope batteries
 - SNAP 7
 - SNAP 9A
 - SNAP 11
 - SNAP 13
 - SNAP 15
 - SNAP 17
 - SNAP 19
 - SNAP 21
 - SNAP 23
 - SNAP 27
 - SNAP 29
 - . . thermionic converters
 - . . . SNAP 13
 - . . . solar blankets
 - . . thermoelectric generators
 - . . . SNAP 3
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 10A
 - . . . SNAP 11
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
 - . . solar sea power plants
 - . . rotating generators
 - . . . amplidynes
 - . . dynamometers
 - . . homopolar generators
 - . . turbogenerators
 - . . . ASTEC solar turboelectric generator
 - . . solar generators
 - . . . solar auxiliary power units
 - . . . ASTEC solar turboelectric generator
 - . . solar cells
 - . . . vertical junction solar cells
 - . . solar dynamic power systems
 - RT aircraft power supplies
 - arc generators
 - armatures
 - auxiliary power sources
 - brushes
 - brushes (electrical contacts)
 - closed cycles
 - cogeneration
 - combined cycle power generation
 - ∞ conversion
 - ∞ converters
 - ∞ electric cells
 - ∞ electric equipment
 - electrical engineering
 - electromotive forces
 - ∞ energy sources
 - ∞ generators
 - nuclear electric power generation
 - ∞ power
 - power conditioning
 - ∞ power supplies
 - SNAP
 - solar ponds (heat storage)
 - static inverters
 - thermonuclear power generation
 - tide powered generators
 - windmills (windpowered machines)
 - windpowered generators
 - electric hybrid vehicles**
 - DEF Surface vehicles which utilize propulsion systems of both electric motors and conventional internal combustion engines.
 - GS surface vehicles
 - . **electric hybrid vehicles**
 - RT automobiles
 - internal combustion engines
 - ∞ rotating electrical machines
 - ∞ vehicles
 - electric ignition**
 - GS ignition
 - . **electric ignition**
 - RT igniters
 - ignition systems
 - spark ignition
 - squibs
 - starting
 - electric impulses*
 - USE **electric pulses**
 - electric moments**
 - GS electrical properties
 - . **electric moments**
 - moments
 - . dipole moments
 - . . **electric moments**
 - RT magnetic moments
 - polarization (charge separation)
 - electric motor vehicles**
 - GS surface vehicles
 - . motor vehicles
 - . . **electric motor vehicles**
 - . . . electric automobiles
 - RT automated transit vehicles
 - automobiles
 - crawler tractors
 - research vehicles
 - roadway powered vehicles
 - test vehicles
 - tractors
 - trucks
 - ∞ vehicles
 - electric motors**
 - GS electromechanical devices
 - . **electric motors**
 - . . asynchronous motors
 - . . induction motors
 - . . micromotors
 - . . piezoelectric motors
 - . . stepping motors
 - . . synchronous motors
 - . . torque motors
 - motors
 - . **electric motors**
 - . . asynchronous motors
 - . . induction motors
 - . . micromotors
 - . . piezoelectric motors
 - . . stepping motors
 - . . synchronous motors
 - . . torque motors
 - RT amplidynes
 - armatures
 - brushes
 - brushes (electrical contacts)
 - circuits
 - commutators
 - decommutators
 - power factor controllers
 - ∞ rotating electrical machines
 - servomechanisms
 - servomotors
 - stators
 - transformers
 - electric networks**
 - GS networks
 - . **electric networks**
 - RT impedance matching
 - sneak circuit analysis
 - voltage controlled oscillators
 - electric outlets**
 - RT ∞ power transmission
 - electric potential**
 - DEF In electrostatics, the work done in moving unit positive charge from infinity to the point whose potential is being specified. Used for voltage.
 - UF *voltage*
 - GS potential energy
 - . **electric potential**
 - . . bioelectric potential
 - . . contact potentials
 - . . Coulomb potential
 - . . high voltages
 - . . Lienard potential
 - . . low voltage
 - . . open circuit voltage
 - . . photovoltages
 - . . quantum wells
 - . . . photoexcitation
 - . . spike potentials
 - . . threshold voltage
 - RT Barritt diodes
 - bias
 - capacitance-voltage characteristics
 - electromotive forces
 - Gibbs-Helmholtz equations
 - ionization potentials
 - Kirchhoff law of networks
 - overvoltage
 - ∞ potential
 - potentiometers (instruments)
 - power conditioning
 - static electricity
 - transconductance
 - volt-ampere characteristics
 - ∞ **electric power**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - UF *electrical energy*
 - RT auxiliary power sources
 - electric batteries
 - electric current
 - electric power plants
 - electric propulsion
 - electrical properties
 - electricity
 - electrification
 - geothermal energy utilization
 - hydroelectricity
 - induction motors
 - Poynting theorem
 - tokamak devices
 - turbogenerators
 - utilities
 - voltage converters (AC to AC)
 - voltage converters (DC to DC)
 - electric power conversion*
 - USE **electric generators**
 - electric power plants**
 - GS **electric power plants**
 - . fuel cell power plants
 - . nuclear power plants
 - . . Enrico Fermi atomic power plant
 - . . Hallam Nuclear Power Facility
 - . . ML-1 nuclear power plant
 - . solar thermal electric power plants
 - RT cogeneration
 - combined cycle power generation
 - ∞ electric power
 - electrical engineering

electric power supplies

- ∞ facilities
- flue gases
- fly ash
- hydroelectric power stations
- integrated energy systems
- Modular Integrated Utility System
- ∞ power plants
- solar sea power plants

electric power supplies

- GS **electric power supplies**
 - . aircraft power supplies
 - . solar dynamic power systems
 - . space station power supplies
 - . spacecraft power supplies
- RT auxiliary power sources
- compulsators
- induction motors
- line current
- payload delivery (STS)
- ∞ power supplies

electric power transmission

- GS transmission
 - . **electric power transmission**
- RT circuit protection
- circuits
- ∞ conduction
- ∞ electric equipment
- electrical engineering
- electrification
- hydroelectric power stations
- poles (supports)
- power lines
- ∞ power transmission
- superconducting power transmission
- transmission circuits
- transmission lines
- transmission loss
- underground transmission lines

electric propulsion

- SN (EXCLUDES PROPULSION USING ELECTRIC MOTORS AS PRIME MOVERS)
- DEF A general term encompassing all the various types of propulsion in which the propellant consists of charged electrical particles which are accelerated by electrical or magnetic fields, or both; for example, electrostatic propulsion, electromagnetic propulsion, and electrothermal propulsion.
- GS propulsion
 - . **electric propulsion**
 - . . electromagnetic propulsion
 - . . . magnetic sails
 - . . electrostatic propulsion
 - . . . ion propulsion
 - . . laser propulsion
 - . . plasma propulsion
 - . . solar electric propulsion
- RT arc jet engines
- ∞ electric power
- Hall thrusters
- low thrust propulsion
- marine propulsion
- nuclear electric propulsion
- plasma power sources
- RIFT (reactor in flight test)
- SERT 1 spacecraft
- SERT 2 spacecraft
- space station propulsion
- spacecraft propulsion
- two stage plasma engines
- underwater propulsion

electric pulses

- UF *electric impulses*
- GS pulses
 - . **electric pulses**
- RT electromagnetic missiles
- electromagnetic pulses
- pulse amplitude
- pulse duration
- pulse generators
- pulse modulation
- pulse rate
- ∞ signals

system generated electromagnetic pulses

electric reactors

- GS **electric reactors**
 - . saturable reactors
- RT capacitors
- circuit protection
- ∞ reactors
- resistors
- transformers

electric relays

- SN (EXCLUDES COMMUNICATION SYSTEM REPEATERS)
- GS switches
 - . **electric relays**
- RT armatures
- circuit breakers
- disconnect devices
- interruption
- ∞ relay
- selectors
- solenoid valves
- solenoids
- switching circuits
- time lag

electric rocket engines

- GS engines
 - . rocket engines
 - . . **electric rocket engines**
 - . . . electrostatic engines
 - ion engines
 - cesium engines
 - Hall thrusters
 - mercury ion engines
 - RIT engines
 - . . . electrothermal engines
 - arc jet engines
 - pulsed jet engines
 - resistojet engines
 - . . . plasma engines
 - magnetoplasmadynamic thrusters
 - pulsed inductive thrusters
 - pulsed plasma thrusters
 - two stage plasma engines
 - VASIMR (propulsion system)
- RT magnetic nozzles
- microrocket engines
- restartable rocket engines
- SERT 1 spacecraft
- SERT 2 spacecraft
- space electric rocket tests
- sustainer rocket engines
- Vernier engines

electric sparks

- UF *spark discharges*
- GS electric current
 - . electric discharges
 - . . **electric sparks**
 - sparks
 - . **electric sparks**
- RT flashover
- gas discharges
- ionization
- lightning
- spark chambers
- spark gaps
- spark ignition
- spark plugs
- static electricity

electric stimuli

- RT ∞ stimuli

electric switches

- GS switches
 - . **electric switches**
 - . . cryotrons
 - . . stepping switches
 - . . thermostats
 - . . vacuum arc switches
- RT contactors
- cryostats
- current regulators
- dropouts
- electronic control

pressure switches

solenoid valves

switching circuits

voltage regulators

electric terminals

- RT electric connectors
- network analysis
- ∞ terminals

electric welding

- GS welding
 - . fusion welding
 - . . **electric welding**
 - . . . arc welding
 - gas tungsten arc welding
 - plasma arc welding
 - electroslog welding
 - flash welding
- RT electron beam welding
- pressure welding
- spot welds
- welding machines

electric wire

- UF *electric wiring*
- GS conductors
 - . electric conductors
 - . . **electric wire**
 - wire
 - . **electric wire**
- RT bus conductors
- circuits
- communication cables
- electrical insulation
- exploding wires
- flat conductors
- power lines
- transmission lines
- wire bridge circuits

electric wiring

- USE **electric wire wiring**

electrical breakdown

- USE **electrical faults**

electrical conductivity

- USE **electrical resistivity**

electrical conductivity meters

- GS measuring instruments
 - . conductivity meters
 - . . **electrical conductivity meters**
- RT ohmmeters

electrical energy

- USE **electric power**

electrical engineering

DEF Branch of engineering related to the design, development, and operation of electrical devices and systems.

- RT electric generators
- electric power plants
- electric power transmission
- ∞ electronics
- ∞ engineering
- ∞ power transmission
- systems engineering
- transmission lines
- turbogenerators

electrical faults

- UF *electrical breakdown voltage breakdown*
- GS **electrical faults**
 - . short circuits
- RT ∞ breakdown
- circuit protection
- electric arcs
- failure
- ∞ faults
- flashover
- sneak circuit analysis
- spark gaps

electrical grounding

- RT circuit protection
- circuits

noise reduction
transformers

electrical impedance

UF *admittance*
impittance
GS electrical properties
 . **electrical impedance**
 . . . electrical resistance
 contact resistance
 Hall resistance
 skin resistance
 . . . transconductance
 . . reactance
 impedance
 . **electrical impedance**
 . . . electrical resistance
 contact resistance
 Hall resistance
 skin resistance
 . . . transconductance
 . . reactance
RT capacitance
impedance matching
impedance measurement
inductance
latch-up
ohmmeters
Smith chart

electrical insulation

DEF A material of relatively low electrical conductivity and high dielectric strength, usually used to support or provide electrical separation for conductors, in which a voltage applied between two points on or within the material produces a small and sometimes negligible current.
UF *nonconductors*
GS insulation
 . **electrical insulation**
RT asbestos
circuit protection
dielectrics
electric conductors
electric wire
excitons
∞ insulated structures
 insulators
 wiring

electrical leads

USE **electric conductors**

electrical measurement

SN (MEASUREMENT OF ELECTRICAL PROPERTIES, QUANTITIES, OR CONDITIONS)
UF *voltage measurement*
GS **electrical measurement**
 . coulometry
 . polarography
RT ammeters
bolometers
coulometers
electric bridges
electric equipment tests
electromagnetic measurement
electrometers
electronic equipment tests
flowmeters
impedance measurement
magnetometers
∞ measurement
 measuring instruments
 micromilliammeters
 mismatch (electrical)
 ohmmeters
 oscillographs
 potentiometers (instruments)
 wattmeters

electrical properties

UF *Bardeen approximation*
GS **electrical properties**
 . antiferroelectricity
 . capacitance
 . capacitance-voltage characteristics
 . carrier mobility
 . . . electron mobility
 . . . hole mobility

. . charge distribution
. . dielectric properties
. . . dielectric loss
. . . permittivity
. . electric moments
. . electrical impedance
. . . electrical resistance
. . . . contact resistance
. . . . Hall resistance
. . . . skin resistance
. . . transconductance
. . reactance
. . electrical resistivity
. . ionospheric conductivity
. . magneto-resistivity
. . photoconductivity
. . plasma conductivity
. . superconductivity
. . . Kondo effect
. . electrostriction
. . ferroelectricity
. . inductance
. . proximity effect (electricity)
. . photovoltaic effect
. . piezoelectricity
. . pyroelectricity

RT ∞ conductivity
crystal oscillators
diamagnetism
dipole moments
domains
eddy currents
electric charge
∞ electric power
∞ electricity
electromagnetic properties
field strength
hysteresis
impedance
magnetic properties
open circuit voltage
optical properties
photoelectric emission
photoelectricity
∞ physical properties
∞ properties
 quality control
∞ resistance
∞ solid state physics
 standing wave ratios

electrical resistance

GS electrical properties
 . electrical impedance
 . . **electrical resistance**
 . . . contact resistance
 . . . Hall resistance
 . . . skin resistance
 . . . transconductance
 impedance
 . electrical impedance
 . . **electrical resistance**
 . . . contact resistance
 . . . Hall resistance
 . . . skin resistance
 . . . transconductance
RT galvanic skin response
∞ high resistance
 linear circuits
∞ low resistance
 Manganin (trademark)
 ohmmeters
 Ohms law
 RC circuits
 reactance
∞ resistance
 RL circuits
 RLC circuits

electrical resistivity

DEF A factor such that the conduction-current density is equal to the electric field in the material divided by resistivity.
UF *electrical conductivity*
electroconductivity
resistivity
GS electrical properties
 . **electrical resistivity**
 . . ionospheric conductivity

. . magneto-resistivity
. . photoconductivity
. . plasma conductivity
. . superconductivity
. . . Kondo effect
transport properties
 electrical resistivity
 . . ionospheric conductivity
 . . magneto-resistivity
 . . photoconductivity
 . . plasma conductivity
 . . superconductivity
 . . . Kondo effect
RT air conductivity
atmospheric conductivity
carrier mobility
∞ conductivity
 electric conductors
 electric current
 electromigration
 Hall resistance
 high temperature superconductors
 low conductivity
 open circuit voltage
 plasma currents
∞ resistance

electrically suspended gyroscopes
USE **electrostatic gyroscopes**

electricity

GS **electricity**
 . alternating current
 . atmospheric electricity
 . . ionospheric currents
 . . . Birkeland currents
 . . . electrojets
 auroral electrojets
 equatorial electrojet
 . . . Pedersen currents
 . geoelectricity
 . . telluric currents
 . hydroelectricity
 . static electricity
RT electric current
∞ electric equipment
∞ electric power
 electrical properties
 electromagnetism
∞ electronics
 lightning
 Maxwell equation
 Ohms law
 photoelectricity
 piezoelectricity
 proximity effect (electricity)

electrification

RT ∞ electric power
 electric power transmission
∞ power transmission
 transmission lines

electroacoustic transducers

DEF Transducers for receiving waves from an electric system and delivering waves to an acoustic system, or vice versa. Microphones and earphones are electroacoustic transducers.
GS transducers
 . sound transducers
 . . **electroacoustic transducers**
 . . . hydrophones
 . . . loudspeakers
 . . . microphones
RT electroacoustics
interdigital transducers
surface acoustic wave devices

electroacoustic waves

GS elastic waves
 . sound waves
 . . **electroacoustic waves**
RT electroacoustics
electromagnetic radiation
plasma waves
pressure sensors
wave interaction

electroacoustics

∞ waves

electroacoustics

GS acoustics

. **electroacoustics**

RT electroacoustic transducers
electroacoustic waves
sound transducers
surface acoustic wave devices
ultrasonic wave transducers
ultrasonics

electroactive polymers

(added June 2000)

UF *EAP (polymers)*

RT actuators

conducting polymers
electromechanical devices
electrorheological fluids
electrostriction
microelectromechanical systems

∞ polymers

robot arms

electroanesthesia

GS anesthesia

. **electroanesthesia**

RT electroneurosis

electrocardiograms

USE **electrocardiography**

electrocardiography

UF *electrocardiograms*

GS bioengineering

. biometrics

. . . cardiography

. . . **electrocardiography**

RT ballistocardiography
body measurement (biology)
electrophysiology
heart diseases
medical electronics
muscles
phonocardiography
vectorcardiography

electrocatalysts

UF *fuel cell catalysts*

GS catalysts

. **electrocatalysts**

RT fuel cells

electrochemical capacitors

(added September 2003)

DEF Devices that store energy in the electric field of an electrochemical double-layer.

UF *double-layer capacitors*

supercapacitors

ultracapacitors

GS capacitors

. **electrochemical capacitors**

RT electric energy storage

electrochemical cells

DEF Electrochemical systems consisting of an anode and a cathode in metallic contact and immersed in an electrolyte. (The anode and cathode may be different metals or dissimilar areas on the same metal surface).

GS **electrochemical cells**

. electric batteries

. . . nickel iron batteries

. . . primary batteries

. . . alkaline batteries

. . . dry cells

. . . . magnesium cells

. . . . nickel zinc batteries

. . . . metal air batteries

. . . . zinc-oxygen batteries

. . . sodium sulfur batteries

. . . thermal batteries

. . Redox cells

. . storage batteries

. . . lead acid batteries

. . . nickel cadmium batteries

. . . nickel hydrogen batteries

. . . nickel zinc batteries

. . . silver cadmium batteries

. . . silver hydrogen batteries

. . . silver zinc batteries

. . . zinc-bromide batteries

. . . zinc-chlorine batteries

. . lithium batteries

. . wet cells

. . . lithium sulfur batteries

. fuel cells

. . biochemical fuel cells

. . hydrogen oxygen fuel cells

. . molten carbonate fuel cells

. . phosphoric acid fuel cells

. . regenerative fuel cells

. . solid oxide fuel cells

RT ∞ cells

∞ electric cells

electrochemistry

photoelectric cells

photoelectrochemical devices

photovoltaic cells

electrochemical corrosion

GS corrosion

. **electrochemical corrosion**

RT electrodisolution

electrolysis

metal-water reactions

electrochemical machining

UF *electrolytic grinding*

GS machining

. chemical machining

. . **electrochemical machining**

RT electropolishing

electrochemical oxidation

GS chemical reactions

. oxidation

. . **electrochemical oxidation**

electrochemical synthesis

(added January 2000)

DEF A chemical synthesis reaction that is induced by an electric current.

UF *electrosynthesis*

GS synthesis (chemistry)

. **electrochemical synthesis**

RT electrochemistry

electrolysis

polymerization

electrochemistry

DEF The branch of science and technology which deals with transformations between chemical and electrical energy.

GS **electrochemistry**

. electrolysis

. . coulometry

. . photoelectrochemistry

RT ∞ chemistry

corrosion

coulometers

electrochemical cells

electrochemical synthesis

electrochromism

electrodeposition

electrodes

electrodissolution

electrolytes

electrolytic cells

electrophysics

fuel cells

glass electrodes

nonaqueous electrolytes

oxidation-reduction reactions

Redox cells

electrochromism

DEF A phenomenon whereby a select number of solid materials will change color when an electric field is applied.

RT chromophores

color

display devices

electrochemistry

electro-optics

thin films

electroconductivity

USE **electrical resistivity**

electrocuteaneous communication

GS communicating

. **electrocuteaneous communication**

RT perception

sensory perception

touch

electrode dark current

(added October 1997)

USE **dark current**

electrode film barriers

RT ∞ barriers

electrodes

∞ films

polarization (charge separation)

thin films

electrode materials

RT anions

anodes

anodic coatings

cathodes

cathodic coatings

cell anodes

cell cathodes

electrodes

mischmetal

photocathodes

photoelectric cells

photoelectric materials

photoelectrochemical devices

polypyrroles

tube anodes

electrodeless discharges

GS electric current

. electric discharges

. . **electrodeless discharges**

RT ∞ discharge

gas discharges

glow discharges

lightning

Penning discharge

radio frequency discharge

ring discharge

toroidal discharge

Townsend discharge

electrodeposition

GS deposition

. **electrodeposition**

. . electroplating

RT cathodic coatings

cell cathodes

coulometers

electrochemistry

electroforming

electroless deposition

electrolysis

electrolytes

electrolytic cells

electrophoresis

electrowinning

metal matrix composites

metal powder

plating

powder metallurgy

reduction (chemistry)

electrodermal response

USE **galvanic skin response**

electrodes

DEF Terminals at which electricity passes from one medium into another. The positive electrodes are called the anodes; the negative electrodes are called the cathodes. In semiconductor devices, elements that perform one or more of the functions of emitting or collecting electrons or holes, or of controlling their movements by electric fields. In electron tubes, conducting elements that perform one or more of the functions of emitting, collecting, or control-

ling by electromagnetic fields, the movements of electrons or ions.

- GS **electrodes**
- . anodes
 - . . cell anodes
 - . . shell anodes
 - . . tube anodes
 - . cathodes
 - . . cell cathodes
 - . . hollow cathodes
 - . . tube cathodes
 - . . . cold cathodes
 - . . . hot cathodes
 - . . . photocathodes
 - . . . thermionic cathodes
 - . . . tunnel cathodes
 - . diffusion electrodes
 - . dynodes
 - . glass electrodes
 - . implanted electrodes (biology)
 - . ion selective electrodes
 - . plasma electrodes
 - . solid electrodes
 - . tube grids
- RT cold cathode tubes
electric batteries
electrochemistry
electrode film barriers
electrode materials
electrolysis
electroplating
electrorefining
electrowinning
graphite
photomultiplier tubes
phototubes
Tafel law
transconductance

electrodialysis

- GS dialysis
- . **electrodialysis**
- RT colloids
hydrometallurgy
- ∞ separation

electrodissolution

- RT dissociation
electrochemical corrosion
electrochemistry
electrolysis

electrodynamics

DEF The science dealing with the forces and energy transformations of electric currents and the magnetic fields associated with them.

- GS **electrodynamics**
- . electrohydrodynamics
 - . electromechanics
 - . quantum electrodynamics
- RT Born-Infeld theory
- ∞ dynamics
- electric fields
 - electromagnetic interactions
 - electromechanical devices
 - line current
 - Maxwell equation
 - ponderomotive forces
 - traveling charge

electrodynamometers

USE **dynamometers**

electroencephalogram

USE **electroencephalography**

electroencephalography

- UF **EKG** (*electroencephalograms*)
electroencephalogram
- GS bioengineering
- . biometrics
 - . . **electroencephalography**
- RT arousal
body measurement (biology)
brain
electrophysiology
medical electronics

medical equipment

electroepitaxy

DEF Crystal growth process achieved by passing an electric current through the substrate solution.

- GS growth
- . crystal growth
 - . . epitaxy
 - . . . **electroepitaxy**
- RT crystals
hydrothermal crystal growth
liquid phases
traveling solvent method

electroerosion

USE **spark machining**

electroexplosive devices

USE **initiators (explosives)**

electroforming

- GS forming techniques
- . **electroforming**
- RT deposition
electrodeposition
electroless deposition
electroplating
spark machining

electrogenerators

USE **electric generators**

electrohydraulic control

USE **electric control hydraulic control**

electrohydraulic forming

- GS forming techniques
- . cold working
 - . . **electrohydraulic forming**
- RT explosive forming
metal working

electrohydrodynamics

- GS electrodynamics
- . **electrohydrodynamics**
- mechanics (physics)
- . fluid mechanics
 - . . fluid dynamics
 - . . . hydrodynamics
 - **electrohydrodynamics**
 - . . hydromechanics
 - . . . hydrodynamics
 - **electrohydrodynamics**
- RT electric corona
electrokinetics
electron gas
electron mobility
ion distribution
ionic mobility
magnetohydrodynamics

electrojets

DEF Laterally limited, relatively intense electric currents located in the ionosphere.

- GS electric current
- . ionospheric currents
 - . . **electrojets**
 - . . . auroral electrojets
 - . . . equatorial electrojet
 - electricity
 - . atmospheric electricity
 - . . ionospheric currents
 - . . . **electrojets**
 - auroral electrojets
 - equatorial electrojet
- RT Birkeland currents
Earth ionosphere
geomagnetism
ionospheric conductivity
ionospheric drift
ring currents

electrokinetics

- GS kinetics
- . **electrokinetics**
- RT electrohydrodynamics
electromagnetic fields
electromechanics

electrophysics

electroless deposition

DEF Controlled autocatalytic reduction method of depositing coatings.

- GS deposition
- . **electroless deposition**
- RT coatings
electrodeposition
electroforming
metal coatings
plating
vacuum deposition
vapor deposition

electroluminescence

DEF Emission of light caused by an application of electric fields to solids or gases. In gas electroluminescence, light is emitted when the kinetic energy of electron or ions accelerated in an electric field is transferred to the atoms or molecules of the gas in which the discharge takes place. Used for electroluminescent lamps.

- UF *electroluminescent lamps*
- GS emission
- . light emission
 - . . luminescence
 - . . . **electroluminescence**
- RT electro-optics
light emitting diodes
light sources
porous silicon

electroluminescent lamps

USE **electroluminescence luminaires**

electrolysis

DEF The production of chemical changes by the passage of current through an electrolyte.

- GS electrochemistry
- . **electrolysis**
 - . . coulometry
- RT corrosion
coulometers
cracking (chemical engineering)
current density
decomposition
electrochemical corrosion
electrochemical synthesis
electrodeposition
electrodes
electrodissolution
electrolytes
electrolytic cells
electroplating
hydrogen production
ionic mobility
metathesis
passivity
photolysis
reduction (chemistry)
Tafel law
water splitting

electrolyte metabolism

- GS metabolism
- . **electrolyte metabolism**
- RT aerospace medicine
aldosterone
blood plasma
body fluids
physiological effects
potassium
sodium
weightlessness

electrolytes

- GS conductors
- . **electrolytes**
 - . . anolytes
 - . . catholytes
 - . . ion exchange membrane electrolytes
 - . . jumpers
 - . . molten salt electrolytes
 - . . nonaqueous electrolytes
 - . . solid electrolytes
- RT conducting fluids
Debye-Huckel theory

electrolytic cells

electric batteries
electrochemistry
electrodeposition
electrolysis
electrolytic cells
electroplating
electrorefining
electrowinning
fuel cells
ions
nonelectrolytes
primary batteries
Redox cells
storage batteries
wet cells

electrolytic cells

DEF Unit apparatus in which electrochemical reactions are produced by applying electrical energy, or which supply electrical energy as a result of chemical reactions and which include two or more electrodes and one or more electrolytes contained in a suitable vessel. Used for galvanic cells.

UF *galvanic cells*

RT ∞ cells

∞ diaphragms
diaphragms (mechanics)
diffusion electrodes
electric batteries
∞ electric cells
electrochemistry
electrodeposition
electrolysis
electrolytes
electroplating
electrorefining
electrowinning
ionic mobility
lead acid batteries
nonaqueous electrolytes
phosphoric acid fuel cells

electrolytic grinding

USE **electrochemical machining**

electrolytic polarization

GS polarization (charge separation)

. **electrolytic polarization**

RT depolarization
magnesium cells

electrolytic polishing

USE **electropolishing**

electromagnetic absorption

UF *ionospheric absorption*
light absorption

magnetic absorption
optical absorption

GS energy absorption
. radiation absorption
. . **electromagnetic absorption**

. . . auroral absorption
. . . gamma ray absorption
. . . infrared absorption
. . . microwave absorption
. . . multiphoton absorption
. . . photoabsorption
. . . polar cap absorption
. . . ultraviolet absorption
. . . x ray absorption

RT absorbers (materials)

absorbance
∞ absorption
absorption spectra
absorptivity
activation
atmospheric attenuation
attenuation
Beer law
Bouguer law
Chandrasekhar equation
electromagnetic properties
excitation
fading
fluorescence
gamma ray absorptiometry
irradiation
laser induced fluorescence

light scattering
molecular absorption
Mossbauer effect
nuclear physics
opacity
optical properties
optical reflection
pair production
perfectly matched layers
photodecomposition
photodissociation
photon absorptiometry
photoproduction
radar absorbers
radar attenuation
radiation shielding
radio attenuation
reflection
resonant frequencies
signal fading
solar energy absorbers
Townsend avalanche
transmission
transmittance
transparence
wave attenuation
wave propagation

electromagnetic acceleration

DEF The use of perpendicular components of electric and magnetic fields to accelerate a current carrier.

RT ∞ acceleration

electromagnetic interactions
magnetic fields
mass drivers
particle acceleration
plasma accelerators

electromagnetic compatibility

GS compatibility

. **electromagnetic compatibility**

RT atmospheric

crosstalk
electronic countermeasures
electronic warfare

∞ interference

noise spectra
radio frequency interference

electromagnetic control

USE **electromagnets**

remote control

electromagnetic coupling

(added September 1988)

GS coupling

. **electromagnetic coupling**

. . microwave coupling
. . . optical coupling

RT electromagnetic interactions

laser plasma interactions
magnetosphere-ionosphere coupling
plasma-electromagnetic interaction

electromagnetic deduction

USE **magnetic induction**

electromagnetic environment experiment

DEF Shuttleborne radio frequency experiment.

GS payloads

. Space Shuttle payloads

. . **electromagnetic environment experiment**

electromagnetic fields

GS **electromagnetic fields**

. far fields
. near fields
. . system generated electromagnetic pulses

RT Abrikosov theory

biomagnetism
blackout (propagation)
electrokinetics
electromagnetism
electromechanics
external surface currents
field mode theory

field strength
field theory (physics)
grand unified theory
magnetic field configurations
magnetic field inversions
magnetic fields
quantum electrodynamics
reciprocity theorem
solar magnetic field
Sommerfeld approximation
squeezed states (quantum theory)
stellar magnetic fields
unified field theory
whistlers
Yang-Mills fields

electromagnetic hammers

GS tools

. hammers

. . **electromagnetic hammers**

RT forming techniques

magnetic coils
magnetic forming
metal working

electromagnetic interactions

GS **electromagnetic interactions**

. photoproduction
. plasma-electromagnetic interaction
. . laser plasma interactions

RT biomagnetism

electrodynamics
electromagnetic acceleration
electromagnetic coupling
electrostatics
electroweak interactions (field theory)
electroweak model
elementary particle interactions
Feynman diagrams
grand unified theory
∞ interactions
meson-meson interactions
photonuclear reactions
plasma resonance
quantum mechanics
unified field theory
wave interaction
wave-particle interactions

electromagnetic interference

GS **electromagnetic interference**

. crosstalk
. . ionospheric cross modulation
. jamming

. . radio frequency interference

. . . blackout (propagation)

. . . . polar radio blackout

. . . . chirp

. . . . chirp signals

. . . . electromagnetic noise

. atmospherics

. ionospherics

. dawn chorus

. hiss

. sudden enhancement of

. atmospherics

. whistlers

. cosmic noise

. ionospheric noise

. whistlers

. shot noise

. white noise

. thermal noise

. cochannel interference

. ionospheric cross modulation

RT ∞ disturbances

electronic countermeasures

electronic warfare

environments

feedback

ground effect (communications)

∞ interference

interference immunity

noise reduction

SCATHA satellite

signal to noise ratios

system generated electromagnetic pulses

electromagnetic levitation
(added February 2009)
USE **magnetic suspension**

electromagnetic measurement
SN (MEASUREMENT OF ELECTROMAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)
GS **electromagnetic measurement**
. electromagnetic noise measurement
RT Barkhausen effect
Earth terminal measurement system
electrical measurement
electromagnetism
infrared detectors
magnetic measurement
magnetic transducers
∞ measurement
signal measurement

electromagnetic missiles
(added January 1992)
RT electric pulses
external surface currents
missiles
picosecond pulses
pulse communication
pulse modulation
wave attenuation
wave degradation
wave propagation

electromagnetic noise
UF *radiation noise*
radio frequency noise
GS electromagnetic interference
. radio frequency interference
. . . **electromagnetic noise**
. . . . atmospherics
. ionospherics
. dawn chorus
. hiss
. sudden enhancement of atmospherics
. . . . whistlers
. . . cosmic noise
. . . ionospheric noise
. . . whistlers
. . . shot noise
. . . white noise
. . . thermal noise
RT background noise
background radiation
blackout (propagation)
channel noise
chirp signals
extraterrestrial radiation
ground effect (communications)
microwaves
millimeter waves
∞ noise
noise generators
noise intensity
noise reduction
noise spectra
noise storms
noise temperature
radar receivers
∞ radiation
radio receivers
radio spectra
radio waves
random noise
signal to noise ratios
solar radio emission
squelch circuits
submillimeter waves

electromagnetic noise measurement
GS electromagnetic measurement
. **electromagnetic noise measurement**
RT cosmic noise
∞ measurement
thermal noise

white noise

electromagnetic propagation
USE **electromagnetic wave transmission**

electromagnetic properties
GS **electromagnetic properties**
. Faraday effect
. inductance
. . . proximity effect (electricity)
. Kerr magneto-optical effect
. magneto-resistivity
. optical properties
. . . absorptance
. . . absorptivity
. . . birefringence
. . . . Kerr electro-optical effect
. . . brightness
. . . . sky brightness
. . . brightness distribution
. . . color
. . . iridescence
. . . stellar color
. . . water color
. . . dichroism
. . . luminosity
. . . stellar luminosity
. . . opacity
. . . optical bistability
. . . optical reflection
. . . phosphorescence
. . . photoconductivity
. . . photoviscoelasticity
. . . radiance
. . . reflectance
. . . . bidirectional reflectance
. . . . spectral reflectance
. . . refractivity
. . . photorefractivity
. . . stigmatism
. . . translucence
. . . transmissivity
. . . transmittance
. . . transparency
. . . turbidity
. . . photoelasticity
. . . photoviscoelasticity
RT carrier mobility
clarity
electrical properties
electromagnetic absorption
gamma ray absorption
gyrotropism
magnetic properties
∞ physical properties
polarization (waves)
∞ properties

electromagnetic propulsion
GS propulsion
. electric propulsion
. . . **electromagnetic propulsion**
. . . magnetic sails
. low thrust propulsion
. . . **electromagnetic propulsion**
. . . magnetic sails
. spacecraft propulsion
. . . **electromagnetic propulsion**
. . . magnetic sails
RT electrostatic propulsion
ion propulsion
magnetoplasmadynamic thrusters
mass drivers
photonic propulsion
plasma propulsion
pulsed inductive thrusters
pulsed plasma thrusters

electromagnetic pulses
UF *EMP (electromagnetism)*
GS electromagnetic radiation
. **electromagnetic pulses**
. . . system generated electromagnetic pulses
pulsed radiation
. **electromagnetic pulses**
. . . system generated electromagnetic pulses
pulses
. **electromagnetic pulses**

. . . system generated electromagnetic pulses

RT electric pulses
external surface currents
picosecond pulses
pulse communication
pulse modulation
pulse radar
radar transmission

electromagnetic pumps
SN (ENCOMPASSES DEVICES FOR MATERIALS HANDLING ONLY--EXCLUDES OPTICAL AND PARTICLE ENERGIZING DEVICES)
GS pumps
. **electromagnetic pumps**
RT fuel pumps

electromagnetic radiation
DEF Energy propagated through space or through material media in the form of an advancing disturbance in electric and magnetic fields existing in space or in media. The term radiation, alone, is used commonly for this type of energy, although it actually has a broader meaning. Used for electromagnetic waves and wave radiation.
UF *electromagnetic waves*
wave radiation
GS **electromagnetic radiation**
. bremsstrahlung
. Cerenkov radiation
. coherent electromagnetic radiation
. . . coherent light
. . . laser beams
. diffraction radiation
. electromagnetic pulses
. . . system generated electromagnetic pulses
. electromagnetic surface waves
. gamma ray beams
. gamma rays
. gamma ray bursts
. H waves
. infrared radiation
. . . far infrared radiation
. . . near infrared radiation
. kilometeric waves
. light (visible radiation)
. . . coherent light
. . . gegenschein
. . . polarized light
. . . sky radiation
. . . airglow
. . . . geocoronal emissions
. . . . nightglow
. . . . twilight glow
. . . dayglow
. . . elves
. . . sprites (atmospheric physics)
. . . sunlight
. . . zodiacal light
. light beams
. . . laser beams
. modulated continuous radiation
. monochromatic radiation
. nonequilibrium radiation
. nonthermal radiation
. . . cyclotron radiation
. . . . ion cyclotron radiation
. . . . synchrotron radiation
. photon beams
. planetary radiation
. plasmons
. polarized electromagnetic radiation
. . . polarized light
. . . synchrotron radiation
. radio waves
. . . decametric waves
. . . extraterrestrial radio waves
. . . . galactic radio waves
. North Polar Spur (astronomy)
. radio bursts
. solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts
. . . . solar radio emission

electromagnetic scattering

. . . . solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . . cosmic microwave background radiation
 . . long wave radiation
 . . radio emission
 . . . CN emission
 . . . hydroxyl emission
 . . . radio bursts
 solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . . solar radio emission
 solar radio bursts
 type 2 bursts
 type 3 bursts
 type 4 bursts
 type 5 bursts
 . . short wave radiation
 . . . microwaves
 . . . centimeter waves
 . . . cosmic microwave background radiation
 decimeter waves
 microwave emission
 millimeter waves
 . . . submillimeter waves
 . . sky waves
 . . . whistlers
 . Sommerfeld waves
 . terrestrial radiation
 . thermal radiation
 . . black body radiation
 . . phonon beams
 . tropospheric radiation
 . ultraviolet radiation
 . . extreme ultraviolet radiation
 . . far ultraviolet radiation
 . . . Lyman alpha radiation
 . . . Lyman beta radiation
 . . near ultraviolet radiation
 . . ultraviolet emission
 . x rays
 . . cosmic x rays
 . . solar x-rays
 . photosynthetically active radiation
 RT aerospace environments
 antennas
 atmospheric radiation
 atmospheric refraction
 backward waves
 beams (radiation)
 coherent radiation
 continuous radiation
 corpuscular radiation
 cosmic rays
 cylindrical waves
 diffraction
 Doppler effect
 duochromators
 electroacoustic waves
 electromagnetism
 extraterrestrial radiation
 far fields
 flux (rate)
 flux density
 galactic radiation
 gamma ray absorption
 gauge invariance
 glare
 harmonic radiation
 incident radiation
 incoherent scattering
 interstellar radiation
 ionizing radiation
 Kerr electrooptical effect
 light emission
 magneto-optics
 near fields
 nonlinear optics
 nuclear radiation
 phase velocity
 photons
 Plancks constant

polarized radiation
 Poynting theorem
 ∞ propagation
 propagation velocity
 pulsed radiation
 radar
 ∞ radiation
 radiation chemistry
 radiation distribution
 radiation hazards
 radiation laws
 radiation pressure
 radiation sources
 radiative transfer
 ∞ rays
 reflected waves
 reflection
 refracted waves
 Ronchi test
 scattering
 sine waves
 solar radiation
 solitary waves
 spectral emission
 spectral energy distribution
 spherical waves
 spontaneous emission
 Stefan-Boltzmann law
 stellar radiation
 stratosphere radiation
 telecommunication
 Thomson scattering
 transmission
 transverse waves
 traveling waves
 ultraviolet astronomy
 VLF emission recorders
 wave amplification
 wave dispersion
 wave generation
 ∞ waves
 whispering gallery modes
 white holes (astronomy)

electromagnetic rocket engines
 (added April 2001)

USE **plasma engines**

electromagnetic scattering

GS scattering
 . wave scattering
 . . **electromagnetic scattering**
 . . . ionospheric F-scatter propagation
 . . . light scattering
 halos
 . . . microwave scattering
 . . . Mie scattering
 . . . Rayleigh scattering
 . . . Raman spectra
 . . . Thomson scattering
 . . . x ray scattering
 RT atmospheric attenuation
 atmospheric scattering
 finite difference time domain method
 magnetic dispersion
 optical coatings
 perfectly matched layers
 reciprocity theorem

electromagnetic shielding

GS shielding
 . **electromagnetic shielding**
 . . radio frequency shielding
 RT magnetic shielding
 radiation shielding

electromagnetic spectra

DEF Spectra of known electromagnetic radiations, extending from the shortest cosmic rays, through gamma rays, x rays, ultraviolet radiation, visible radiation, and including microwave and all other wavelengths of radio energy.

GS spectra
 . radiation spectra
 . . **electromagnetic spectra**
 . . . gamma ray spectra
 . . . infrared spectra
 . . . line spectra
 Balmer series
 D lines

. . . . electronic spectra
 Fraunhofer lines
 H lines
 H alpha line
 H beta line
 H gamma line
 K lines
 Lyman spectra
 Paschen series
 Rydberg series
 telluric lines
 . . . radio spectra
 microwave spectra
 . . . Raman spectra
 . . stellar spectra
 . . . solar spectra
 . . . UVB spectra
 . . . ultraviolet spectra
 . . . vibrational spectra
 . . . visible spectrum
 . . . x ray spectra

RT absorption spectra
 astronomical spectroscopy
 electronic warfare
 emission spectra
 energy spectra
 light (visible radiation)
 molecular spectra
 noise spectra
 spectral correlation
 spectral reconnaissance

electromagnetic surface waves

GS electromagnetic radiation
 . **electromagnetic surface waves**
 surface waves
 . **electromagnetic surface waves**
 RT dielectrics
 propagation modes
 radio waves
 ∞ surfaces
 waveguides
 ∞ waves

electromagnetic wave filters

GS **electromagnetic wave filters**
 . bandpass filters
 . . crystal filters
 . . tracking filters
 . electric filters
 . . bandstop filters
 . . crystal filters
 . . digital filters
 . . . FIR filters
 . . . IIR filters
 . . microwave filters
 . . radar filters
 . . radio filters
 . . tracking filters
 . . waveguide filters
 . matched filters
 . optical filters
 . . birefringent filters
 . . infrared filters
 . . ultraviolet filters
 RT absorbers (materials)
 adaptive filters
 attenuators
 correlation detection
 ∞ filters
 high pass filters
 linear filters
 low pass filters
 nonlinear filters
 screen effect

electromagnetic wave transmission

UF *electromagnetic propagation*
 GS transmission
 . **electromagnetic wave transmission**
 . . light transmission
 . . . light scattering
 halos
 . . . microwave attenuation
 . . . radar transmission
 . . . radio transmission
 double sideband transmission
 . . . ionospheric propagation

. . . . ionospheric F-scatter propagation
 . . . microwave transmission
 . . . multipath transmission
 . . . short wave radio transmission
 . . . single sideband transmission
 . . . spread spectrum transmission
 . . . transequatorial propagation
 . . . transhorizon radio propagation
 . . scatter propagation
 . . . ionospheric F-scatter propagation
 . . television transmission
 RT atmospheric attenuation
 attenuation
 Fermat principle
 incoherent scattering
 lossy media
 magnetoionics
 plasma decay
 plasmaguides
 radar attenuation
 radio attenuation
 radome materials
 screen effect
 transmission efficiency
 wave propagation
 whispering gallery modes

electromagnetic waves
 USE **electromagnetic radiation**

electromagnetics
 USE **electromagnetism**

electromagnetism
 DEF Magnetism produced by an electric current. The science dealing with the physical relations between electricity and magnetism. Used for electromagnetics.
 UF *electromagnetics*
 GS **electromagnetism**
 . magnetostatics
 RT Barkhausen effect
 Biot-Savart law
 computational electromagnetics
 electric fields
 electricity
 electromagnetic fields
 electromagnetic measurement
 electromagnetic radiation
 electromagnets
 electrophysics
 grand unified theory
 magnet coils
 magnetic coils
 magnetic field inversions
 magnetic fields
 magnetic properties
 magnetoresistivity
 unified field theory

electromagnets
 UF *electromagnetic control*
 GS magnets
 . **electromagnets**
 . . high field magnets
 . . superconducting magnets
 RT electromagnetism
 field coils
 magnet coils
 racetracks (particle accelerators)
 solenoids

electromechanical devices
 GS **electromechanical devices**
 . microelectromechanical systems
 . . lab-on-a-chip devices
 . . microoptoelectromechanical systems
 . electric motors
 . piezoelectric actuators
 . . asynchronous motors
 . . induction motors
 . . micromotors
 . . piezoelectric motors
 . . stepping motors
 . . synchronous motors
 . . torque motors
 RT ∞ electric equipment
 electroactive polymers

electrodynamics
 electromechanics
 ∞ equipment
 homopolar generators

electromechanics
 GS electrodynamics
 . **electromechanics**
 RT circuits
 electric fields
 elektrokinetiks
 electromagnetic fields
 electromechanical devices
 electrostatics
 magnetic field inversions
 magnetic fields
 Maxwell equation
 mechanics (physics)

electrometers
 DEF Instruments for measuring differences of electric potential.
 GS measuring instruments
 . **electrometers**
 RT electric charge
 electrical measurement
 electron counters
 galvanometers
 potentiometers (instruments)
 voltmeters
 wattmeters

electromigration
 RT electrical resistivity
 electron mobility
 hole mobility
 ionic mobility
 polarization (charge separation)
 thermocapillary migration
 thermomigration

electromotive forces
 DEF Forces capable of maintaining a potential difference, and thus a current, within a circuit. They can be established by chemical action or by mechanical work.
 GS **electromotive forces**
 . ponderomotive forces
 RT electric batteries
 electric generators
 electric potential
 Ohms law
 open circuit voltage

electromyograms
 USE **electromyography**

electromyographs
 USE **electromyography**

electromyography
 DEF The study of the response of a muscle to an electric stimulation. Used for electromyograms and electromyographs.
 UF *electromyograms*
electromyographs
 GS bioengineering
 . biometrics
 . . **electromyography**
 RT electrophysiology
 medical electronics
 myoelectricity

electron acceleration
 DEF The acceleration of electrons by action of solar cosmic rays.
 GS rates (per time)
 . acceleration (physics)
 . . **electron acceleration**
 RT ∞ acceleration
 cosmic rays
 electrons
 extraterrestrial radiation
 particle beams
 solar cosmic rays

electron accelerators
 GS particle accelerators
 . **electron accelerators**
 . . betatrons

RT ∞ accelerators
 linear accelerators
 synchrotrons
 Van de Graaff accelerators

electron affinity
 GS affinity
 . **electron affinity**
 RT anions
 molecular ions
 negative electron affinity
 semiconductors (materials)

electron attachment
 GS **electron attachment**
 . nucleophiles
 RT ∞ attachment
 gas ionization
 ionization

electron avalanche
 DEF The process in which a relatively small number of free electrons in a gas that is subjected to a strong electric field accelerate, ionize gas atoms by collision, and thus form new free electrons to undergo the same process in cumulative fashion.
 GS avalanches
 . **electron avalanche**
 RT CATT devices
 channel multipliers
 free electrons
 gas discharges
 Townsend avalanche

electron beam welding
 GS welding
 . fusion welding
 . . **electron beam welding**
 RT arc welding
 electric welding
 spiking

electron beams
 DEF Specifically, focused streams of electrons used for neutralization of the positively charged ion beam in an ion engine. Also used to melt or weld materials with externally high melting points.
 GS beams (radiation)
 . particle beams
 . . **electron beams**
 . . . relativistic electron beams
 particles
 . corpuscular radiation
 . . electron radiation
 . . . **electron beams**
 relativistic electron beams
 RT beam injection
 beam neutralization
 beam plasma amplifiers
 beta particles
 Brillouin flow
 diffraction radiation
 electron cyclotron heating
 ionizing radiation
 magnetic lenses
 monoscopes
 nanofabrication
 plasma jets
 scalloping
 scanning electron microscopy
 transmission electron microscopy

electron bombardment
 RT ∞ bombardment
 deposition
 particle beams
 plasma jets
 relativistic electron beams
 sputtering

electron bunching
 GS bunching
 . **electron bunching**
 RT catchers
 convection currents
 klystrons
 traveling wave tubes

electron capture

velocity modulation

electron capture

GS nuclear reactions
. nuclear interactions
. . . nuclear capture
. . . . **electron capture**
. . . spin-orbit interactions
. . . . **electron capture**
particle interactions
. elementary particle interactions
. . nuclear capture
. . . . **electron capture**
. . nuclear interactions
. . . nuclear capture
. . . . **electron capture**
. . . spin-orbit interactions
. . . . **electron capture**
spin
. spin-orbit interactions
. . . **electron capture**
RT capture effect
many electron effects

electron clouds

RT ∞ clouds
orbitrons
space charge

electron collisions

USE **electron scattering**

electron compounds

USE **intermetallics**

electron counters

UF *electron detectors*
GS measuring instruments
. counters
. . radiation counters
. . . **electron counters**
. radiation measuring instruments
. . radiation counters
. . . **electron counters**
RT electrometers
ionization chambers

electron cyclotron heating

DEF A type of radio frequency plasma heating in which high-power microwave energy is introduced into the plasma region.

GS heating
. plasma heating
. . **electron cyclotron heating**
RT electron beams
electron cyclotron resonance
electron guns
klystrons
magnetic pumping

electron cyclotron resonance

(added June 1997)
GS resonance
. cyclotron resonance
. . **electron cyclotron resonance**
RT cyclotron resonance devices
electron cyclotron heating
plasma heating
plasma resonance

electron decay rate

GS rates (per time)
. decay rates
. . **electron decay rate**
RT muons
secondary cosmic rays

electron density (concentration)

GS density (number/volume)
. particle density (concentration)
. . **electron density (concentration)**
. . . carrier density (solid state)
. . . . electron density profiles
. . . . ionospheric electron density
. . . . magnetospheric electron density
RT atmospheric composition
atmospheric density
atom concentration
density functional theory
free electrons

ion density (concentration)
plasma density
plasma frequencies
radiation belts
semiconductors (materials)
space density

electron density profiles

GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . **electron density profiles**
. . . electron distribution
. . . . **electron density profiles**
distribution (property)
. electron distribution
. . **electron density profiles**
gradients
. **electron density profiles**
RT angular distribution
atmospheric electricity
atmospheric ionization

electron detectors

USE **electron counters**

electron diffraction

DEF The phenomenon, or the technique of producing diffraction patterns through the incidence of electrons as a function of kinetic energy.

GS diffraction
. **electron diffraction**
RT Bragg angle
diffraction radiation
x ray diffraction

electron diffusion

GS diffusion
. particle diffusion
. . **electron diffusion**
RT ambipolar diffusion
diffusion length
diffusion waves
gaseous self-diffusion
ionic diffusion
plasma diffusion
thermal diffusion

electron distribution

GS density (number/volume)
. particle density (concentration)
. . **electron distribution**
. . . electron density profiles
distribution (property)
. **electron distribution**
. . electron density profiles
RT charge distribution
current distribution
density functional theory
Thomas-Fermi model
vertical distribution

electron emission

GS emission
. particle emission
. . **electron emission**
. . . field emission
. . . . photoelectric emission
. . . . secondary emission
RT cathodes
electric discharges
emitters
negative electron affinity
pair production
photoelectric materials
photoelectron spectroscopy
photoelectrons
photoionization
radio frequency discharge
self sustained emission
stimulated emission
thermal emission
thermionic emission
thermionics
work functions

electron energy

UF *electron temperature*
electronic levels

GS particle energy
. **electron energy**
. . electron states
RT activation energy
electronic structure
electrostatic probes
 ∞ energy
forbidden bands
Hartree-Fock-Slater method
interfacial energy
ionospheric temperature
kinetic energy
noise temperature
plasmas (physics)
proton energy
space temperature
surface energy
temperature

electron flux

USE **electrons flux (rate)**

electron flux density

SN (LIMITED TO ELECTRON EMISSION OR DETECTION RATE PER UNIT AREA)
UF *electron intensity*
GS rates (per time)
. flux density
. . radiant flux density
. . . particle flux density
. . . . **electron flux density**
RT irradiance
radiancy
solar flux density

electron gas

RT cosmic gases
electrohydrodynamics
free electrons
ionized gases
plasmons
quantum Hall effect
rarefied gases
screen effect
superconductors (materials)

electron guns

DEF Electrode structures which produce and may control, focus, deflect, and converge one or more electron beams.

RT cathode ray tubes
crossed field guns
electron cyclotron heating
flying spot scanners
 ∞ guns
magnetic lenses
particle accelerators
plasma guns
tube anodes
tube cathodes
tube grids

electron holes

USE **holes (electron deficiencies)**

electron impact

GS impact
. **electron impact**
RT ion impact
point impact
proton impact

electron intensity

USE **electron flux density**

electron interactions

USE **electron scattering**

electron ionization

USE **ionization**

electron irradiation

GS irradiation
. **electron irradiation**
RT auroral irradiation
ion irradiation
secondary emission

electron mass

GS mass

- . particle mass
- . . **electron mass**
- RT electrons
- electron microscopes**
- GS microscopes
- . **electron microscopes**
- RT field emission
- ion microscopes
- magnetic lenses
- microanalysis
- optical microscopes
- photomicrography
- replicas
- scanning electron microscopy
- scanning tunneling microscopy
- electron microscopy**
- DEF The interpretive application of an electron microscope for the magnification of materials that cannot be properly seen with an optical microscope.
- GS microscopy
- . **electron microscopy**
- . . scanning electron microscopy
- . . scanning tunneling microscopy
- . . transmission electron microscopy
- RT field emission
- ion microscopes
- magnetic lenses
- microanalysis
- phase contrast
- electron mobility**
- GS electrical properties
- . carrier mobility
- . . **electron mobility**
- mobility
- . carrier mobility
- . . **electron mobility**
- transport properties
- . carrier mobility
- . . **electron mobility**
- RT ambipolar diffusion
- atomic mobilities
- charge carriers
- electrohydrodynamics
- electromigration
- high electron mobility transistors
- hole mobility
- majority carriers
- minority carriers
- modulation doping
- NDM semiconductor devices
- semiconductor plasmas
- single electron transistors
- ∞ solid state physics
- square wells
- electron multipliers*
- USE **photomultiplier tubes**
- electron optics**
- DEF The science that deals with the propagation of electrons, as light optics deals with light and its phenomena.
- RT atom optics
- beam switching
- Brillouin flow
- cathode ray tubes
- electro-optics
- flying spot scanners
- ion optics
- ∞ optics
- particle trajectories
- steering
- electron orbitals**
- GS orbitals
- . **electron orbitals**
- RT configuration interaction
- electronic structure
- excimers
- electron oscillations**
- GS oscillations
- . **electron oscillations**
- RT oscillator strengths
- plasma oscillations
- transient oscillations
- electron paramagnetic resonance**
- UF *electron spin resonance*
- GS resonance
- . magnetic resonance
- . . paramagnetic resonance
- . . . **electron paramagnetic resonance**
- RT Jahn-Teller effect
- electron paths*
- USE **electron trajectories**
- electron phonon interactions**
- RT ∞ interactions
- particle interactions
- plasma-particle interactions
- polarons
- superconductivity
- thermodynamic coupling
- electron photography**
- GS imagery
- . photography
- . . **electron photography**
- RT black and white photography
- electron photon cascades**
- RT bremsstrahlung
- ∞ cascades
- cosmic ray showers
- pair production
- secondary cosmic rays
- electron plasma**
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **electron plasma**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **electron plasma**
- RT electron-positron plasmas
- helium plasma
- high temperature plasmas
- Landau damping
- metallic plasmas
- plasma waves
- plasma-particle interactions
- rarefied plasmas
- relativistic plasmas
- thermal plasmas
- electron precipitation**
- GS particle precipitation
- . **electron precipitation**
- particles
- . corpuscular radiation
- . . **electron precipitation**
- RT auroras
- ∞ precipitation
- proton precipitation
- radiation belts
- secondary cosmic rays
- trapped particles
- electron pressure**
- GS pressure
- . radiation pressure
- . . **electron pressure**
- electron probes**
- DEF Narrow beams of electrons used to scan or illuminate an object or screen.
- GS measuring instruments
- . **electron probes**
- RT chemical analysis
- irradiation
- microwave plasma probes
- spectrometers
- electron pumping**
- RT energy transfer
- excimer lasers
- gas lasers
- lasers
- nuclear pumping
- nuclear radiation
- optical pumping
- population inversion
- ∞ pumping
- stimulated emission
- stimulated emission devices
- electron radiation**
- SN (LIMITED TO RADIATION CONSISTING OF ELECTRONS--EXCLUDES ELECTROMAGNETIC RADIATION)
- GS particles
- . corpuscular radiation
- . . **electron radiation**
- . . . beta particles
- . . . electron beams
- relativistic electron beams
- RT bremsstrahlung
- nuclear radiation
- plasma radiation
- proton irradiation
- ∞ radiation
- radiation effects
- electron recombination**
- GS recombination reactions
- . **electron recombination**
- . . radiative recombination
- RT ion recombination
- neutral particles
- electron ring accelerators*
- USE **storage rings (particle accelerators)**
- electron runaway (plasma physics)**
- DEF High acceleration of electrons in a collisional plasma caused by a suddenly applied electric field (which greatly reduces the collision cross section of the electrons).
- GS scattering
- . electron scattering
- . . **electron runaway (plasma physics)**
- RT collisional plasmas
- high acceleration
- plasma physics
- scattering cross sections
- electron scattering**
- UF *electron collisions*
- electron interactions*
- GS scattering
- . **electron scattering**
- . . electron runaway (plasma physics)
- RT atomic collisions
- dense plasmas
- elastic scattering
- inelastic scattering
- ion scattering
- many electron effects
- nuclear reactions
- nuclear scattering
- particle interactions
- photon-electron interaction
- Ramsauer effect
- recoil ions
- relativistic electron beams
- transmission electron microscopy
- Umklapp process
- electron sources**
- RT ∞ energy sources
- ion sources
- ∞ power supplies
- radiation sources
- ∞ sources
- electron spectroscopy**
- DEF The study and interpretation of atomic, molecular, and solid state structure based on x ray induced electron emission from substances.
- GS spectroscopy
- . **electron spectroscopy**
- RT absorption spectra
- emission spectra
- infrared spectroscopy
- molecular spectroscopy
- optical emission spectroscopy

electron spin

x ray absorption

electron spin
GS spin
. particle spin
. . **electron spin**
RT angular momentum
nuclear spin
spin dynamics

electron spin resonance
USE **electron paramagnetic resonance**

electron states
GS level (quantity)
. energy levels
. . **electron states**
particle energy
. electron energy
. . **electron states**
RT density functional theory
electronic structure
excimers
excitation
ground state
many electron effects
noise temperature

electron sweeping
USE **sweep frequency**

electron telescopes
USE **particle telescopes**

electron temperature
USE **electron energy**

electron trajectories
DEF The paths of electrons. Used for electron paths.
UF *electron paths*
GS trajectories
. particle trajectories
. . **electron trajectories**
RT diffraction paths
magnetic rigidity
radiation belts

electron transfer
RT backward wave tubes
charge exchange
charge transfer
oxidation
transferred electron devices
transferring

electron transitions
RT atomic theory
Auger effect
Auger spectroscopy
Balmer series
band structure of solids
Bohr theory
conduction bands
excimers
excitation
forbidden transitions
Franck-Condon principle
Jahn-Teller effect
lasing
many electron effects
nuclear capture
optical transition
oscillator strengths
Paschen series
Rydberg series
 ∞ transition
transition probabilities
x ray lasers
xenon chloride lasers
xenon fluoride lasers

electron tubes
DEF Devices in which conduction by electrons takes place through a vacuum of gaseous medium within a gas tight envelope.
GS **electron tubes**
. camera tubes
. . image dissector tubes
. . orthicons

. . . image orthicons
. . vidicons
. . . return beam vidicons
. . . . thermicons
. cold cathode tubes
. phototubes
. . photomultiplier tubes
. . . . frequency modulation photomultipliers
. gas discharge tubes
. . ignitrons
. . thyratrons
. image tubes
. . thermicons
. thermionic diodes
. . cesium diodes
. vacuum tubes
. . cathode ray tubes
. . . monoscopes
. . . picture tubes
. . cesium diodes
. . microwave tubes
. . . . telescopes
. . . cyclotron resonance devices
. . . klystrons
. . . magnetrons
. . . . nigotrons
. . . planotrons
. . . traveling wave tubes
. . . . backward wave tubes
. helitrons
. carcinotrons
. . vacuum tube oscillators
RT cavity resonators
circuits
crossed field amplifiers
diodes
fiber optics
 ∞ heaters
modulators
orbitrons
oscillators
pentodes
rectifiers
resonators
tetrodes
transconductance
triodes
tube grids
 ∞ tubes
tunnel cathodes
velocity modulation
x ray tubes

electron tunneling

UF *tunnel resistors*
RT energy levels
Josephson effect
MIM diodes
quantum dots
resonant tunneling
scanning tunneling microscopy
semiconductors (materials)
single electron transistors
superconductivity
tunnel diodes
tunnel junctions
 ∞ tunneling

electronarcosis

RT electroanesthesia
electrophysiology

electron-hole drops

DEF Exciton condensations exhibiting the properties of electrically conducting plasmas which form in germanium and silicon crystals at sufficiently low cryogenic temperatures.
RT carrier density (solid state)
luminescence
magnetic fields
optical pumping
phase transformations
plasma density
plasma equilibrium
semiconductor plasmas

single event upsets

electronic aircraft

DEF Designation for tactical electronic warfare aircraft.
RT ∞ aircraft
automatic control
electronic countermeasures

electronic amplifiers

USE **amplifiers**

electronic bulletin boards

(added September 1993)
UF *computer bulletin boards*
RT communication networks
computer conferencing
electronic mail
Internet resources
internets
websites
World Wide Web

electronic commerce

(added April 2000)
DEF The buying and selling of goods and services via the Internet or other computer communications network.
UF *e-commerce*
GS commerce
. **electronic commerce**
RT computer information security
electronic mail
Internet resources
websites
World Wide Web

electronic control

RT automatic control
cascade control
 ∞ control
control equipment
control systems design
controllers
current regulators
electric control
electric switches
feedback control
hydraulic control
optical control
pneumatic control
remote control
Terminal Configured Vehicle Program
voltage regulators

electronic countermeasures

GS countermeasures
. **electronic countermeasures**
. . antiradar coatings
. . chaff
RT deception
electromagnetic compatibility
electromagnetic interference
electronic aircraft
electronic warfare
jamming
optical countermeasures
radar detection
radio frequency interference
stealth technology

electronic equipment

DEF Equipment in which electricity is conducted principally by electrons moving through a vacuum, gas, or semiconductor.
GS **electronic equipment**
. diodes
. . crystal rectifiers
. . plasma diodes
. . semiconductor diodes
. . . avalanche diodes
. . . . cryosar
. . . . Barritt diodes
. . . germanium diodes
. . . Gunn diodes
. . . . transferred electron devices
. . . junction diodes
. . . . MIM diodes
. . . . step recovery diodes
. . . light emitting diodes

- . . . parametric diodes
- . . . photodiodes
- . . . Schottky diodes
- . . . tunnel diodes
- resonant tunneling diodes
- . . . varactor diodes
- . . . thermionic diodes
- . . . cesium diodes
- . . . electronic filters
- . . . electronic modules
- . . . micromodules
- . . . electronic packaging
- . . . electronic recording systems
- . . . electronic transducers
- . . . miniature electronic equipment
- . . . solid state devices
- . . . cryotrons
- . . . crystal rectifiers
- . . . metal-nitride-oxide-semiconductors
- . . . multispectral linear arrays
- . . . semiconductor devices
- avalanche diodes
- cryosar
- Barritt diodes
- charge transfer devices
- bucket brigade devices
- charge coupled devices
- charge injection devices
- germanium diodes
- heterojunction devices
- high electron mobility transistors
- MODFETS
- junction diodes
- MIM diodes
- step recovery diodes
- light emitting diodes
- metal oxide semiconductors
- CMOS
- ITO (semiconductors)
- SOS (semiconductors)
- MIM (semiconductors)
- MIS (semiconductors)
- MOM (semiconductors)
- MSM (semiconductors)
- NDM semiconductor devices
- neuristors
- parametric diodes
- photodiodes
- photovoltaic cells
- solar cells
- vertical junction solar cells
- Schottky diodes
- semiconductor lasers
- aluminum gallium arsenide lasers
- gallium arsenide lasers
- quantum cascade lasers
- quantum well lasers
- YLF lasers
- SOI (semiconductors)
- thermistors
- thyristors
- silicon controlled rectifiers
- transferred electron devices
- transistor amplifiers
- transistors
- bipolar transistors
- field effect transistors
- charge flow devices
- JFET
- MODFETS
- high electron mobility transistors
- MODFETS
- junction transistors
- JFET
- phototransistors
- silicon transistors
- SOS (semiconductors)
- single electron transistors
- cascode devices
- quantum well infrared photodetectors
- resonant tunneling diodes
- TRAPATT devices
- varactor diodes
- varistors
- SIS (semiconductors)
- SIS (superconductors)
- solid state lasers

- . . . aluminum gallium arsenide lasers
- . . . DBR lasers
- . . . fiber lasers
- . . . gallium arsenide lasers
- . . . quantum cascade lasers
- . . . quantum well lasers
- . . . ruby lasers
- YAG lasers
- YLF lasers
- spacecraft electronic equipment
- RT antenna components
- bubble technique
- ∞ electric equipment
- ∞ electronics
- ∞ equipment
- radiation hardening
- spherical antennas
- system generated electromagnetic pulses

electronic equipment tests

- SN (CHECKOUT OF ELECTRONIC EQUIPMENT)
- RT Earth terminal measurement system
- electric equipment tests
- electrical measurement
- environmental tests
- fault detection
- nondestructive tests
- oscilloscopes
- quality control
- resonance testing
- self tests
- stability tests
- ∞ test equipment
- ∞ tests
- vibration tests

electronic filters

- GS electric equipment
- . **electronic filters**
- RT electric filters
- ∞ filters
- FIR filters

electronic levels

- USE **electron energy energy levels**

electronic mail

- UF *e-mail*
- GS telecommunication
- . **electronic mail**
- RT communication networks
- communication satellites
- computer conferencing
- computer networks
- data transmission
- electronic bulletin boards
- electronic commerce
- electronic publishing
- Internet resources
- internets

electronic modules

- GS electric equipment
- . **electronic modules**
- . . micromodules
- modules
- . **electronic modules**
- . . micromodules
- RT ∞ hardware
- miniature electronic equipment
- modularity
- subminiaturization

electronic packaging

- GS electric equipment
- . **electronic packaging**
- packaging
- . **electronic packaging**
- RT circuit boards
- DTL integrated circuits
- encapsulating
- hybrid circuits
- integrated circuits
- large scale integration
- linear integrated circuits
- medium scale integration
- micromodules

- printed circuits
- thick films
- TTL integrated circuits

electronic photography

- USE **electro-optical photography**

electronic publishing

- (added July 1995)
- RT computer conferencing
- document markup languages
- documents
- electronic mail
- hypertext
- information dissemination
- multimedia
- printing

electronic recording systems

- GS electric equipment
- . **electronic recording systems**
- RT recording instruments
- ∞ systems
- tape recorders

electronic signal measurement

- USE **signal measurement**

electronic spectra

- SN (EMISSION OR ABSORPTION MOLECULAR SPECTRA OF AN ELECTRON TRANSITION)
- GS molecular properties
- . molecular spectra
- . . **electronic spectra**
- spectra
- . energy spectra
- . . **electronic spectra**
- . . molecular spectra
- . . **electronic spectra**
- . radiation spectra
- . . electromagnetic spectra
- . . . line spectra
- **electronic spectra**
- RT absorption spectra
- emission spectra
- Lyman spectra
- spectral bands
- vibrational spectra

electronic structure

- (added April 1999)
- SN (THE TERM "ATOMIC STRUCTURE" WAS USED FOR THIS CONCEPT PRIOR TO MAY 1999)
- RT atomic structure
- band structure of solids
- density functional theory
- electron energy
- electron orbitals
- electron states
- energy bands
- energy gaps (solid state)
- energy levels
- Fermi liquids

electronic switches

- USE **switching circuits**

electronic transducers

- GS electric equipment
- . **electronic transducers**
- transducers
- . **electronic transducers**
- RT magnetic transducers
- ∞ sensors
- ultrasonic wave transducers

electronic warfare

- DEF Military action involving the use of electromagnetic energy to determine, exploit, reduce, or prevent hostile use of the electromagnetic spectrum, and action which retains friendly use of the electromagnetic spectrum.
- GS military operations
- . **electronic warfare**
- warfare
- . **electronic warfare**
- RT air defense
- antiradar coatings
- chaff
- combat

deception
 electromagnetic compatibility
 electromagnetic interference
 electromagnetic spectra
 electronic countermeasures
 evasive actions
 jamming
 missile detection
 peacetime
 radar detection
 radio frequency interference
 stealth technology
 strategy

∞ **electronics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Study and application of the motions of electrons through vacuum and gaseous, conducting, or semiconducting media. Used for photoelectronics.

UF *photoelectronics*
 RT *astrionics*

avionics
 digital electronics
 electrical engineering
 electricity
 electronic equipment
 electrophysics
 medical electronics
 microelectronics
 molecular electronics
 nucleonics
 quantum electronics
 radio electronics
 thermionics
 transistor circuits
 volt-ampere characteristics

electron-ion recombination

GS recombination reactions
 . **electron-ion recombination**
 . . radiative recombination
 RT ion recombination
 plasma control

electronography

RT electrophysiology
 printing

electron-positron annihilation

USE **positron annihilation**

electron-positron pairs

(added September 1988)

GS particles
 . elementary particles
 . . **electron-positron pairs**
 RT annihilation reactions
 charged particles
 electron-positron plasmas
 electrons
 pair production
 positron annihilation
 positrons

electron-positron plasmas

(added September 1988)

GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **electron-positron plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **electron-positron plasmas**

RT electron plasma

electron-positron pairs
 electrons
 positrons
 relativistic plasmas

electrons

DEF Particles of very small mass, carrying a unit negative or positive charge. Negative electrons, surrounding the nucleus (i.e., orbital electrons) are present in all atoms. Their number is equal to the number of positive charges (or protons) in the particular nucleus. The term

electron, when used alone, commonly refers to a negative electron. A positive electron is usually called a positron, and a negative electron is sometimes called a negatron.

UF *electron flux*

GS *nonrelativistic electrons*

particles
 . charged particles
 . . energetic particles
 . . . **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . corpuscular radiation
 . . energetic particles

. . . **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . elementary particles
 . . fermions
 . . . leptons
 **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons

. **electrons**
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons

RT acceptor materials
 beta particles
 Bohr magneton
 cosmic rays
 donor materials
 electron acceleration
 electron mass
 electron-positron pairs
 electron-positron plasmas
 excitons
 holes (electron deficiencies)
 Lewis base
 majority carriers

∞ materials
 minority carriers
 muonium
 n-type semiconductors
 nuclear radiation
 Pomeranchuk theorem
 quantum numbers
 radiation belts
 semiconductors (materials)
 Suhl effect

electronystagmography

GS bioengineering
 . biometrics
 . . **electronystagmography**
 . . . physiological tests
 . . . **electronystagmography**
 RT eye examinations
 eye movements
 nystagmus
 ophthalmology

electro-optical effect

RT ∞ effects
 ∞ Kerr effects
 light modulation

nonlinear optics

∞ optics

electro-optical photography

UF *electronic photography*
 GS imagery
 . photography
 . . **electro-optical photography**
 RT astronomical photography
 black and white photography
 image resolution
 Lallemand cameras
 optical measurement
 ∞ optics
 streak photography

electro-optical switching

USE **optical switching**

electro-optics

GS electrophysics
 . **electro-optics**
 RT acousto-optics
 birefringence
 charge injection devices
 electrochromism
 electroluminescence
 electron optics
 integrated optics
 Kerr electrooptical effect
 laser microscopy
 light modulators
 light valves
 magneto-optics
 optical computers
 optical control
 optical relay systems
 optical switching
 ∞ optics
 optoelectronic devices
 photonics
 position sensing
 pushbroom sensor modes
 Stark effect
 tunable filters

electrophoresis

DEF The movement of colloidal particles produced by the application of an electric potential. Used for continuous flow electrophoresis.

UF *continuous flow electrophoresis*

RT bioprocessing
 colloids
 electrodeposition
 electroplating
 ∞ microgravity applications
 particle motion

electrophotometers

UF *photoelectric photometers*
 GS measuring instruments
 . optical measuring instruments
 . . photometers
 . . . **electrophotometers**
 . . . radiation measuring instruments
 . . . photometers
 **electrophotometers**
 optical equipment
 . optical measuring instruments
 . . photometers
 . . . **electrophotometers**
 RT electrophotometry

electrophotometry

GS chemical tests
 . chemical analysis
 . . **electrophotometry**
 . . . optical measurement
 . . . photometry
 . . . **electrophotometry**
 RT colorimetry
 electrophotometers
 electrophysics
 ∞ materials tests
 microanalysis
 photometers
 pixels
 qualitative analysis
 quantitative analysis
 spectroscopic analysis

spectroscopy

electrophysics
 GS **electrophysics**
 . electro-optics
 . molecular electronics
 RT electrochemistry
 electrokinetics
 electromagnetism
 ∞ electronics
 electrophotometry
 ∞ physics
 ∞ science
 theoretical physics

electrophysiology
 GS physiology
 . **electrophysiology**
 RT body measurement (biology)
 depolarization
 echoencephalography
 electrocardiography
 electroencephalography
 electromyography
 electronarcosis
 electronography
 electroplethysmography
 electroretinography
 His bundle
 information processing (biology)
 ion channels (biology)
 myelin sheath
 nerve fibers
 nervous system
 neurology
 ∞ science

electroplating
 GS coating
 . **electroplating**
 coatings
 . **electroplating**
 deposition
 . electrodeposition
 . . **electroplating**
 plating
 . **electroplating**
 RT baths
 cathodic coatings
 current density
 electrodes
 electroforming
 electrolysis
 electrolytes
 electrolytic cells
 electrophoresis
 metallizing
 nickel plate
 protective coatings
 surface finishing

electroplethysmography
 GS bioengineering
 . biometrics
 . . body measurement (biology)
 . . . **electroplethysmography**
 . . plethysmography
 . . . **electroplethysmography**
 RT blood circulation
 electrophysiology
 medical electronics

electropolishing
 DEF The improvement in surface finish of a metal effected by making it anodic in an appropriate solution. Used for electrolytic polishing.
 UF *electrolytic polishing*
 GS metal finishing
 . **electropolishing**
 polishing
 . metal polishing
 . . **electropolishing**
 RT electrochemical machining
 metallography
 surface finishing

electrorefining
 GS refining
 . **electrorefining**
 RT electrodes

electrolytes
 electrolytic cells
 electrowinning

electroretinography
 GS bioengineering
 . biometrics
 . . **electroretinography**
 RT electrophysiology
 medical electronics
 retina

electrorheological fluids
(added June 1990)
 UF *ER fluids*
 RT elastodynamics
 electroactive polymers
 magnetorheological fluids
 rheology
 smart materials

electroseismic effect
 USE **electric current**
seismic waves

∞ **electroslag process**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT electroslag refining
 electroslag welding

electroslag refining
 GS refining
 . **electroslag refining**
 RT arc melting
 ∞ electroslag process
 resistance heating

electroslag welding
 GS welding
 . fusion welding
 . . electric welding
 . . . **electroslag welding**
 RT ∞ electroslag process

electrostatic bonding
 DEF Use of the particle-attracting property of electrostatic charges to bond particles of one charge to those of the opposite charge.
 RT binding energy
 coverings
 encapsulating
 energy technology
 glass
 solar arrays
 solar cells

electrostatic charge
 GS electric charge
 . **electrostatic charge**
 RT capacitance
 charge distribution
 ∞ charging
 electric discharges
 electric fields
 electrostatics
 SCATHA satellite
 static electricity
 xerography

electrostatic drag
 GS dynamic characteristics
 . drag
 . . **electrostatic drag**
 RT drag measurement
 satellite drag

electrostatic engines
 DEF Electric rocket engines that use charge potential differences to accelerate propellant ions.
 GS engines
 . rocket engines
 . . electric rocket engines
 . . . **electrostatic engines**
 ion engines
 cesium engines
 Hall thrusters
 mercury ion engines
 RIT engines

RT arc jet engines
 microrocket engines
 restartable rocket engines
 sustainer rocket engines
 Vernier engines

electrostatic erosion
 USE **spark machining**

electrostatic fields
 USE **electric fields**

electrostatic generators
 GS electric generators
 . direct power generators
 . . **electrostatic generators**
 RT arc generators
 ∞ generators
 klystrons
 magnetrons
 rotating generators
 voltage generators

electrostatic gyroscopes
 UF *electrically suspended gyroscopes*
ESG (gyroscopes)
 GS gyroscopes
 . **electrostatic gyroscopes**
 RT levitation

electrostatic levitation
(added February 2009)
 USE **magnetic suspension**

electrostatic plasma
 USE **plasmas (physics)**

electrostatic precipitators
 GS separators
 . precipitators
 . . **electrostatic precipitators**
 RT adsorption
 air purification
 air sampling
 dust collectors
 fly ash
 ∞ separation

electrostatic probes
 UF *Langmuir probes*
 GS measuring instruments
 . plasma probes
 . . **electrostatic probes**
 . . radiation measuring instruments
 . . . **electrostatic probes**
 RT electron energy
 plasma frequencies
 radiation counters
 SCATHA satellite

electrostatic propulsion
 GS propulsion
 . electric propulsion
 . . **electrostatic propulsion**
 . . . ion propulsion
 . . low thrust propulsion
 . . . **electrostatic propulsion**
 ion propulsion
 . . spacecraft propulsion
 . . . **electrostatic propulsion**
 ion propulsion
 RT electromagnetic propulsion
 plasma propulsion

electrostatic shielding
 GS shielding
 . **electrostatic shielding**
 RT electric conductors
 SCATHA satellite

electrostatic waves
 GS elastic waves
 . magnetohydrodynamic waves
 . . plasma waves
 . . . **electrostatic waves**
 RT diffusion waves
 ionic waves
 longitudinal waves
 magnetoelastic waves
 shock waves

electrostatics

wave-particle interactions

electrostatics

GS statics
 . **electrostatics**
RT Born-Infeld theory
 electric fields
 electromagnetic interactions
 electromechanics
 electrostatic charge
 magnetostatics
 Poisson equation
 static electricity

electrostriction

DEF The phenomenon wherein some dielectric materials experience an elastic strain when subjected to an electric field, this strain being independent of polarity of the field.

GS electrical properties
 . **electrostriction**
 mechanical properties
 . **electrostriction**
RT electroactive polymers
 magnetostriction
 piezoelectricity
 smart materials

electrosynthesis

(added January 2000)

USE **electrochemical synthesis**

electrothermal engines

DEF Electric rocket engines that use electric energy to heat the propellant and add additional enthalpy.

GS engines
 . rocket engines
 . . electric rocket engines
 . . . **electrothermal engines**
 arc jet engines
 pulsed jet engines
 resistojet engines
RT high temperature propellants
 ion engines
 nuclear electric propulsion
 plasma engines
 restartable rocket engines
 sustainer rocket engines

electroweak interactions (field theory)

(added April 1994)

GS particle interactions
 . elementary particle interactions
 . . **electroweak interactions (field theory)**
RT electromagnetic interactions
 electroweak model
 ∞ interactions
 standard model (particle physics)
 weak interactions (field theory)

electroweak model

(added April 1994)

UF *standard electroweak model*
Weinberg-Salam Gauge Model
GS field theory (physics)
 . gauge theory
 . . unified field theory
 . . . **electroweak model**
 models
 . **electroweak model**
RT electromagnetic interactions
 electroweak interactions (field theory)
 Higgs bosons
 particle theory
 quantum theory
 standard model (particle physics)
 weak interactions (field theory)

electrowinning

DEF The production of metals by electrolysis with insoluble anodes in solutions derived from ores or other materials.

RT electrodeposition
 electrodes
 electrolytes
 electrolytic cells

electrorefining

Elektron 1 satellite

GS artificial satellites
 . meteorological satellites
 . . Elektron satellites
 . . . **Elektron 1 satellite**

Elektron 2 satellite

GS artificial satellites
 . meteorological satellites
 . . Elektron satellites
 . . . **Elektron 2 satellite**

Elektron 4 satellite

GS artificial satellites
 . meteorological satellites
 . . Elektron satellites
 . . . **Elektron 4 satellite**

Elektron satellites

GS artificial satellites
 . meteorological satellites
 . . **Elektron satellites**
 . . . Elektron 1 satellite
 . . . Elektron 2 satellite
 . . . Elektron 4 satellite

element abundance

USE **abundance**

elementary excitations

UF *quasi-particles*
GS **elementary excitations**
 . excitons
 . magnons
 . phonons
 . . phonon beams
 . plasmons
 . polarons
RT many body problem

elementary particle interactions

GS particle interactions
 . **elementary particle interactions**
 . . electroweak interactions (field theory)
 . . high energy interactions
 . . . strong interactions (field theory)
 . . meson-meson interactions
 . . meson-nucleon interactions
 . . nuclear capture
 . . . electron capture
 . . nucleon-nucleon interactions
 . . weak energy interactions
 . . . weak interactions (field theory)
 . . proton-antiproton interactions
RT angular distribution
 electromagnetic interactions
 ∞ interactions
 ion atom interactions
 Mandelstam representation
 particle decay
 photon-electron interaction
 transverse momentum
 Veneziano model

elementary particles

GS particles
 . **elementary particles**
 . . antiparticles
 . . . antineutrinos
 . . . antinucleons
 . . . antiprotons
 . . . positrons
 . . beta particles
 . . bosons
 . . . alpha particles
 . . . Higgs bosons
 . . . mesons
 eta-mesons
 hyperons
 xi hyperons
 kaons
 meson resonance
 X mesons
 muons
 omega-mesons
 pions
 vector mesons
RT atomic structure
 bubble chambers
 charged particles
 de Broglie wavelengths
 geocyclotrons
 hypernuclei
 instantons
 ionizing radiation
 neutron scattering
 nuclear interactions
 nuclear particles
 nuclear radiation
 nuclei (nuclear physics)
 particle accelerators
 Pomeranchuk theorem

 rho-mesons
 sigma-mesons
 . . . photons
 . . . xi hyperons
 . . deuterons
 . . electron-positron pairs
 . . fermions
 . . baryons
 . . . hyperons
 xi hyperons
 omega-mesons
 rho-mesons
 sigma-mesons
 . . . eta-mesons
 . . leptons
 . . . antineutrinos
 . . . electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . . . muons
 . . . neutrinos
 solar neutrinos
 . . . positrons
 . . meson resonance
 . . . X mesons
 . . neutrons
 . . . cold neutrons
 . . . fast neutrons
 . . . photoneutrons
 . . . solar neutrons
 . . . thermal neutrons
 . . protons
 . . . recoil protons
 . . . solar protons
 . . hadrons
 . . baryons
 . . . hyperons
 xi hyperons
 omega-mesons
 rho-mesons
 sigma-mesons
 . . mesons
 . . . eta-mesons
 . . . hyperons
 xi hyperons
 . . . kaons
 . . . meson resonance
 X mesons
 . . . muons
 omega-mesons
 . . . pions
 vector mesons
 rho-mesons
 sigma-mesons
 . . . hypothetical particles
 . . magnetic monopoles
 . . nucleons
 . . . gluons
 . . . gravitinos
 . . . gravitons
 . . . partons
 . . . quarks
 . . . tachyons
 . . . weakly interacting massive particles

positron annihilation
 quantum theory
 radiation belts
 standard model (particle physics)

∞ **elements**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT atoms
 chemical elements
 hahnium
 heavy elements
 isoparametric finite elements
 light elements
 logical elements
 neutral atoms
 nuclear fuel elements
 orbital elements
 rutherfordium
 tasks

elevation

RT altimetry
 altitude
 contours
 digital elevation models
 head (fluid mechanics)
 hydrostatic pressure
 hydrostatics
 hypsography
 low altitude
 pressure heads
 topography

elevation angle

UF *almucantar*
 GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **elevation angle**
 RT altitude
 azimuth
 datum (elevation)
 field of view
 look angles (tracking)
 topography

elevations (drawings)
 USE **drawings**

elevator illusion

GS psychological effects
 . illusions
 . . optical illusion
 . . . **elevator illusion**
 RT visual perception

elevators (control surfaces)

GS airfoils
 . **elevators (control surfaces)**
 control surfaces
 . **elevators (control surfaces)**
 RT ailerons
 ∞ control
 elevons
 horizontal tail surfaces
 hydrofoils
 stabilizers (fluid dynamics)
 ∞ surfaces
 tabs (control surfaces)
 tail assemblies
 tail surfaces

elevators (lifts)

GS **elevators (lifts)**
 . space elevators
 RT conveyors
 escalators
 ∞ jacks
 ∞ lifts
 winches

elevons

GS airfoils
 . **elevons**
 control surfaces
 . **elevons**
 RT ailerons
 elevators (control surfaces)
 lateral control

tabs (control surfaces)

elimination

GS **elimination**
 . deletion
 RT attenuation
 cancellation
 decontamination
 depletion
 ∞ discharge
 disposal
 evacuating (transportation)
 evacuating (vacuum)
 exclusion
 exhaust systems
 exhausting
 Gaussian elimination
 pollution
 purification
 ∞ reduction
 rejection
 ∞ separation
 stopping
 waste disposal

ellipses

DEF Plane curves constituting the locus of all points the sum of whose distances from two fixed points called foci is constant; an elongated circle.
 GS geometry
 . Euclidean geometry
 . . analytic geometry
 . . . conics
 **ellipses**
 RT circles (geometry)

ellipsoids

DEF Surfaces whose plane sections (cross sections) are all ellipses or circles, or the solid enclosed by such a surface. Used for Izsak ellipsoid.
 UF *Izsak ellipsoid*
 GS symmetrical bodies
 . **ellipsoids**
 RT bodies of revolution
 ellipticity
 ogives

ellipsometers

DEF Instruments for determining the ellipticity of polarized light. Used to measure the thickness of very thin transparent films.
 GS measuring instruments
 . optical measuring instruments
 . . **ellipsometers**
 optical equipment
 . optical measuring instruments
 . . **ellipsometers**
 RT ellipsometry
 photometers
 polarimeters

ellipsometry

(added December 1989)
 RT dimensional measurement
 ellipsometers
 ellipticity
 film thickness
 ∞ measurement
 optical measurement
 polarized light

elliptic differential equations

GS analysis (mathematics)
 . real variables
 . . differential equations
 . . . partial differential equations
 **elliptic differential equations**
 Monge-Ampere equation
 RT ∞ equations
 half spaces
 maximum principle

elliptic functions

UF *elliptic integrals*
 GS analysis (mathematics)
 . complex variables
 . . meromorphic functions
 . . . **elliptic functions**

functions (mathematics)
 . meromorphic functions
 . . **elliptic functions**
 RT Jacobi integral
 Weierstrass functions

elliptic integrals

USE **elliptic functions**

elliptical cylinders

RT circular cylinders
 ∞ cylinders
 cylindrical bodies
 cylindrical shells

elliptical galaxies

GS celestial bodies
 . galaxies
 . . **elliptical galaxies**
 RT disk galaxies
 galactic clusters
 local group (astronomy)
 peculiar galaxies
 Population II stars
 ring galaxies
 shell galaxies
 spiral galaxies
 star clusters
 Virgo galactic cluster

elliptical orbits

UF *Hohmann trajectories*
Hohmann transfer orbits
 GS orbits
 . **elliptical orbits**
 . . transfer orbits
 . . . interplanetary transfer orbits
 RT aphelions
 apogees
 apsides
 circular orbits
 Earth orbits
 Earth-Mars trajectories
 Earth-Mercury trajectories
 eccentric orbits
 ellipticity
 equatorial orbits
 Euler-Lambert equation
 low Earth orbits
 lunar orbits
 orbital mechanics
 PAS
 perigees
 perihelions
 planetary orbits
 polar orbits
 satellite orbits
 solar orbits
 spacecraft orbits

elliptical plasmas

DEF Confined non-circular plasmas.
 GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **elliptical plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **elliptical plasmas**
 RT magnetohydrodynamic stability
 plasma control
 toroidal plasmas

elliptical polarization

DEF The polarization of a wave radiated by an electric vector rotating in a plane and simultaneously varying in amplitude so as to describe an ellipse.
 GS polarization (waves)
 . **elliptical polarization**
 RT circular polarization
 magnetoionic

ellipticity

DEF The amount by which a spheroid differs from a circle, calculated by dividing the difference in the length of the axes by the length of the major axis.

elongation

- GS shapes
- . **ellipticity**
- RT eccentricity
- ellipsoids
- ellipsometry
- elliptical orbits
- flattening
- oblate spheroids

elongation

- RT angles (geometry)
- deformation
- ductility
- eccentricity
- expansion
- mechanical properties
- plastic deformation
- stretching
- superplasticity
- tensile deformation
- tensile strength

elution

- UF *elutriation*
- RT adsorption
- extraction
- flushing
- leaching
- purification
- ∞ separation
- washing

elutriation

USE **elution**

elves

(added January 2000)

DEF Transient air glow events observed near 90 km, nearly simultaneously with a strong cloud-to-ground lightning stroke. They often precede sprites, which may occur at lower altitudes a few milliseconds later. It is believed that elves are the result of wave heating by very low frequency (VLF) radio pulses emitted by the lightning discharge current.

- GS atmospheric radiation
- . sky radiation
- . . **elves**
- electromagnetic radiation
- . light (visible radiation)
- . . sky radiation
- . . . **elves**
- RT atmospheric electricity
- atmospheric ionization
- cloud-to-ground discharges
- lightning
- sprites (atmospheric physics)
- thunderstorms

e-mail

(added April 2000)

USE **electronic mail**

emanation

USE **emission**

embedded atom method

(added February 1998)

DEF A semiempirical calculation method developed by Daw and Baskes for determining the energetics of atoms in a bulk environment. The original form of the method was based on density functional theory and was intended primarily for tight-packed transition metals. More recent modifications have extended the applicability of the method to a large number of elements in the periodic table.

- UF *EAM (physical chemistry)*
- MEAM (physical chemistry)*
- modified embedded atom method*
- RT alloys
- crystal defects
- grain boundaries
- interatomic forces
- metals
- ∞ methodology
- molecular dynamics

potential energy

embedded computer systems

DEF Computer systems physically incorporated into larger systems whose primary function is not data processing.

- GS data processing equipment
- . computers
- . . **embedded computer systems**
- . . . airborne/spaceborne computers
- RT Ada (programming language)

embedding

- RT acceleration protection
- encapsulating
- insertion

embolisms

DEF Large amounts of air in the blood stream which, when reaching the heart, cause it to fail; small amounts are resorbed and cause no symptoms.

- GS **embolisms**
- . aeroembolism
- . fat embolisms
- RT blood vessels
- clotting
- coagulation
- infarction

embossing

- DEF Raising in relief on a surface.
- RT braille

embrittlement

DEF The severe loss of ductility or toughness or both, of a material, usually a metal or alloy.

- GS **embrittlement**
- . hydrogen embrittlement
- RT brittle materials
- brittleness
- degradation
- time temperature parameter

embryology

- RT ∞ biology
- diencephalon
- differentiation (biology)
- embryos
- fetuses
- neuroblasts
- reproduction (biology)

embryos

- RT eggs
- embryology
- fetuses
- seeds
- zygotes

emerald

USE **beryl**

emergencies

- RT accidents
- disasters
- fail-safe systems

emergency breathing techniques

- RT ∞ breathing
- ∞ methodology
- pressure breathing
- respirators
- resuscitation

emergency landing

(added March 2002)

DEF Unscheduled aircraft or spacecraft landing necessitated by an unexpected problem.

- GS landing
- . **emergency landing**
- RT abort trajectories
- aircraft accidents
- aircraft landing
- aircraft safety
- crash landing
- engine failure
- flight safety
- hard landing

spacecraft landing

emergency life sustaining systems

- GS support systems
- . life support systems
- . . **emergency life sustaining systems**
- . . . AEPS
- RT Assured Crew Return Vehicle
- environmental control
- escape capsules
- floats
- high altitude breathing
- medical equipment
- oxygen supply equipment
- portable life support systems
- pressurized cabins
- protective clothing
- safety
- safety devices
- survival equipment
- ∞ systems

emergency locator transmitters

DEF Aircraft distress signal equipment with a radio beacon on a specific emergency frequency and used for locating downed aircraft. The set is activated by the impact of the crash.

- GS transmitters
- . **emergency locator transmitters**

emerging

- RT emission
- emissivity
- emittance

emission

- UF *emanation*
- GS **emission**
- . acoustic emission
- . exhaust emission
- . light emission
- . . incandescence
- . . luminescence
- . . . bioluminescence
- . . . cathode glow
- . . . cathodoluminescence
- . . . chemiluminescence
- . . . electroluminescence
- . . . fluorescence
- laser induced fluorescence
- phosphorescence
- resonance fluorescence
- x ray fluorescence
- . . . lunar luminescence
- . . . optical resonance
- . . . photoluminescence
- triboluminescence
- x ray fluorescence
- . . . shock wave luminescence
- . . . sonoluminescence
- . . . spacecraft glow
- . . . thermoluminescence
- . microwave emission
- . particle emission
- . . electron emission
- . . . field emission
- . . . photoelectric emission
- . . . secondary emission
- . . ion emission
- . . neutron emission
- . . thermionic emission
- . photoionization
- . radio emission
- . . CN emission
- . . hydroxyl emission
- . . radio bursts
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . solar radio emission
- . . . solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . self sustained emission
- . spectral emission

. spontaneous emission
 . stimulated emission
 . thermal emission
 . . thermionic emission
 . ultraviolet emission
 . water masers

RT
 airglow
 atomic recombination
 bursts
 decay
 ∞ discharge
 efflux
 ejection
 emerging
 emitters
 excitation
 ionizing radiation
 irradiation
 nuclear reactions
 pair production
 quantum theory
 ∞ radiation
 radioactive decay
 radioactivity
 releasing
 selection rules (nuclear physics)
 sputtering

emission spectra

SN (LIMITED TO ELECTROMAGNETIC RADIATION OF ANY WAVELENGTH EMITTED FROM EXCITED MATTER--EXCLUDES PARTICLE SPECTRA)

DEF The spectra of wavelengths and relative intensities of electromagnetic radiation emitted by a given radiator. Each radiating substance has a unique, characteristic emission spectrum, just as every medium of transmission has its individual absorption spectrum.

GS spectra
 . radiation spectra
 . . **emission spectra**

RT
 absorption spectra
 atomic recombination
 Balmer series
 blue shift
 continuous radiation
 D lines
 electromagnetic spectra
 electron spectroscopy
 electronic spectra
 flame spectroscopy
 gamma ray spectra
 gamma rays
 H alpha line
 H beta line
 H gamma line
 H II regions
 H lines
 hydroxyl emission
 infrared spectra
 K lines
 laser-induced breakdown spectroscopy
 line spectra
 Lyman spectra
 molecular spectra
 molecular spectroscopy
 nuclear radiation
 optical emission spectroscopy
 optical transition
 Paschen series
 photoluminescent bands
 plasma spectra
 Raman spectra
 Rydberg series
 Schumann-Runge bands
 solar spectra
 solar spectrometers
 spectral signatures
 spectrum analysis
 spontaneous emission
 stellar spectra
 Swan bands
 symbiotic stars
 ultraviolet emission
 ultraviolet spectra
 Vegard-Kaplan bands
 visible spectrum

x ray stars
 x rays

emissivity

DEF A property of a material, measured as the emittance of a specimen of the material that is thick enough to be completely opaque and has an optically smooth surface. Used for photoemissivity.

UF *photoemissivity*
 GS thermodynamic properties
 . thermophysical properties
 . . **emissivity**

RT
 black body radiation
 brightness
 emerging
 emittance
 hohlraums
 incandescence
 luminosity
 nongray atmospheres
 nongray gas
 optical measurement
 radiance
 radiant flux density
 Stefan-Boltzmann law
 surface properties
 temperature
 thermal emission

emissographs

USE **actinometers**
recording instruments

emittance

RT
 emerging
 emissivity
 flux (rate)
 luminosity
 luminous intensity
 optical properties
 radiance
 radiant flux density
 spectral emission
 thermodynamic properties

emitters

GS **emitters**
 . thermionic cathodes
 . thermionic emitters

RT
 electron emission
 emission
 semiconductors (materials)
 thermophotovoltaic conversion

emotional factors

RT
 angina pectoris
 detachment
 disorders
 dithers
 feedback
 frustration
 human reactions
 moods
 panic
 phobias
 psychological factors
 psychology
 sensory feedback
 sensory stimulation

emotions

RT ∞
 depression
 fear
 fear of flying
 frustration
 human behavior
 laughing
 moods
 panic
 psychological effects
 psychology

sensory feedback

EMP (electromagnetism)
 (added May 1997)

USE **electromagnetic pulses**

empennage

USE **tail assemblies**

emphysema

GS diseases
 . respiratory diseases
 . . **emphysema**

RT occupational diseases

employee relations

RT ∞
 cooperation
 human relations
 personnel
 personnel development
 personnel management
 position (title)
 production management
 retirement
 wage surveys

employment

RT personnel selection
 ∞ tests

emptying

RT
 disposal
 dumping
 ejection
 expulsion
 expulsion bladders
 jettisoning
 materials handling
 releasing
 removal
 spilling
 spreading
 unloading

EMR 6050 computer

GS data processing equipment
 . computers
 . . digital computers
 . . . **EMR 6050 computer**

emulsions

DEF Suspensions of fine particle or globules of one or more liquids in another liquid.

GS mixtures
 . dispersions
 . . **emulsions**
 . . . photographic emulsions
 . . . nuclear emulsions

RT
 Brownian movements
 colloids
 slurries
 solutions

enamels

DEF Thin ceramic coatings, usually of high glass content, applied to a substrate, generally a metal.

GS coatings
 . **enamels**
 finishes
 . **enamels**

RT porcelain

enantiomeric compounds

(added August 1998)

USE **enantiomers**

enantiomers

(added August 1998)

DEF Isomeric pairs whose crystalline forms or molecular structures are non-superimposable mirror images.

UF *enantiomeric compounds*
enantiomorphs

GS isomers
 . **enantiomers**

RT
 chirality
 crystal structure
 isomorphism
 molecular structure
 stereochemistry

encapsulated microcircuits

symmetry

enantiomorphs
(added August 1998)
USE **enantiomers**

encapsulated microcircuits
DEF Microelectronic circuits enclosed in plastic.
GS circuits
. integrated circuits
. . . **encapsulated microcircuits**
RT microelectronics

encapsulating
GS coating
. **encapsulating**
coatings
. **encapsulating**
RT canning
electronic packaging
electrostatic bonding
embedding
∞ imbeddings
materials handling
packaging
plastic coatings
potting compounds
protective coatings
sealing
sheaths

Enceladus
DEF A satellite of Saturn orbiting at a mean distance of 238,000 kilometers.
GS celestial bodies
. natural satellites
. . icy satellites
. . . **Enceladus**
. . Saturn satellites
. . . **Enceladus**
RT Saturn (planet)

encephalitis
GS diseases
. **encephalitis**
RT bacterial diseases
brain
viral diseases

Encke comet
DEF A very faint comet with a periodicity of 3. 3 years which is the shortest of any known comet.
GS celestial bodies
. comets
. . **Encke comet**
RT Comet Nucleus Tour

Encke method
RT ∞ methodology

enclosure
RT ∞ casing
 housings
 packaging

enclosures
RT air locks
asteroid capture
∞ barriers
biopaks
closures
compartments
∞ containers
coverings
doghouses (electronics)
∞ envelopes
 housings
∞ pens
perforated shells
pressure chambers
protectors
rooms
safety devices
shells (structural forms)
shielding
shipyards

walls

encoders
USE **coders**

encoding
USE **coding**

encounters
RT crashes
scattering

end effectors
UF *fingers (robotics)*
hands (robotics)
mechanical fingers
mechanical hands
robot fingers
robot hands
RT ∞ effectors
manipulators
robot arms
robot dynamics
robotics
robots
tactile sensors (robotics)
torque sensors (robotics)

end moraines
USE **glacial drift**

end plates
GS structural members
. plates (structural members)
. . **end plates**
RT anisotropic plates
bulkheads
circular plates
closures
flat plates
shallow shell equations

endangered species
DEF Living organisms (except plants) whose populations have diminished to such low levels that survival may require extraordinary conservation procedures. Changes in size and quality of the ecology are considered the cause of the possible extinction of some species.
RT animals
birds
ecology
ecosystems
habitats
pollution
toxicity
wildlife

Endeavour (orbiter)
(added June 1989)
UF *Space Shuttle Orbiter 105*
GS manned spacecraft
. space shuttles
. . Space Shuttle orbiters
. . . **Endeavour (orbiter)**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. **Endeavour (orbiter)**
RT Challenger (Orbiter)
∞ spacecraft

endfire arrays
GS arrays
. antenna arrays
. . linear arrays
. . . **endfire arrays**
. . . . Yagi antennas
RT backfire antennas
directional antennas

endocrine glands
GS anatomy
. glands (anatomy)
. . **endocrine glands**
. . . adrenal gland
. . . gonads
. . . ovaries

. . . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
RT endocrinology
estrogens

endocrine secretions
GS secretions
. **endocrine secretions**
. . hormones
. . . corticosteroids
. . . . aldosterone
. . . . hydrocorticosteroid
. cortisone
. glucocorticoids
. . . estrogens
. . . hypertensin
. . . pituitary hormones
. . . . adrenocorticotropin (ACTH)
. . . . vasopressins
. . . prostaglandins
. . . thyroxine
. . insulin

endocrine systems
RT endocrinology
glands (anatomy)
hormones
mineral metabolism
∞ systems

endocrinology
GS medical science
. **endocrinology**
RT endocrine glands
endocrine systems

endolymph
GS body fluids
. **endolymph**
RT ear

endoplasmic reticulum
GS organelles
. **endoplasmic reticulum**
. . sarcoplasmic reticulum
RT cells (biology)
cytoplasm

endoscopes
UF *borescopes*
GS medical equipment
. **endoscopes**
optical equipment
. **endoscopes**
RT inspection

endothelium
GS tissues (biology)
. **endothelium**
RT blood vessels
cells (biology)

endothermic fuels
GS fuels
. chemical fuels
. . **endothermic fuels**
RT cryogenic rocket propellants
double base propellants
gaseous rocket propellants
hydrocarbon fuels
propellant decomposition

endothermic reactions
GS chemical reactions
. **endothermic reactions**
RT association reactions
exothermic reactions
heat sinks
pyrolysis
thermal decomposition

endotoxins
GS poisons
. **endotoxins**

- toxins and antitoxins
. endotoxins
 RT bacteriology
 toxicology
- endrin**
 GS epoxy compounds
. endrin
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **endrin**
 RT insecticides
- end-to-end data systems**
 DEF Comprehensive data systems which demonstrate the processing of sensor data to the user thus reducing data fragmentation.
 GS **end-to-end data systems**
 . needs (data system)
 RT ∞ data
 data acquisition
 data processing
 data systems
 ∞ systems
- ∞ **endurance**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT durability
 fatigue (biology)
 fatigue (materials)
 human performance
 human tolerances
- enemy personnel**
 GS personnel
. enemy personnel
 RT armed forces (foreign)
- Energetic Particle Explorer A*
 USE **Explorer 12 satellite**
- Energetic Particle Explorer B*
 USE **Explorer 14 satellite**
- Energetic Particle Explorer C*
 USE **Explorer 15 satellite**
- Energetic Particle Explorer D*
 USE **Explorer 26 satellite**
- energetic particles**
 DEF Charged particles having energies equaling or exceeding a hundred MeV
 GS particles
 . charged particles
 . . **energetic particles**
 . . . electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 . . . nuclei (nuclear physics)
 alpha particles
 deuterons
 even-even nuclei
 heavy nuclei
 hypernuclei
 odd-even nuclei
 odd-odd nuclei
 tritons
 . . . plasmas (physics)
 argon plasma
 beta particles
 boundary layer plasmas
 cold plasmas
 collisional plasmas
 strongly coupled plasmas
 collisionless plasmas
 cosmic plasma
 cylindrical plasmas
 dense plasmas
 plasma focus
 strongly coupled plasmas
 electron plasma
 electron-positron plasmas
 elliptical plasmas
 helium plasma
 high temperature plasmas
 hydrogen plasma
 deuterium plasma
 laser plasmas
 metallic plasmas
 cesium plasma
 uranium plasmas
 microplasmas
 nitrogen plasma
 nonequilibrium plasmas
 nonuniform plasmas
 oxygen plasma
 rarefied plasmas
 relativistic plasmas
 rotating plasmas
 semiconductor plasmas
 space plasmas
 solar wind
 stellar winds
 dusty plasmas
 spherical plasmas
 thermal plasmas
 toroidal plasmas
 plasma focus
 strongly coupled plasmas
 electron plasma
 electron-positron plasmas
 elliptical plasmas
 helium plasma
 high temperature plasmas
 hydrogen plasma
 deuterium plasma
 laser plasmas
 metallic plasmas
 cesium plasma
 uranium plasmas
 microplasmas
 nitrogen plasma
 nonequilibrium plasmas
 nonuniform plasmas
 oxygen plasma
 rarefied plasmas
 relativistic plasmas
 rotating plasmas
 semiconductor plasmas
 space plasmas
 solar wind
 stellar winds
 dusty plasmas
 spherical plasmas
 thermal plasmas
 toroidal plasmas
- RT Advanced Composition Explorer
 galactic cosmic rays
 radio jets (astronomy)
 solar cosmic rays
- Energiya launch vehicle**
(added April 1995)
 GS launch vehicles
 . heavy lift launch vehicles
 . . **Energiya launch vehicle**
 RT international cooperation
 Russian Space Program
 space commercialization
- ∞ **energy**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Any quantity with dimensions which can be represented as mass times length squared
 RT activation energy
 Bernstein energy principle
 binding energy
 chemical energy
 commercial energy
 dark energy
 domestic energy
 electron energy
 energy conservation
 energy conversion efficiency
 energy of formation
 enthalpy
 entropy
 exergy
 flux (rate)
 flux density
 free energy
 gravitational binding energy
 heat
 hydrogen-based energy
 industrial energy
 interfacial energy
 internal energy
 kinetic energy
 lattice energy
 molecular energy levels
 nuclear binding energy
 particle energy
 potential energy
 proton energy
 radiant heating
 seismic energy
 solar energy
 solar total energy systems
 stacking fault energy
 strain energy methods
 surface energy
 thermal energy
 thermonuclear power generation
 transportation energy
 waterwave energy
 work
- energy absorption**
 UF *nonreflection*
 GS **energy absorption**
 . moderation (energy absorption)
 . . thermalization (energy absorption)
 . . . neutron thermalization
 . . . radiation absorption
 electromagnetic absorption
 auroral absorption
 gamma ray absorption
 infrared absorption
 microwave absorption
 multiphoton absorption
 photoabsorption
 polar cap absorption
 ultraviolet absorption
 X ray absorption
 . . . molecular absorption
 . . . self absorption
 . . . thermal absorption
 polar cap absorption
 RT absorbers (materials)
 ∞ absorption

energy absorption films

damping
energy conversion efficiency
gamma ray absorptiometry
heat sinks
infrared radiation
light (visible radiation)
photon absorptiometry
shock absorbers
sound transmission
vibration isolators

energy absorption films

GS thin films
. **energy absorption films**
RT ∞ absorption
aluminum oxides
coatings
direct power generators
Golay detector cells
monomolecular films
photoelectric cells
photothermal conversion
selective surfaces
semiconducting films
thermochromic coatings

energy bands

GS **energy bands**
. Bloch band
. conduction bands
. forbidden bands
RT ∞ bands
electronic structure
excitons
laser windows
quantum wells
spectral bands
windows (intervals)

energy budgets

DEF Quantitative descriptions of the total energy exchange into and out of a given physical or ecological system; may include radiation heat, kinetic, and biological process.
GS **energy budgets**
. Earth radiation budget
. heat budget
. . . atmospheric heat budget
RT atmospheric energy sources
∞ budgets
exergy

energy conservation

GS conservation
. **energy conservation**
RT ∞ energy
energy policy
exergy
power factor controllers
residential energy
resource allocation
resources
thermochromic coatings

energy consumption

GS consumption
. **energy consumption**
RT coal utilization
commercial energy
domestic energy
∞ energy sources
fuel consumption
industrial energy

energy conversion

DEF The change of a working substance or natural power into a more useable form of energy such as electricity or mechanical motion.
GS **energy conversion**
. biomass energy production
. geothermal energy conversion
. ocean thermal energy conversion
. satellite solar energy conversion
. solar energy conversion
. . . photothermal conversion
. . . thermophotovoltaic conversion
. . . photovoltaic conversion
. . . thermophotovoltaic conversion
. . . solar total energy systems
. waterwave energy conversion

RT cogeneration
commercial energy
∞ conversion
direct power generators
domestic energy
geothermal energy extraction
hydrogen production
hydrothermal systems
industrial energy
integrated energy systems
laser power beaming
lignite
organic wastes (fuel conversion)
power beaming
power conditioning
satellite solar power stations
solar ponds (heat storage)
solar sea power plants
space industrialization
transportation energy
waste energy utilization

energy conversion efficiency

GS efficiency
. **energy conversion efficiency**
RT carrier transport (solid state)
∞ conversion
direct power generators
∞ energy
energy absorption
engines
exergy
fuel cells
∞ generators
motors
open circuit voltage
photothermal conversion
power conditioning
power factor controllers
quantum efficiency
Redox cells
spectrophotovoltaics
thermophotovoltaic conversion
tide powered generators
transducers
volumetric efficiency
waterwave energy conversion

energy converters

USE **direct power generators**

energy density

USE **flux density**

energy dissipation

DEF The difference between energy input and output as a result of transfer of energy between two points. Used for energy loss.
UF **energy loss**
GS dissipation
. **energy dissipation**
RT dielectric loss
exergy
friction
insertion loss
Lagrange similarity hypothesis
losses
nonadiabatic theory
∞ power loss
traveling charge

energy distribution

GS distribution (property)
. **energy distribution**
. . . spectral energy distribution
RT equipartition theorem
flux density
force distribution
integrated energy systems
quantum mechanics
statistical mechanics

Energy Efficiency Transport program

USE **ACEE program**

energy equipartition

USE **equipartition theorem**

energy exchange

USE **energy transfer**

energy gaps (solid state)

DEF A range of forbidden energies in the

band theory of solids. Used for bandgap.

UF **bandgap**

GS gaps

. **energy gaps (solid state)**

RT band structure of solids
blue shift
electronic structure
MODFETS
modulation doping
quantum well lasers
quantum wells
solid state
∞ solid state physics

energy levels

DEF Any one of different values of energy which a particle, atom, or molecule may adopt under conditions where the possible values are restricted by quantizing conditions. Used for electronic levels.

UF **electronic levels**

GS level (quantity)

. **energy levels**

. . atomic energy levels
. . electron states
. . ground state
. . molecular energy levels
. . . intermolecular forces
. . . rotational states
. . . vibrational states
. . yrast state

RT atomic excitations
atomic structure
electron tunneling
electronic structure
excitation
Fermi surfaces
molecular excitation
nuclear capture
nuclear models
nuclear quadrupole resonance
nuclear spin
nuclear structure
population inversion
quantum numbers
quantum theory

energy loss

USE **energy dissipation**

energy methods

GS structural analysis
. **energy methods**
. . Bernstein energy principle
. . strain energy methods
RT Castigliano variational theorem
matrices (mathematics)
∞ methodology
stress analysis

energy of formation

GS chemical energy
. **energy of formation**
RT ∞ energy
free energy
molecular energy levels

energy policy

GS policies
. **energy policy**
RT abundance
availability
coal
coal gasification
coal liquefaction
coal utilization
conservation
crude oil
depletion
∞ development
Earth resources
ecology
economic factors
energy conservation
fuel oils
fuels
hydrocarbon fuels
land use
lignite
logistics

- mining
- ∞ nuclear energy
 - nuclear fuels
 - oil exploration
 - oils
 - operating costs
 - pollution
 - refining
 - renewable energy
 - reserves
 - resource allocation
 - resources
 - safety
- energy requirements**
 - RT ∞ energy sources
 - fuel consumption
 - ∞ power supplies
- ∞ **energy sources**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT atmospheric energy sources
 - auxiliary power sources
 - biomass energy production
 - electric batteries
 - electric generators
 - electron sources
 - energy consumption
 - energy requirements
 - energy technology
 - geothermal resources
 - heat sources
 - lithium sulfur batteries
 - ocean thermal energy conversion
 - plasma power sources
 - point sources
 - propellants
 - rectifiers
 - renewable energy
 - spacecraft power supplies
 - tidepower
 - waterwave energy conversion
- energy spectra**
 - GS spectra
 - . **energy spectra**
 - . . . electronic spectra
 - . . . neutron spectra
 - RT absorption spectra
 - electromagnetic spectra
 - gamma ray astronomy
 - GRIST (telescope)
 - mass spectra
 - molecular spectra
 - plasma spectra
 - power spectra
 - radiation spectra
 - shock spectra
 - spectral energy distribution
 - spectrophotovoltaics
 - vibrational spectra
- energy storage**
 - UF *energy storage devices*
 - GS **energy storage**
 - . electric energy storage
 - . heat storage
 - . magnetic energy storage
 - RT capacitors
 - compressed air
 - electrets
 - electric batteries
 - flywheels
 - fuel cells
 - fuels
 - geothermal energy utilization
 - heat sources
 - inductors
 - lead acid batteries
 - nickel hydrogen batteries
 - ∞ nuclear energy
 - potential energy
 - Redox cells
 - regenerators
 - roadway powered vehicles
 - space station power supplies
 - springs (elastic)
 - ∞ storage
- superconductors (materials)
- energy storage devices*
- USE **energy storage**
- energy technology**
 - GS technologies
 - . **energy technology**
 - . . . geothermal technology
 - RT biomass energy production
 - coal utilization
 - combined cycle power generation
 - Earth resources
 - electrostatic bonding
 - ∞ energy sources
 - fuel cell power plants
 - gas recovery
 - geothermal energy extraction
 - heat engines
 - hydrocarbon fuel production
 - hydrogen-based energy
 - lignite
 - magnetic energy storage
 - offshore energy sources
 - oil recovery
 - phosphoric acid fuel cells
 - photoelectrochemical devices
 - photothermal conversion
 - quantum efficiency
 - renewable energy
 - residential energy
 - solar cooling
 - solar energy conversion
 - solar houses
 - space cooling (buildings)
 - Trombe walls
 - waste heat
- energy transfer**
 - UF *energy exchange*
 - GS **energy transfer**
 - . linear energy transfer (LET)
 - RT acoustic coupling
 - antenna couplers
 - coupling circuits
 - cyclotron resonance
 - electron pumping
 - gas transport
 - gas-liquid interactions
 - heat transfer
 - Heisenberg theory
 - Lagrange similarity hypothesis
 - mass transfer
 - momentum transfer
 - nonadiabatic conditions
 - nonisothermal processes
 - nuclear pumping
 - plasma heating
 - Poynting theorem
 - radiative transfer
 - terminal ballistics
 - transferring
 - wave rotors
- engine airframe integration**
 - DEF Physics of the interface between the engine and the airframe.
 - RT aerodynamic characteristics
 - aerodynamic configurations
 - aircraft design
 - aircraft engines
 - airframes
- engine analyzers**
 - GS measuring instruments
 - . analyzers
 - . . **engine analyzers**
- engine control**
 - DEF Any control for regulating the power and speed of an engine, such as the throttle, mixture control, manifold pressure regulator, fuel pressure control, or supercharger control.
 - GS **engine control**
 - . rocket engine control
 - . turbojet engine control
 - RT air start
 - aircraft control
 - automatic control
 - combustion control
- ∞ control
 - electric control
 - flight instruments
 - fuel control
 - hydraulic control
 - manual control
 - pneumatic control
 - remote control
 - spacecraft control
 - speed control
 - temperature control
 - thrust control
 - variable stream control engines
- engine coolants**
 - DEF Liquids used in an engine cooling system to transfer heat from the engine to the radiator.
 - GS coolants
 - . **engine coolants**
 - RT cooling
 - cooling systems
- engine design**
 - GS **engine design**
 - . rocket engine design
 - RT aircraft design
 - computer aided design
 - ∞ design
 - helicopter design
 - missile design
 - nozzle design
 - product development
 - reactor design
 - spacecraft design
 - Stirling engines
 - volumetric efficiency
- engine failure**
 - GS failure
 - . **engine failure**
 - RT aborted missions
 - ∞ cut-off
 - emergency landing
 - ingestion (engines)
 - ∞ stalling
- engine inlets**
 - GS intake systems
 - . air intakes
 - . . **engine inlets**
 - RT bypass ratio
 - cavity flow
 - ∞ diffusers
 - hypersonic inlets
 - inlet airframe configurations
 - inlet nozzles
 - inlet temperature
 - internal compression inlets
 - nacelles
- engine monitoring instruments**
 - GS measuring instruments
 - . **engine monitoring instruments**
 - RT fault detection
 - flight instruments
 - systems health monitoring
- engine noise**
 - GS elastic waves
 - . sound waves
 - . . noise (sound)
 - . . . **engine noise**
 - rocket engine noise
 - RT aircraft noise
 - aircraft runup
 - jet aircraft noise
 - propeller noise
 - quiet engine program
- engine parts**
 - RT carburetors
 - clutches
 - combustion chambers
 - ∞ components
 - dump combustors
 - flywheels
 - internal combustion engines
 - pistons
 - retirement for cause

engine primers

- rocket linings
- spare parts
- turbine blades
- turbine wheels
- valves
- wave rotors

engine primers

- RT internal combustion engines
- ∞ primers
- starting

engine relight (in-flight)

- USE **air start**

engine starters

- GS starters
- . **engine starters**
- RT engines
- internal combustion engines
- jet engines

engine testing laboratories

- GS laboratories
- . **engine testing laboratories**
- test facilities
- . **engine testing laboratories**
- RT engines

engine tests

- GS **engine tests**
- . cold flow tests
- . prefiring tests
- . space electric rocket tests
- . static firing
- RT aircraft runup
- altitude tests
- captive tests
- flight tests
- fuel tests
- full scale tests
- ground tests
- lubricant tests
- missile tests
- nondestructive tests
- prelaunch tests
- propellant tests
- propulsive efficiency
- rocket engine design
- rocket test facilities
- SERT 1 spacecraft
- SERT 2 spacecraft
- static tests
- Stirling engines
- test firing
- test stands
- testing time
- ∞ tests
- vibration tests

∞ engineering

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The useful application of scientific or other systematic knowledge of the properties of matter and the sources of energy in nature.
- RT aeronautical engineering
- aerospace engineering
- aircraft production costs
- anthropometry
- bioengineering
- bioinstrumentation
- biometrics
- biotelemetry
- body measurement (biology)
- chemical engineering
- concurrent engineering
- electrical engineering
- environmental engineering
- human factors engineering
- man machine systems
- mechanical engineering
- production engineering
- reactor technology
- reliability engineering
- software engineering
- structural engineering
- systems engineering
- underwater engineering

- value engineering

engineering development

- USE **product development**

engineering drawings

- UF *mechanical drawings*
- GS documents
- . drawings
- . . **engineering drawings**
- . . . blueprints
- RT circuit diagrams
- descriptive geometry
- ∞ design
- dimensions
- graphic arts
- layouts
- lofting
- reproduction (copying)

engineering management

- GS management
- . industrial management
- . . **engineering management**
- RT allocations
- ∞ budgets
- goals
- manpower
- priorities
- research management
- resource allocation
- resources

engineering test reactors

- UF *ETR (reactors)*
- GS nuclear reactors
- . **engineering test reactors**
- RT reactor design
- reactor technology

Engineering Test Satellites

(added October 1997)

- SN (LIMITED TO THE JAPANESE ETS SERIES OF SATELLITES)
- UF *ETS series satellites*
- GS artificial satellites
- . **Engineering Test Satellites**
- Japanese spacecraft
- . **Engineering Test Satellites**

engineers

(added November 1992)

- GS manpower
- . **engineers**
- personnel
- . **engineers**
- RT awards
- scientists

engines

- SN (LIMITED TO MACHINES WITH SELF-CONTAINED POWER SOURCES FOR CONTINUOUS OPERATION--SEE MOTORS FOR MACHINES UTILIZING EXTERNAL POWER SOURCES FOR NORMAL OPERATION)
- DEF Machines or apparatus that convert energy, especially heat energy, into work. Used for gas generator engines.
- UF *gas generator engines*
- GS **engines**
- . air breathing engines
- . . gas turbine engines
- . . . hydrogen engines
- . . . jet engines
- . . . T-58 engine
- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turboramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine

- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- .. helicopter engines
- .. rotary engines
- .. Wankel engines
- . JATO engines
- . Marquardt R4D engine
- . piston engines
- .. diesel engines
- .. free-piston engines
- .. Stirling engines
- . rocket engines
- .. booster rocket engines
- .. AJ-10 engine
- .. Algol engine
- .. apogee boost motors
- .. H-1 engine
- .. LR-87-AJ-5 engine
- .. M-1 engine
- .. M-55 engine
- .. MA-2 engine
- .. MA-3 engine
- .. MA-5 engine
- .. Nike booster rocket engines
- .. P-1 engine
- .. rocket engine 9K5-11000
- .. Space Shuttle Boosters
- ... Advanced Solid Rocket Motor (STS)
- ... X-405 engine
- .. ducted rocket engines
- .. electric rocket engines
- .. electrostatic engines
- ion engines
- cesium engines
- Hall thrusters
- mercury ion engines
- RIT engines
- .. electrothermal engines
- arc jet engines
- pulsed jet engines
- resistojet engines
- .. plasma engines
- ... magnetoplasmadynamic thrusters
- pulsed inductive thrusters
- pulsed plasma thrusters
- two stage plasma engines
- VASIMR (propulsion system)
- .. HEUS rocket engines
- .. hot water rocket engines
- .. hybrid propellant rocket engines
- .. lithergol rocket engines
- .. liquid propellant rocket engines
- .. AJ-10 engine
- .. F-1 rocket engine
- .. H-1 engine
- .. hydrazine engines
- .. hydrogen oxygen engines
- J-2 engine
- M-1 engine
- RL-10-A-1 engine
- RL-10-A-3 engine
- .. liquid air cycle engines
- .. LR-62-RM-2 engine
- .. LR-87-AJ-5 engine
- .. LR-91-AJ-5 engine
- .. MA-2 engine
- .. MA-3 engine
- .. MA-5 engine
- .. oxygen-hydrocarbon rocket engines
- .. RL-10 engines
- .. RL-10-A-1 engine
- .. RL-10-A-3 engine
- .. pulse detonation engines
- .. Space Shuttle Main Engine
- ... X-405 engine
- ... XLR-99 engine
- ... YLR-91-AJ-1 engine
- .. M-100 engine
- .. microrocket engines
- .. Orbit Maneuvering Engine (Space Shuttle)
- .. nozzleless rocket engines
- .. nuclear engine for rocket vehicles
- .. nuclear ramjet engines
- .. nuclear rocket engines
- .. nuclear lightbulb engines
- .. restartable rocket engines
- .. retrorocket engines
- .. BE-3 engine
- .. reusable rocket engines
- .. solid propellant rocket engines
- .. Algol engine
- .. apogee boost motors
- .. ASROC engine
- .. Hercules engine
- .. M-46 engine
- .. M-55 engine
- .. M-56 engine
- .. M-57 engine
- .. Nike booster rocket engines
- .. P-1 engine
- .. SL-3 rocket engine
- .. Space Shuttle Boosters
- ... Advanced Solid Rocket Motor (STS)
- ... SYNCOM apogee engines
- .. TX-77 engine
- .. TX-354 engine
- .. X-248 engine
- .. X-254 engine
- .. X-258 engines
- ... X-258-B1 engine
- .. X-259 engine
- .. XM-33 engine
- .. sustainer rocket engines
- .. turborocket engines
- .. ullage rocket engines
- .. upper stage rocket engines
- .. Vernier engines
- .. control rockets
- .. SYNCOM apogee engines
- .. aerospike engines
- .. rocket-based combined-cycle engines
- .. torpedo engines
- .. turborocket engines
- .. ullage rocket engines
- .. Vernier engines
- .. control rockets
- .. SYNCOM apogee engines
- .. turbine engines
- .. gas turbine engines
- .. hydrogen engines
- .. jet engines
- .. T-58 engine
- ... ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turboramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- RT auxiliary propulsion
- carburetors
- combustion chambers
- displacement
- energy conversion efficiency
- engine starters
- engine testing laboratories
- exhaust systems
- expendable stages (spacecraft)
- fuel consumption
- fuel systems
- geothermal energy conversion
- heat engines
- heat sources
- ignition systems
- lubrication
- ∞ machinery
- missile components
- motors
- ∞ power plants
- propulsion
- reaction products
- shutdowns
- speed regulators
- supersonic combustion
- thermodynamic efficiency
- thermodynamics
- transportation energy
- turbines
- ∞ vehicles
- England**
- GS nations
- .. United Kingdom
- .. **England**
- RT Europe
- English Channel**
- RT Atlantic Ocean
- France
- North Sea
- United Kingdom
- English language**
- GS languages
- .. **English language**
- RT speech
- words (language)
- engraving**
- RT etching
- printing
- enhanced vision**
- (added June 1995)
- UF *EVS*
- synthetic vision*
- GS vision
- .. **enhanced vision**
- RT aircraft landing
- landing aids
- multisensor applications
- night vision

enrichment

visibility
RT ∞ statistics

enhancement
USE **augmentation**

enlarging
USE **expansion**

ENO schemes
USE **essentially non-oscillatory schemes**

enrichment
GS **enrichment**
. isotopic enrichment
. jet membrane process
RT **beneficiation**
concentrating
purification
refining
upgrading

Enrico Fermi atomic power plant
GS electric power plants
. nuclear power plants
. . **Enrico Fermi atomic power plant**
nuclear electric power generation
. nuclear power plants
. . **Enrico Fermi atomic power plant**
RT breeder reactors
fast nuclear reactors
liquid metal cooled reactors
∞ power plants

Enskog-Chapman theory
USE **Chapman-Enskog theory**

enstatite
GS chalcogenides
. oxides
. . pyroxenes
. . . **enstatite**
magnesium compounds
. **enstatite**
minerals
. pyroxenes
. . **enstatite**
silicon compounds
. silicates
. . pyroxenes
. . . **enstatite**
RT chondrule
igneous rocks
regolith
rocks
soils

enstrophy
USE **vorticity**

Enterprise (Orbiter)
UF *Space Shuttle Orbiter 101*
GS manned spacecraft
. space shuttles
. . Space Shuttle orbiters
. . . **Enterprise (Orbiter)**
reentry vehicles
. recoverable spacecraft
. . reusable spacecraft
. . . space shuttles
. . . . Space Shuttle orbiters
. **Enterprise (Orbiter)**
RT manned space flight
∞ spacecraft

enthalpy
DEF A mathematically defined thermodynamic function of state. Used for heat content.
UF *heat content*
GS **heat**
. **enthalpy**
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
thermodynamic properties
. **enthalpy**

. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
RT **adiabatic conditions**
drying
∞ energy
entropy
free energy
Gibbs-Helmholtz equations
heat measurement
Joule-Thomson effect
Mollier diagram
specific heat
thermochemistry
thermodynamics

enthalpy-entropy diagrams
USE **Mollier diagram**

entire functions
UF *integral functions*
GS analysis (mathematics)
. complex variables
. . analytic functions
. . . **entire functions**
functions (mathematics)
. analytic functions
. . **entire functions**

entomology
RT insecticides
insects
∞ science
∞ zoology

entrainment
RT aeration
aerosols
blowing
Coanda effect
dispersing
spraying
suspending (mixing)

entrances
RT curtains
doors
intake systems
∞ thresholds
transfer tunnels

entrapment
RT accumulators
confusion
escape (abandonment)
radiation belts
tangling
traps

entropy
DEF A measure of the extent to which the energy of a system is unavailable.
GS thermodynamic properties
. **entropy**
RT Crocco method
∞ energy
enthalpy
exergy
heat
maximum entropy method
Mollier diagram
nonisentropy
Shannon-Wiener measure
tephigrams
thermochemistry
thermodynamics

entropy (statistics)
DEF A factor or quantity that is a function of a mechanical system and is equal to the logarithm of the probability of the particular arrangement in that state.
GS **entropy (statistics)**
. maximum entropy method
. minimum entropy method

∞ **entry**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT atmospheric entry
reentry

entry guidance (STS)
DEF The precise steering commands for trajectory from initial penetration of the Earth's atmosphere until the terminal area guidance is activated at an Earth-relative speed (about 2500 fps).
GS guidance (motion)
. **entry guidance (STS)**
RT atmospheric entry
flight control
hypersonic reentry
pointing control systems
space shuttles
Space Transportation System flights
spacecraft reentry
terminal guidance

enumeration
RT counting
lists
number theory

∞ **envelopes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coverings
enclosures
flight envelopes
limits (mathematics)
stellar envelopes

environment effects
SN (EFFECTS ON ENVIRONMENT)
GS **environment effects**
. radiative forcing
RT air pollution
coastal ecology
coastal water
contaminants
contamination
debris
deforestation
∞ effects
environments
eutrophication
exhaust gases
greenhouse effect
habitats
ice environments
man environment interactions
marine biology
marine environments
metabolic wastes
noise pollution
poisons
pollution
sewage
soil erosion
thermal pollution
waste disposal
wastes
water pollution
water quality
water resources
wetlands
wildlife

environment management
GS management
. **environment management**
RT conservation
Earth resources
environmental cleanup
environmental monitoring
land management
land use
man environment interactions
resources management
waste management
water management

water resources

environment models

- GS models
- . **environment models**
- RT atmospheric models
- climate models
- exobiology
- test chambers

environment pollution

DEF Alterations of the natural environment that are harmful to life; normally as produced by human activities.

- GS pollution
- . **environment pollution**
- .. air pollution
- ... global air pollution
- ... indoor air pollution
- .. soil pollution
- .. water pollution
- ... oil pollution
- RT aerobiology
- aerosols
- air sampling
- biomass burning
- clean energy
- Earth resources
- environmental monitoring
- environmental surveys
- human wastes
- metabolic wastes
- noise pollution
- oil slicks
- poisons
- pollution monitoring
- pollution transport
- radioactive wastes
- thermal pollution
- waste disposal

environment protection

- GS protection
- . **environment protection**
- RT air pollution
- Central Atlantic Regional Ecol Test Site
- effluents
- environmental cleanup
- environmental monitoring
- planetary protection
- pollution
- radioactive wastes
- waste disposal
- water pollution

environment simulation

- GS simulation
- . **environment simulation**
- .. acoustic simulation
- .. altitude simulation
- .. space environment simulation
- .. thermal simulation
- ... weightlessness simulation
- ... neutral buoyancy simulation
- RT atmospheric entry simulation
- atmospheric models
- environmental tests
- flight simulation
- virtual reality

environment simulators

- GS simulators
- . **environment simulators**
- .. Lunar Gravity Simulator
- .. solar simulators
- .. space simulators
- ... clinostats
- ... High Vacuum Orbital Simulator
- ... Langley complex coordinator
- RT test chambers

environmental chambers

USE **test chambers**

environmental chemistry

DEF Collective term comprising the complex chemical relationships involving the atmosphere, climatology, air and water pollution, fu-

els, pesticides, energy, biochemistry, geochemistry, etc.

GS **environmental chemistry**

- . aerothermochemistry
- . atmospheric chemistry
- . geochemistry
- . . biogeochemistry
- . marine chemistry

- RT air pollution
- ∞ chemistry
- climatology
- hydrocarbon fuels
- pesticides
- smog
- waste disposal
- water pollution

environmental cleanup

(added February 1999)

- GS cleaning
- . **environmental cleanup**
- RT decontamination
- environment management
- environment protection
- hazardous wastes
- oil pollution
- oil slicks
- pollution control
- reclamation
- soil pollution
- waste disposal
- waste treatment
- water pollution
- water treatment

environmental control

- GS **environmental control**
- . pollution control
- RT antiseptics
- artificial gravity
- automatic control
- biosatellites
- cabin atmospheres
- clean rooms
- ∞ control
- emergency life sustaining systems
- environments
- habitability
- manned reentry
- manned spacecraft
- pressurized cabins
- resources management
- spacecraft cabin atmospheres
- spacecraft environments
- temperature control
- test chambers
- weather modification
- windshields

environmental engineering

- RT ∞ aerospace sciences
- clean energy
- climatology
- comfort
- ∞ engineering
- environments
- heating
- human factors engineering
- illuminating
- life sciences
- life support systems
- meteorology
- physiological effects
- psychological effects
- shelters
- space heating (buildings)
- Starsite program
- temperature control
- temperature distribution
- terraforming
- ventilation
- waste disposal
- waste management

environmental index

- RT physiological tests

environmental laboratories

- GS laboratories
- . **environmental laboratories**

test facilities

RT **environmental laboratories**

- human factors laboratories
- test chambers

environmental monitoring

- RT ambience
- biomarkers
- environment management
- environment pollution
- environment protection
- infrared radiometers
- meteorology
- monitors
- NOAA 19 satellite
- NPOESS
- oceanography
- Orbiting Carbon Observatory (OCO)
- water sampling
- weather forecasting

environmental quality

- GS quality
- . **environmental quality**
- .. air quality
- .. water quality
- RT air pollution
- contaminants
- environments
- Global Air Sampling Program
- marine biology
- noise pollution
- pollution
- thermal pollution
- water pollution

Environmental Research Satellites

- UF *Octahedral Research Satellites*
- GS artificial satellites
- . scientific satellites
- .. **Environmental Research Satellites**
- ... ERS 17
- ... ERS 18
- ... Intasat satellite
- RT Atlas Agena launch vehicles

environmental surveys

- SN (LIMITED TO INDEXING ENVIRONMENTAL IMPACT STATEMENTS)
- RT aerosols
- air pollution
- Earth resources
- environment pollution
- human wastes
- metabolic wastes
- poisons
- pollution
- pollution control
- radioactive wastes
- thermal pollution
- waste disposal
- water pollution

environmental temperature

USE **ambient temperature**

environmental tests

- GS **environmental tests**
- . cold weather tests
- . corrosion tests
- .. corrosion test loops
- .. salt spray tests
- . high temperature tests
- . low temperature tests
- . underwater tests
- .. neutral buoyancy simulation
- RT ASSET project
- electronic equipment tests
- environment simulation
- field tests
- high altitude tests
- ∞ materials tests
- orbital space tests
- physiological tests
- psychological tests
- reverberation chambers
- spin tests
- test chambers
- ∞ tests

environmental transport

thermal cycling tests
thermal vacuum tests
vibration tests

environmental transport

(added March 2005)

DEF The transport of a substance through an environmental medium.

GS **environmental transport**

. pollution transport

environments

DEF External conditions or the sum of such conditions, in which pieces of equipment, living organisms, or systems operate as in temperature environment, vibration environment, or space environment. Environments are usually specified by a range of values, and may be either natural or artificial.

GS **environments**

. aerospace environments
. . . cislunar space
. . . deep space
. . . . interplanetary space
. . . . interstellar space
. . . Earth orbital environments
. . . Earth environment
. . . Earth magnetosphere
. . . geomagnetic tail
. . . magnetopause
. . . magnetosheath
. . . extraterrestrial environments
. . . cislunar space
. . . deep space
. . . . interplanetary space
. . . . interstellar space
. . . Earth orbital environments
. . . lunar environment
. . . . lunar atmosphere
. . . planetary environments
. . . . Mars environment
. Mars atmosphere
. . . . planetary atmospheres
. helium hydrogen atmospheres
. Jupiter atmosphere
. Mars atmosphere
. Mercury atmosphere
. Neptune atmosphere
. planetary ionospheres
. Pluto atmosphere
. Saturn atmosphere
. Uranus atmosphere
. Venus atmosphere
. Venus clouds
. . . . planetary magnetospheres
. planetary magnetotails
. . . satellite atmospheres
. . . . lunar atmosphere
. . . . Titan atmosphere
. . . stellar atmospheres
. . . . chromosphere
. . . . solar atmosphere
. solar transition region
. . . frictionless environments
. . . heterosphere
. . . high altitude environments
. . . high gravity environments
. . . high temperature environments
. . . ice environments
. . . inner radiation belt
. . . low temperature environments
. . . marine environments
. . . midlatitude atmosphere
. . . rotating environments
. . . spacecraft environments
. . . thermal environments
RT adiabatic conditions
air
air pollution
air quality
ambience
∞ atmospheres
coastal ecology
coastal plains
controlled atmospheres
Earth atmosphere
ecology
economic impact
electromagnetic interference

environment effects
environmental control
environmental engineering
environmental quality
global air pollution
gravitation
habitability
habitats
human factors engineering
humidity
life support systems
nonpoint sources
∞ performance
physiological effects
plants (botany)
pressure
programming environments
psychological effects
regimes
temperature
thermal pollution
vacuum effects
weightlessness

Envisat-1 satellite

(added August 2000)

DEF Polar-orbiting Earth observation satellite designed to provide continuous global measurements including high- and medium-resolution radar and optical images from its Advanced Synthetic Aperture Radar (ASAR) and Medium-Resolution Imaging Spectrometer (MERIS). Acquired data will support Earth science research and allow monitoring of environmental and climatic changes.

GS artificial satellites

. ESA satellites
. . **Envisat-1 satellite**
ESA spacecraft
. ESA satellites
. . **Envisat-1 satellite**

RT ERS-2 (esa satellite)
imaging spectrometers
remote sensing
satellite observation
satellite-borne radar
synthetic aperture radar

enzyme activity

GS metabolism

. **enzyme activity**

. . fermentation
RT bioconversion
diabetes mellitus
digestive system
enzyme inhibitors
lysosomes
tyrosine

enzyme inhibitors

(added August 2004)

DEF Compounds or agents that combine with an enzyme in such a manner as to prevent the normal substrate-enzyme combination and the catalytic reaction.

GS inhibitors

. **enzyme inhibitors**

RT active sites (chemistry)
biochemistry
catalytic activity
enzyme activity

enzymes

GS biopolymers
. proteins
. . **enzymes**
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . dehydrogenases
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . phosphatases

. . . protease
. . . renin
. . . thrombin
. . . trypsin
organic compounds
. proteins
. . **enzymes**
. . . aldolase
. . . amidase
. . . carbonic anhydrase
. . . catalase
. . . cholinesterase
. . . cytochromes
. . . dehydrogenases
. . . hexokinase
. . . lysozyme
. . . nuclease
. . . oxidase
. . . papain
. . . pepsin
. . . phosphatases
. . . protease
. . . renin
. . . thrombin
. . . trypsin

RT activation (biology)
catalysts
coenzymes
enzymology

enzymology

GS biochemistry
. **enzymology**
RT digesting
digestive system
enzymes
metabolism
nitrogen metabolism
phosphatases

EOCR (reactor)

USE **experimental organic cooled reactors**

EOGO

USE **EGO**

EOLE satellites

GS artificial satellites
. French satellites
. . **EOLE satellites**
. . meteorological satellites
. . . **EOLE satellites**
RT French space program
GEOLE satellites
geophysical satellites

EOPAP

USE **Earth & Ocean Physics Applications Program**

EOR (rendezvous)

USE **Earth orbital rendezvous**

EOS

USE **Earth Observing System (EOS)**

EOS AM-1 spacecraft

(added June 1999)

USE **Terra spacecraft**

EOS data and information system

(added April 1995)

DEF A system to manage data resulting from NASA's Earth Observing Systems's science research satellites and field measurement programs, and other data essential for interpreting these measurements.

UF **EOSDIS**

GS information systems

. **EOS data and information system**

RT Earth Observing System (EOS)
Earth Resources Information System
remote sensing
satellite observation

scientific satellites

EOS PM (satellite)
(added May 2005)
USE **Aqua spacecraft**

EOS-A
USE **Landsat E**

EOS-B
USE **Landsat F**

EOSDIS
USE **EOS data and information system**

eosinophils
DEF A type of white blood cell or leukocyte which stains a red color with eosin stain; normally about 2 to 3 percent of white cells in the blood but tending to decrease during stressful situations and thus usable as an index for stress.
GS cells (biology)
. blood cells
. . . leukocytes
. . . **eosinophils**
RT cytoplasm

EPE-A
USE **Explorer 12 satellite**

EPE-B
USE **Explorer 14 satellite**

EPE-C
USE **Explorer 15 satellite**

EPE-D
USE **Explorer 26 satellite**

ephemerides
DEF Periodical publications tabulating the predicted positions of celestial bodies at regular intervals, such as daily, and containing other data of interest to astronomers. A publication giving similar information useful to a navigator is called an almanac.
GS **ephemerides**
. planet ephemerides
RT astronomical catalogs
celestial mechanics
ephemeris time
orbits
position (location)

ephemeris time
DEF The uniform measure of time defined by the laws of dynamics and determined in principle from the orbital motions of the planets, specifically, the orbital motion of the Earth as represented by Newcomb's Tables of the sun.
GS time
. **ephemeris time**
RT ephemerides
universal time

epicardium
GS anatomy
. circulatory system
. . . cardiovascular system
. . . heart
. . . **epicardium**
membranes
. **epicardium**
tissues (biology)
. **epicardium**

epicycloids
GS geometry
. curves (geometry)
. . **epicycloids**
. Euclidean geometry
. . analytic geometry
. . . **epicycloids**
RT cusps (mathematics)

epidemiology
DEF The branch of medicine that studies the sources, distribution, and determinants of diseases and injuries in human populations.
GS medical science

. **epidemiology**
RT infectious diseases
vaccines
veterinary medicine

epidermis
GS anatomy
. skin (anatomy)
. . **epidermis**
RT contact dermatitis

epilepsy
GS diseases
. **epilepsy**
RT cramps
human pathology
shaking

Epimetheus
(added July 1995)
DEF A natural satellite of Saturn, orbiting at a mean distance of 151,422 kilometers. .
GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Epimetheus**
RT Saturn (planet)

epinephrine
DEF The active sympathomimetic hormone from the adrenal medulla in most species. It stimulates both the alpha- and beta- adrenergic systems, causes systemic vasoconstriction and gastrointestinal relaxation, stimulates the heart, and dilates bronchi and cerebral vessels. It is used in asthma and cardiac failure and to delay absorption of local anesthetics.
UF *adrenaline*
GS drugs
. **epinephrine**
organic compounds
. amines
. . catecholamine
. . . **epinephrine**
RT adrenal gland
dopamine
heart rate
hormones
neurotransmitters
stimulants

epitaxy
DEF The oriented growth of a crystalline substance on a substrate of the same or different crystalline substance.
GS growth
. crystal growth
. . **epitaxy**
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
RT bipolar transistors
crystal lattices
crystal structure
junction transistors
laser deposition
pulsed laser deposition

epithelium
GS tissues (biology)
. **epithelium**
RT anatomy
histology
peritoneum
skin (anatomy)

EPNL
USE **effective perceived noise levels**

epochs
USE **time measurement**

epoxidation
GS chemical reactions
. **epoxidation**

RT oxidation

epoxides
USE **epoxy compounds**

epoxy compounds
UF *epoxides*
GS **epoxy compounds**
. endrin
. ethylene oxide
. hyoscine
. propylene oxide
RT ∞ chemical compounds
ethers

epoxy matrix composites
DEF High strength compositions consisting of epoxy resin and a reinforcing matrix of filaments or fibers of glass, metal, or other materials.
GS composite materials
. polymer matrix composites
. . **epoxy matrix composites**
. . . boron-epoxy composites
. . . graphite-epoxy composites
RT aramid fiber composites
aramid fibers
braided composites
fiber orientation
low density research
 ∞ materials
 ∞ matrices
matrix materials
pultrusion
sandwich structures
woven composites

epoxy resins
DEF Viscous liquids or brittle solids containing epoxide groups that can be crosslinked into final form by means of a chemical reaction with a variety of setting agents used with or without heat.
GS plastics
. synthetic resins
. . thermosetting resins
. . . **epoxy resins**
. . . . phenolic epoxy resins
resins
. synthetic resins
. . thermosetting resins
. . . **epoxy resins**
. . . . phenolic epoxy resins
RT adhesives
boron reinforced materials
boron-epoxy composites
coatings
glass transition temperature
graphite-epoxy composites
lay-up
prepregs
resin matrix composites

equalizers (circuits)
RT attenuators
frequency response
phase shift
signal processing

∞ **equations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *balance equations*
forced vibratory motion equations
RT adiabatic equations
approximation
Bernoulli theorem
Bethe-Salpeter equation
biharmonic equations
Blasius equation
Boltzmann transport equation
Boltzmann-Vlasov equation
Born approximation
boundary layer equations
Brillouin-Wigner equation
Burger equation
Cauchy-Riemann equations
Chandrasekhar equation
Chaplygin equation
conservation equations

constitutive equations
 continuity equation
 convection-diffusion equation
 cubic equations
 difference equations
 differential equations
 diophantine equation
 Dirac equation
 Donnell equations
 Duffing differential equation
 eikonal equation
 Einstein equations
 Elber equation
 elliptic differential equations
 equations of motion
 equations of state
 equilibrium equations
 Euler equations of motion
 Euler-Cauchy equations
 Euler-Lagrange equation
 Euler-Lambert equation
 Faddeev equations
 Falkner-Skan equation
 Ficks equation
 flow equations
 Fokker-Planck equation
 Fredholm equations
 Gauss equation
 Gibbs adsorption equation
 ∞ Gibbs equations
 Gibbs-Helmholtz equations
 Glimm method
 Hamilton-Jacobi equation
 ∞ Helmholtz equations
 Helmholtz vorticity equation
 Hugoniot equation of state
 hydrodynamic equations
 hyperbolic differential equations
 identities
 inhour equation
 integral equations
 kinematic equations
 kinetic equations
 Klein-Gordon equation
 Korteweg-Devries equation
 Krook equation
 Lamé wave equations
 Landau-Ginzburg equations
 Laplace equation
 linear equations
 linear evolution equations
 linearization
 Liouville equations
 macroscopic equations
 Mathieu function
 Maxwell equation
 Monge-Ampere equation
 Navier-Stokes equation
 nonholonomic equations
 nonlinear equations
 nonlinear evolution equations
 Orr-Sommerfeld equations
 parabolic differential equations
 partial differential equations
 Pfaff equation
 Poisson equation
 polynomials
 primitive equations
 quadratic equations
 quartic equations
 Rayleigh equations
 reaction-diffusion equations
 Reynolds equation
 roots of equations
 Saha equations
 Schroedinger equation
 semiempirical equations
 shallow shell equations
 simultaneous equations
 singular integral equations
 Stokes-Beltrami equation
 thermodynamics
 vlasov equations
 Volterra equations
 Von Karman equation
 vorticity equations
 wave equations

Wiener Hopf equations

equations of motion

DEF A set of equations which give information regarding the motion of a body or of a point in space as a function of time when initial position and initial velocity are known. Used for motion equations.

- UF *motion equations*
- GS **equations of motion**
 - . Euler equations of motion
 - . Euler-Lagrange equation
 - . kinetic equations
 - . . hydrodynamic equations
 - . . . Burnett equations
 - . . . Helmholtz vorticity equation
 - . . kinematic equations
 - . Navier-Stokes equation
 - . Reynolds equation
- RT autonomy
 - Bethe-Salpeter equation
 - celestial mechanics
 - classical mechanics
 - computational fluid dynamics
 - continuity equation
 - control moment gyroscopes
- ∞ dynamics
 - Einstein equations
- ∞ equations
 - equilibrium equations
 - Hamilton-Jacobi equation
 - inertia principle
 - kinematics
 - Lissajous figures
 - Mach inertia principle
 - moments of inertia
 - motion aftereffects
 - spinning unguided rocket trajectory
 - stability
 - systems stability
 - trajectories
 - trajectory analysis
 - variable mass systems
 - von Zeipel method

equations of state

DEF Equations relating temperature, pressure, and volume of a system in thermodynamic equilibrium. Used for state equations.

- UF *state equations*
- GS **equations of state**
 - . Hugoniot equation of state
- RT adiabatic equations
 - BBGKY hierarchy
 - Bose geometry
 - compressibility
 - continuity equation
- ∞ equations
 - equilibrium equations
 - ideal fluids
 - ideal gas
 - kinetic theory
 - Mollier diagram
 - real gases
 - thermodynamics
 - virial coefficients

equatorial atmosphere

DEF The composition and characteristics of the Earth's atmosphere at and/or near the equator.

- RT ∞ atmospheres
 - atmospheric composition
 - meteorological parameters
 - middle atmosphere
 - quasi-biennial oscillation
 - TRMM satellite
 - tropical meteorology
 - tropical regions

equatorial electrojet

- GS electric current
 - . ionospheric currents
 - . . electrojets
 - . . . **equatorial electrojet**
 - electricity
 - . atmospheric electricity
 - . . ionospheric currents
 - . . . electrojets
 - **equatorial electrojet**

RT auroral electrojets

equatorial orbits

DEF Inclined orbits with an inclination of zero degrees. The plane of an equatorial orbit contains the equator of the primary body.

- GS orbits
 - . **equatorial orbits**
 - . . stationary orbits
- RT circular orbits
 - Earth orbits
 - elliptical orbits
 - geosynchronous orbits
 - lunar orbits
 - orbital mechanics
 - planetary orbits
 - polar orbits
 - satellite orbits
 - spacecraft orbits
 - twenty-four hour orbits

equatorial regions

DEF Areas on or near the Earth's equator; regions between the Tropic of Cancer and the Tropic of Capricorn (23 degrees 27 minutes North or South of the Equator).

- GS regions
 - . **equatorial regions**
- RT arid lands
 - Earth surface
 - tropical regions

equators

DEF The primary great circle of a sphere or spheroid, such as the Earth, perpendicular to the polar axis; or a line resembling or approximating such a circle.

- GS **equators**
 - . lunar equator
 - . magnetic equator
- RT coordinates
 - rotating spheres
 - transequatorial propagation

∞ **equilibrium**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF A state of dynamic balance between the opposing actions, reactions, or velocities of a reversible process.

- RT acid base equilibrium
- aerostatics
- balance
- balancing
- body sway test
- chemical equilibrium
- diffusion
- diffusion coefficient
- dynamic characteristics
- equilibrium equations
- heat of dissociation
- homeostasis
- isostasy
- liquid-vapor equilibrium
- loads (forces)
- Maxwell-Mohr method
- nonequilibrium conditions
- Onsager relationship
- plasma equilibrium
- relaxation (mechanics)
- relaxation time
- stability
- stabilization
- statics
- steady state
- systems stability
- thermodynamic equilibrium
- thermodynamic properties
- thermodynamics
- transition points
- unsteady state
- variability
- water balance

equilibrium diagrams

USE **phase diagrams**

equilibrium equations

- RT analysis (mathematics)
- ∞ equations

- equations of motion
equations of state
∞ equilibrium
- equilibrium flow**
DEF Gas flow in which energy is constant along streamlines and the composition of the gas at any point is not time dependent. Used for steady state flow.
UF *steady state flow*
GS fluid flow
. gas flow
. . . **equilibrium flow**
. . . frozen equilibrium flow
. . . shifting equilibrium flow
RT Eyring theory
heat transmission
nonequilibrium flow
plasma equilibrium
quasi-steady states
steady flow
- equilibrium methods**
SN (LIMITED TO STRUCTURAL ANALYSIS)
GS structural analysis
. **equilibrium methods**
RT matrix methods
∞ methodology
variational principles
- equinoxes**
DEF One of two points of intersection of the ecliptic and the celestial equator occupied by the sun when its declination is zero degrees.
RT seasons
solar position
solstices
winter
- equipartition theorem**
UF *energy equipartition*
GS theorems
. **equipartition theorem**
RT degrees of freedom
energy distribution
kinetic energy
specific heat
- ∞ **equipment**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *apparatus*
RT abort apparatus
absorbers (equipment)
accumulators (computers)
air conditioning equipment
airborne equipment
aircraft equipment
airport surface detection equipment
audio equipment
automatic test equipment
bedding equipment
bombing equipment
breathing apparatus
communication equipment
computer storage devices
consoles
cryogenic computer storage
cryogenic equipment
data processing equipment
distillation equipment
electromechanical devices
electronic equipment
ground support equipment
handling equipment
∞ hardware
heating equipment
hydraulic equipment
laboratory equipment
lighting equipment
lunar based equipment
lunar excavation equipment
mechanical devices
medical equipment
miniature electronic equipment
onboard equipment
peripheral equipment (computers)
photographic equipment
pneumatic equipment
portable equipment
- radar equipment
rigging
safety devices
self erecting devices
service life
spacecraft equipment
survival equipment
syringes
television equipment
∞ test equipment
wind tunnel apparatus
x ray apparatus
- equipment specifications**
GS specifications
. **equipment specifications**
RT aircraft production
commonality
∞ design
dynamic range
functional design specifications
maintenance
procurement
- equipotentials**
GS fluid flow
. potential flow
. . . **equipotentials**
RT ∞ flow graphs
flow nets
- equivalence**
GS mathematical logic
. set theory
. . . **equivalence**
RT parity
partitions (mathematics)
- equivalent circuits**
GS circuits
. **equivalent circuits**
RT duality principle
network analysis
network synthesis
superposition (mathematics)
- ER fluids*
USE **electrorheological fluids**
- ER-2 aircraft*
USE **U-2 aircraft**
- ERBE*
USE **Earth radiation budget experiment**
- erbium**
GS chemical elements
. rare earth elements
. . . **erbium**
. . . erbium isotopes
metals
. rare earth elements
. . . **erbium**
. . . erbium isotopes
- erbium 169*
USE **erbium isotopes**
- erbium 171*
USE **erbium isotopes**
- erbium alloys**
GS alloys
. rare earth alloys
. . . **erbium alloys**
- erbium compounds**
GS rare earth compounds
. **erbium compounds**
RT ∞ chemical compounds
∞ metal compounds
- erbium isotopes**
UF *erbium 169*
erbium 171
GS chemical elements
. nuclides
. . . isotopes
. . . **erbium isotopes**
. rare earth elements
. . . erbium
- . . . **erbium isotopes**
metals
. rare earth elements
. . . erbium
. . . **erbium isotopes**
- erection*
USE **construction**
- EREP**
UF *Earth Resources Experiment Package*
GS packages
. instrument packages
. . . **EREP**
RT ∞ instruments
Skylab 1
Skylab 2
Skylab 3
Skylab 4
- ergodic process**
RT information theory
probability theory
stochastic processes
thermodynamics
- ergometers**
DEF Instruments for measuring muscular work.
GS measuring instruments
. **ergometers**
RT dynamometers
- ergonomics*
USE **human factors engineering**
- ergotamine**
GS bases (chemical)
. alkaloids
. . . **ergotamine**
drugs
. **ergotamine**
nitrogen compounds
. alkaloids
. . . **ergotamine**
organic compounds
. amines
. . . **ergotamine**
cyclic compounds
. . . heterocyclic compounds
. . . alkaloids
. . . . **ergotamine**
- EROS (satellites)**
UF *Earth Resources Observation Satellites*
GS artificial satellites
. **EROS (satellites)**
RT Earth resources
oceanography
remote sensors
satellite observation
scanning
terrain analysis
- EROS asteroid**
(added March 1996)
GS celestial bodies
. asteroids
. . . **EROS asteroid**
RT Near Earth Asteroid Rendezvous Mission
- EROS project*
USE **Experimental Reflector Orbital Shot Proj**
- erosion**
DEF Progressive loss of original material from a solid surface due to mechanical interaction between that surface and a fluid, a multi-component fluid, or impinging liquid or solid particles. Used for scars (geology).
UF *scars (geology)*
GS **erosion**
. rain erosion
. soil erosion
. water erosion
. wind erosion

erosive burning

RT ablation
abrasion
arroyos
atmospheric effects
cavitation corrosion
cavitation flow
corrosion
degradation
deterioration
erosive burning
etching
fretting
hot corrosion
hydrogeology
impingement
inliers (landforms)
metal surfaces
metal-water reactions
pitting
plateaus
rain impact damage
ravines
rivers
soil science
space weathering
spark machining
surface reactions
tribology
valleys
wave resistance
wear
wear tests
weathering
wind effects

erosive burning

DEF Combustion of solid propellants accompanied with nonsteady, high velocity flows of product gases across burning propellant surfaces.

GS combustion
. **erosive burning**
RT burnout
combustion temperature
deterioration
erosion
exhaust gases
fuel combustion
hypersonic combustion
oxidation
pitting
propellant combustion
smoldering
solid propellant combustion
tribology

error analysis

GS analysis (mathematics)
. numerical analysis
. . **error analysis**
RT ∞ analyzing
∞ applications of mathematics
backpropagation (artificial intelligence)
bit error rate
boresight error
censored data (mathematics)
fault tolerance
ill-conditioned problems
(mathematics)
mean square values
probability theory
range errors
Rayleigh distribution
root-mean-square errors
sensitivity analysis
systematic errors

error band

USE **accuracy**

error correcting codes

DEF Codes in which each telegraph or data signal conforms to specific rules of construction so that departures from this construction in the received signals can be automatically detected, and permits the automatic correction, at the received terminal, of some or all of the errors. Note: Such codes require more signal elements

than are necessary to convey the basic information.

GS **error correcting codes**
. Reed-Solomon codes
RT automatic repeat request
bit error rate
∞ codes
concatenated codes
digital techniques
redundancy encoding

error correcting devices

RT BCH codes
correction
∞ devices
instrument compensation
redundancy encoding

error detection codes

DEF Codes in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression the resulting expression will not conform to the rules of construction and thus the presence of errors is detected. Note: Such codes require more signal elements than are necessary to convey the fundamental information.

RT bit error rate
∞ codes
coding
computer programs
computer systems programs
digital techniques
fault detection
fault tolerance
information theory
parity
proving
quality control
redundancy
redundancy encoding

error functions

GS functions (mathematics)
. **error functions**
RT statistical distributions

error signals

DEF Voltages the magnitude of which are proportional to the difference between an actual and a desired position.

RT automatic repeat request
bit error rate
comparators
compensators
differential amplifiers
discriminators
errors
false alarms
loop transfer recovery
phase error
position errors
range errors
signal mixing
∞ signals
slewing

errors

DEF In mathematics, the difference between the true value and a calculated or observed value. Use for invalidity.

UF *invalidity*
GS **errors**
. instrument errors
. phase error
. pilot error
. position errors
. . boresight error
. random errors
. range errors
. root-mean-square errors
. systematic errors
. truncation errors
. velocity errors

RT accuracy
bias
∞ compensation
computer program integrity
confidence
consistency

correction
drift (instrumentation)
dynamic characteristics
error signals
hysteresis
linearity
malfunctions
median (statistics)
optical correction procedure
precision
quality control
range (extremes)
reliability
resolution
response bias
∞ scaling
∞ tests
tolerances (mechanics)

ERS 17

GS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . **ERS 17**
RT Atlas Agena launch vehicles

ERS 18

GS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . **ERS 18**
RT Atlas Agena launch vehicles

ERS-1 (ESA satellite)

DEF A European Space Agency remote sensing satellite designed to monitor global oceans, coastal zones and polar regions. It is scheduled for launch on an Ariane 4 expendable launch vehicle in 1990.

GS artificial satellites
. ESA satellites
. . **ERS-1 (ESA satellite)**
. maritime satellites
. . **ERS-1 (ESA satellite)**
ESA spacecraft
. ESA satellites
. . **ERS-1 (ESA satellite)**
RT European Space Agency

ERS-2 (esa satellite)

(added February 1996)

GS artificial satellites
. ESA satellites
. . **ERS-2 (esa satellite)**
ESA spacecraft
. ESA satellites
. . **ERS-2 (esa satellite)**
RT Envisat-1 satellite
European Space Agency

ERTS

USE **Landsat satellites**

ERTS-A

USE **Landsat 1**

ERTS-B

USE **Landsat 2**

ERTS-C

USE **Landsat 3**

ERTS-D

USE **Landsat 4**

ERTS-E

USE **Landsat E**

ERTS-F

USE **Landsat F**

eruptions (volcanology)

(added October 2001)

USE **volcanic eruptions**

erythrocytes

UF *red blood cells*
GS cells (biology)
. blood cells
. . **erythrocytes**
. . . reticulocytes

RT blood cell count
bone marrow
carboxyhemoglobin
hematocrit
hematocrit ratio
hemoglobin
hemolysis
leukocytes
monocytes
oxyhemoglobin

ES-3A aircraft
USE **S-3 aircraft**

ESA
USE **European Space Agency**

ESA satellites
SN (EUROPEAN SPACE AGENCY SATELLITES)
UF *ESRO satellites*
European Space Research Organization sat

GS artificial satellites
. **ESA satellites**
.. Aerosat satellites
.. COS-B satellite
.. ERS-1 (ESA satellite)
.. ERS-2 (esa satellite)
.. ESRO 1 satellite
.. ESRO 2 satellite
.. ESRO 4 satellite
.. European Communications Satellite
.. Exosat satellite
.. GEOS satellites (ESA)
.. HEOS satellites
.. . HEOS A satellite
.. . HEOS B satellite
.. Hipparcos satellite
.. Infrared Space Observatory (ISO)
.. L-Sat
.. Magellan ultraviolet astronomy satellite
.. Marecs maritime satellites
.. Marots (ESA)
.. METEOSAT satellite
.. OTS (ESA)
.. TD satellites
.. . TD-1 satellite
.. Envisat-1 satellite
.. XMM-Newton telescope
ESA spacecraft
. **ESA satellites**
.. Aerosat satellites
.. COS-B satellite
.. ERS-1 (ESA satellite)
.. ERS-2 (esa satellite)
.. ESRO 1 satellite
.. ESRO 2 satellite
.. ESRO 4 satellite
.. European Communications Satellite
.. Exosat satellite
.. GEOS satellites (ESA)
.. HEOS satellites
.. . HEOS A satellite
.. . HEOS B satellite
.. Hipparcos satellite
.. Infrared Space Observatory (ISO)
.. L-Sat
.. Magellan ultraviolet astronomy satellite
.. Marecs maritime satellites
.. Marots (ESA)
.. METEOSAT satellite
.. OTS (ESA)
.. TD satellites
.. . TD-1 satellite
.. Envisat-1 satellite
.. XMM-Newton telescope

RT Earthnet
European Space Agency
European space programs
international cooperation
SOHO Mission

ESA spacecraft
DEF Spacecraft of the European Space Agency.
GS **ESA spacecraft**

. Columbus space station
.. ESA satellites
.. . Aerosat satellites
.. . COS-B satellite
.. . ERS-1 (ESA satellite)
.. . ERS-2 (esa satellite)
.. . ESRO 1 satellite
.. . ESRO 2 satellite
.. . ESRO 4 satellite
.. European Communications Satellite
.. Exosat satellite
.. GEOS satellites (ESA)
.. HEOS satellites
.. . HEOS A satellite
.. . HEOS B satellite
.. Hipparcos satellite
.. Infrared Space Observatory (ISO)
.. L-Sat
.. Magellan ultraviolet astronomy satellite
.. Marecs maritime satellites
.. Marots (ESA)
.. METEOSAT satellite
.. OTS (ESA)
.. TD satellites
.. . TD-1 satellite
.. Envisat-1 satellite
.. XMM-Newton telescope
.. Giotto mission
.. Huygens probe
RT ∞ spacecraft

Esaki diodes
USE **tunnel diodes**

escalators
RT elevators (lifts)
ladders
∞ lifts
stairways

∞ **escape**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF Of a particle or larger body: to achieve an escape velocity and a flightpath outward from a primary body so as neither to fall back to the body nor to orbit it.
RT escape (abandonment)
escape capsules
escape rockets
escape systems
escape velocity
leakage

escape (abandonment)
RT bailout
ejection
ejection training
entrapment
∞ escape
escape rockets
escape systems
jettison systems
jettisoning
parachute descent

escape capsules
GS safety devices
. **escape capsules**
space capsules
. **escape capsules**
RT abort apparatus
aborted missions
Assured Crew Return Vehicle
ejection seats
emergency life sustaining systems
∞ escape
flying ejection seats
high altitude environments
launch escape systems
lunar escape devices
paracone
pressurized cabins
X-38 crew return vehicle

escape rockets
DEF Small rocket engines attached to the leading end of an escape tower, which may be

used to provide additional thrust to the capsule to obtain separation of the capsule from the booster vehicle in an emergency.
GS safety devices
. **escape rockets**
RT abort apparatus
aborted missions
∞ escape
escape (abandonment)
launch escape systems
lunar escape devices
∞ rockets
∞ spacecraft

escape systems
GS **escape systems**
. launch escape systems
RT bailout
ejection
ejection seats
∞ escape
escape (abandonment)
jettison systems
paracone
safety factors
∞ systems

escape velocity
DEF The radial speed which a particle or larger body must attain in order to escape from the gravitational field of a planet, satellite, or star. Used for parabolic velocity.
UF *parabolic velocity*
GS rates (per time)
. **escape velocity**
velocity
. **escape velocity**
RT ∞ escape
high speed
hyperbolic trajectories
∞ hypervelocity
orbital velocity
planetary gravitation
Schwarzschild metric
velocity errors

escarpments
DEF Long, more or less continuous cliffs or relatively steep slopes facing in one general direction, breaking the continuity of the land by separating two level or gently sloping surfaces, and produced by erosion or by faulting. Used for scarps.
UF *scarps*
GS landforms
. **escarpments**
RT cliffs
slopes
topography

Escherichia
GS microorganisms
. bacteria
.. **Escherichia**

ESG (*gyroscopes*)
USE **electrostatic gyroscopes**

eskers
USE **glacial drift**

Eskimos
RT anthropology
culture (social sciences)

ESO (*observatory*)
(*added June 1996*)
USE **European Southern Observatory**

esophagus
GS anatomy
. digestive system
.. **esophagus**

ESRO
USE **European Space Agency**

ESRO 1 satellite
GS artificial satellites
. ESA satellites
.. **ESRO 1 satellite**

ESRO 2 satellite

ESA spacecraft
. ESA satellites
.. **ESRO 1 satellite**
RT European Space Agency
European space programs

ESRO 2 satellite

GS artificial satellites
. ESA satellites
.. **ESRO 2 satellite**
ESA spacecraft
. ESA satellites
.. **ESRO 2 satellite**
RT European Space Agency
European space programs

ESRO 4 satellite

GS artificial satellites
. ESA satellites
.. **ESRO 4 satellite**
ESA spacecraft
. ESA satellites
.. **ESRO 4 satellite**
RT auroras
European Space Agency
European space programs
particle density (concentration)
scientific satellites

ESRO satellites

USE **ESA satellites**

ESSA 1 satellite

UF *OT-3*
GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 1 satellite**
RT Delta launch vehicle

ESSA 2 satellite

UF *OT-2*
GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 2 satellite**
RT Delta launch vehicle

ESSA 3 satellite

UF *TOS-A*
GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 3 satellite**
RT Delta launch vehicle

ESSA 4 satellite

GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 4 satellite**
RT Delta launch vehicle

ESSA 5 satellite

GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 5 satellite**
RT Delta launch vehicle

ESSA 6 satellite

GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 6 satellite**
RT Delta launch vehicle

ESSA 7 satellite

GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 7 satellite**
RT Delta launch vehicle

ESSA 8 satellite

GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 8 satellite**

RT Delta launch vehicle

ESSA 9 satellite

GS artificial satellites
. meteorological satellites
.. ESSA satellites
... **ESSA 9 satellite**
RT Delta launch vehicle

ESSA satellites

DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS, those funded by NOAA are called ESSA.

GS artificial satellites
. meteorological satellites
.. **ESSA satellites**
... ESSA 1 satellite
... ESSA 2 satellite
... ESSA 3 satellite
... ESSA 4 satellite
... ESSA 5 satellite
... ESSA 6 satellite
... ESSA 7 satellite
... ESSA 8 satellite
... ESSA 9 satellite
RT cloud photography
Nimbus satellites
satellite observation
TIROS satellites

essentially non-oscillatory schemes

(added September 1990)

UF *ENO schemes*
GS analysis (mathematics)
. numerical analysis
.. approximation
... **essentially non-oscillatory schemes**
RT finite difference theory
hyperbolic differential equations
TVD schemes

esters

GS **esters**
. acrylates
. alkylates
. aspartates
. Carbamates (tradename)
.. urethanes
. carboxylates
. chloroformate
. cobalt acetates
. cyanurates
. glutamates
. glycerides
. isocyanates
.. diisocyanates
.. fulminates
. lactates
. lead acetates
. maleates
. meprobamate
. nitrate esters
.. isopropyl nitrate
.. propyl nitrate
. octoates
. organic nitrates
.. cellulose nitrate
.. nitroforms
... hydrazine nitroform
.. nitroglycerin
.. PETN
. phthalates
. polycarbonates
. Lexan (trademark)
. polyesters
. polyethylene terephthalate
. sodium chlorodifluoroacetates
. sodium salicylates
. stearates
. sulfonates
. triacetin
acetates
acetyl compounds
citrates
cyanates
lipids
nitrosyls
organic compounds

phosphatases
plasticizers
salicylates
Skydrol (trademark)

estimates

GS **estimates**
. cost estimates
RT allocations
comparison
confidence limits
contingency
contracts
damage assessment
estimating
evaluation
forecasting
likelihood ratio
management methods
management planning
noise prediction (aircraft)
parameter identification
predictions
production management
project planning
quality control
reliability
reserves
risk
statistical analysis
statistical tests
∞ statistics
subcontracts
system identification
value

estimating

DEF A procedure for making a statistical inference about the numerical values of one or more unknown population parameters from the observed values in a sample.

GS **estimating**
. orbital position estimation
. parameter identification
. system identification
RT autoregressive moving average
budgeting
contracts
costs
counting
critical path method
Delphi method (forecasting)
∞ design
estimates
∞ estimators
evaluation
feasibility
forecasting
∞ measurement
mission planning
numerical differentiation
pattern method (forecasting)
probe method (forecasting)
profile method (forecasting)
projects
quality control
reserves
risk
sampling
standard deviation
statistical analysis
statistical tests
∞ statistics
technological forecasting
value

estimators

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT correlation
cost estimates
estimating
parameterization
personnel

Estonia

GS nations
. **Estonia**
RT Baltic sea

Europe

estrogens
 GS organic compounds
 . lipids
 . . steroids
 . . . **estrogens**
 secretions
 . endocrine secretions
 . . hormones
 . . . **estrogens**
 RT endocrine glands
 sex glands

estuaries
 DEF (A) The seaward end or the widened funnel-shaped tidal mouth of a river valley where fresh water comes into contact with seawater and where tidal effects are evident. ley due to the rise of sea level.
 UF *outlets (geology)*
 RT bays (topographic features)
 Chesapeake Bay (US)
 coasts
 fisheries
 geography
 harbors
 oceanography
 rivers
 tidal flats
 tides
 tributaries

etalons
 DEF Two adjustable parallel mirrors mounted so that either one may serve as one of the mirrors in a Michelson interferometer; used to measure distance in terms of wavelengths of spectral lines.
 GS measuring instruments
 . interferometers
 . . **etalons**
 . optical measuring instruments
 . . **etalons**
 mirrors
 . **etalons**
 optical equipment
 . optical measuring instruments
 . . **etalons**
 RT astronomical interferometry
 diffractometers
 Fabry-Perot interferometers
 flatness
 goniometers
 optical measurement
 photogoniometers
 reflectors
 Ronchi test
 Sagnac effect
 specular reflection
 telescopes
 very long base interferometry

eta-mesons
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **eta-mesons**
 . . fermions
 . . . **eta-mesons**
 . . hadrons
 . . . mesons
 **eta-mesons**
 . nuclear particles
 . . bosons
 . . . mesons
 **eta-mesons**
 RT baryons
 charged particles
 omega-mesons
 rho-mesons
 sigma-mesons

etchants
 RT corrosion
 etching

etching
 GS **etching**

. plasma etching
 RT corrosion
 engraving
 erosion
 etchants
 metallography
 photoresists
 pitting
 ultrasonic cleaning

ethane
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkanes
 **ethane**
 RT hydrocarbon fuels

ethane nitrile
 USE **acetonitrile**

ethanol
 USE **ethyl alcohol**

Ethernet
(added January 2000)
 DEF Computer network protocol originally developed in the 1970s for local area network technology; uses carrier sense multiple access with collision detection (CSMA/CD), coaxial cable, and broadcast transmission.
 GS protocol (computers)
 . **Ethernet**
 RT carrier sense multiple access
 computer networks
 local area networks

ethers
 GS **ethers**
 . acetals
 . anisole
 . diethyl ether
 . gallamine triethiodide
 . polyphenyl ether
 RT anesthetics
 drugs
 epoxy compounds
 organic compounds
 PEEK
 propargyl groups

ethics
 DEF The standards of conduct and moral judgment of a group, religion, profession, etc.
 RT ∞ methodology
 norms
 research

Ethiopia
 GS nations
 . **Ethiopia**
 RT Africa

ethnic factors
 DEF The complex patterns of behavior which distinguish an ethnic group.
 GS sociology
 . social factors
 . . **ethnic factors**
 RT American Indians
 communities
 culture (social sciences)
 group dynamics
 race factors

ethoxy ethylene
 GS organic compounds
 . ethylene compounds
 . . **ethoxy ethylene**

ethyl alcohol
 UF *ethanol*
 GS hydroxyl compounds
 . alcohols
 . . **ethyl alcohol**
 RT atmospheric energy sources
 carbohydrates

ethyl compounds
 RT ∞ chemical compounds
 diethyl compounds

diethyl hydrogen phosphite (DEHP)
 tetraethyl orthosilicate
 triethyl compounds

ethylene
 GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkenes
 **ethylene**
 vinylidene
 RT hydrocarbon fuels
 plant growth regulators
 polyethylenes

ethylene compounds
 GS organic compounds
 . **ethylene compounds**
 . . chloroethylene
 . . . trichloroethylene
 . . ethoxy ethylene
 . . ethylene dihydrazine
 . . ethylenediamine
 . . ethylenediaminetetraacetic acids
 . . succinonitrile
 RT ∞ chemical compounds

ethylene cyanide
(added April 2004)
 USE **succinonitrile**

ethylene dihydrazine
 GS hydrazines
 . **ethylene dihydrazine**
 organic compounds
 . ethylene compounds
 . . **ethylene dihydrazine**

ethylene oxide
 GS epoxy compounds
 . **ethylene oxide**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **ethylene oxide**
 RT bactericides
 chemical sterilization
 decontamination
 oxides
 spacecraft sterilization

ethylenediamine
 GS organic compounds
 . amines
 . . diamines
 . . . **ethylenediamine**
 . ethylene compounds
 . . **ethylenediamine**

ethylenediaminetetraacetic acids
 UF *EDTA*
 GS acids
 . carboxylic acids
 . . fatty acids
 . . . acetic acid
 **ethylenediaminetetraacetic acids**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . acetic acid
 **ethylenediaminetetraacetic acids**
 . ethylene compounds
 . . **ethylenediaminetetraacetic acids**
 RT acetates
 detergents

etiology
 DEF The doctrine of causes, particularly the causes and reasons for diseases.
 RT case histories
 causes
 diseases

Ettingshausen effect

prevention

ETR (reactors)

USE **engineering test reactors**

ETS series satellites

(added October 1997)

USE **Engineering Test Satellites**

Ettingshausen coolers

USE **Ettingshausen effect thermoelectric cooling**

Ettingshausen effect

UF *Ettingshausen coolers*

RT cooling systems

∞ effects

temperature effects
thermoelectric cooling
thermoelectricity
thermomagnetic cooling
thermomagnetic effects

Euclidean geometry

UF *Euclidean space*

GS geometry

. **Euclidean geometry**

. . . analytic geometry

. . . . catenaries

. . . . circumferences

. . . . conics

. ellipses

. hyperbolas

. parabolas

. . . . cycloids

. . . . epicycloids

. . . . loci

. . . Mercator projection

. . . . quadrants

. . . . S curves

. Gompertz curves

. . . . spheroids

. oblate spheroids

. prolate spheroids

. . . . tangents

. . . . toruses

. . . . trigonometry

. . . angles (geometry)

. . . . angle of attack

. zero angle of attack

. . . . Bragg angle

. . . Brewster angle

. . . . dihedral angle

. . . . elevation angle

. . . . look angles (electronics)

. . . . look angles (tracking)

. . . . sweep angle

. sweepback

. leading edge sweep

. . Cartesian coordinates

. . circles (geometry)

. . . great circles

. . descriptive geometry

. . lines (geometry)

. . . chords (geometry)

. . . geodesic lines

. . points (mathematics)

. . . fixed points (mathematics)

. . . inflection points

. . polygons

. . . hexagons

. . . tetragons

. . . . parallelograms

. rhomboids

. rectangles

. squares (mathematics)

. . . . trapezoids

. . . triangles

. . polyhedrons

. . . cubes (mathematics)

. . . icosahedrons

. . . octahedrons

. . . parallelepipeds

. . . pyramids

. . . rhombohedrons

. . . tetrahedrons

. . projective geometry

. . . Mercator projection

. . radii

. . . Larmor radius

RT coordinates

curves (geometry)

phase-space integral

polytopes

Riemann manifold

Sobolev space

spheres

Euclidean space

USE **Euclidean geometry**

audiometers

GS measuring instruments

. **audiometers**

RT gas mixtures

spark ignition

Euglena

GS animals

. protozoa

. . Flagellata

. . . **Euglena**

microorganisms

. protozoa

. . Flagellata

. . . **Euglena**

RT algae

eukaryotes

GS cells (biology)

. **eukaryotes**

RT bacteria

biological evolution

cytology

molecular biology

prokaryotes

Euler buckling

GS buckling

. **Euler buckling**

RT stress analysis

Euler equations of motion

GS equations of motion

. **Euler equations of motion**

RT ∞ equations

Godunov method

hydrodynamics

moments of inertia

primitive equations

rigid structures

upwind schemes (mathematics)

Euler-Bernoulli beam theory

(added April 1998)

USE **Euler-Bernoulli beams**

Euler-Bernoulli beams

(added April 1998)

UF *Euler-Bernoulli beam theory*

GS structural members

. beams (supports)

. . **Euler-Bernoulli beams**

RT axial strain

bending

bending vibration

dynamic structural analysis

elastic properties

mathematical models

partial differential equations

structural analysis

Timoshenko beams

Euler-Cauchy equations

GS analysis (mathematics)

. real variables

. . differential equations

. . . partial differential equations

. . . . **Euler-Cauchy equations**

RT complex variables

conformal mapping

∞ equations

vector analysis

Eulerian nutation

USE **Chandler wobble**

Euler-Lagrange equation

UF *Lagrange equations of motion*

GS equations of motion

. **Euler-Lagrange equation**

RT calculus of variations

Castigliano variational theorem

classical mechanics

∞ equations

extremum values

Lagrangian function

Euler-Lambert equation

RT elliptical orbits

∞ equations

Eureca (ESA)

DEF A Space Shuttle launched retrievable autonomous space platform being developed by the European Space Agency. First launch is scheduled for 1991 with first retrieval 6 months later. Used for European Retrievable Carrier.

UF *European Retrievable Carrier*

GS space platforms

. **Eureca (ESA)**

RT space shuttles

Europa

DEF A satellite of Jupiter orbiting at a mean distance of 671,000 kilometers. Also called Jupiter II.

GS celestial bodies

. natural satellites

. . icy satellites

. . . **Europa**

. . . Jupiter satellites

. . . Galilean satellites

. . . . **Europa**

RT Charon

extraterrestrial oceans

extraterrestrial water

Jupiter (planet)

Europa 1 launch vehicle

GS launch vehicles

. Europa launch vehicles

. . **Europa 1 launch vehicle**

Europa 2 launch vehicle

GS launch vehicles

. Europa launch vehicles

. . **Europa 2 launch vehicle**

RT COS-B satellite

Europa 3 launch vehicle

GS launch vehicles

. Europa launch vehicles

. . **Europa 3 launch vehicle**

Europa 4 launch vehicle

GS launch vehicles

. Europa launch vehicles

. . **Europa 4 launch vehicle**

Europa launch vehicles

GS launch vehicles

. **Europa launch vehicles**

. . Europa 1 launch vehicle

. . Europa 2 launch vehicle

. . Europa 3 launch vehicle

. . Europa 4 launch vehicle

RT Ariane launch vehicle

Eldo launch vehicle

European Space Agency

European space programs

∞ vehicles

Europe

GS continents

. **Europe**

. . Central Europe

RT Albania

Alps Mountains (Europe)

Andorra

Armenia

Austria

Azerbaijan

Baltic Shield (Europe)

Belarus

Belgium

Bosnia and Herzegovina

Bulgaria

Carpathian Mountains (Europe)

Commonwealth of Independent States

- Croatia
Czech Republic
Czechoslovakia
Denmark
East Germany
England
Estonia
European Union
Finland
France
Georgia (Eurasia)
Germany
Gibraltar
Greece
Hungary
Iceland
Italy
Latvia
Liechtenstein
Lithuania
Luxembourg
Middle East
Moldova
Monaco
nations
Netherlands
Northern Ireland
Norway
Poland
Portugal
Romania
Russian Federation
San Marino
Scotland
Serbska Republic
Slovakia
Spain
Sweden
Switzerland
Turkey
U.S.S.R.
Ukraine
United Kingdom
Vatican City
Wales
West Germany
Yugoslavia
- European 1 spacecraft**
GS artificial satellites
 . **European 1 spacecraft**
RT Eldo launch vehicle
- European Airbus**
UF *Airbus*
GS commercial aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
jet aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
passenger aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
transport aircraft
 . **European Airbus**
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
RT ∞ aircraft
- international cooperation
- European Communications Satellite**
UF *ECS*
GS artificial satellites
 . communication satellites
 . . **European Communications Satellite**
 . ESA satellites
 . . **European Communications Satellite**
 . ESA spacecraft
 . ESA satellites
 . . **European Communications Satellite**
RT European space programs
 OTS (ESA)
- European Incoherent Scatter Radar*
USE **EISCAT radar system (Europe)**
- European Large Telecomm Satellite*
USE **L-Sat**
- European Retrievable Carrier*
USE **Eureca (ESA)**
- European Southern Observatory**
(added June 1996)
DEF An astronomical observatory with several telescopes at La Silla, Chile. It was established by and is jointly operated by Belgium, France, Germany, Italy, the Netherlands, Sweden, and Switzerland.
UF *ESO (observatory)*
GS observatories
 . astronomical observatories
 . . **European Southern Observatory**
RT Chile
 international cooperation
- European Space Agency**
DEF An international organization acting on behalf of its member states (Belgium, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, Switzerland, and the United Kingdom).
UF *ESA*
 ESRO
 European Space Research Organization
GS organizations
 . **European Space Agency**
RT Ariane launch vehicle
 Cassini mission
 Columbus module
 Cupola Module
 Eldo launch vehicle
 ERS-1 (ESA satellite)
 ERS-2 (esa satellite)
 ESA satellites
 ESRO 1 satellite
 ESRO 2 satellite
 ESRO 4 satellite
 Europa launch vehicles
 European space programs
 European Union
 EXPOS (Spacelab payload)
 Geosari project
 ICL computers
 LIRTS (telescope)
 Marots (ESA)
 Mars Express
 METEOSAT satellite
 space programs
- European space programs**
GS programs
 . space programs
 . . **European space programs**
 . . . Austrian space program
 . . . Belgian space program
 . . . Czechoslovakian space program
 . . . Danish space program
 . . . Finnish space program
 . . . French space program
 . . . German space program
 . . . Greek space program
 . . . Hungarian space program
 . . . Icelandic space program
 . . . Italian space program
- . . . Luxembourg space program
 . . . Netherlands space program
 . . . Norwegian space program
 . . . Portuguese space program
 . . . Spanish space program
 . . . Swedish space program
 . . . Swiss space program
 . . . Turkish space program
 . . . UK space program
RT Aerosat satellites
 AMPTE (satellites)
 Ariane 4 launch vehicle
 Ariane 5 launch vehicle
 Ariane launch vehicle
 Azur satellite
 Cassini mission
 Cluster Mission
 Committee on Space Research
 COS-B satellite
 DIAL satellite
 Earthnet
 ESA satellites
 ESRO 1 satellite
 ESRO 2 satellite
 ESRO 4 satellite
 Europa launch vehicles
 European Communications Satellite
 European Space Agency
 European Union
 Exosat satellite
 foreign policy
 French satellites
 GEOS satellites (ESA)
 HEOS satellites
 Hipparcos satellite
 Infrared Space Observatory (ISO)
 International Magnetospheric Study
 International Satellite Geodesy Experiment
 IRIS satellites
 man tended free flyers
 Marecs maritime satellites
 Mars Express
 METEOSAT satellite
 OTS (ESA)
 Quasat
 SOHO Mission
 space missions
 Symphonie satellites
- European Space Research Organization*
USE **European Space Agency**
- European Space Research Organization sat*
USE **ESA satellites**
- European Union**
(added June 2005)
RT Europe
 European Space Agency
 European space programs
 federations
 international cooperation
 international law
 North Atlantic Treaty Organization (NATO)
 United Nations
- europium**
GS chemical elements
 . rare earth elements
 . . **europium**
 . . . europium isotopes
 metals
 . rare earth elements
 . . **europium**
 . . . europium isotopes
- europium compounds**
GS rare earth compounds
 . **europium compounds**
RT ∞ chemical compounds
 ∞ metal compounds
- europium isotopes**
GS chemical elements
 . nuclides
 . . isotopes
 . . . **europium isotopes**
 . . rare earth elements

eustachian tubes

- . . europium
- . . . **europium isotopes**
- metals
- . rare earth elements
- . . europium
- . . . **europium isotopes**

eustachian tubes

GS anatomy

- . sense organs
- . . ear
- . . . **eustachian tubes**

RT eardrums

∞ tubes

eutectic alloys

GS alloys

- . **eutectic alloys**
- binary systems (materials)
- . binary mixtures
- . . eutectics
- . . . **eutectic alloys**
- mixtures
- . binary mixtures
- . . eutectics
- . . . **eutectic alloys**

RT alloying

- bismuth alloys
- lamella (metallurgy)
- superplasticity
- whisker composites

eutectic composites

DEF Composite materials with a metal matrix of a mixture of solids including eutectoids.

GS composite materials

- . metal matrix composites
- . . **eutectic composites**

RT alloys

- directional solidification (crystals)
- eutectics
- fracture strength

∞ matrices

- metals
- mixtures
- precipitation hardening

eutectic diagrams

USE **phase diagrams**

eutectics

GS binary systems (materials)

- . binary mixtures
- . . **eutectics**
- . . . eutectic alloys
- mixtures
- . binary mixtures
- . . **eutectics**
- . . . eutectic alloys

RT alloying

- alloys
- eutectic composites
- liquid phases
- phase diagrams
- solid phases
- solutions
- syntectic alloys

eutrophication

DEF The process by which waters become more eutrophic; especially the artificial or natural enrichment of a lake by an influx of nutrients required for the growth of aquatic plants such as algae that are vital for fish and animal life.

RT environment effects

- lakes

∞ nutrients

EUVE

USE **Extreme Ultraviolet Explorer satellite**

euxenite

GS minerals

- . **euxenite**

RT niobates

- oxides

titanates

EVA

USE **extravehicular activity**

∞ evacuating

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT evacuating (transportation)

evacuating (vacuum)

evacuating (transportation)

SN (LIMITED TO CLEARANCE OF PERSONNEL, ANIMALS, OR MATERIAL FROM A GIVEN LOCALITY)

DEF The organized withdrawal or removal of people from a place or area as a protective measure.

RT C-9 aircraft

- casualties
- civil defense
- ejection
- elimination

∞ evacuating

- hospitals
- mobile quarantine facility
- removal
- transportation
- unloading

evacuating (vacuum)

UF *gas evacuating*

RT drainage

- ejection
- elimination

∞ evacuating

- exhausting
- gas pockets
- purging
- removal
- suction
- vacuum
- vacuum pumps
- venting
- vents

EVAL

USE **Earth Viewing Applications Laboratory**

evaluation

DEF The process of determining whether an item or activity meets the specified criteria.

GS evaluation

. training evaluation

RT accelerated life tests

acceptability

∞ analyzing

- approach and landing tests (STS)
- assessments
- certification

∞ classifying

- comparison
- computer systems performance
- correlation
- costs
- criteria
- crop identification

∞ discussion

- economics
- estimates
- estimating
- examination
- feasibility
- figure of merit
- forecasting

∞ indication

- inspection
- management

∞ measurement

- normalizing (statistics)
- observation

∞ performance

- performance prediction
- position (title)
- proving
- quality
- ranking
- ratings
- rejection

- reserves
- reviewing
- risk assessment
- selection
- statistical correlation
- technology assessment

∞ tests

- timber identification
- value

evanescence

RT evanescent waves

- evaporation
- surface properties
- transpiration

evanescent waves

(added March 1998)

GS surface waves

- . **evanescent waves**

RT acoustic impedance

- evanescence
- fiber optics
- internal waves
- plane waves
- propagation modes
- reflected waves
- wave propagation

∞ waves

evaporation

DEF The physical process by which a liquid or solid is transformed into the gaseous state; the opposite of condensation.

GS phase transformations

- . vaporizing
- . . **evaporation**
- . . . evapotranspiration
- . . . propellant evaporation
- . . . transpiration

RT boiling

- concentrating
- condensing
- dehydration
- diffusion
- distillation
- drying
- evanescence
- evaporative cooling
- evaporography
- flashing (vaporizing)
- gas-liquid interactions
- gas-metal interactions
- hydrological cycle
- liquid-vapor interfaces
- perspiration
- reservoirs
- respiratory system

∞ separation

- skin (anatomy)
- sublimation
- volatility
- water loss

evaporation rate

DEF The mass of material evaporated per unit time from unit surface of a liquid or solid. The number of molecules of a given substance evaporated per second per square centimeter from the free surface of the condensed phase.

GS rates (per time)

- . **evaporation rate**

RT heat transfer coefficients

evaporative cooling

GS cooling

- . **evaporative cooling**
- . . film cooling
- . . sweat cooling

RT capillary pumped loops

- cooling systems
- cryogenic fluid storage
- evaporation
- propellant evaporation
- surface cooling

evaporators

GS heating equipment

- . vaporizers
- . . **evaporators**

- separators
 . **evaporators**
 RT air conditioning equipment
 atomizers
 concentrators
 condensers (liquefiers)
 cooling systems
 drying apparatus
 heat exchangers
 refrigerating machinery
- evaporography**
 RT evaporation
 images
 infrared radiation
 photography
- evapotranspiration**
 DEF Loss of water from a land area through transpiration of plants and evaporation from the soil and surface-water bodies. Also, the volume of water lost through evapotranspiration.
 GS phase transformations
 . vaporizing
 . . evaporation
 . . . **evapotranspiration**
 RT transpiration
 vadose water
- evasive actions**
 GS maneuvers
 . **evasive actions**
 RT electronic warfare
 obstacle avoidance
 pursuit-evasion games
 tactics
 terrain following
 warfare
- evasive satellites**
 GS artificial satellites
 . **evasive satellites**
 maneuverable spacecraft
 . **evasive satellites**
 RT military spacecraft
- evection*
 USE **lunar orbits**
orbit perturbation
solar gravitation
- even-even nuclei**
 GS particles
 . charged particles
 . . energetic particles
 . . . nuclei (nuclear physics)
 **even-even nuclei**
 . corpuscular radiation
 . . energetic particles
 . . . nuclei (nuclear physics)
 **even-even nuclei**
 RT nuclear structure
 odd-even nuclei
 odd-odd nuclei
- evening**
 RT daytime
 night
 sunset
- event horizon**
 (added August 1990)
 DEF The smallest radius of observable events around a black hole.
 GS horizon
 . **event horizon**
 RT black holes (astronomy)
 cosmology
 gravitation theory
 naked singularities
 relativity
 Schwarzschild metric
 white holes (astronomy)
- events**
 GS **events**
 . consecutive events
 RT occurrences
 probability density functions
 probability theory
- statistical analysis
 statistical distributions
 stochastic processes
- Everglades (FL)**
 RT Florida
- evoked response (psychophysiology)**
 RT physiological responses
 psychophysiology
- ∞ **evolution**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT biogeny
 chemical evolution
 evolution (development)
 evolution (liberation)
 existence
- evolution (development)**
 GS **evolution (development)**
 . biological evolution
 . . abiogenesis
 . chemical evolution
 . galactic evolution
 . lunar evolution
 . planetary evolution
 . solar system evolution
 . stellar evolution
 . . star formation
 . . stellar mass accretion
 RT ∞ biology
 ∞ development
 ∞ evolution
 extinction
 gene expression
 genetics
 growth
 heredity
 interstellar extinction
 ontogeny
 species diffusion
- evolution (liberation)**
 GS **evolution (liberation)**
 . gas evolution
 RT boiling
 desorption
 ∞ evolution
 outgassing
 transpiration
 vaporizing
- evolvable hardware**
 (added September 2001)
 DEF Reconfigurable hardware devices that can be dynamically changed by evolutionary algorithms or other adaptive processes.
 UF *EHW (computers)*
 GS reconfigurable hardware
 . **evolvable hardware**
 RT design optimization
 field-programmable gate arrays
 genetic algorithms
 ∞ hardware
 integrated circuits
 logic circuits
 logic design
 neural nets
 self repairing devices
- EVS*
 USE **enhanced vision**
- exactness*
 USE **precision**
- examination**
 GS **examination**
 . eye examinations
 RT acceptability
 ∞ analyzing
 characterization
 clinical medicine
 comparison
 conical scanning
 detection
 diagnosis
 ∞ discussion
- evaluation
 exploration
 inspection
 investigation
 ∞ measurement
 observation
 ∞ performance
 proving
 reviewing
 scanning
 ∞ tests
 training evaluation
 ultrasonic flaw detection
- excavation**
 DEF The act or process of removing soil and/or rock materials from one location and transporting them to another. It includes digging, blasting, breaking, loading, and hauling, either at the surface or underground. Also, a pit, cavity, hole, or other uncovered cutting produced by excavation or the material dug out in making a channel or cavity. Used for ditching (excavation)
 UF *ditching (excavation)*
 GS **excavation**
 . tunneling (excavation)
 RT boreholes
 construction
 ∞ ditching
 drainage
 exploration
 foundations
 lunar excavation equipment
 materials handling
 mineral deposits
 mineral exploration
 mining
 pits (excavations)
 strip mining
 underground structures
- ∞ **exchangers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT heat exchangers
- exchanging**
 GS **exchanging**
 . charge exchange
 . . resonance charge exchange
 . gas exchange
 . ion exchanging
 . spin exchange
 RT ∞ conversion
 deionization
 ∞ separation
 ∞ shift
 transferring
- excimer lasers**
 DEF Molecular lasers using vibronic transitions whose lasing medium is a dimer that exists in the excited state and dissociates in the ground state.
 GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . **excimer lasers**
 RT electron pumping
 fluorides
 halogens
 laser deposition
 laser outputs
 lasing
 optical pumping
 pulsed laser deposition
 ∞ rare gas compounds
 xenon chloride lasers
 xenon fluoride lasers
- excimers**
 DEF Molecules characterized by repulsive or very weakly bound ground electronic states.
 RT electron orbitals
 electron states
 electron transitions
 intermolecular forces
 molecular energy levels

excitation

∞ rare gas compounds

excitation

DEF Addition of energy to a nuclear, atomic or molecular system transferring it to another energy state. Used for excited states.

UF *excited states*

GS **excitation**

. atomic excitations
. molecular excitation
. photoexcitation
. self excitation
. wave excitation
. . acoustic excitation
. . harmonic excitation

RT

activation
actuation
atomic energy levels
auroral ionization
auroral irradiation
electromagnetic absorption
electron states
electron transitions
emission
energy levels
frequency response
ionization
irradiation
laser induced fluorescence
metastable state
radiation trapping
relaxation time
rotors
starting
transition probabilities

excited states

USE **excitation**

excitons

GS elementary excitations

. **excitons**

RT

carrier mobility
electrical insulation
electrons
energy bands
holes (electron deficiencies)
ionic crystals
light (visible radiation)
optical properties
photoelectromagnetic effects
plasmons
positronium
semiconductors (materials)
spectra
Suhl effect

exclusion

RT elimination

isolation

. Pauli exclusion principle

rejection

∞ separation

excretion

RT expulsion

feces

human wastes

perspiration

urine

executive aircraft

USE **general aviation aircraft**
passenger aircraft

executive systems (computers)

USE **operating systems (computers)**

exercise

USE **physical exercise**

exercise physiology

GS physiology

. **exercise physiology**

RT

circulatory system
human body
locomotion
muscular tonus
physical exercise
physical fitness

physiochemistry
physiological effects
respiratory physiology
sports medicine
stress (biology)
stress (physiology)

exergic energy

(added December 2000)

USE **exergy**

exergy

(added December 2000)

DEF The maximum amount of external-energy that could be drawn from a system or form of energy in relation to a certain reference environment. Exergy is not considered to be a form of energy but a designation of the quality of energy.

UF *exergic energy*

RT ∞ energy

energy budgets
energy conservation
energy conversion efficiency
energy dissipation
entropy
power efficiency
thermodynamic efficiency
thermodynamic properties
thermodynamics
waste energy utilization

exertion

USE **physical work**

exhalation

RT alveolar air

expired air

respirometers

exhaust clouds

DEF Clouds formed from the exhaust aerosols of launch vehicle engines and boosters at liftoff. Used for ground clouds and launch clouds.

UF *ground clouds*

launch clouds

RT aerosols

∞ clouds

exhaust gases
launch vehicles
launching
launching sites
rocket exhaust
rocket launching

exhaust diffusers

RT conical nozzles

∞ diffusers

ejectors

∞ jet nozzles

supersonic diffusers

vaneless diffusers

exhaust emission

DEF The movement of gaseous or other particles and radiation from the nozzle of a rocket or other reaction engine.

GS emission

. **exhaust emission**

RT

gas-gas interactions
gas-metal interactions
high temperature gases
infrared radiation
jet exhaust
particle emission
pollution transport
releasing
thermal emission
volatile organic compounds

exhaust flow simulation

GS simulation

. **exhaust flow simulation**

RT

flow distribution
mathematical models
wind tunnels

exhaust gases

UF *exhaust jets*

GS gases

. **exhaust gases**

. . flue gases

RT

air pollution

∞ blasts

combustion efficiency

combustion products

diluents

effluents

environment effects

erosive burning

exhaust clouds

exhausting

fumes

gas mixtures

gas recovery

infrared suppression

jet blast effects

jet exhaust

nozzle flow

odors

particulates

pollution transport

propulsion

reaction products

rocket exhaust

smog

smoke

smoke abatement

vapors

waste disposal

waste energy utilization

wastes

exhaust jets

USE **exhaust gases**

exhaust nozzles

GS **exhaust nozzles**

. convergent-divergent nozzles

. plug nozzles

. spike nozzles

. turbine exhaust nozzles

RT

air ducts

annular nozzles

base heating

conical nozzles

divergent nozzles

ejectors

∞ flow

infrared suppression

inlet nozzles

jet engines

∞ jet nozzles

nozzle flow

nozzle inserts

∞ nozzles

openings

outlets

rocket engines

skirts

exhaust systems

RT afterburning

air conditioning

air pollution

blowers

chimneys

condensers (liquefiers)

cooling systems

ducts

dust collectors

ejectors

elimination

engines

exhausting

flues

fuel tank pressurization

intake systems

internal combustion engines

manifolds

mufflers

openings

outlets

pipe nozzles

plenum chambers

ports (openings)

rocket exhaust

∞ systems

temperature control

ventilation
ventilators
vents
waste disposal

exhaust velocity
DEF The velocity of gases or particles (exhaust stream) that exhaust through the nozzle or a reaction engine, relative to the nozzle.
GS rates (per time)
. **exhaust velocity**
velocity
. **exhaust velocity**
RT acoustic velocity
critical velocity
expulsion
flow velocity

exhausting
RT blowing
breathing vibration
consumption
decontamination
∞ discharge
dispersing
disposal
dissipation
ejection
elimination
evacuating (vacuum)
exhaust gases
exhaust systems
relieving
removal
ventilation
venting

exhaustion
RT consumption
depletion
fatigue (biology)
hyperkinesia

existence
RT cosmology
∞ evolution
life span
validity

existence theorems
GS analysis (mathematics)
. real variables
. . . **existence theorems**
theorems
. **existence theorems**
RT problem solving
roots of equations

exits (doors)
USE **doors**

exobiology
DEF Field of biology that deals with the search for extraterrestrial life and the conditions that may give rise to life on other planets or elsewhere in the Universe. May also be defined to include the study of effects of extraterrestrial environments on living organisms. Used for astrobiology and space biology.
UF *astrobiology*
space biology
RT aerospace environments
Apollo extension system
bioastronautics
∞ biology
biomarkers
carbonaceous meteorites
chemical evolution
environment models
extraterrestrial life
extraterrestrial water
life support systems
lunar environment
Mars Pathfinder
panspermia
planetary environments
planetary protection
spacecraft contamination
spacecraft environments
spacecraft sterilization

terraforming

exophoria
USE **heterophoria**

exoplanet detection
(added January 2003)
USE **planet detection**

exoplanets
(added April 2001)
USE **extrasolar planets**

EXOS satellites
GS artificial satellites
. scientific satellites
. . . **EXOS satellites**
. . . EXOS-A satellite
. . . EXOS-B satellite
. . . EXOS-C satellite
. . . EXOS-D satellite
Japanese spacecraft
. **EXOS satellites**
. . EXOS-A satellite
. . EXOS-B satellite
. . EXOS-C satellite
. . EXOS-D satellite

EXOS sounding rocket
GS rocket vehicles
. multistage rocket vehicles
. . . **EXOS sounding rocket**
. . . sounding rockets
. . . **EXOS sounding rocket**
RT Honest John rocket vehicle
Nike-Ajax missile
solid propellant rocket engines
XM-33 engine

EXOS-A satellite
(added February 1992)
UF *Kyokko satellite*
GS artificial satellites
. scientific satellites
. . EXOS satellites
. . . **EXOS-A satellite**
Japanese spacecraft
. EXOS satellites
. . **EXOS-A satellite**

Exosat satellite
UF *HELOS (satellite)*
High Eccentric Lunar Occultation Satellite
GS artificial satellites
. ESA satellites
. . **Exosat satellite**
. . scientific satellites
. . **Exosat satellite**
ESA spacecraft
. ESA satellites
. . **Exosat satellite**
RT eccentric orbits
European space programs
lunar occultation
x ray astronomy
x ray sources

EXOS-B satellite
UF *Jikiken satellite*
GS artificial satellites
. scientific satellites
. . EXOS satellites
. . . **EXOS-B satellite**
Japanese spacecraft
. EXOS satellites
. . **EXOS-B satellite**

EXOS-C satellite
UF *Ohzora satellite*
GS artificial satellites
. scientific satellites
. . EXOS satellites
. . . **EXOS-C satellite**
Japanese spacecraft
. EXOS satellites
. . **EXOS-C satellite**

EXOS-D satellite
(added February 1992)

UF *Akebono satellite*
GS artificial satellites
. scientific satellites
. . EXOS satellites
. . . **EXOS-D satellite**
Japanese spacecraft
. EXOS satellites
. . **EXOS-D satellite**

exoskeletons
RT anatomy
arthropods
body composition (biology)
bones
connective tissue
musculoskeletal system

exosolar planets
(added April 2001)
USE **extrasolar planets**

exosphere
SN (ALTITUDES ABOVE APPROXIMATELY 500 KM)
DEF The outermost, or topmost, portion of the atmosphere. Its lower boundary is the critical level of escape, variously estimated at 500 to 1000 kilometers above the Earth's surface.
GS Earth atmosphere
. upper atmosphere
. . **exosphere**
RT Earth ionosphere
Earth magnetosphere
heterosphere
planetary magnetotails
radiation belts
thermosphere

exothermic reactions
GS chemical reactions
. **exothermic reactions**
RT association reactions
combustion
combustion chemistry
combustion synthesis
endothermic reactions
incendiary ammunition
pyrolysis
thermal decomposition

expandable structures
GS **expandable structures**
. bellows
. inflatable structures
. . air bag restraint devices
. . balloons
. . . high altitude balloons
. . . jimsphere balloons
. . . skyhook balloons
. . . superpressure balloons
. . . meteorological balloons
. . . jimsphere balloons
. . . ROBIN balloons
. . . microballoons
. . . tethered balloons
. . ballutes
. . gas bags
. . inflatable gliders
. . inflatable spacecraft
. . . Beacon satellites
. . . . Beacon Explorer A
. . . . Explorer 22 satellite
RT expulsion bladders
folding structures
large space structures
orbital assembly
space erectable structures
∞ spacecraft
∞ structures
variable geometry structures

expansion
UF *enlarging*
GS **expansion**
. gas expansion
. Karhunen-Loeve expansion
. Prandtl-Meyer expansion
. series expansion
. thermal expansion
RT adiabatic conditions

expectancy hypothesis

distortion
elongation
extensions
inflating
rarefaction
relaxation (mechanics)
swelling
thermal buckling

expansion waves

USE **elastic waves**

expectancy hypothesis

GS hypotheses
. **expectancy hypothesis**
RT Monte Carlo method
probability density functions
statistical analysis
statistical distributions

expectation

RT contingency
decision theory
Fisher information
forecasting
reliability

expeditions

RT exploration
∞ missions
space flight

expellants

RT cough
∞ discharge
expulsion
flushing

expendable stages (spacecraft)

RT booster recovery
booster rocket engines
engines
multistage rocket vehicles
recoverable spacecraft
reusable spacecraft
rocket engines
space shuttles
stage separation

experience

RT education
lessons learned
qualifications
upgrading

experiment design

SN (LIMITED TO DESIGN OF
EXPERIMENTS--EXCLUDES
PROTOTYPES)
UF *design of experiments*
GS **experiment design**
. factorial design
RT covariance
degrees of freedom
∞ design
factor analysis
laboratories
mathematical models
operations research
orthogonality
quality control
regression analysis
statistical analysis
systems engineering
Taguchi methods
variance (statistics)

experimental aircraft

USE **research aircraft**

experimental boiling water reactors

UF *EBWR (reactor)*
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **experimental boiling water reactors**
. nuclear research and test reactors
. . **experimental boiling water reactors**

. water moderated reactors
. . **experimental boiling water reactors**

Experimental Breeder Reactor 1

UF *EBR-1 reactor*
GS nuclear reactors
. breeder reactors
. . **Experimental Breeder Reactor 1**
. fast nuclear reactors
. . **Experimental Breeder Reactor 1**
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Experimental Breeder Reactor 1**
. nuclear research and test reactors
. . **Experimental Breeder Reactor 1**

Experimental Breeder Reactor 2

UF *EBR-2 reactor*
GS nuclear reactors
. breeder reactors
. . **Experimental Breeder Reactor 2**
. fast nuclear reactors
. . **Experimental Breeder Reactor 2**
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **Experimental Breeder Reactor 2**
. nuclear research and test reactors
. . **Experimental Breeder Reactor 2**

experimental gas cooled reactors

UF *EGCR (reactor)*
GS nuclear reactors
. gas cooled reactors
. . **experimental gas cooled reactors**
. nuclear research and test reactors
. . **experimental gas cooled reactors**

experimental organic cooled reactors

UF *EOCR (reactor)*
GS nuclear reactors
. liquid cooled reactors
. . organic cooled reactors
. . . **experimental organic cooled reactors**
. nuclear research and test reactors
. . **experimental organic cooled reactors**
. organic moderated reactors
. . **experimental organic cooled reactors**

Experimental Reflector Orbital Shot Proj

UF *EROS project*
GS programs
. projects
. . **Experimental Reflector Orbital Shot Proj**

experimental STOL transport rsch airplane

USE **Questol aircraft**

experimentation

GS **experimentation**
. Physics and Chemistry Experiment in Space
RT critical experiments
exploration
investigation
laboratories
phenomenology
spaceborne experiments

expert systems

(added August 1990)

DEF Computer programs that manipulate symbolic information to produce the same results as human experts would. They deal with uncertain data and make decisions on that data. Input and design relies on human experts. Used for knowlege based systems.

GS information systems
. knowledge based systems
. . **expert systems**
RT artificial intelligence
belief networks

C (programming language)
computer programming
decision support systems
knowledge bases (artificial intelligence)
knowledge representation
∞ logic
logic programming
natural language processing
pilot support systems
Prolog (programming language)
systems health monitoring

expiration

RT ∞ breathing
death
expired air
expulsion
mortality
respiration

expired air

GS gases
. gas mixtures
. . air
. . . **expired air**
mixtures
. solutions
. . gas mixtures
. . . air
. . . . **expired air**
RT alveolar air
exhalation
expiration
gas composition
metabolic wastes
rebreathing
respiration

exploding conductor circuits

USE **circuits**
exploding wires

exploding conductors

USE **exploding wires**

exploding wires

UF *exploding conductor circuits*
exploding conductors
GS explosive devices
. initiators (explosives)
. . **exploding wires**
igniters
. initiators (explosives)
. . **exploding wires**
wire
. **exploding wires**
RT boosters (explosives)
caps (explosives)
conductors
detonators
electric wire
plasma generators
primers (explosives)
radiation transport
shock waves
wire bridge circuits

exploitation

RT beneficiation
depletion
∞ development
exploration
geology
land use
mines (excavations)
mining
reserves
strip mining

exploration

DEF The search for deposits of useful minerals or fossil fuels; prospecting, including under the oceans. It may include geologic reconnaissance, e.g., remote sensing, photogeology, geophysical and geochemical methods, and both surface and underground investigations. Used for discovering and prospecting.

UF *discovering*

GS *prospecting*
exploration
 . mineral exploration
 . natural gas exploration
 . oil exploration
 . space exploration
 . . lunar exploration
 . . Mars exploration
 RT boreholes
 detection
 drilling
 examination
 excavation
 expeditions
 experimentation
 exploitation
 geological surveys
 geology
 geothermal technology
 investigation
 mines (excavations)
 OSS-1 payload
 research
 reserves
 sampling
 space flight
 surveys
 underground acoustics

Explorer 1 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 1 satellite**

Explorer 2 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 2 satellite**

Explorer 3 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 3 satellite**

Explorer 4 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 4 satellite**

Explorer 5 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 5 satellite**

Explorer 6 satellite
 GS artificial satellites
 . geophysical satellites
 . . **Explorer 6 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 6 satellite**
 RT Thor Able rocket vehicle

Explorer 7 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 7 satellite**

Explorer 8 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 8 satellite**

Explorer 9 satellite
 GS artificial satellites
 . meteorological satellites
 . . **Explorer 9 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 9 satellite**

RT Scout launch vehicle

Explorer 10 satellite
 GS artificial satellites
 . geophysical satellites
 . . **Explorer 10 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 10 satellite**
 RT Delta launch vehicle

Explorer 11 satellite
 UF *Gamma Ray Astronomy Explorer*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 11 satellite**
 RT Juno 2 launch vehicle

Explorer 12 satellite
 UF *Energetic Particle Explorer A*
EPE-A
S-3 satellite
 GS artificial satellites
 . geophysical satellites
 . . **Explorer 12 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 12 satellite**
 RT Delta launch vehicle

Explorer 14 satellite
 UF *Energetic Particle Explorer B*
EPE-B
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 14 satellite**
 RT Delta launch vehicle

Explorer 15 satellite
 UF *Energetic Particle Explorer C*
EPE-C
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 15 satellite**
 RT Delta launch vehicle

Explorer 16 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 16 satellite**
 RT Scout launch vehicle

Explorer 17 satellite
 UF *AE-A satellite*
Atmosphere Explorer A
S-6 satellite
 GS artificial satellites
 . meteorological satellites
 . . **Explorer 17 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 17 satellite**
 RT Delta launch vehicle

Explorer 18 satellite
 UF *IMP-1*
IMP-A
Interplanetary Explorer
S-74 satellite
 GS artificial satellites
 . lunar satellites
 . . **Explorer 18 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 18 satellite**
 interplanetary spacecraft
 . **Explorer 18 satellite**
 lunar spacecraft
 . lunar satellites
 . . **Explorer 18 satellite**
 unmanned spacecraft
 . space probes
 . . **Explorer 18 satellite**

RT Delta launch vehicle

Explorer 19 satellite
 UF *AD-A satellite*
Air Density Explorer A
 GS artificial satellites
 . meteorological satellites
 . . **Explorer 19 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 19 satellite**
 RT Scout launch vehicle

Explorer 20 satellite
 UF *Ionosphere Explorer A*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 20 satellite**
 RT Scout launch vehicle

Explorer 21 satellite
 UF *IMP-2*
IMP-B
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 21 satellite**
 RT Delta launch vehicle

Explorer 22 satellite
 UF *BE B*
Beacon Explorer B
 GS artificial satellites
 . navigation satellites
 . . **Explorer 22 satellite**
 . passive satellites
 . . Beacon satellites
 . . . **Explorer 22 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 22 satellite**
 expandable structures
 . inflatable structures
 . . inflatable spacecraft
 . . . Beacon satellites
 . . . **Explorer 22 satellite**
 inflatable space structures
 . inflatable spacecraft
 . . Beacon satellites
 . . . **Explorer 22 satellite**
 space erectable structures
 . inflatable spacecraft
 . . Beacon satellites
 . . . **Explorer 22 satellite**
 RT Scout launch vehicle

Explorer 23 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 23 satellite**
 RT Scout launch vehicle

Explorer 24 satellite
 UF *AD/I satellite*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 24 satellite**
 RT Scout launch vehicle

Explorer 25 satellite
 UF *AD/I B*
Air Density/Injun Explorer B
Injun Explorer
 GS artificial satellites
 . Injun satellites
 . . **Explorer 25 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 25 satellite**
 RT Scout launch vehicle

Explorer 26 satellite
 UF *Energetic Particle Explorer D*
EPE-D
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites

Explorer 27 satellite

... **Explorer 26 satellite**
 RT Delta launch vehicle

Explorer 27 satellite
 UF *BE C*
Beacon Explorer C
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 27 satellite**
 RT Scout launch vehicle

Explorer 28 satellite
 UF *IMP-3*
IMP-C
 GS artificial satellites
 . lunar satellites
 . . **Explorer 28 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 28 satellite**
 lunar spacecraft
 . lunar satellites
 . . **Explorer 28 satellite**
 RT Delta launch vehicle

Explorer 29 satellite
 GS artificial satellites
 . geodetic satellites
 . . **Explorer 29 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 29 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 Delta launch vehicle
 GEOS 1 satellite
 LARGOS satellite
 PAGEOS satellite

Explorer 30 satellite
 UF *SE-A*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 30 satellite**
 RT Scout launch vehicle

Explorer 31 satellite
 UF *DME-A satellite*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 31 satellite**
 RT Thor Agena launch vehicle

Explorer 32 satellite
 UF *AE-B satellite*
Atmosphere Explorer B
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 32 satellite**
 RT Delta launch vehicle

Explorer 33 satellite
 UF *AIMP-1*
AIMP-D
IMP-D
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 33 satellite**
 RT Delta launch vehicle

Explorer 34 satellite
 UF *IMP-4*
IMP-F
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 34 satellite**
 RT Thor Agena launch vehicle

Explorer 35 satellite
 UF *AIMP-2*
AIMP-E
IMP-E
 GS artificial satellites

. scientific satellites
 . . Explorer satellites
 . . . **Explorer 35 satellite**
 RT Thor Agena launch vehicle

Explorer 36 satellite
 GS artificial satellites
 . geodetic satellites
 . . **Explorer 36 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 36 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 GEOS 2 satellite
 LARGOS satellite
 PAGEOS satellite
 Thor Agena launch vehicle

Explorer 37 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 37 satellite**
 RT Scout launch vehicle

Explorer 38 satellite
 UF *RAE-1*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 38 satellite**
 RT Delta launch vehicle

Explorer 39 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 39 satellite**
 RT Scout launch vehicle

Explorer 40 satellite
 UF *Injun 5 satellite*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 40 satellite**
 RT Scout launch vehicle

Explorer 41 satellite
 UF *IMP-5*
IMP-G
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 41 satellite**

Explorer 42 satellite
 USE **Uhuru satellite**

Explorer 43 satellite
 UF *IMP-6*
IMP-I
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 43 satellite**
 RT Delta launch vehicle

Explorer 44 satellite
 DEF The tenth in a series of solar radiation monitoring satellites launched from Wallops Island, VA on July 8, 1971, to measure x rays and ultraviolet radiation from the sun. It was operational until June 3, 1978. Used for Solrad 10 satellite.
 UF *Solrad 10 satellite*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 44 satellite**

Explorer 45 satellite
 DEF One in a long series of NASA scientific satellites used to study the atmosphere, ionosphere, magnetosphere, interplanetary space, etc.
 GS artificial satellites
 . geophysical satellites

. . **Explorer 45 satellite**
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 45 satellite**

Explorer 46 satellite
 DEF A satellite designed to study meteoroid protective ability of spacecraft launched from Wallops Island, VA on August 13, 1972. Two scientific experiments also on board were to determine the size and the velocity of meteoroids. The velocity experiment failed to work due to excessive heat. Used for Meteoroid Technology Satellite.
 UF *Meteoroid Technology Satellite*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 46 satellite**

Explorer 47 satellite
 UF *IMP-7*
IMP-H
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 47 satellite**

Explorer 48 satellite
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 48 satellite**
 RT SAS
 SAS-2

Explorer 49 satellite
 UF *Radio Astronomy Explorer 2*
Radio Astronomy Explorer B
RAE 1
RAE 2
RAE B
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 49 satellite**
 RT Delta launch vehicle

Explorer 50 satellite
 UF *IMP-8*
IMP-J
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 50 satellite**

Explorer 51 satellite
 UF *AE-C satellite*
Atmosphere Explorer C
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 51 satellite**

Explorer 52 satellite
 DEF The Hawkeye 1 satellite in the Explorer series. Used for Hawkeye 1 satellite.
 UF *Hawkeye 1 satellite*
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 52 satellite**

Explorer 53 satellite
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . SAS
 **Explorer 53 satellite**
 . . Explorer satellites
 . . . **Explorer 53 satellite**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . SAS
 **Explorer 53 satellite**
 RT SAS-3

Explorer 54 satellite
 UF *AE-D satellite*

Atmosphere Explorer D
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 54 satellite**
Explorer 55 satellite
 UF *AE-E satellite*
 Atmosphere Explorer E
 GS artificial satellites
 . scientific satellites
 . . Explorer satellites
 . . . **Explorer 55 satellite**
 RT Delta launch vehicle
Explorer 71 satellite
 (added November 2000)
 USE **Advanced Composition Explorer**
Explorer 73 satellite
 (added November 2000)
 USE **Transition Region and Coronal Explorer**
Explorer 74 satellite
 (added November 2000)
 USE **Submillimeter Wave Astronomy Satellite**
Explorer 77 satellite
 (added November 2000)
 USE **Far UV Spectroscopic Explorer**
Explorer 78 satellite
 (added November 2000)
 USE **IMAGE satellite**
Explorer satellites
 GS artificial satellites
 . scientific satellites
 . . **Explorer satellites**
 . . . Applications Explorer Satellites
 . . . Cosmic Background Explorer satellite
 . . . Dual Air Density Explorer
 . . . Dynamics Explorer satellites
 Dynamics Explorer 1 satellite
 Dynamics Explorer 2 satellite
 . . . Explorer 1 satellite
 . . . Explorer 2 satellite
 . . . Explorer 3 satellite
 . . . Explorer 4 satellite
 . . . Explorer 5 satellite
 . . . Explorer 6 satellite
 . . . Explorer 7 satellite
 . . . Explorer 8 satellite
 . . . Explorer 9 satellite
 . . . Explorer 10 satellite
 . . . Explorer 11 satellite
 . . . Explorer 12 satellite
 . . . Explorer 14 satellite
 . . . Explorer 15 satellite
 . . . Explorer 16 satellite
 . . . Explorer 17 satellite
 . . . Explorer 18 satellite
 . . . Explorer 19 satellite
 . . . Explorer 20 satellite
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 . . . Explorer 25 satellite
 . . . Explorer 26 satellite
 . . . Explorer 27 satellite
 . . . Explorer 28 satellite
 . . . Explorer 29 satellite
 . . . Explorer 30 satellite
 . . . Explorer 31 satellite
 . . . Explorer 32 satellite
 . . . Explorer 33 satellite
 . . . Explorer 34 satellite
 . . . Explorer 35 satellite
 . . . Explorer 36 satellite
 . . . Explorer 37 satellite
 . . . Explorer 38 satellite
 . . . Explorer 39 satellite
 . . . Explorer 40 satellite
 . . . Explorer 41 satellite
 . . . Explorer 43 satellite
 . . . Explorer 44 satellite

. . . Explorer 45 satellite
 . . . Explorer 46 satellite
 . . . Explorer 47 satellite
 . . . Explorer 48 satellite
 . . . Explorer 49 satellite
 . . . Explorer 50 satellite
 . . . Explorer 51 satellite
 . . . Explorer 52 satellite
 . . . Explorer 53 satellite
 . . . Explorer 54 satellite
 . . . Explorer 55 satellite
 . . . Extreme Ultraviolet Explorer satellite
 . . . Far UV Spectroscopic Explorer
 . . . IMP
 . . . International Magnetospheric Explorer
 . . . International Sun Earth Explorers
 International Sun Earth Explorer 1
 International Sun Earth Explorer 2
 International Sun Earth Explorer 3
 . . . Advanced Composition Explorer
 . . . IMAGE satellite
 . . . Micrometeoroid Explorer satellites
 . . . Radio Astronomy Explorer satellite
 . . . Solar Mesosphere Explorer
 . . . Submillimeter Wave Astronomy Satellite
 . . . Transition Region and Coronal Explorer
 . . . Uhuru satellite
 . . . X Ray Timing Explorer
 RT IUE
 Juno 1 launch vehicle
 Jupiter C rocket vehicle
 meteoroid dust clouds
 micrometeoroids
 outer planets explorers
 Scout project
 Thor Delta launch vehicle
 zodiacal dust

explosion suppression

DEF Any method used to confine or suppress an explosion.
 RT fire prevention
 foams
 retardants

explosions

DEF The sudden production of large quantities of gases, usually hot, from much smaller amounts of gases, liquids, or solids.

GS **explosions**

. aerial explosions
 . chemical explosions
 . gas explosions
 . . propellant explosions
 . nuclear explosions
 . thermonuclear explosions
 . underground explosions
 . underwater explosions

RT

accidents
 backfire
 blast loads
 ∞ blasts
 bursts
 combustion
 detonation
 ∞ discharge
 explosive decompression
 explosives
 fires
 flame propagation
 ∞ flash
 flashback
 hazards
 hydrocarbon combustion
 implosions
 reactor safety
 Riemann waves
 safety
 shock waves
 sound pressure
 spontaneous combustion

warning systems

explosive decompression

GS pressure reduction
 . **explosive decompression**
 RT explosions
 implosions
 pressure recovery
 pressurized cabins

explosive devices

UF *cartridge actuated devices*
 GS **explosive devices**
 . bombs (ordnance)
 . initiators (explosives)
 . boosters (explosives)
 . caps (explosives)
 . detonators
 . exploding wires
 . primers (explosives)
 . nuclear devices
 . shaped charges
 . torpedoes
 RT actuators
 ammunition
 ∞ charging
 ∞ devices
 explosives detection
 igniters
 ∞ propellant actuated devices
 warheads

explosive forming

GS forming techniques
 . cold working
 . . **explosive forming**
 metal working
 . **explosive forming**
 RT bulging
 deep drawing
 electrohydraulic forming
 extruding
 shaped charges

*explosive gases*USE **flammable gases****explosive welding**

GS bonding
 . **explosive welding**
 welding
 . pressure welding
 . . **explosive welding**
 RT cladding
 metal bonding
 metal joints
 metal working
 metal-metal bonding

explosives

GS **explosives**
 . BSX
 . cellulose nitrate
 . dynamite
 . HMX
 . hydrazine nitroform
 . hydrogen azides
 . nitrasol explosives
 . octol (explosive)
 . pentolite
 . RDX
 . styphnates
 . TATB
 . tetryl
 . trinitrotoluene
 RT ammonium picrates
 ammunition
 azides (organic)
 bombs (ordnance)
 burning rate
 case bonded propellants
 ∞ charging
 chemical explosions
 chemical fuels
 composite propellants
 detonators
 double base propellants
 double base rocket propellants
 explosions
 fires

explosives detection

flammable gases
fulminates
gun propellants
guns (ordnance)
hazardous materials
nitroglycerin
nitroguanidine
nitromethane
nuclear weapons
ordnance
PETN
plastic propellants
potassium perchlorates
powder (particles)
propellants
pyrophoric materials
pyrotechnics
shaped charges
sodium azides
TAGN
torpedoes
warheads

explosives detection

(added September 1995)

GS detection
. chemical detection
. . **explosives detection**
RT airport security
explosive devices
ion mobility spectroscopy
terrorism

exponential functions

GS analysis (mathematics)
. complex variables
. . **exponential functions**
. . . logarithms
functions (mathematics)
. transcendental functions
. . **exponential functions**
. . . logarithms
RT Fourier analysis
hyperbolic functions
orthogonal functions
Poisson density functions
probability density functions
statistical analysis
Weibull density functions

exponents

GS number theory
. **exponents**
RT arithmetic
fractals
logarithms

exports

USE **international trade**

EXPOS (Spacelab payload)

DEF X ray spectropolarimetry payload for Spacelab. Used for X Ray Spectropolarimetry Payload.

UF *X Ray Spectropolarimetry Payload*
GS payloads
. **EXPOS (Spacelab payload)**
RT European Space Agency
Spacelab

exposure

GS **exposure**
. weathering
. . space weathering
. photoperiod
RT atmospheric effects
bearing (direction)
bioavailability
cold tolerance
dosimeters
irradiation
photography
position (location)
positioning
radiation dosage
time

trinitrotoluene

expressions (mathematics)

USE **formulas (mathematics)**

expulsion

RT acceleration (physics)
circuit protection
disposal
dumping
ejection
emptying
excretion
exhaust velocity
expellants
expiration
fluid flow
gravity gradient satellites
jettisoning
particle emission
pressurizing
removal
unloading

expulsion bladders

GS diaphragms (mechanics)
. **expulsion bladders**
RT bellows
ejection
emptying
expandable structures
fuel tank pressurization
fuel tanks
pressurizing
propellant storage
propellant tanks
storage tanks

extars

USE **x ray stars**

extended duration space flight

USE **long duration space flight**

extensions

GS **extensions**
. prolongation
RT accessories
adapters
contracts
decontamination
expansion
filling
fittings
insurance (contracts)
revisions
supplements

extensometers

DEF Devices for determining the elongation of a specimen as it is strained. Used for dilatometers.

UF *dilatometers*
GS measuring instruments
. **extensometers**
RT deformeters
dilatometry
elastometers
mechanical measurement
strain gages
stress measurement
tensometers
thermal expansion
transducers

external combustion engines

GS engines
. **external combustion engines**
. . Stirling engines
RT automobile engines
boilers
gas turbine engines
internal combustion engines
piston engines

external store separation

UF *store release*
RT nacelles
pods (external stores)
protuberances

∞ separation
∞ storage
wing tanks
wing-fuselage stores

external stores

GS **external stores**
. pods (external stores)
RT nacelles
protuberances
∞ storage
wing tanks
wing-fuselage stores

external surface currents

GS electric current
. **external surface currents**
RT ∞ currents
electric fields
electromagnetic fields
electromagnetic missiles
electromagnetic pulses
levitation melting
photoelectric emission
spacecraft charging
∞ surfaces
system generated electromagnetic pulses

external tanks

UF *Shuttle Superlightweight Tank*
SLWT (propellant tank)
GS tanks (containers)
. **external tanks**
RT fuel tanks
nacelles
propellant tanks
Space Shuttle Ascent Stage
storage tanks
wing tanks

externally blown flaps

UF *blown flaps*
EBF
GS airfoils
. flaps (control surfaces)
. . **externally blown flaps**
. . . upper surface blown flaps
control surfaces
. flaps (control surfaces)
. . **externally blown flaps**
. . . upper surface blown flaps
RT blowing
jet flaps
lift
lift devices
powered lift aircraft
short takeoff aircraft
spanwise blowing
wing flaps
wing nacelle configurations

extinction

GS **extinction**
. interstellar extinction
RT Cenozoic Era
Cretaceous-Tertiary boundary
evolution (development)
extinguishing
fading
fluorescence
laser induced fluorescence
Nemesis (star)

extinguishers

USE **fire extinguishers**

extinguishing

UF *flame quenching*
GS **extinguishing**
. flameout
RT burnout
combustion
extinction
occultation
∞ quenching
quenching (cooling)

extraction

GS **extraction**

- . geothermal energy extraction
- . ion extraction
- . solvent extraction
- RT beds (process engineering)
- beneficiation
- centrifuges
- centrifuging
- columns (process engineering)
- concentrating
- dialysis
- diffusion
- dissolving
- elution
- filtration
- furnaces
- hydrolysis
- leaching
- material absorption
- materials recovery
- melting
- osmosis
- percolation
- recycling
- refining
- removal
- ∞ separation
- solvents
- sorption
- washers (cleaners)
- extragalactic light*
- USE **extraterrestrial radiation**
- extragalactic media*
- USE **intergalactic media**
- extragalactic radio sources**
- GS celestial bodies
 - . radio sources (astronomy)
 - . . . **extragalactic radio sources**
 - radio galaxies
 - radio jets (astronomy)
- RT BL Lacertae objects
- blazars
- extraterrestrial radiation
- extraterrestrial radio waves
- quasars
- radiation sources
- radio astronomy
- radio emission
- ∞ sources
- extrapolation**
- RT finite difference theory
- forecasting
- interpolation
- periodic variations
- quality control
- statistical analysis
- ∞ tests
- time series analysis
- trends
- extrasensory perception**
- UF *parapsychology*
- GS perception
 - . sensory perception
 - . . **extrasensory perception**
- extrasolar planet detection*
(added January 2003)
- USE **planet detection**
- extrasolar planets**
- UF *exoplanets*
- exosolar planets*
- GS celestial bodies
 - . planets
 - . . **extrasolar planets**
- RT gas giant planets
- hypothetical planets
- Kepler mission
- planet detection
- planetary systems
- extraterrestrial communication**
- GS telecommunication
 - . space communication
 - . . **extraterrestrial communication**
- RT information dissemination
- interplanetary communication
- radio telemetry
- extraterrestrial environments**
- GS environments
 - . **extraterrestrial environments**
 - . . cislunar space
 - . . deep space
 - . . . interplanetary space
 - . . . interstellar space
 - . . Earth orbital environments
 - . . lunar environment
 - . . . lunar atmosphere
 - . . planetary environments
 - . . . Mars environment
 - Mars atmosphere
 - . . . planetary atmospheres
 - helium hydrogen atmospheres
 - Jupiter atmosphere
 - Mars atmosphere
 - Mercury atmosphere
 - Neptune atmosphere
 - planetary ionospheres
 - Pluto atmosphere
 - Saturn atmosphere
 - Uranus atmosphere
 - Venus atmosphere
 - Venus clouds
 - . . planetary magnetospheres
 - . . . planetary magnetotails
 - . . satellite atmospheres
 - . . lunar atmosphere
 - . . Titan atmosphere
 - . . stellar atmospheres
 - . . chromosphere
 - . . solar atmosphere
 - . . . solar transition region
- RT aerospace environments
- high gravity environments
- long duration space flight
- Mars bases
- Mercury surface
- space exploration
- space weathering
- spacecraft environments
- Venus surface
- extraterrestrial intelligence**
- DEF Intelligent life existing elsewhere than on Earth.
- GS intelligence
 - . **extraterrestrial intelligence**
- RT interstellar communication
- interstellar travel
- Project SETI
- space communication
- unidentified flying objects
- extraterrestrial life**
- DEF Life forms evolved and existing outside the terrestrial biosphere.
- GS life sciences
 - . **extraterrestrial life**
- RT aerospace environments
- biofilms
- biomarkers
- biosatellites
- exobiology
- extraterrestrial water
- life detectors
- panspermia
- Phoenix Mars Lander
- planetary protection
- extraterrestrial matter**
- GS **extraterrestrial matter**
 - . cosmic gases
 - . . interplanetary gas
 - . . interstellar gas
 - . cosmic plasma
 - . interstellar matter
 - . . cosmic dust
 - . . . interplanetary dust
 - meteoroid dust clouds
 - zodiacal dust
 - . . dark matter
 - . . interstellar gas
- RT cosmochemistry
- degenerate matter
- matter (physics)
- negative matter
- Venus fly trap rocket vehicle
- extraterrestrial oceans**
(added June 2001)
- SN (EXCLUDES MAGMA OCEANS)
- DEF Extensive bodies of water on planets and moons.
- UF *planetary oceans*
- satellite oceans*
- GS oceans
 - . **extraterrestrial oceans**
- RT Callisto
- Europa
- extraterrestrial water
- planetary surfaces
- satellite surfaces
- extraterrestrial radiation**
- DEF Electromagnetic or particle radiation emitted from a source beyond the Earth atmosphere. Used for extragalactic light and space radiation.
- UF *extragalactic light*
- space radiation*
- GS **extraterrestrial radiation**
 - . extraterrestrial radio waves
 - . . galactic radio waves
 - . . . North Polar Spur (astronomy)
 - . . radio bursts
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . solar radio emission
 - . . solar radio bursts
 - . . . type 2 bursts
 - . . . type 3 bursts
 - . . . type 4 bursts
 - . . . type 5 bursts
 - . . cosmic microwave background radiation
 - . . galactic radiation
 - . . galactic cosmic rays
 - . . galactic radio waves
 - . . . North Polar Spur (astronomy)
 - . . galactic winds
 - . gamma ray bursts
 - . gegenschein
 - . interstellar radiation
 - . lunar radiation
 - . planetary radiation
 - . primary cosmic rays
 - . . solar cosmic rays
 - . solar radiation
 - . . circumsolar radiation
 - . . solar corpuscular radiation
 - . . . solar electrons
 - . . . solar neutrinos
 - . . . solar neutrons
 - . . . solar protons
 - . . solar cosmic rays
 - . . solar radio emission
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . solar wind
 - . . solar x-rays
 - . . sunlight
 - . stellar radiation
 - . . stellar winds
 - . zodiacal light
- RT aerospace environments
- ∞ aerospace sciences
 - atmospheric radiation
 - background radiation
 - corpuscular radiation
 - cosmic rays
 - cosmic x rays
 - CRRES (satellite)
 - Earth orbital environments
 - electromagnetic noise
 - electromagnetic radiation
 - electron acceleration
 - extragalactic radio sources
 - light (visible radiation)
 - Lyman alpha radiation

extraterrestrial radio waves

Lyman beta radiation
microwave emission
polarized electromagnetic radiation
polarized radiation
∞ radiation
radiation belts
radiative transfer
radio jets (astronomy)
radio waves
∞ rays
relic radiation
synchrotron radiation
system generated electromagnetic pulses
terrestrial radiation
x rays

extraterrestrial radio waves

UF *cosmic radio waves*
GS electromagnetic radiation
. radio waves
. . . **extraterrestrial radio waves**
. . . . galactic radio waves
. North Polar Spur (astronomy)
. radio bursts
. solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts
. . . . solar radio emission
. solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts
. . . . cosmic microwave background radiation
extraterrestrial radiation
. **extraterrestrial radio waves**
. . galactic radio waves
. . . North Polar Spur (astronomy)
. . radio bursts
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . . solar radio emission
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . cosmic microwave background radiation
RT centimeter waves
extragalactic radio sources
microwave emission
microwaves
millimeter waves
radio astronomy
radio emission
radio frequency interference
radio jets (astronomy)
radio sources (astronomy)

extraterrestrial resources

GS resources
. **extraterrestrial resources**
. . lunar resources
RT in situ resource utilization
lunar exploration
planetary bases
space exploration
space logistics

extraterrestrial roving vehicles

USE **roving vehicles**

extraterrestrial water

(added May 2005)

DEF Water beyond the surface, lithosphere, hydrosphere, and atmosphere of the Earth; includes the water content of interstellar matter, comets, planets, and satellites.

GS water
. **extraterrestrial water**
RT Europa
exobiology

extraterrestrial life
extraterrestrial oceans
icy satellites
Mars (planet)
Mars Reconnaissance Orbiter
Phoenix Mars Lander
planetary composition

extravehicular activity

SN (ACTIVITY OUTSIDE THE SPACECRAFT)
DEF Activities by crew members conducted outside the spacecraft pressure hull or within the cargo bay when the cargo bay doors are open.
UF *EVA*
spacewalks
RT ∞ activity
AEPS
aerospace environments
Apollo extension system
astronaut locomotion
astronaut maneuvering equipment
Crew Equipment Translation Aid (ISS)
extravehicular mobility units
IMLSS
intravehicular activity
man operated propulsion systems
manned maneuvering units
manned space flight
orbital workers
self maneuvering units
space flight
space maintenance
Space Shuttle payloads
umbilical connectors
weightlessness

extravehicular mobility units

SN (LIMITED TO SPACE SUIT UNITS OF THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM)
DEF Independent anthropometric space suit systems that provide crew members with environmental protection, life support, mobility, communications, and visibility while performing various extravehicular activities.
GS clothing
. protective clothing
. . pressure suits
. . . space suits
. . . . **extravehicular mobility units**
. . . suits
. . . pressure suits
. . . space suits
. . . . **extravehicular mobility units**
RT astronaut locomotion
astronaut maneuvering equipment
Crew Equipment Translation Aid (ISS)
extravehicular activity
IMLSS
life support systems
self maneuvering units
space transportation system

extrema

USE **range (extremes)**

Extreme Ultraviolet Explorer satellite

DEF An Explorer satellite carrying scientific instruments for scanning the sky in the 100-900 Angstrom region of the spectrum to study the very hot celestial bodies (white dwarfs, for example). Used for EUVE.

UF *EUVE*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **Extreme Ultraviolet Explorer satellite**

RT IUE
ultraviolet astronomy

extreme ultraviolet radiation

DEF Ultraviolet emission in the 100-1000 Angstrom range.
GS electromagnetic radiation
. ultraviolet radiation
. . **extreme ultraviolet radiation**
RT beams (radiation)
ionizing radiation
Magellan ultraviolet astronomy
satellite

∞ radiation
solar radiation

extremely high frequencies

SN (30 TO 300 GHZ)
UF *K band*
KA band
V band
GS frequencies
. radio frequencies
. . microwave frequencies
. . . **extremely high frequencies**
RT ACTS
millimeter waves

extremely low frequencies

SN (BELOW 300 HZ)
UF *ultralow frequencies*
GS frequencies
. radio frequencies
. . **extremely low frequencies**
RT audio frequencies
low frequencies
Seafarer project

extremum values

DEF In statistics, the upper or lower bound of the random variable which is not expected to be exceeded by a specified percentage of the population within a given confidence interval.
GS analysis (mathematics)
. real variables
. . **extremum values**
. . . limits (mathematics)
. . . maxima
. . . minima
. . . . Cramer-Rao bounds
RT Euler-Lagrange equation
functions (mathematics)
optimization
∞ peaks
probability theory

extroversion

RT behavior
human behavior
psychology

extruding

UF *hot extruding*
GS forming techniques
. **extruding**
. . pultrusion
RT casting
cladding
cold working
dies
∞ drawing
explosive forming
injection molding
intrusion
metal spinning
metal working
piercing
pressing (forming)
squeeze casting
wet spinning

eye (anatomy)

GS anatomy
. sense organs
. . **eye (anatomy)**
. . . choroid membranes
. . . conjunctiva
. . . cornea
. . . oculomotor nerves
. . . pupils
. . . retina
. . . . fovea
RT accommodation
color vision
face (anatomy)
head (anatomy)
lenses
miosis
nystagmus
ophthalmodynamometry
ophthalmology
optometry
photoreceptors

vestibular nystagmus
vision

eye diseases

GS diseases
 . **eye diseases**
 . . asthenopia
 . . astigmatism
 . . cataracts
 . . conjunctivitis
 . . glaucoma
 . . keratitis
 . . phoria
 RT blindness
 hyperopia
 ophthalmology

eye dominance

GS dominance
 . **eye dominance**
 RT vision

eye examinations

GS examination

. eye examinations

RT electronystagmography
 haploscopes
 ophthalmology

eye movements

GS **eye movements**
 . nystagmus
 . . vestibular nystagmus
 . Saccadic eye movements
 RT blinking
 electronystagmography
 head movement
 oculometers
 rapid eye movement state
 visual tasks

eye protection

GS protection
 . **eye protection**
 RT flash blindness
 goggles
 sunglasses

visors

eyepieces

GS optical equipment
 . **eyepieces**
 RT binoculars
 contact lenses
 lenses
 microscopes
 periscopes
 reticles
 sunglasses
 telescopes

Eyring theory

GS kinetic theory
 . transport theory
 . . **Eyring theory**
 RT equilibrium flow
 fluid dynamics
 ∞ theories

F

F 1 region

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... upper ionosphere
 - F region
 - **F 1 region**
- regions
- . F region
- .. **F 1 region**

F 2 region

- GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... upper ionosphere
 - F region
 - **F 2 region**
 - regions
 - . F region
 - .. **F 2 region**
- RT spread F
transequatorial propagation

F centers

- USE **color centers**

F displays

- USE **F region**

F layer

- USE **F region**

F region

SN (ALTITUDES ABOVE APPROXIMATELY 160 KM)
 DEF A portion of the ionosphere extending from about 150 to 1000 km. The F region is subdivided into the F1 (150 to 250 km) and the F2 (250 to 1000 km) regions. The F2 region generally has the largest electron density and it persists throughout the night. The F region is the one most commonly used for long range high frequency propagation.

- UF *F displays*
F layer
night F layer
 - GS Earth atmosphere
 - . upper atmosphere
 - .. Earth ionosphere
 - ... upper ionosphere
 - **F region**
 - F 1 region
 - F 2 region
 - regions
 - . **F region**
 - .. F 1 region
 - .. F 2 region
- RT plasma bubbles
radio transmission

F stars

- GS celestial bodies
 - . stars
 - .. **F stars**
- RT blue stars
dwarf stars
G stars
giant stars
main sequence stars
stellar spectra

F-1 rocket engine

- GS engines
 - . rocket engines
 - .. liquid propellant rocket engines
 - ... **F-1 rocket engine**
- RT booster rocket engines
Nova launch vehicles
Saturn launch vehicles

F-2 aircraft

- UF *Hawker Hunter aircraft*
Hunter F-2 aircraft
- GS attack aircraft
 - . fighter aircraft
 - .. **F-2 aircraft**
- Hawker Siddeley aircraft
- . **F-2 aircraft**

- jet aircraft
- . **F-2 aircraft**
- monoplanes
- . **F-2 aircraft**
- RT ∞ aircraft

F-4 aircraft

- UF *F-110 aircraft*
F4H aircraft
Phantom aircraft
RF-4 aircraft
 - GS attack aircraft
 - . fighter aircraft
 - .. **F-4 aircraft**
 - jet aircraft
 - . **F-4 aircraft**
 - McDonnell Douglas aircraft
 - . McDonnell aircraft
 - .. **F-4 aircraft**
 - monoplanes
 - . **F-4 aircraft**
 - supersonic aircraft
 - . **F-4 aircraft**
- RT ∞ aircraft
J-79 engine

F4H aircraft

- USE **F-4 aircraft**

F-5 aircraft

- UF *Freedom Fighter aircraft*
N-156 aircraft
 - GS attack aircraft
 - . COIN aircraft
 - .. **F-5 aircraft**
 - . fighter aircraft
 - .. **F-5 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - .. **F-5 aircraft**
 - monoplanes
 - . **F-5 aircraft**
 - Northrop aircraft
 - . **F-5 aircraft**
 - supersonic aircraft
 - . **F-5 aircraft**
- RT ∞ aircraft

F-8 aircraft

- UF *Crusader aircraft*
F8U aircraft
RF-8 aircraft
 - GS attack aircraft
 - . fighter aircraft
 - .. **F-8 aircraft**
 - jet aircraft
 - . **F-8 aircraft**
 - Ling-Temco-Vought aircraft
 - . **F-8 aircraft**
 - monoplanes
 - . **F-8 aircraft**
 - single engine aircraft
 - . **F-8 aircraft**
 - supersonic aircraft
 - . **F-8 aircraft**
- RT ∞ aircraft

F8U aircraft

- USE **F-8 aircraft**

F-9 aircraft

- UF *Cougar aircraft*
F9F aircraft
Panther aircraft
- GS attack aircraft
 - . fighter aircraft
 - .. **F-9 aircraft**
- Grumman aircraft
- . **F-9 aircraft**
- jet aircraft
- . **F-9 aircraft**
- monoplanes
- . **F-9 aircraft**
- single engine aircraft
- . **F-9 aircraft**

- RT ∞ aircraft

F9F aircraft

- USE **F-9 aircraft**

F-14 aircraft

- GS attack aircraft
 - . fighter aircraft
 - .. **F-14 aircraft**
 - Grumman aircraft
 - . **F-14 aircraft**
 - jet aircraft
 - . **F-14 aircraft**
 - supersonic aircraft
 - . **F-14 aircraft**
- RT ∞ aircraft

F-15 aircraft

- GS attack aircraft
 - . fighter aircraft
 - .. **F-15 aircraft**
 - jet aircraft
 - . **F-15 aircraft**
 - supersonic aircraft
 - . **F-15 aircraft**
- RT ∞ aircraft

F-16 aircraft

- UF *YF-16 aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - .. **F-16 aircraft**
 - jet aircraft
 - . **F-16 aircraft**
 - single engine aircraft
 - . **F-16 aircraft**
 - supersonic aircraft
 - . **F-16 aircraft**
- RT ∞ aircraft

F-17 aircraft

- UF *YF-17 aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - .. **F-17 aircraft**
 - jet aircraft
 - . **F-17 aircraft**
 - monoplanes
 - . **F-17 aircraft**
 - supersonic aircraft
 - . **F-17 aircraft**
- RT ∞ aircraft
F-18 aircraft

F-18 aircraft

- GS attack aircraft
 - . fighter aircraft
 - .. **F-18 aircraft**
 - jet aircraft
 - . **F-18 aircraft**
 - McDonnell Douglas aircraft
 - . **F-18 aircraft**
 - Northrop aircraft
 - . **F-18 aircraft**
- RT ∞ aircraft
F-17 aircraft

F-20 aircraft

- GS attack aircraft
 - . fighter aircraft
 - .. **F-20 aircraft**
- jet aircraft
- . **F-20 aircraft**
- Northrop aircraft
- . **F-20 aircraft**

F-22 aircraft

- (added August 1993)
- UF *advanced tactical fighter*
ATF
YF-22 aircraft
- GS attack aircraft
 - . fighter aircraft
 - .. **F-22 aircraft**
- jet aircraft
- . **F-22 aircraft**
- supersonic aircraft
- . **F-22 aircraft**

- RT ∞ aircraft
- F-27 aircraft**
 UF *Fokker F 27 aircraft*
Fokker Friendship aircraft
 GS Fokker aircraft
 . **F-27 aircraft**
 jet aircraft
 . turboprop aircraft
 . . **F-27 aircraft**
 monoplanes
 . **F-27 aircraft**
 passenger aircraft
 . **F-27 aircraft**
 transport aircraft
 . **F-27 aircraft**
 RT ∞ aircraft
- F-28 helicopter**
 GS light aircraft
 . **F-28 helicopter**
 passenger aircraft
 . **F-28 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . rigid rotor helicopters
 **F-28 helicopter**
- F-28 transport aircraft**
 UF *Fellowship aircraft*
Fokker F 28 aircraft
 GS commercial aircraft
 . **F-28 transport aircraft**
 Fokker aircraft
 . **F-28 transport aircraft**
 jet aircraft
 . turbofan aircraft
 . . **F-28 transport aircraft**
 monoplanes
 . **F-28 transport aircraft**
 passenger aircraft
 . **F-28 transport aircraft**
 transport aircraft
 . **F-28 transport aircraft**
 RT ∞ aircraft
- F-80 aircraft*
 USE **T-33 aircraft**
- F-84 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **F-84 aircraft**
 jet aircraft
 . **F-84 aircraft**
 monoplanes
 . **F-84 aircraft**
 Republic aircraft
 . **F-84 aircraft**
 single engine aircraft
 . **F-84 aircraft**
 RT ∞ aircraft
- F-86 aircraft**
 UF *Sabre aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-86 aircraft**
 jet aircraft
 . **F-86 aircraft**
 monoplanes
 . **F-86 aircraft**
 North American aircraft
 . **F-86 aircraft**
 single engine aircraft
 . **F-86 aircraft**
 RT ∞ aircraft
- F-89 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **F-89 aircraft**
 jet aircraft
 . **F-89 aircraft**
 monoplanes
 . **F-89 aircraft**
 Northrop aircraft
 . **F-89 aircraft**
- RT ∞ aircraft
- F-94 aircraft**
 GS attack aircraft
 . fighter aircraft
 . . **F-94 aircraft**
 jet aircraft
 . **F-94 aircraft**
 Lockheed aircraft
 . **F-94 aircraft**
 monoplanes
 . **F-94 aircraft**
 single engine aircraft
 . **F-94 aircraft**
 RT ∞ aircraft
- F-100 aircraft**
 UF *Super Sabre aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-100 aircraft**
 jet aircraft
 . **F-100 aircraft**
 monoplanes
 . **F-100 aircraft**
 North American aircraft
 . **F-100 aircraft**
 single engine aircraft
 . **F-100 aircraft**
 supersonic aircraft
 . **F-100 aircraft**
 RT ∞ aircraft
- F-101 aircraft**
 UF *JF 101 aircraft*
Voodoo aircraft
 GS attack aircraft
 . fighter aircraft
 . . **F-101 aircraft**
 jet aircraft
 . **F-101 aircraft**
 McDonnell Douglas aircraft
 . McDonnell aircraft
 . . **F-101 aircraft**
 single engine aircraft
 . **F-101 aircraft**
 supersonic aircraft
 . **F-101 aircraft**
 RT ∞ aircraft
- F-102 aircraft**
 UF *Delta Dagger aircraft*
YF-102 aircraft
 GS attack aircraft
 . fighter aircraft
 . . **F-102 aircraft**
 General Dynamics aircraft
 . **F-102 aircraft**
 jet aircraft
 . **F-102 aircraft**
 monoplanes
 . **F-102 aircraft**
 single engine aircraft
 . **F-102 aircraft**
 supersonic aircraft
 . **F-102 aircraft**
 tailless aircraft
 . **F-102 aircraft**
 RT ∞ aircraft
- F-104 aircraft**
 UF *Canadair CF-104 aircraft*
CF-104 aircraft
Starfighter aircraft
 GS attack aircraft
 . fighter aircraft
 . . **F-104 aircraft**
 jet aircraft
 . **F-104 aircraft**
 Lockheed aircraft
 . **F-104 aircraft**
 monoplanes
 . **F-104 aircraft**
 single engine aircraft
 . **F-104 aircraft**
 supersonic aircraft
 . **F-104 aircraft**
- RT ∞ aircraft
- F-105 aircraft**
 UF *Thunderchief aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-105 aircraft**
 jet aircraft
 . **F-105 aircraft**
 monoplanes
 . **F-105 aircraft**
 Republic aircraft
 . **F-105 aircraft**
 single engine aircraft
 . **F-105 aircraft**
 RT ∞ aircraft
- F-106 aircraft**
 UF *Delta Dart aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **F-106 aircraft**
 General Dynamics aircraft
 . **F-106 aircraft**
 jet aircraft
 . **F-106 aircraft**
 monoplanes
 . **F-106 aircraft**
 single engine aircraft
 . **F-106 aircraft**
 supersonic aircraft
 . **F-106 aircraft**
 tailless aircraft
 . **F-106 aircraft**
 RT ∞ aircraft
- F-110 aircraft*
 USE **F-4 aircraft**
- F-111 aircraft**
 UF *LASV*
TFX aircraft
 GS attack aircraft
 . bomber aircraft
 . . **F-111 aircraft**
 General Dynamics aircraft
 . **F-111 aircraft**
 Grumman aircraft
 . **F-111 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **F-111 aircraft**
 supersonic aircraft
 . **F-111 aircraft**
 RT ∞ aircraft
 mission adaptive wings
 variable sweep wings
- F-117A aircraft**
(added April 1991)
 GS attack aircraft
 . fighter aircraft
 . . **F-117A aircraft**
 jet aircraft
 . **F-117A aircraft**
 RT ∞ aircraft
 aircraft detection
 bomber aircraft
- FAB (programming language)*
 USE **FORTRAN**
- fabrication**
 GS **fabrication**
 . nanofabrication
 . space manufacturing
 RT assembling
 assembling
 construction
 low gravity manufacturing
 manufacturing
 production management
 rapid prototyping
 resin film infusion
 resin transfer molding
 self assembly

fabrics

squeeze casting

fabrics

- UF *cloth*
- GS **fabrics**
 - . crepe
 - . Dacron (trademark)
 - . felts
 - . Fortisan (trademark)
 - . gauze
 - . linen
 - . parachute fabrics
 - . silk
 - . wool
- RT clothing
 - coatings
 - cotton
 - fibers
- ∞ films
 - flame retardants
 - geotechnical fabrics
 - gores
 - interlayers
 - laminates
 - mesh
 - micarta
 - multilayer insulation
 - reinforcing materials
 - ribbons
- ∞ sheets
 - socks
 - textiles
 - weaving
 - webbing
 - webs (sheets)
 - wire cloth
 - woven composites

Fabry-Perot interferometers

- GS measuring instruments
 - . interferometers
 - . . **Fabry-Perot interferometers**
- RT etalons
 - microwave interferometers
 - plasma diagnostics

Fabry-Perot lasers

USE **lasers**

Fabry-Perot spectrometers

- GS measuring instruments
 - . radiation measuring instruments
 - . . **Fabry-Perot spectrometers**
 - . spectrometers
 - . . **Fabry-Perot spectrometers**
- RT actinometers
 - airglow
 - auroral spectroscopy
 - optical equipment
 - optical measuring instruments

face (anatomy)

- GS anatomy
 - . **face (anatomy)**
 - . . chin
 - . . forehead
 - . . mouth
 - . . . lips (anatomy)
 - . . nose (anatomy)
- RT eye (anatomy)
 - head (anatomy)

face centered cubic lattices

- UF *FCC lattices*
- GS crystal lattices
 - . cubic lattices
 - . . **face centered cubic lattices**
- RT body centered cubic lattices
 - close packed lattices
 - cluster variation method
 - crystals

facets

USE **flat surfaces**

∞ facilities

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT airports
 - electric power plants

- ground handling
- industrial areas
- industrial plants
- land use
- launching bases
- logistics
- logistics management
- military air facilities
- mobile quarantine facility
- research facilities
- roads
- site selection
- sites
 - Solar Cell Calibration Facility
- stations
 - terminal facilities
 - test facilities
 - X Ray Astrophysics Facility

facsimile communication

(added September 1992)

- UF *facsimile transmission*
- fax*
- GS telecommunication
 - . communication
 - . . **facsimile communication**
 - . . . automatic picture transmission
- RT interplanetary communication
 - Iridium network
 - lunar communication
 - satellite communication
 - spacecraft communication
 - teletypewriter systems
 - television systems
 - transoceanic communication
 - wireless communication

facsimile transmission

USE **facsimile communication**

factor analysis

- GS statistical analysis
 - . **factor analysis**
- RT autoregressive processes
 - correlation
 - covariance
 - degrees of freedom
 - experiment design
 - factorization
 - matrices (mathematics)
 - orthogonality
 - regression analysis
 - statistical tests
 - variability
 - variance (statistics)

factorial design

- GS experiment design
 - . **factorial design**
- RT ∞ design
 - mathematical models
 - sensitivity analysis
 - statistical analysis

factorials

- GS analysis (mathematics)
 - . combinatorial analysis
 - . . **factorials**
- RT binomial coefficients
 - gamma function

factories

USE **industrial plants**

factorization

- DEF Process or instance of factoring.
- GS **factorization**
 - . Cholesky factorization
- RT algorithms
 - factor analysis
 - finite element method
 - real variables

factors

USE **variable**

faculae

DEF Large patches of bright material forming a veined network in the vicinity of sunspots. They appear to be more permanent than sun-

spots and are probably due to elevated clouds of luminous gas. Used for plages (faculae) and solar faculae.

- UF *plages (faculae)*
- solar faculae*
- GS stellar activity
 - . solar activity
 - . . **faculae**

- RT ∞ activity
 - chromosphere
 - photosphere
 - starspots
 - sunspots

Faddeev equations

- RT ∞ equations
 - particle collisions
 - scattering amplitude
 - wave scattering

fading

- GS **fading**
 - . signal fading
 - . . Rayleigh fading
 - . . selective fading
- RT attenuation
 - bleaching
 - color
 - discoloration
 - electromagnetic absorption
 - extinction
 - reception diversity
 - signal fading rate
 - wave dispersion

fahrenheit temperature scale

USE **temperature scales**

fail-safe systems

DEF Systems used to minimize risk in case of malfunction.

- RT ∞ automation
 - emergencies
 - fault tolerance
 - safety devices
 - safety management
 - self tests
- ∞ systems

failure

- GS **failure**
 - . burnthrough (failure)
 - . engine failure
 - . structural failure
 - . system failures
- RT aborted missions
 - ∞ breakdown
 - buckling
 - burn-in
 - collapse
 - corrosion
 - cracking (fracturing)
 - cumulative damage
 - deformation
 - destruction
 - deterioration
 - distortion
 - downtime
 - electrical faults
 - failure analysis
 - fatigue (materials)
 - flashover
 - fractures (materials)
 - malfunctions
 - Mills ratio
 - rupturing
 - shearing
 - short circuits
 - structural strain
 - temperature inversions
 - wear

failure analysis

DEF Subsequent to failure, the logical, systematic examination of an item, its construction, application, and documentation to identify the failure mode and determine the failure mechanism and its basic cause.

- RT acoustic emission
 - ∞ analyzing

burn-in
burst tests
failure
fatigue life
fault detection
fault tolerance
fiber pullout
lessons learned
life (durability)
Mills ratio
MTBF
preventive maintenance
probability density functions
reliability
risk assessment
statistical analysis
trend analysis

failure modes

GS modes
. **failure modes**
RT buckling
cracks
elastic buckling
fault detection
fiber pushout
kink bands
kinking
∞ mode
mode (statistics)
MTBF
shearing

faint object camera

DEF One of the five components of the first scientific payload of the Hubble Space Telescope. The faint object camera will be used to observe extremely faint astronomical objects with wavelengths between 120 and 700 nm.

GS optical equipment
. cameras
. . **faint object camera**
photographic equipment
. cameras
. . **faint object camera**
RT astronomical photography
Hubble Space Telescope
infrared photography
optical measuring instruments
spaceborne astronomy
spaceborne telescopes
ultraviolet photography

faint objects

GS celestial bodies
. **faint objects**
RT galaxies
stars

fainting

USE **syncope**

Fairchild military aircraft

USE **Fairchild-Hiller aircraft**

Fairchild-Hiller aircraft

UF *Fairchild military aircraft*
GS **Fairchild-Hiller aircraft**
. C-119 aircraft
. C-123 aircraft
. OH-5 helicopter
. OH-23 helicopter
. XC-142 aircraft
RT ∞ aircraft

Fairey aircraft

GS **Fairey aircraft**
. FD 2 aircraft
RT ∞ aircraft

Fairey Delta 2 aircraft

USE **FD 2 aircraft**

fairings

GS symmetrical bodies
. streamlined bodies
. . **fairings**
RT aerodynamic configurations
aircraft structures
canopies

cowlings
fillets
housings
landing gear
nacelles
ogives
perforated shells
protectors
protuberances
sheaths
shells (structural forms)
∞ spinners
streamlining
wing roots

Faith 7

GS manned spacecraft
. Mercury spacecraft
. . **Faith 7**
reentry vehicles
. recoverable spacecraft
. . Mercury spacecraft
. . . **Faith 7**
soft landing spacecraft
. Mercury spacecraft
. . **Faith 7**
space capsules
. Mercury spacecraft
. . **Faith 7**
RT Mercury MA-2 flight
Mercury MA-9 flight

Falcon missile

GS missiles
. air to air missiles
. . **Falcon missile**
. antiaircraft missiles
. . **Falcon missile**
RT M-46 engine
solid propellant rocket engines

Falkner-Skan equation

GS analysis (mathematics)
. real variables
. . differential equations
. . . **Falkner-Skan equation**
RT Blasius equation
boundary layer separation
∞ equations
laminar flow
Prandtl-Meyer expansion
wedge flow

falling

RT atmospheric entry
descent trajectories
particle motion
∞ precipitation
sinking
vertical motion

falling spheres

GS symmetrical bodies
. bodies of revolution
. . spheres
. . . **falling spheres**
RT balls
drop towers
free fall
globules
raindrops
spheroids

fallout

UF *washout (radioactivity)*
RT air pollution
fission products
fission weapons
nuclear explosion effect
nuclear explosions
nuclear meteorology
post-blast nuclear radiation
∞ radiation
radiation effects
radiation hazards
radioactive contaminants
∞ radioactive debris

radioactivity

false alarms

DEF In general, the unwanted detection of input noise. In radar, an indication of a detected target even though one does not exist, due to noise or interference levels exceeding the set threshold of detection.
RT error signals
signal to noise ratios
warning systems

fan blades

DEF One or more revolving vanes attached to a rotary hub and operated by a motor.
RT compressor blades
ducted fans
∞ fans
propeller blades
rotary wings
turbine blades
turbomachine blades
ventilation fans

fan in wing aircraft

GS **fan in wing aircraft**
. XV-5 aircraft
RT ∞ aircraft
lift fans
research aircraft
short takeoff aircraft
tilt wing aircraft
V/STOL aircraft
vertical takeoff aircraft

fanlift devices

USE **lift fans**

∞ fans

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT actuator disks
air conditioning equipment
air ducts
antenna radiation patterns
blowers
compressor rotors
compressors
ducted fans
fan blades
propeller fans
turbofans
ventilation fans
wind tunnel drives

fans (landforms)

DEF Gently sloping, fan-shaped masses of detritus forming sections of very low shaped cones commonly at places where there is a notable decrease in gradient; specifically, alluvial fans. Also fan-shaped masses of congealed lava that formed on steep slopes by the continual changing direction of flow. Used for bajadas.

UF *bajadas*
GS landforms

. **fans (landforms)**

RT alluvium
canyons
clays
deltas
gravels
mud
sands
sediments

far fields

DEF (1- antennas) Those regions of the field of an antenna where the angular field distribution is essentially independent of the distance from a specified point in the antenna region. (2-fiber optics) The regions, far from source, where the diffraction pattern is substantially the same as that at infinity. (mobile communication) The regions of the field of an antenna where the angular field distance is essentially independent of the distance from the antenna. Used for Fraunhofer region.

UF *Fraunhofer region*
GS electromagnetic fields

far infrared radiation

- . **far fields**
 - RT antenna radiation patterns
 - electromagnetic radiation
 - field theory (physics)
 - Fresnel region
 - laser arrays
 - near fields
 - noise propagation
 - radiant flux density
- far infrared radiation**
- SN (30 MICRONS TO ABOUT 1000 MICRONS)
 - GS electromagnetic radiation
 - . infrared radiation
 - . . **far infrared radiation**
 - RT long wave radiation
 - near infrared radiation
 - ∞ radiation
 - radio waves
 - short wave radiation
 - submillimeter waves
 - terrestrial radiation
- far ultraviolet radiation**
- SN (200 TO 2000 ANGSTROMS)
 - UF *vacuum ultraviolet radiation*
 - GS electromagnetic radiation
 - . ultraviolet radiation
 - . . **far ultraviolet radiation**
 - . . . Lyman alpha radiation
 - . . . Lyman beta radiation
 - RT bremsstrahlung
 - Magellan ultraviolet astronomy satellite
 - near ultraviolet radiation
 - ∞ radiation
 - ultraviolet telescopes
 - x rays

Far UV Spectroscopic Explorer

DEF High-orbit, ultraviolet space observatory covering the wavelength range of 90. 5-119. 5 nm. The primary objective of FUSE is to use high-resolution spectroscopy at far ultraviolet wavelengths to study the origin and evolution of the lightest elements (hydrogen and deuterium) created shortly after the Big Bang, and the forces and processes involved in the evolution of galaxies, stars, and planetary systems.

UF *Explorer 77 satellite*
FUSE (satellite)

- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Far UV Spectroscopic Explorer**

Faraday dark space

- RT gas discharge tubes
- glow discharges

Faraday effect

- UF *Faraday rotation*
- GS electromagnetic properties
- . **Faraday effect**
- RT circulators (phase shift circuits)
- ∞ effects
- Hall generators
- Kerr magneto-optical effect
- magneto-optics
- optical measurement
- optical properties
- polarization (waves)
- polarized electromagnetic radiation
- rotation

Faraday rotation

USE **Faraday effect**

farm crops

- GS **farm crops**
- . alfalfa
- . coffee
- . cotton
- . fruits
- . grains (food)
- . . barley
- . . corn
- . . millet
- . . oats
- . . rice

- . . sorghum
- . . wheat
- . hay
- . leguminous plants
- . . soybeans
- . potatoes
- . spinach
- . sugar beets
- . sugar cane
- . sunflowers
- . tomatoes
- RT agriculture
- AgRISTARS project
- botany
- crop calendars
- crop dusting
- crop growth
- crop inventories
- crop vigor
- ∞ crops
- curing
- Earth resources
- farmlands
- frost damage
- grasses
- grasslands
- irrigation
- Large Area Crop Inventory Experiment
- locusts
- orchards
- planting
- plants (botany)
- plowing
- seeds
- vineyards

farmlands

- UF *croplands*
- plowed fields*
- GS land
- RT **farmlands**
- agriculture
- agrophysical units
- crop growth
- crop identification
- crop inventories
- crop vigor
- ∞ crops
- Earth resources
- farm crops
- grasses
- grasslands
- hay
- irrigation
- land use
- plains
- planting
- plowing
- regional planning
- rural areas
- rural land use
- sod
- sugar beets
- sugar cane

fast Fourier transformations

- UF *FFT*
- GS analysis (mathematics)
- . functional analysis
- . . integral transformations
- . . . Fourier transformation
- **fast Fourier transformations**
- functions (mathematics)
- . Fourier transformation
- . . **fast Fourier transformations**
- transformations (mathematics)
- . integral transformations
- . . Fourier transformation
- . . . **fast Fourier transformations**
- RT vortex in cell technique
- Walsh function

fast neutrons

DEF Neutrons of energy exceeding some threshold that must be specified (typically 0. 1 or MeV); often associated with those neutrons predominately responsible for displacement damage of materials in neutron radiation fields.

- GS nuclear radiation

- . **fast neutrons**
- particles
- . elementary particles
- . . fermions
- . . . neutrons
- **fast neutrons**
- . neutral particles
- . . neutrons
- . . . **fast neutrons**
- RT baryons
- nucleons
- thermal neutrons

fast nuclear reactors

- GS nuclear reactors
- . **fast nuclear reactors**
- . . Experimental Breeder Reactor 1
- . . Experimental Breeder Reactor 2
- . . fast oxide reactors
- . . fast test reactors
- . . gas cooled fast reactors
- . . liquid metal fast breeder reactors
- RT Enrico Fermi atomic power plant
- nuclear power reactors

fast oxide reactors

- GS nuclear reactors
- . fast nuclear reactors
- . . **fast oxide reactors**
- RT nuclear power reactors

fast test reactors

- GS nuclear reactors
- . fast nuclear reactors
- . . **fast test reactors**
- RT ∞ reactors

fasteners

- GS **fasteners**
- . anchors (fasteners)
- . bolts
- . . rock bolts
- . . tiebolts
- . locks (fasteners)
- . nuts (fasteners)
- . pins
- . rivets
- . screws
- . washers (spacers)
- . zippers
- RT adhesives
- ∞ bands
- ∞ belts
- brackets
- cables (ropes)
- chains
- clamps
- clips
- closures
- connectors
- couplings
- fittings
- holders
- hooks
- inserts
- interference fit
- joints (junctions)
- latches
- linkages
- locking
- lugs
- mooring
- ribbons
- sleeves
- spacers
- ∞ spikes
- splicing
- splines
- straps
- structural members
- studs (structural members)
- ∞ tapes
- unions (connectors)
- wire

fasting

- RT aerospace medicine
- diets
- food intake

hypoxia

fat embolisms

- GS diseases
 - . fat embolisms embolisms
 - . fat embolisms
- RT aeroembolism
 - blood vessels
 - cardiovascular system
 - heart diseases

fatigue (biology)

DEF State of the human organism after exposure to any time of physical or psychological stress (e.g., pilot fatigue).

- GS **fatigue (biology)**
 - . auditory fatigue
 - . flight fatigue
 - . muscular fatigue
- RT asthenopia
- ∞ biology
 - damage
 - effort
 - ∞ endurance
 - exhaustion
 - human factors engineering
 - hyperkinesia
 - massaging
 - ∞ performance
 - physical exercise
 - sleep deprivation
 - stress (biology)
 - stress (physiology)
 - stress (psychology)
 - workloads (psychophysiology)
 - work-rest cycle

fatigue (materials)

DEF A weakening or deterioration of metal or other material occurring under load, especially under repeated cyclic, or continued loading. Used for strain fatigue and structural fatigue.

- UF *strain fatigue*
- UF *structural fatigue*
- GS **fatigue (materials)**
 - . acoustic fatigue
 - . bending fatigue
 - . metal fatigue
 - . thermal fatigue
 - . volumetric strain
- RT Bauschinger effect
 - crack closure
 - crack geometry
 - crack propagation
 - cracking (fracturing)
 - cracks
 - creep properties
 - crystal dislocations
 - cycles
 - damage
 - destruction
 - ductility
 - ∞ endurance
 - failure
 - fractography
 - fretting
 - fretting corrosion
 - hardness
 - ∞ materials
 - mechanical properties
 - notch sensitivity
 - plastic properties
 - residual strength
 - shear properties
 - shot peening
 - S-N diagrams
 - stress concentration
 - stress cycles
 - stress ratio
 - stress relaxation
 - stress relieving
 - stresses
 - structural failure
 - surface defects
 - system failures
 - temperature inversions
 - thermal stresses

vibration

fatigue diagramsUSE **S-N diagrams****fatigue life**

DEF The number of cycles of stress or strain of a specified character that a given specimen sustains before failure of a specified nature occurs.

- GS life (durability)
 - . **fatigue life**
 - mechanical properties
 - . **fatigue life**
- RT accelerated life tests
 - blowouts
 - Coffin-Manson law
 - combined stress
 - failure analysis
 - interference fit
 - Palmgren-Miner rule
 - retirement for cause
 - service life
 - short cracks
 - S-N diagrams
 - stress cycles

fatigue testing machines

- RT acoustic emission
- ∞ machinery
- ∞ test equipment

fatigue tests

- RT bending
 - Coffin-Manson law
 - creep tests
 - destructive tests
 - ferrography
 - impact testing machines
 - impact tests
 - load tests
 - ∞ materials tests
 - notch strength
 - notch tests
 - resonance testing
 - S-N diagrams
 - specimen geometry
 - static tests
 - stress concentration
 - stress cycles
 - stress ratio
 - tensile tests
 - testing time
 - ∞ tests
 - thermal cycling tests
 - Weibull density functions
 - weld tests

fats

- GS organic compounds
 - . lipids
 - . . **fats**
- RT adipose tissues
 - ∞ food
 - greases
 - myelin
 - ∞ nutrients
 - oils
 - palmitic acid
 - synthetic food

fatty acids

- GS acids
 - . carboxylic acids
 - . . **fatty acids**
 - . . . acetic acid
 - ethylenediaminetetraacetic acids
 - iodoacetic acid
 - acetylsalicylic acid
 - benzoic acid
 - lipoic acid
 - oleic acid
 - palmitic acid
 - propionic acid
 - sebacic acid
 - valeric acid
 - organic compounds
 - . carboxylic acids
 - . . **fatty acids**

- . . . acetic acid
- ethylenediaminetetraacetic acids
- iodoacetic acid
- acetylsalicylic acid
- benzoic acid
- benzoic acid
- lipoic acid
- oleic acid
- palmitic acid
- propionic acid
- sebacic acid
- valeric acid

- RT ∞ aliphatic compounds
 - castor oil
 - ∞ nutrients

fault detection

(added September 1993)

- GS detection
 - . **fault detection**
- RT electronic equipment tests
 - engine monitoring instruments
 - error detection codes
 - failure analysis
 - failure modes
 - fault tolerance
 - maintenance
 - reliability engineering
 - structural health monitoring
 - system failures
 - systems health monitoring

fault mechanicsUSE **fracture mechanics****fault tolerance**

DEF The capability of systems to function despite one or more critical failures, by use of redundant circuits or functions and/or reconfigurable elements.

- RT error analysis
 - error detection codes
 - fail-safe systems
 - failure analysis
 - fault detection
 - reliability engineering

fault trees

DEF Acyclic directed graphs used in the analysis or prediction of faults and defects.

- GS trees (mathematics)
 - . **fault trees**
- RT graphs (charts)
 - topology

∞ **faults**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT electrical faults
 - geological faults
 - landforms
 - massifs
 - seamounts
 - test pattern generators

faunaUSE **animals****fax**USE **facsimile communication****fayalite**

- GS iron compounds
 - . **fayalite**
 - minerals
 - . **fayalite**
 - silicon compounds
 - . silicates
 - . . **fayalite**

FBFM (modulation)USE **feedback frequency modulation****FBL control**USE **fly by light control****FBM (missiles)**USE **fleet ballistic missiles****FCC lattices**USE **face centered cubic lattices****FD 2 aircraft**UF *Fairey Delta 2 aircraft*

FDL-5 reentry vehicle

GS Fairey aircraft
. **FD 2 aircraft**
jet aircraft
. **FD 2 aircraft**
monoplanes
. **FD 2 aircraft**
research vehicles
. research aircraft
. . **FD 2 aircraft**
tailless aircraft
. **FD 2 aircraft**

RT ∞ aircraft
delta wings

FDL-5 reentry vehicle

GS lifting bodies
. lifting reentry vehicles
. . **FDL-5 reentry vehicle**
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . **FDL-5 reentry vehicle**

FDMA

USE **frequency division multiple access**

FDTD (mathematics)
(added April 1999)

USE **finite difference time domain method**

fear

GS phobias
. **fear**
. . fear of flying

RT anxiety
emotions
neuroses
panic
psychoses

fear of flying

GS phobias
. fear
. . **fear of flying**

RT anxiety
emotions
neuroses

feasibility

RT cost analysis
costs
efficiency
estimating
evaluation

feasibility analysis

RT cost analysis
economic factors
management planning
research management
systems analysis
technology assessment

Feather River Basin (CA)

GS landforms
. structural basins
. . river basins
. . . **Feather River Basin (CA)**

RT California
rivers

feathering

RT propeller blades
propellers

feature extraction

USE **pattern recognition**

Feature Identification and Location Exper

SN (FEATURE IDENTIFICATION AND LOCATION EXPERIMENT)

RT Earth observations (from space)
image processing
pattern recognition
remote sensing
remote sensors
scene analysis

Space Shuttle payloads

feces

GS wastes
. metabolic wastes
. . human wastes
. . . **feces**

RT excretion
perspiration
urine

federal budgets

RT allocations
appropriations

∞ budgets
contracts
cost estimates
financial management
government procurement
procurement management

Federal Republic of Germany

USE **West Germany**

federations

GS organizations
. **federations**
. . bureaus (organizations)

RT European Union
institutions
international cooperation
nations
teams
unionization
United Nations

feed systems

RT cold flow tests
feeding (supplying)
fuel tanks
intake systems
pumps

∞ systems

feedback

DEF The return of a portion of the output of a device to the input; positive feedback adds to the input, negative feedback subtracts from the input. Information such as progress or results, returned to an originating source. In aeronautics, the transmittal of forces initiated by aerodynamic action on control surfaces or rotor blades to the cockpit controls; the forces so transmitted.

GS **feedback**
. biofeedback
. . sensory feedback
. negative feedback
. nonlinear feedback
. positive feedback

RT compensators
complexity
control theory
cybernetics
electromagnetic interference
emotional factors
oscillations
oscillators
screech tones

∞ systems
transfer functions

feedback amplifiers

GS amplifiers
. **feedback amplifiers**

RT distributed feedback lasers
nonlinear feedback
operational amplifiers
oscillators
phantastrons
positive feedback
power amplifiers
self oscillation
servoamplifiers
transistor amplifiers
voltage amplifiers

feedback circuits

GS circuits
. **feedback circuits**

RT feedforward control

transfer functions

feedback control

DEF A control system in which the controlled quantity is measured and compared with a standard representing the desired performance. Any deviation from the standard is fed back into the control system in such a sense that it will reduce the deviation of the controlled quantity from the standard.

UF *closed loop systems*

GS automatic control
. **feedback control**
. . cascade control

RT adaptive control
adaptive optics
automatic frequency control
automatic gain control

∞ automation
biofeedback

∞ control
control equipment
control systems design
control theory
distributed feedback lasers
dynamic control
electronic control
H-2 control
H-infinity control
inverse kinematics
Kalman-Schmidt filtering
linear parameter-varying control
linear quadratic Gaussian control
linear quadratic regulator
loop transfer functions
loop transfer recovery
machine learning
MIMO (control systems)
model reference adaptive control
multivariable control
negative feedback
nonlinear feedback
observability (systems)
optical control
optimal control
proportional control
robot control
robustness (mathematics)
sampled data systems
servocontrol
servomechanisms
SISO (control systems)
stability augmentation
Terminal Configured Vehicle Program
tracking problem

feedback frequency modulation

UF *FBFM (modulation)*

GS coding
. signal encoding
. . frequency modulation
. . . **feedback frequency modulation**
modulation
. frequency modulation
. . **feedback frequency modulation**

RT phase locked systems

feeders

SN (FOR FLUID AND PARTICULATE MATERIALS)

RT conveyors
dispensers
distributors
feeding (supplying)
fuel systems
injectors
intake systems
loading operations
materials handling
mixers

feedforward control

GS automatic control
. **feedforward control**

RT adaptive control

∞ automation

∞ control
control theory
feedback circuits
model reference adaptive control

- optimal control
- feeding (supplying)**
 RT feed systems
 feeders
 injection
 input
 ∞ loading
 materials handling
- feelings*
 USE **sensory feedback**
- feet (anatomy)**
 DEF The lower, pedal extremities of the legs.
 GS anatomy
 . limbs (anatomy)
 . leg (anatomy)
 . . . **feet (anatomy)**
 appendages
 . leg (anatomy)
 . . . **feet (anatomy)**
- feldspars**
 DEF A group of abundant rock-forming minerals of the family of anhydrous silicates.
 GS aluminum compounds
 . aluminum silicates
 . . . **feldspars**
 . . . plagioclase
 minerals
 . **feldspars**
 . . plagioclase
 silicon compounds
 . silicates
 . . aluminum silicates
 . . . **feldspars**
 plagioclase
 RT andesite
 anorthosite
 felsite
 igneous rocks
- Fellowship aircraft*
 USE **F-28 transport aircraft**
- felsite**
 DEF A light colored, fine grained igneous rock composed chiefly of quartz or feldspar.
 GS rocks
 . igneous rocks
 . . **felsite**
 RT feldspars
 minerals
 quartz
- felts**
 GS fabrics
 . **felts**
 RT wool
- females**
 UF *women*
 RT adults
 children
 gynecology
 human beings
 males
 menstruation
 sex
 sex factor
 zygotes
- femur**
 GS anatomy
 . musculoskeletal system
 . . bones
 . . . **femur**
 RT knee (anatomy)
 leg (anatomy)
- ∞ **fences**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT airfoil fences
 fences (barriers)
- tracking stations
- fences (barriers)**
 RT ∞ barriers
 boundaries
 ∞ fences
 gates (openings)
- Fermat principle**
 DEF The principle which states that the path along which electromagnetic radiation travels between any two points will be that path for which the elapsed time for the travel is a minimum.
 RT electromagnetic wave transmission
 light transmission
 multipath transmission
 optical thickness
 velocity
- fermentation**
 GS chemical reactions
 . **fermentation**
 metabolism
 . enzyme activity
 . . **fermentation**
 RT bioconversion
 butyric acid
- Fermi Gamma-ray Space Telescope**
(added August 2008)
 DEF Gamma-ray astronomy observatory in low-Earth orbit, comprised of the Large Area Telescope and the GLAST Burst Monitor, used to explore the extreme Universe, dark matter composition, black hole material acceleration, and the high-energy behavior of gamma-ray bursts. The observatory will also be used to investigate solar flares, pulsars, and cosmic ray origins.
 UF *Gamma-ray Large Area Space Telescope*
GLAST
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **Fermi Gamma-ray Space Telescope**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **Fermi Gamma-ray Space Telescope**
 telescopes
 . gamma ray telescopes
 . . **Fermi Gamma-ray Space Telescope**
 . . spaceborne telescopes
 . . **Fermi Gamma-ray Space Telescope**
 RT cosmic rays
 gamma ray astronomy
 spaceborne astronomy
- Fermi liquids**
 GS liquids
 . cryogenic fluids
 . . **Fermi liquids**
 RT cryogenics
 electronic structure
- Fermi surfaces**
 RT Brillouin zones
 cyclotron resonance
 energy levels
 magnetoresistivity
 ∞ surfaces
 transition probabilities
- Fermi-Dirac statistics**
 DEF The statistics of an assembly of identical half-integer spin particles; such particles have wave functions antisymmetrical with respect to particle interchange and satisfy the Pauli exclusion principle.
 RT bosons
 degenerate matter
 fermions
 quantum mechanics
 quantum statistics
- ∞ statistics
- fermions**
 GS particles
 . elementary particles
 . . **fermions**
 . . . baryons
 . . . hyperons
 xi hyperons
 omega-mesons
 rho-mesons
 sigma-mesons
 eta-mesons
 . . . leptons
 antineutrinos
 electrons
 conduction electrons
 free electrons
 high energy electrons
 relativistic electron beams
 hot electrons
 N electrons
 negatrons
 photoelectrons
 pi-electrons
 polarons
 solar electrons
 muons
 neutrinos
 solar neutrinos
 positrons
 . . . meson resonance
 X mesons
 . . . neutrons
 . . . cold neutrons
 . . . fast neutrons
 . . . photoneutrons
 . . . solar neutrons
 . . . thermal neutrons
 . . . protons
 . . . recoil protons
 . . . solar protons
 RT Fermi-Dirac statistics
 heavy fermion systems
 particle decay
 Pauli exclusion principle
 quantum statistics
 supersymmetry
- fermium**
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **fermium**
 . . . nuclides
 . . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **fermium**
 metals
 . actinide series
 . . transuranium elements
 . . . **fermium**
- Ferranti Mercury computer**
 GS data processing equipment
 . computers
 . . digital computers
 . . . **Ferranti Mercury computer**
- ferrates**
 GS iron compounds
 . **ferrates**
 . . barium ferrates
- ferric ions**
 GS ions
 . metal ions
 . . **ferric ions**
 RT iron
- ferrimagnetic materials**
 GS magnetic materials
 . **ferrimagnetic materials**
 RT ferromagnetic materials
 ∞ materials
- ferrimagnetism**
 GS magnetic properties
 . **ferrimagnetism**

ferrimagnets

- RT ferrimagnets
magnons
- ferrimagnets**
- GS magnets
 - . ferrimagnets
- RT ferrimagnetism
permanent magnets
- ferrites**
- DEF Solid solutions of carbon in alpha-iron.
- GS iron compounds
 - . ferrites
- RT austenite
ferritic stainless steels
gadolinium-gallium garnet
gyrators
iron alloys
magnetic cores
microstructure
pearlite
spinel
steels
yttrium-aluminum garnet
yttrium-iron garnet
- ferritic stainless steels**
- GS alloys
 - . iron alloys
 - . . steels
 - . . . stainless steels
 - **ferritic stainless steels**
- RT chromium steels
ferrites
heat treatment
magnetic properties
mechanical properties
- ferroalloys*
- USE **iron alloys**
- ferrocenes**
- GS iron compounds
 - . ferrocenes
 - . . alkylferrocene
 - organometallic compounds
 - . ferrocenes
 - . . alkylferrocene
- ferroelastic materials**
(added June 1998)
- GS **ferroelastic materials**
 - . shape memory alloys
 - . . nitinol alloys
- RT ceramics
ferroelasticity
ferroelectric materials
- ∞ materials
smart materials
- ferroelasticity**
(added June 1998)
- GS mechanical properties
 - . elastic properties
 - . . **ferroelasticity**
- RT crystal structure
domain wall
ferroelastic materials
ferroelectricity
phase transformations
shape memory alloys
smart materials
- ferroelectric materials**
(added March 1997)
- RT barium titanates
ceramics
ferroelastic materials
ferroelectricity
ferromagnetic materials
lead zirconate titanates
liquid crystals
- ∞ materials
- ∞ polymers
smart materials
thin films
- ferroelectricity**
- GS electrical properties
 - . ferroelectricity

- RT antiferroelectricity
Curie temperature
dielectric properties
ferroelasticity
ferroelectric materials
microwave switching
- ferrofluids**
- GS liquids
 - . ferrofluids
- magnetic materials
 - . ferromagnetic materials
 - . . ferrofluids
- RT dispersions
- ∞ fluids
magnetorheological fluids
microparticles
suspending (mixing)
- ∞ suspensions
working fluids
- ferrography**
- DEF A technique for the isolation and analysis of wear particles in a lubricant.
- RT fatigue tests
metallography
wear tests
- ferromagnetic films**
- GS magnetic materials
 - . ferromagnetic materials
 - . . ferromagnetic films
 - thin films
 - . ferromagnetic films
- ferromagnetic materials**
- GS magnetic materials
 - . ferromagnetic materials
 - . . ferrofluids
 - . . ferromagnetic films
 - . . magnetite
 - . . Permalloys (trademark)
- RT ferrimagnetic materials
ferroelectric materials
magnetorheological fluids
magnets
- ∞ materials
permanent magnets
smart materials
yokes
- ferromagnetic resonance**
- GS resonance
 - . magnetic resonance
 - . . ferromagnetic resonance
- RT magnetic fields
paramagnetic resonance
- ferromagnetism**
- GS magnetic properties
 - . ferromagnetism
- RT antiferromagnetism
Curie temperature
Curie-Weiss law
diamagnetism
Ising model
Langevin formula
magnetic cores
magnetic dispersion
magnets
magnons
- ferrous metals**
- GS metals
 - . ferrous metals
- RT alloys
chemical elements
iron
iron isotopes
- ∞ metallurgy
- ferry spacecraft**
- UF *space buses*
- GS maneuverable spacecraft
 - . ferry spacecraft
 - manned spacecraft
 - . ferry spacecraft
- RT Astro vehicle
cargo spacecraft
Columbus space station

- MARS (Manned Reusable Spacecraft)
reentry vehicles
rendezvous spacecraft
reusable spacecraft
soft landing spacecraft
space stations
- fertility**
- RT breeding (reproduction)
fertilization
reproduction (biology)
reproductive systems
zygotes
- fertilization**
- RT birth
fertility
in vitro methods and tests
recombination reactions
- ∞ reproduction
spermatozoa
zygotes
- fertilizers**
- RT ammonia
ammonium nitrates
ashes
cultivation
planting
ureas
vegetation growth
- FET (transistors)*
- USE **field effect transistors**
- fetuses**
- UF *foetuses*
- RT birth
eggs
embryology
embryos
reproduction (biology)
reproductive systems
- fever**
- RT body temperature
hyperthermia
skin temperature (biology)
- Feynman diagrams**
- GS diagrams
 - . Feynman diagrams
- RT electromagnetic interactions
Minkowski space
particle interactions
quantum electrodynamics
- FFAR rocket vehicle*
- USE **Folding Fin aircraft rocket vehicle**
- Ffowcs Williams-Hawkings equation**
(added December 2006)
- DEF A governing equation of noise generation by sources on, and the fluid motion in the vicinity of a moving surface based on the acoustic analogy. It is an inhomogeneous linear wave equation. The inhomogeneous terms of this equation are known as thickness, loading, and quadrupole (nonlinear) source terms.
- UF *FW-H equation*
- GS algebra
 - . linear equations
 - . . Ffowcs Williams-Hawkings equation
 - analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . partial differential equations
 - Ffowcs Williams-Hawkings equation
 - . . linear equations
 - . . . Ffowcs Williams-Hawkings equation
 - wave equations
 - . Ffowcs Williams-Hawkings equation
- RT aeroacoustics
aerodynamic noise
aircraft noise

- blade slap noise
 - computational aeroacoustics
 - flow noise
 - noise prediction
 - noise prediction (aircraft)
 - propeller noise
 - rotor aerodynamics
 - surface noise interactions
 - wave propagation
- FFT**
USE **fast Fourier transformations**
- FGM (materials)**
USE **functionally gradient materials**
- FH-1100 helicopter**
USE **OH-5 helicopter**
- Fiat aircraft**
GS **Fiat aircraft**
. G-91 aircraft
. G-95/4 aircraft
. G-222 aircraft
RT ∞ aircraft
- Fiat G-91 aircraft**
USE **G-91 aircraft**
- Fiat G-95/4 aircraft**
USE **G-95/4 aircraft**
- Fiat G-222 aircraft**
USE **G-222 aircraft**
- fiber bridging**
USE **crack bridging**
- fiber composites**
DEF Structural materials consisting of combinations of metals or alloys or plastics reinforced with one or more types of fibers.
GS composite materials
. **fiber composites**
. . . aramid fiber composites
. . . braided composites
. . . carbon fiber reinforced plastics
. . . carbon-phenolic composites
. . . glass fiber reinforced plastics
. . . woven composites
RT aluminum boron composites
aluminum graphite composites
aramid fibers
boron fibers
boron reinforced materials
boron-epoxy composites
Borsic (tradename)
carbon fibers
carbon-carbon composites
carbon-silicon carbide composites
ceramic fibers
chemical vapor infiltration
composite wrapping
crack bridging
debonding (materials)
fiber pullout
fiber pushout
fiber volume fraction
fiber-matrix interfaces
filament winding
functionally gradient materials
graphite
graphite-epoxy composites
hybrid composites
kink bands
kinking
laminates
matrix materials
metal fibers
metal matrix composites
micarta
polymer matrix composites
pultrusion
reinforced plastics
reinforcing fibers
reinforcing materials
resin transfer molding
sheet molding compounds
stacking sequence (composite materials)
- superhybrid materials
- three dimensional composites

fiber lasers
(added October 1997)
GS electronic equipment
. solid state devices
. . solid state lasers
. . . **fiber lasers**
stimulated emission devices
. lasers
. . solid state lasers
. . . **fiber lasers**
. . waveguide lasers
. . . **fiber lasers**

RT fiber optics
laser materials
laser pumping
light amplifiers
optical fibers
optical pumping
semiconductor lasers

fiber optics
DEF The technique of transmitting light through long thin, flexible fibers of glass, plastic, or other transparent materials.
RT Cassegrain optics
crystal optics
electron tubes
evanescent waves
fiber lasers
fly by light control
geometrical optics
gradient index optics
light emitting diodes
light transmission
numerical aperture
optical fibers
∞ optics
optoelectronic devices
photonics
physical optics
plastic fibers
Sagnac effect
scintillating fibers
smart structures
vidicons

fiber orientation
RT aramid fibers
boron fibers
ceramic fibers
composite materials
dynamic response
epoxy matrix composites
fiber volume fraction
glass fiber reinforced plastics
impact loads
lay-up
mechanical properties
∞ orientation
reinforcing fibers
stacking sequence (composite materials)

fiber pullout
UF *fiber release*
GS releasing
. **fiber pullout**
RT adhesive bonding
carbon fibers
ceramic matrix composites
composite materials
failure analysis
fiber composites
fiber pushout
fibers
interfacial energy
∞ materials tests
metal matrix composites
reinforcing fibers

fiber pushout
(added September 1999)
GS releasing
. **fiber pushout**
RT ceramic matrix composites
composite materials
debonding (materials)

 - destructive tests
 - failure modes
 - fiber composites
 - fiber pullout
 - fiber-matrix interfaces
 - fibers
 - interfacial energy
 - ∞ materials tests
 - metal matrix composites
 - reinforcing fibers

fiber release
USE **fiber pullout**

fiber strength
GS mechanical properties
. **fiber strength**
RT aramid fibers
bending
boron fibers
ceramic fibers
compressive strength
fiber volume fraction
Hookes law
Poisson ratio
shear strength
∞ strength
tensile strength

fiber volume fraction
(added April 1992)
GS composition (property)
. concentration (composition)
. . **fiber volume fraction**
ratios
. **fiber volume fraction**
RT composite materials
fiber composites
fiber orientation
fiber strength
reinforcing fibers

fiberboard
USE **boards (paper)**

fiberglass
USE **glass fibers**

fiber-matrix interfaces
(added July 1994)
GS interfaces
. **fiber-matrix interfaces**
RT composite materials
fiber composites
fiber pushout
interfacial energy
matrix materials
reinforcing fibers

fibers
UF *fibrous materials*
Refrasil (trademark)
GS **fibers**
. cotton fibers
. hair
. linen
. metal fibers
. microfibers
. optical fibers
. . scintillating fibers
. plastic fibers
. reinforcing fibers
. . aramid fibers
. . . Kevlar (trademark)
. . boron fibers
. . carbon fibers
. silk
. synthetic fibers
. . aramid fibers
. . . Kevlar (trademark)
. . ceramic fibers
. . Dacron (trademark)
. . Fortisan (trademark)
. . glass fibers
. . Nylon (trademark)
. . rayon
. . Vycor
. wool
RT boron reinforced materials
carbon fiber reinforced plastics

fibers (mathematics)

composite materials
cordage
cotton
fabrics
fiber pullout
fiber pushout
∞ filaments
glass fiber reinforced plastics
metal matrix composites
netting (materials/structures)
papers
polymeric films
reinforcing materials
slivers
strands
textiles
wet spinning
whiskers (crystals)
yarns

fibers (mathematics)

RT canonical forms
dimensional analysis
function space
group theory
homotopy theory
manifolds (mathematics)
topology

Fibonacci numbers

RT number theory
∞ numbers
set theory

fibrillation

GS heart function
. **fibrillation**
RT heart diseases
muscles
seismocardiography

fibrin

GS biopolymers
. proteins
. . **fibrin**
body fluids
. blood
. . **fibrin**
organic compounds
. proteins
. . **fibrin**
RT blood coagulation
coagulation
fibrinogen
thrombin

fibrinogen

GS biopolymers
. proteins
. . globulins
. . . **fibrinogen**
body fluids
. blood
. . **fibrinogen**
organic compounds
. proteins
. . globulins
. . . **fibrinogen**
RT fibrin
hemostatics
homeostasis
thrombin

fibroblasts

GS cells (biology)
. **fibroblasts**
RT cytoplasm
osteoblasts
tendons
tissues (biology)

fibrosis

GS diseases
. **fibrosis**
. . cystic fibrosis

RT tissues (biology)

fibrous materials

USE **fibers**

Ficks equation

RT diffusion
diffusion coefficient
∞ equations
reaction-diffusion equations
Tafel law

fidelity

USE **accuracy**

fiduciaries

RT economics
finance
management

field aligned currents

(added September 1988)

DEF Electric currents aligned along magnetic fields.

GS electric current
. **field aligned currents**
. . Birkeland currents

RT aeronomy
atmospheric electricity
Earth ionosphere
Earth magnetosphere
geoelectricity
geomagnetic tail
geomagnetism
geophysics
ionospheric currents
lines of force
magnetic field reconnection
Pedersen currents
plasma currents
telluric currents
upper atmosphere

field army ballistic missiles

GS missiles
. ballistic missiles
. . **field army ballistic missiles**
RT intermediate range ballistic missiles
short range ballistic missiles

field coils

GS electric coils
. magnetic coils
. . **field coils**
RT electromagnets
helical inducers
magnet coils

field effect transistors

UF *cascode MOSFET*
FET (transistors)
IGFET
MESFETs
MISFETs
MOSFET

GS *unipolar transistors*
electronic equipment
. solid state devices
. . semiconductor devices
. . . transistors
. . . . **field effect transistors**
. charge flow devices
. JFET
. MODFETS

RT cascode devices
∞ effects
high electron mobility transistors
indium aluminum arsenides
ion implantation
SOI (semiconductors)

field emission

GS emission
. particle emission
. . electron emission
. . . **field emission**
RT electric fields
electron microscopes
electron microscopy
magnetic fields

scanning electron microscopy
secondary emission
transmission electron microscopy
Zener effect

field intensity meters

SN (EMPLOY THIS TERM WHEN TYPE OF FIELD INVOLVED IS NOT SPECIFIED—OTHERWISE USE A MORE SPECIFIC TERM)
GS measuring instruments
. **field intensity meters**
RT actinometers
flux density
magnetometers
noise meters

field mode theory

RT cavity resonators
dielectrics
electromagnetic fields
laser modes
optical resonators
propagation modes
∞ theories

field of view

DEF The area or solid angle that can be viewed through or scanned by an optical instrument.

GS viewing
. **field of view**
RT bearing (direction)
conical scanning
elevation angle
∞ fields
look angles (tracking)
visual fields

field sails

USE **magnetic sails**

field strength

DEF For any physical field, the flux density, intensity, or gradient of the field at the point in question.

GS **field strength**
. electric field strength
. magnetic flux
RT acoustic properties
directivity
electric fields
electrical properties
electromagnetic fields
flux density
gravitational fields
isotropy
magnetic diffusion
magnetic fields
magnetic properties
∞ orientation
permittivity
∞ strength

field tests

(added November 1998)

SN (EXCLUDES TESTS OF ELECTRIC, MAGNETIC, OR ELECTROMAGNETIC FIELDS)
DEF Tests carried out in the actual setting in which the subject device is intended to operate.
RT environmental tests
performance tests
∞ tests

field theory (algebra)

GS **field theory (algebra)**
. cubic equations
. quadratic equations
RT ∞ fields
Green's functions
homomorphisms
nonlinear equations
∞ theories

field theory (physics)

UF *ambit*
force fields
Wightman theory
GS **field theory (physics)**
. crystal field theory
. gauge theory

- . . quantum chromodynamics
- . . unified field theory
- . . . electroweak model
- . . . standard model (particle physics)
- . grand unified theory
- RT antenna radiation patterns
- attraction
- boson fields
- closure law
- crossed fields
- Dirac equation
- distribution (property)
- ∞ dynamics
- electromagnetic fields
- far fields
- ∞ fields
- flow distribution
- flux (rate)
- flux density
- function space
- geomagnetism
- gravitational fields
- Green's functions
- light-cone expansion
- magnetic field inversions
- magnetic fields
- magnetostatic fields
- many body problem
- multipolar fields
- nuclear physics
- null zones
- ∞ physics
- Pomeranchuk theorem
- potential fields
- pressure distribution
- quantum electrodynamics
- quantum theory
- radiation distribution
- relativity
- self consistent fields
- sound fields
- string theory
- strong interactions (field theory)
- supergravity
- supersymmetry
- temperature distribution
- tensors
- ∞ theories
- traveling charge
- weak interactions (field theory)
- Yang-Mills fields
- Yang-Mills theory
- zero point energy

field-programmable gate arrays

(added April 2000)

- GS circuits
 - . gates (circuits)
 - . . **field-programmable gate arrays**
 - . integrated circuits
 - . . **field-programmable gate arrays**
 - reconfigurable hardware
 - . programmable logic devices
 - . . **field-programmable gate arrays**
- RT evolvable hardware

∞ **fields**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boson fields
- electric fields
- field of view
- field theory (algebra)
- field theory (physics)
- gravitational fields
- magnetic fields
- military air facilities
- self consistent fields
- visual fields

fighter aircraft

- UF *Interceptor aircraft*
- GS attack aircraft
 - . **fighter aircraft**
 - . . Alpha jet aircraft
 - . . DH 112 aircraft
 - . . F-2 aircraft
 - . . F-4 aircraft
 - . . F-5 aircraft

- . . F-8 aircraft
- . . F-9 aircraft
- . . F-14 aircraft
- . . F-15 aircraft
- . . F-16 aircraft
- . . F-17 aircraft
- . . F-18 aircraft
- . . F-20 aircraft
- . . F-22 aircraft
- . . F-84 aircraft
- . . F-86 aircraft
- . . F-89 aircraft
- . . F-94 aircraft
- . . F-100 aircraft
- . . F-101 aircraft
- . . F-102 aircraft
- . . F-104 aircraft
- . . F-105 aircraft
- . . F-106 aircraft
- . . F-117A aircraft
- . . FV-12A aircraft
- . . G-91 aircraft
- . . G-95/4 aircraft
- . . GA-5 aircraft
- . . Harrier aircraft
- . . Jaguar aircraft
- . . JAS-39 aircraft
- . . jet provost aircraft
- . . MiG aircraft
- . . Mirage aircraft
- . . . Mirage 3 aircraft
- . . P-51 aircraft
- . . P-1127 aircraft
- . . P-1154 aircraft
- . . Saab 37 aircraft
- . . Scimitar aircraft
- . . Vampire MK 35 aircraft
- . . YF-12 aircraft

- RT ∞ aircraft
 - highly maneuverable aircraft
 - ∞ interceptors
 - jet aircraft
 - ∞ military aircraft
 - ∞ military aviation
 - MRCA aircraft
 - single engine aircraft
 - STOVL aircraft
 - supersonic aircraft
 - training aircraft
 - V/STOL aircraft
 - X-31 aircraft

figure of merit

- RT acceptability
- ∞ analyzing
- criteria
- efficiency
- evaluation
- modulation transfer function
- optical transfer function
- ∞ performance
- Q factors
- quality
- selection
- value

filament winding

- UF *filament wound construction*
- GS winding
 - . **filament winding**
- RT ceramic fibers
- composite wrapping
- fiber composites
- isotensoid structures
- laminates
- metal fibers
- netting (materials/structures)
- preimpregnation

filament wound construction

USE **filament winding**

∞ **filaments**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boron fibers
- carbon fibers
- cathodes
- ceramic fibers

- cordage
- fibers
- ionizers
- reinforcing materials
- resistors
- strands
- vortex filaments
- wet spinning
- whiskers (crystals)
- wire

filaments (solar physics)

USE **solar prominences**

file maintenance (computers)

- GS maintenance
 - . **file maintenance (computers)**
- RT checkout
- computer programming
- computers
- program verification (computers)
- programmers
- ∞ programming

∞ **files**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT document storage
- files (tools)

files (tools)

- GS tools
 - . **files (tools)**
- RT abrasion
- ∞ files
- scrapers

fillers

- RT additives
- ∞ cells
- dopes
- opacifiers
- paints
- pigments
- primers (coatings)
- reinforcement (structures)
- resins
- sealers
- sizing materials
- varnishes

fillets

- RT fairings
- joints (junctions)
- seams (joints)
- welding

filling

- GS **filling**
 - . refilling
- RT accumulations
- ∞ charging
- extensions
- injection
- input
- ∞ loading
- replenishment
- supplying

film boiling

- GS phase transformations
 - . vaporizing
 - . . boiling
 - . . . **film boiling**
- RT heat transfer
- Leidenfrost phenomenon
- nucleate boiling

film condensation

- GS condensing
 - . **film condensation**
- RT condensers (liquefiers)
- cooling
- heat transfer

film cooling

DEF The cooling of a body or surface, such as the inner surface of a rocket combustion chamber, by maintaining a thin fluid layer over the affected area.

film thickness

- GS cooling
 - . evaporative cooling
 - . . **film cooling**
 - . liquid cooling
 - . . **film cooling**
- RT liquid injection
- surface cooling
- sweat cooling

film thickness

- GS dimensions
 - . **film thickness**
- RT ellipsometry
 - thickness

∞ films

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT biofilms
- coatings
- corrosion prevention
- electrode film barriers
- fabrics
- fluid films
- helium film
- Kapton (trademark)
- laminates
- Langmuir-Blodgett films
- magnetic films
- membranes
- metal films
- monomolecular films
- oxide films
- papers
- photographic film
- polymeric films
- semiconducting films
- silicon films
- squeeze films
- superconducting films
- thermoplastic films
- thick films
- thin films
- video tapes
- webs (sheets)

filter wheel infrared spectrometers

- GS measuring instruments
 - . optical measuring instruments
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
 - . radiation measuring instruments
 - . . actinometers
 - . . . infrared spectrometers
 - **filter wheel infrared spectrometers**
 - . . infrared instruments
 - . . . infrared spectrometers
 - **filter wheel infrared spectrometers**
 - . spectrometers
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
 - optical equipment
 - . optical measuring instruments
 - . . infrared spectrometers
 - . . . **filter wheel infrared spectrometers**
- RT Ebert spectrometers
- ∞ filters
- infrared spectrophotometers
- solar spectrometers

filtergrams

- RT optical filters
- solar instruments
- solar physics
- solar spectra

filtering

USE **filtration**

∞ filters

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT absorbers (materials)
- adaptive filters

- air filters
- attenuators
- bandpass filters
- bandstop filters
- birefringent filters
- crystal filters
- digital filters
- electric filters
- electromagnetic wave filters
- electronic filters
- filter wheel infrared spectrometers
- FIR filters
- fluid filters
- Gabor filters
- high pass filters
- image filters
- Kalman filters
- linear filters
- low pass filters
- matched filters
- monochromatic radiation
- nonlinear filters
- optical filters
- radar filters
- radio filters
- reduced order filters
- separators
- spatial filtering
- tunable filters

filtration

- UF *filtering*
- GS **filtration**
 - . spatial filtering
- RT activated carbon
- beds (process engineering)
- beneficiation
- concentrating
- ∞ concentration
- concentrators
- effluents
- extraction
- fluid filters
- hydrometallurgy
- materials recovery
- percolation
- precipitation (chemistry)
- ∞ screening
- ∞ separation
- sewage treatment
- size separation
- water treatment

finance

- RT accounting
- commerce
- fiduciaries
- gross national product
- investments
- management planning
- marketing
- risk
- wage surveys

financial management

- GS management
 - . **financial management**
- RT aircraft production costs
- allocations
- budgeting
- cost analysis
- cost estimates
- costs
- economy
- federal budgets
- launch costs
- life cycle costs
- procurement management

∞ fine

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fine structure
- fineness
- fineness ratio
- fines

fine structure

- UF *multiplets*

- RT alpha decay
- atomic structure
- ∞ fine
- hyperfine structure
- line spectra
- spectral energy distribution
- ∞ structures

fineness

- RT coarseness
- ∞ fine
- fineness ratio
- particle size distribution
- purity
- quality
- size (dimensions)
- textures

fineness ratio

DEF The ratio of the length of a body to its maximum diameter or to some equivalent dimension -- said especially of a body such as an airship hull or rocket.

- GS ratios
 - . aspect ratio
 - . . **fineness ratio**
- RT dimensional analysis
- dimensions
- ∞ fine
- fineness
- oblate spheroids
- shape optimization
- slender bodies
- thickness ratio

fines

- GS particles
 - . powder (particles)
 - . . **fines**
- RT ∞ fine
- ∞ flour
- fractions
- particle size distribution
- ∞ screening

fingers

- GS anatomy
 - . limbs (anatomy)
 - . . hand (anatomy)
 - . . . **fingers**
 - appendages
 - . hand (anatomy)
 - . . **fingers**
- RT sense organs

fingers (robotics)

USE **end effectors**

finishes

- GS **finishes**
 - . enamels
 - . glazes
 - . lacquers
- RT ceramic coatings
- coatings
- corrosion
- dopes
- impregnating
- luster
- machining
- metallizing
- paints
- plating
- polishing
- primers (coatings)
- protective coatings
- sizing (surface treatment)
- sprayed coatings
- surface finishing
- surface properties
- varnishes
- veneers
- waxes

finite difference theory

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **finite difference theory**

- finite difference time domain method
- RT computational aeroacoustics
 - Crank-Nicholson method
 - difference equations
 - differences
 - essentially non-oscillatory schemes
 - extrapolation
 - flux difference splitting
 - flux vector splitting
 - Godunov method
 - grid generation (mathematics)
 - interpolation
 - multigrid methods
 - perfectly matched layers
 - significance
 - ∞ theories
 - time marching
 - TVD schemes
 - upwind schemes (mathematics)
 - vortex in cell technique
- finite difference time domain method**
 - (added April 1999)
 - UF *FDTD (mathematics)*
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . finite difference theory
 - **finite difference time domain method**
 - . time domain analysis
 - . . **finite difference time domain method**
 - RT computational electromagnetics
 - electromagnetic scattering
- finite element method**
 - UF *hybrid-Trefftz finite element method*
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **finite element method**
 - procedures
 - . **finite element method**
 - RT ∞ applications of mathematics
 - boundary value problems
 - Cholesky factorization
 - computational fluid dynamics
 - computational mechanics
 - conjugates
 - Crank-Nicholson method
 - factorization
 - fracture mechanics
 - grid generation (mathematics)
 - isoparametric finite elements
 - iterative solution
 - matrices (mathematics)
 - meshfree methods
 - ∞ methodology
 - Mindlin plates
 - minimal surfaces
 - multigrid methods
 - NASTRAN
 - panel method (fluid dynamics)
 - patch tests
 - perfectly matched layers
 - shape functions
 - solid mechanics
 - Trefftz method
 - unstructured grids (mathematics)
- finite impulse response filters*
 - USE **FIR filters**
- finite volume method**
 - DEF A moving mesh method for analyzing transonic flow over airfoils.
 - GS analysis (mathematics)
 - . numerical analysis
 - . . **finite volume method**
 - . . . Godunov method
 - procedures
 - . **finite volume method**
 - . . Godunov method
 - RT boundary value problems
 - ∞ methodology
 - TVD schemes
- unstructured grids (mathematics)
- finite-state machines*
 - USE **Turing machines**
- Finland**
 - GS nations
 - . **Finland**
 - RT Europe
 - Finnish space program
 - Scandinavia
- finned bodies**
 - RT aerodynamic configurations
 - ∞ bodies
 - bodies of revolution
 - cooling fins
 - fins
 - heat exchangers
 - missile bodies
 - nose fins
 - projectiles
 - symmetrical bodies
- Finnish space program**
 - (added November 1990)
 - GS programs
 - . space programs
 - . . European space programs
 - . . . **Finnish space program**
 - RT Finland
- fins**
 - DEF Fixed or adjustable airfoils or vanes attached longitudinally to an aircraft, rocket, or a similar body to provide a stabilizing effect. Also, a flat plate of structure, as a cooling fin. Used for vertical fins.
 - UF *vertical fins*
 - GS **fins**
 - . cooling fins
 - . nose fins
 - RT aerial rudders
 - airfoils
 - airframes
 - ∞ blades
 - control surfaces
 - finned bodies
 - hydrofoils
 - missile components
 - rudders
 - sails
 - stabilizers (fluid dynamics)
 - tail assemblies
 - vanes
 - winglets
- fiords**
 - DEF Arms of the sea having steep sides, deep bottoms, and shallow sills separating them from the sea.
 - GS landforms
 - . **fiords**
 - RT cliffs
 - geology
 - inlets (topography)
 - Norway
 - oceanography
 - water
- FIR filters**
 - DEF Physically unrealizable nonrecursive digital filters. Used for finite impulse response filters.
 - UF *finite impulse response filters*
 - GS electromagnetic wave filters
 - . electric filters
 - . . digital filters
 - . . . **FIR filters**
 - RT bandpass filters
 - electronic filters
 - ∞ filters
 - IIR filters
 - microwave filters
 - radar filters
 - recursive functions
- FIRE (climatology)**
 - (added August 1991)
 - UF *First ISCCP Regional Experiment*
- GS programs
 - . projects
 - . . **FIRE (climatology)**
- RT climatology
 - cloud cover
 - clouds (meteorology)
 - remote sensing
 - satellite observation
- fire control**
 - SN (LIMITED TO CONTROL OF THE FIRING OF WEAPONS--EXCLUDES FIRE PREVENTION AND FIRE FIGHTING)
 - RT bombing equipment
 - ∞ control
 - firing (igniting)
 - gunfire
 - gunnery training
 - range finders
 - weapon systems
 - weapons
- fire control circuits**
 - GS circuits
 - . **fire control circuits**
 - RT ∞ control
- fire damage**
 - GS damage
 - . **fire damage**
 - RT ashes
 - charring
 - combustion
 - fires
 - flames
 - fumes
 - smoke
 - soot
- fire extinguishers**
 - UF *chemical extinguishers*
 - RT fire fighting
 - fire prevention
 - firebreaks
 - fires
 - flammability
 - foams
 - halon
- fire fighting**
 - SN (EXCLUDES FIRE CONTROL--CONTROL OF THE FIRING OF WEAPONS)
 - RT breathing apparatus
 - fire extinguishers
 - fire prevention
 - firebreaks
 - fires
 - flammability
 - foams
- fire point**
 - RT flammability
 - flash point
 - spontaneous combustion
- fire prevention**
 - SN (EXCLUDES FIRE CONTROL--CONTROL OF THE FIRING OF WEAPONS)
 - GS prevention
 - . **fire prevention**
 - RT accident prevention
 - explosion suppression
 - fire extinguishers
 - fire fighting
 - firebreaks
 - fireproofing
 - fires
 - flame retardants
 - forest fires
 - high pressure oxygen
 - safety
 - safety devices
 - safety management
 - smoke detectors
 - spontaneous combustion
 - warning

fireballs

warning systems

fire resistance

USE **flammability**

fire retardants

USE **flame retardants**

∞ fireballs

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bolides
nuclear explosions

Firebee 2 target drone aircraft

GS drone vehicles
. drone aircraft
. . target drone aircraft
. . . **Firebee 2 target drone aircraft**
light aircraft
. **Firebee 2 target drone aircraft**
pilotless aircraft
. drone aircraft
. . target drone aircraft
. . . **Firebee 2 target drone aircraft**
research vehicles
. research aircraft
. . **Firebee 2 target drone aircraft**
Ryan aircraft
. **Firebee 2 target drone aircraft**
supersonic aircraft
. **Firebee 2 target drone aircraft**

RT ∞ aircraft
∞ military aircraft
targets
∞ winged vehicles

firebreaks

GS clearings (openings)
. **firebreaks**

RT combustion
conservation
fire extinguishers
fire fighting
fire prevention
fires
flames
forest fires
forests

fireflies

DEF Flying insects which produce light by bioluminescence.

GS animals
. invertebrates
. . arthropods
. . . insects
. . . . **fireflies**

fireproofing

RT fire prevention
nonflammable materials
safety

fires

GS **fires**
. forest fires

RT accidents
backfire
burns (injuries)
combustion
control surfaces
deflagration
explosions
explosives
fire damage
fire extinguishers
fire fighting
fire prevention
firebreaks
firing (igniting)
flames
flashback
hazards
safety
Saint Elmo fire
smoldering

warning systems

firewalls (computers)

(added January 2003)

DEF Computers, routers, and/or communications devices that filter access to a protected network. They may also consist of a collaboration of such components geared toward protecting networks from intrusion from the Internet while allowing users inside the network access to services on the Internet, such as Web and e-mail services.

GS security
. computer security
. . **firewalls (computers)**

RT access control
computer information security
computer networks
computer systems design
intrusion detection (computers)

fireworks

USE **pyrotechnics**

firing (igniting)

GS **firing (igniting)**
. rocket firing
. . retrofiring
. . test firing
. . . static firing

RT burning time
detonable gas mixtures
detonation
drying
fire control
fires
flammable gases
gunfire
ignition
pulsejet engines
starting

firing time

USE **burning time**

firmware

DEF Hardwired software which often encompasses microcodes.

RT computer components
computer programming
∞ hardware
microprocessors
microprogramming
RISC processors

first aid

RT accidents
chemical defense
cures
disasters
kits
medical equipment
medical science
medical services
resuscitation
splints
stretchers
tourniquets
transfusion

First ISCCP Regional Experiment

USE **FIRE (climatology)**

Fischer-Tropsch process

RT catalysis
catalytic activity
reaction kinetics
synthesis (chemistry)
synthetic fuels

fish

USE **fishes**

Fishbowl Operation

RT high altitude tests
nuclear explosions
∞ operations
Vela satellites

Fisher information

(added March 2004)

DEF A fundamental quantity in statistical inference that describes an attribute or property of a distribution with known form but uncertain parameter values.

RT Cramer-Rao bounds
expectation
information theory
likelihood ratio

fisheries

DEF Place for harvesting fish or other aquatic life, especially in sea waters.

RT aquaculture
estuaries
fishes
fishing
marine biology
marine resources
sea water
shallow water
tidal flats
wetlands

fishes

UF *fish*

GS animals
. vertebrates
. . **fishes**
. . . schools (fish)
. . . sharks

RT aquaculture
Earth resources
fisheries
fishing
∞ food
ichthyology
∞ nutrients
poikilothermia
red tide
squama
wildlife

fishing

(added November 1992)

RT fisheries
fishes
industries
schools (fish)

fish tailing

USE **yaw**

fission fuels

GS fissionable materials
. **fissile fuels**
fuels
. nuclear fuels
. . **fissile fuels**

RT fissium
gaseous fission reactors
nuclear fission
nuclear reactors
radioactive materials

fissile materials

USE **fissionable materials**

fission

DEF The splitting of an atomic nucleus into two more-or-less equal fragments.

RT blankets (fission reactors)
fuel production
nuclear fuels
splitting

fission electric cells

GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . space power reactors
. . . **fission electric cells**
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A

nuclear electric power generation
 . nuclear auxiliary power units
 . . SNAP
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . space power reactors
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . nuclear power reactors
 . . space power reactors
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 nuclear reactors
 . nuclear power reactors
 . . space power reactors
 . . . **fission electric cells**
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 RT ∞ electric cells
 radioisotope batteries
 space power unit reactors

fission products

DEF The large variety of smaller atoms, including cesium and strontium, left over by the splitting of uranium and plutonium, usually caused by the absorption of a neutron.
 GS products
 . **fission products**
 RT chain reactions (nuclear physics)
 fallout
 high energy interactions
 nuclear fission
 nuclear particles
 nuclear pumping
 nuclear radiation
 radioactive materials
 radioactive wastes
 radioactivity

fission weapons

UF *atomic bombs*
 GS weapons
 . nuclear weapons
 . . **fission weapons**
 RT fallout
 nuclear devices
 thermonuclear explosions

fissionable materials

DEF Materials containing nuclides capable of undergoing fission only by fast neutrons with energy greater than 1MeV, e.g., thorium-232 and uranium-238. Used for fissile materials.
 UF *fissile materials*
 GS **fissionable materials**
 . fissile fuels
 RT gaseous fission reactors
 ∞ materials
 nozzle flow
 nuclear fuels
 plutonium
 radioactive materials
 uranium

fissium

GS fuels
 . nuclear fuels
 . . **fissium**
 RT fissile fuels

fissures (geology)

DEF Extensive cracks in rocks.
 RT folds (geology)
 geological faults
 structural properties (geology)

tectonics
fitness
 GS **fitness**
 . flight fitness
 . physical fitness
 RT qualifications

fitting
 RT adaptation
 adjusting
 alignment
 assembling
 fittings
 goodness of fit
 interference fit
 ∞ joining
 matching
 positioning

fittings
 RT accessories
 adapters
 closures
 connectors
 couplings
 extensions
 fasteners
 fitting
 inserts
 joints (junctions)
 linkages
 sleeves
 U bends
 unions (connectors)

Fitzgerald-Lorentz contraction
 USE **Lorentz contraction**

fix
 USE **fixing**

fixed point arithmetic
 GS number theory
 . arithmetic
 . . **fixed point arithmetic**
 RT computer programs
 computers
 data processing

fixed points (mathematics)
 DEF Positional notation in which corresponding places in different quantities are occupied by coefficients of the same power of the base. Notation in which the base point is assumed to remain fixed with respect to one end of the numeric expressions.
 GS geometry
 . Euclidean geometry
 . . points (mathematics)
 . . . **fixed points (mathematics)**
 . topology
 . . **fixed points (mathematics)**
 RT manifolds (mathematics)
 mapping

fixed wings
 UF *fixed-wing aircraft*
 GS airfoils
 . wings
 . . **fixed wings**
 RT cambered wings
 cruciform wings
 flexible wings
 low aspect ratio wings
 rigid wings
 slender wings
 swept wings
 thin wings
 twisted wings
 uncambered wings
 unswept wings

fixed-wing aircraft
 USE **aircraft configurations**
fixed wings

∞ **fixing**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *fix*
 RT maintenance
 navigation
 position (location)
 positioning

fixtures
 RT brackets
 ∞ hardware
 jigs
 luminaires
 tools

Fizeau effect
 RT Doppler effect
 Doppler-Fizeau effect
 ∞ effects

Flagellata
 GS animals
 . protozoa
 . . **Flagellata**
 . . . Euglena
 . . . trypanosome
 microorganisms
 . protozoa
 . . **Flagellata**
 . . . Euglena
 . . . trypanosome

flakes
 GS particles
 . **flakes**
 RT flaking
 metal powder
 powder (particles)

flaking
 RT atomizing
 chipping
 comminution
 cutting
 disintegration
 flakes
 fracturing
 peeling
 ∞ separation
 spalling
 splitting
 wear

flame calorimeters
 GS measuring instruments
 . calorimeters
 . . **flame calorimeters**
 RT bomb calorimeters
 drop calorimeters
 heat measurement
 high temperature tests
 temperature measuring instruments

flame deflectors
 DEF In a vertical launch, any of variously designed obstructions that intercept hot gases of rocket engines so as to deflect them away from the ground or from a structure. In captive tests, elbows in the exhaust conduits or flame buckets that deflect the flame into the open.
 GS deflectors
 . **flame deflectors**
 RT backfire
 baffles
 blast deflectors
 diverters
 flashback
 launching pads
 safety devices
 shielding
 test stands

flame fronts
 USE **flame propagation**

flame holders
 GS holders
 . **flame holders**
 RT combustion chambers
 dump combustors
 flameout

flame ionization

flames

flame interaction
USE **chemical reactions**
flame propagation

flame ionization
GS ionization
. gas ionization
. . **flame ionization**

flame plating
GS plating
. **flame plating**
RT coating
welding

flame probes
GS measuring instruments
. **flame probes**
RT gas analysis
manometers
temperature measuring instruments

flame propagation
UF *Chapman-Jouget flame*
combustion waves
flame fronts
flame interaction
GS propagation (extension)
. **flame propagation**
RT backfire
boundary layer combustion
burning rate
combustible flow
combustion
combustion physics
Damkohler number
detonation
detonation waves
explosions
flames
flammability
flashback
gas explosions
gas-metal interactions
ignition
premixed flames
pressure oscillations
pressure pulses
∞ propagation
reacting flow
turbulent combustion
turbulent flames

flame quenching
USE **extinguishing**
quenching (cooling)

flame retardants
UF *fire retardants*
GS retardants
. **flame retardants**
RT antimisting fuels
fabrics
fire prevention
flammability
halon
ignition limits
inorganic compounds
polybrominated biphenyls
synthetic fibers

flame spectroscopy
GS spectroscopy
. **flame spectroscopy**
spectrum analysis
. **flame spectroscopy**
RT emission spectra
gas spectroscopy
line spectra
optogalvanic spectroscopy
qualitative analysis
spectroscopic analysis

flame spraying
GS spraying
. **flame spraying**
. . HVOF thermal spraying
RT coating

coatings
metal spraying
metallizing
plasma spraying

flame stability
GS dynamic characteristics
. dynamic stability
. . combustion stability
. . . **flame stability**
. . motion stability
. . . flow stability
. . . . **flame stability**
. flow characteristics
. . flow stability
. . . **flame stability**
stability
. dynamic stability
. . combustion stability
. . . **flame stability**
. . motion stability
. . . flow stability
. . . . **flame stability**
RT flameout
turbulent flames

flame temperature
GS temperature
. **flame temperature**
RT combustion chemistry
combustion temperature

flameout
DEF Unintended loss of combustion in turbine engines resulting in the loss of engine power.
UF *blowoff (combustion)*
GS extinguishing
. **flameout**
RT combustion
combustion chambers
flame holders
flame stability
gas turbine engines
jet engines

flames
UF *jet flames*
laminar flames
GS **flames**
. diffusion flames
. premixed flames
. turbulent flames
RT combustion
fire damage
firebreaks
fires
flame holders
flame propagation
∞ flares
forest fires
fuels
smog
turbulent combustion

flammability
DEF Those characteristics of a material that pertain to its relative ease of ignition and relative ability to sustain combustion. Used for combustibility and fire resistance.
UF *combustibility*
fire resistance
RT burning rate
combustion
detonable gas mixtures
fire extinguishers
fire fighting
fire point
flame propagation
flame retardants
flammable gases
flash point
ignition
ignition limits
ignition temperature
pyrophoric materials
∞ resistance
smoldering

spontaneous combustion

flammable gases
UF *explosive gases*
GS gases
. **flammable gases**
. . gaseous fuels
. . . natural gas
. . . . liquefied natural gas
. . liquefied natural gas
. . pyrogen
RT chemical explosions
detonable gas mixtures
explosives
firing (igniting)
flammability
gas explosions
hazards

flange wrinkling
GS wrinkling
. **flange wrinkling**
RT buckling

flanges
RT connectors
metal plates

flap control
USE **aircraft control**
flaps (control surfaces)

flaperons
DEF Airplane control surfaces that serve the function of both aileron and flap.
GS airfoils
. ailerons
. . **flaperons**
. . flaps (control surfaces)
. . **flaperons**
control surfaces
. ailerons
. . **flaperons**
. . flaps (control surfaces)
. . **flaperons**
RT aerodynamic brakes

flapping
RT airfoil oscillations
flutter
resonant vibration
rotor aerodynamics
shaking
undamped oscillations
vibration
wing oscillations

flapping hinges
GS hinges
. **flapping hinges**
RT rotary wings
rotor aerodynamics

flaps (control surfaces)
UF *flap control*
GS airfoils
. **flaps (control surfaces)**
. . externally blown flaps
. . . upper surface blown flaps
. . flaperons
. . jet flaps
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
control surfaces
. **flaps (control surfaces)**
. . externally blown flaps
. . . upper surface blown flaps
. . flaperons
. . jet flaps
. . split flaps
. . wing flaps
. . . leading edge flaps
. . . leading edge slats
. . . trailing edge flaps
. . . vortex flaps
RT aerodynamic brakes

- brakes (for arresting motion)
- ∞ control
 - drag devices
 - GAW-2 airfoil
 - lift devices
 - spoilers
- ∞ surfaces

flare stars

- DEF Members of a class of dwarf stars that show sudden intensive outbursts of energy. Used for UV Ceti stars.
- UF *UV Ceti stars*
- GS celestial bodies
 - . stars
 - . . late stars
 - . . . cool stars
 - **flare stars**
 - . . main sequence stars
 - . . . dwarf stars
 - **flare stars**
 - . . variable stars
 - . . . **flare stars**
- RT cataclysmic variables
 - M stars
 - solar flares
 - stellar activity
 - stellar flares
 - symbiotic stars

flared bodies

- RT afterbodies
 - aircraft configurations
- ∞ flares
 - spacecraft configurations
 - symmetrical bodies

∞ **flares**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT flames
 - flared bodies
 - illuminating
 - lighting equipment
 - luminaires
 - pyrotechnics
 - runway lights
 - solar flares
 - Solar Maximum Mission
 - solar terrestrial interactions
 - stellar activity
 - stellar flares

∞ **flash**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *light duration*
- RT electric discharges
 - explosions
 - flash welding
 - flashing (vaporizing)
 - light (visible radiation)
 - radiography
 - solar flares

flash blindness

- GS blindness
 - . **flash blindness**
- RT eye protection
 - light adaptation
 - vision

flash lamps

- UF *flash tubes*
- GS lighting equipment
 - . luminaires
 - . . **flash lamps**
 - . . . alkali vapor lamps
- RT light sources
 - xenon lamps

flash point

- DEF The temperature at which a substance, such as fuel oil, will give off a vapor that will flash or burn momentarily when ignited.
- GS temperature
 - . ignition temperature
 - . . **flash point**
- RT combustion temperature

- fire point
- flammability
- ignition
- spontaneous combustion
- vapor pressure
- volatility

flash tubes

USE **flash lamps**

flash welding

- GS welding
 - . fusion welding
 - . . electric welding
 - . . . **flash welding**
- RT ∞ flash
 - pressure welding

flashback

- DEF Backward burning of a flame into the lip of a burner or torch.
- RT backfire
 - combustion
 - deflagration
 - explosions
 - fires
 - flame deflectors
 - flame propagation

flashing (vaporizing)

- DEF The evaporation of a heated liquid as a consequence of rapid pressure reduction.
- GS phase transformations
 - . vaporizing
 - . . **flashing (vaporizing)**
- RT distillation
 - evaporation
 - ∞ flash
 - prevaporization
 - ∞ separation

flashover

- GS electric current
 - . electric discharges
 - . . **flashover**
- RT electric arcs
 - electric sparks
 - electrical faults
 - failure

flasks

- RT bottles
 - glassware

flat coaxial transmission lines

USE **microstrip transmission lines**

flat conductors

- GS conductors
 - . **flat conductors**
 - . . beam leads
- RT bus conductors
 - circuits
 - connectors
 - electric connectors
 - electric contacts
 - electric wire
 - wire
 - wiring

flat layers

- RT flatness
 - ∞ layers
 - planar structures
 - strata
 - stratification

flat panel displays

- (added September 1994)
- GS display devices
 - . **flat panel displays**
- RT avionics
 - consoles
 - human factors engineering
 - imaging techniques
 - indicating instruments

flat patterns

- DEF Shape of a part or parts put in 3 space in its undefined condition.
- RT castings

molds

flat plates

- GS structural members
 - . plates (structural members)
 - . . **flat plates**
- RT annular plates
 - Blasius equation
 - Blasius flow
 - circular plates
 - dynamic structural analysis
 - end plates
 - flatness
 - fluid mechanics
 - heat transfer
 - metal plates
 - panels
 - parallel plates
 - planar structures
 - plate theory
 - ∞ plates
 - rectangular plates
 - ∞ sheets
 - slabs
 - thick plates
 - thin plates

flat surfaces

- UF *facets*
- RT Cosserat surfaces
 - flatness
 - planar structures
 - ∞ surface geometry
 - surface properties
 - ∞ surfaces

flatness

- GS shapes
 - . **flatness**
- RT concavity
 - contours
 - convexity
 - etalons
 - flat layers
 - flat plates
 - flat surfaces
 - flattening
 - interferometers
 - mechanical properties
 - planar structures
 - roughness
 - ∞ surface geometry

flats (landforms)

- DEF A general term for level or nearly level surfaces or small areas of land marked by little or no relief such as plains. Also, nearly level regions that visibly display lower relief than their surroundings. Used for adobe flats and salt flats.
- UF *adobe flats*
- salt flats*
- GS landforms
 - . **flats (landforms)**
 - . . tidal flats
- RT Earth resources
 - marshlands
 - mesas
 - plains
 - salt beds

flattening

- RT ductility
 - ellipticity
 - flatness
 - leveling
 - metal working
 - oblate spheroids
 - ∞ rolling
 - smoothing

flatworms

- GS animals
 - . invertebrates
 - . . worms
 - . . . **flatworms**
- RT infestation

flavor (particle physics)

- DEF The specific identifiers of quarks which

fleet ballistic missiles

distinguish various combinations of electric charge and mass.

- RT hadrons
- particle interactions
- particle theory
- ∞ physics
- quantum theory
- quark models
- quarks
- theoretical physics

flaw detection

USE **nondestructive tests**

flaws

USE **defects**

fleet ballistic missiles

UF *FBM (missiles)*

GS missiles

. surface to surface missiles

. . **fleet ballistic missiles**

. . . Polaris A1 missile

. . . Polaris A2 missile

. . . Polaris A3 missile

. . . Poseidon missiles

. . . Subroc missile

RT ballistic missile submarines

guided missile submarines

intercontinental ballistic missiles

intermediate range ballistic missiles

sea launching

Fleet Satellite Communication System

DEF Global communication system utilizing satellites. Used for FLEETSATCOM and FLT-SATCOM.

UF *Fleetsatcom*

Fltsatcom

GS telecommunication

. Defense Communications Satellite System

. . **Fleet Satellite Communication System**

RT communication satellites

Marisat satellites

microwave transmission

military technology

NASCOM network

navy

radio communication

∞ systems

ultrahigh frequencies

Fleetsatcom

USE **Fleet Satellite Communication System**

flexibility

DEF That property of a material by virtue of which it may be bowed repeatedly without undergoing rupture. That property of a material by virtue of which it may be flexed or bowed repeatedly without undergoing rupture. Used for nonrigidity.

UF *nonrigidity*

GS mechanical properties

. **flexibility**

RT bending

elastic properties

flexing

nonuniformity

plastic properties

∞ rigidity

softness

stiffness

versatility

flexible bodies

GS **flexible bodies**

. flexible spacecraft

RT ∞ bodies

hybrid structures

inflatable structures

flexible spacecraft

DEF Space vehicles (usually space structures or rotating satellites) whose surfaces and/or appendages may be subject to elastic flexural deformations (vibrations).

GS aerospace vehicles

. **flexible spacecraft**

flexible bodies

. **flexible spacecraft**

RT artificial satellites

displacement

elastic deformation

flexing

large space structures

satellite control

satellite orientation

satellite rotation

shape control

∞ spacecraft

spacecraft control

spacecraft motion

structural vibration

vibration damping

flexible wings

UF *Rogallo wings*

GS airfoils

. wings

. . **flexible wings**

. . . parawings

RT fixed wings

gliders

hang gliders

infinite span wings

inflatable structures

rigid wings

thin wings

twisted wings

XV-8A aircraft

flexing

UF *flexure*

RT bending

camber

∞ chambers

curvature

deflection

deformation

distortion

flexibility

flexible spacecraft

folding

heaving

loading moments

flexors

GS anatomy

. musculoskeletal system

. . muscles

. . . **flexors**

RT joints (anatomy)

Flexowriters (trademark)

USE **automatic typewriters**

flexural strength

(added September 1995)

DEF DEF The bending load that a material can withstand without fracturing - it's resistance to fracture.

UF *bending strength*

GS mechanical properties

. fracture strength

. . **flexural strength**

RT bend tests

bending fatigue

static loads

∞ strength

flexure

USE **flexing**

flicker

RT critical flicker fusion

light transmission

flicker fusion frequency

USE **critical flicker fusion**

∞ **flight**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The movement of an object through the atmosphere or through space, sustained by aerodynamic, aerostatic, or reaction forces, or

by orbital speed; especially the movement of a man-operated or man-controlled device, such as a rocket, a space probe, a space vehicle, or an aircraft. Used for flying, high altitude flight, and high speed flight.

UF *flying*

high altitude flight

high speed flight

RT aerodynamics

∞ aeronautics

balloon flight

climbing flight

coasting flight

cruising flight

flight altitude

flight control

flight mechanics

flight optimization

flight paths

flight safety

flight tests

flight time

formation flying

free flight

gliding

horizontal flight

hypersonic flight

long duration space flight

lunar flight

meteorological flight

parabolic flight

rocket flight

soaring

space flight

steering

suborbital flight

supersonic flight

trajectories

transition flight

transoceanic flight

transonic flight

turning flight

vertical flight

visual flight

flight altitude

GS altitude

. **flight altitude**

RT air traffic control

ceiling (aircraft capability)

∞ flight

midaltitude

flight characteristics

DEF Characteristics exhibited by an aircraft, rocket, or the like in flight, such as a tendency to stall or to yaw, or an ability to remain stable at certain speeds. Used for flight performance and flying qualities.

UF *flight performance*

flying qualities

GS **flight characteristics**

. flight envelopes

. pilot ratings

. . Cooper-Harper ratings

RT

aerodynamics

aircraft maneuvers

aircraft performance

aircraft specifications

airspeed

buffeting

ceiling (aircraft capability)

∞ characteristics

controllability

flight control

flutter

helicopter performance

highly maneuverable aircraft

in-flight simulation

low speed stability

maneuverability

∞ performance

quality

flight clothing

GS clothing

. **flight clothing**

RT coveralls

garments

goggles

helmets
pressure suits
protective clothing

flight computers

USE **airborne/spaceborne computers**

flight conditions

GS conditions
. **flight conditions**
RT aircraft icing
aviation meteorology
cloud cover
cockpit weather information systems
instrument flight rules
meteorological services
storms (meteorology)
visual flight
weather forecasting

flight control

GS **flight control**
. automatic flight control
. . automatic landing control
. fly by light control
. fly by tube control
. fly by wire control
. thrust vector control
RT aerobatics
air traffic control
aircraft control
aircraft instruments
aircraft survivability
attitude control
attitude indicators
automated en route ATC
automatic control
automatic pilots
∞ control
control configured vehicles
control stability
control sticks
control surfaces
display devices
entry guidance (STS)
∞ flight
flight characteristics
flight management systems
formation flying
ground based control
ground support equipment
guidance (motion)
helicopter control
in-flight monitoring
in-flight simulation
instrument approach
instrument landing systems
maneuverability
maneuvers
missile control
navigation
navigation aids
navigation instruments
pointing control systems
radio navigation
remote control
rocket engine control
solar compasses
spacecraft control
stability augmentation
turbojet engine control

flight crews

UF *aircrews*
GS personnel
. crews
. . **flight crews**
. . . spacecrews
. flying personnel
. . **flight crews**
. . . spacecrews
RT aircraft pilots
crew procedures (inflight)
crew procedures (preflight)
crew size
flight fatigue
navigator

pilots (personnel)

flight envelopes

DEF The bounds within which a certain flight system can operate, especially a graphic representation of these bounds showing interrelationships of operational parameters.

GS flight characteristics
. **flight envelopes**
RT aerodynamic characteristics
aerodynamic stability
aircraft control
aircraft maneuvers
aircraft performance
aircraft stability
∞ envelopes
flight tests
helicopter performance
maneuverability
terrain following

flight fatigue

GS fatigue (biology)
. **flight fatigue**
RT aerospace medicine
flight crews
∞ flight stress
flight stress (biology)
pilot performance

flight fitness

GS fitness
. **flight fitness**
RT ∞ flight stress
flying personnel
physical examinations
physical fitness

flight hazards

GS hazards
. **flight hazards**
. . meteoroid hazards
RT air piracy
air traffic
aircraft accidents
aircraft hazards
aircraft icing
aircraft safety
aircraft spin
aviation meteorology
bird-aircraft collisions
birds
collisions
crash landing
crashes
destruction
downbursts
microbursts (meteorology)
midair collisions
noise (sound)
operational hazards
toxic hazards
weather

flight instruments

GS **flight instruments**
. approach indicators
. attitude indicators
. . gyro horizons
. automatic pilots
. flight test instruments
. horizon scanners
. radio altimeters
RT air navigation
airborne equipment
aircraft control
aircraft equipment
aircraft instruments
altimeters
bubble technique
cockpit weather information systems
compasses
display devices
engine control
engine monitoring instruments
head-up displays
instrument approach
instrument flight rules
instrument landing systems
∞ instruments

landing instruments
Light Airborne Multipurpose System
measuring instruments
navigation instruments
night flights (aircraft)
onboard equipment
position indicators
radar
radio direction finders
rate of climb indicators
recording instruments
satellite instruments
solar compasses
spacecraft instruments
spacecraft position indicators
speed indicators
star trackers
TERCOM

flight load recorders

GS aircraft instruments
. flight recorders
. . **flight load recorders**
data recorders
. flight recorders
. . **flight load recorders**
measuring instruments
. flight recorders
. . **flight load recorders**
recording instruments
. flight recorders
. . **flight load recorders**
RT strain gages

flight management systems

GS management systems
. **flight management systems**
RT air navigation
air traffic control
airborne/spaceborne computers
automatic flight control
automatic landing control
avionics
computer techniques
flight control
ground based control
navigation aids
onboard data processing
pilot support systems
situational awareness
systems engineering

flight mechanics

GS mechanics (physics)
. **flight mechanics**
RT aerodynamics
ascent trajectories
descent trajectories
∞ flight
missile trajectories
orbit calculation
orbit decay
orbital mechanics
∞ platforms
reentry trajectories
rendezvous
rendezvous trajectories
space flight
space mechanics
spacecraft reentry
spacecraft trajectories
thrust programming
trajectories
trajectory measurement
trajectory optimization

flight nurses

GS personnel
. medical personnel
. . **flight nurses**
RT crews

flight operations

DEF Collective term for ground support operations by flight crew or support personnel preparatory to space flight, or tasks performed by crew during flight.

GS **flight operations**
. crew procedures (inflight)
RT aircraft maintenance

flight optimization

- crew procedures (preflight)
- ground handling
- onboard equipment
- preflight operations
- refueling

flight optimization

- GS optimization
 - . **flight optimization**
- RT burning time
 - Earth-Venus trajectories
- ∞ flight
 - great circles
 - orbital mechanics
 - orbits
 - parking orbits
 - space flight
 - thrust programming
 - trajectories
 - trajectory optimization

flight paths

DEF Paths made or followed in the air or in space by an aircraft or rocket; the continuous series of positions occupied by a flying body; more strictly, the path of the center of gravity of the flying body, referred to the Earth or other fixed reference.

- GS **flight paths**
 - . glide paths
- RT air navigation
 - air traffic
 - air traffic control
 - aircraft instruments
 - aircraft maneuvers
 - airspace
 - approach
 - approach control
 - area navigation
 - caustic lines
 - climbing flight
 - collision avoidance
 - collisions
 - descent
- ∞ drift
- ∞ flight
 - gliding
 - Global Positioning System
 - great circles
 - ground tracks
 - guidance (motion)
 - horizontal flight
 - missile trajectories
 - National Airspace Utilization System
 - navigation
 - navigation aids
 - orbits
- ∞ paths
 - reentry
 - rocket flight
 - satellite ground tracks
 - solar compasses
 - swath width
 - Tacan
 - trajectories
 - turning flight
 - uncontrolled reentry (spacecraft)
 - vertical flight
 - visual flight

flight performance

USE **flight characteristics**

flight plans

- RT air navigation
 - air traffic
 - air traffic control
 - approach
 - instrument flight rules
 - National Airspace Utilization System
- ∞ plans
 - routes
 - thrust programming
 - weather

flight recorders

- GS aircraft instruments
 - . **flight recorders**
 - . . flight load recorders
 - data recorders

- . **flight recorders**
- . . flight load recorders
- measuring instruments
- . **flight recorders**
- . . flight load recorders
- recording instruments
- . **flight recorders**
- . . flight load recorders

flight rules

- GS rules
 - . **flight rules**
 - . . instrument flight rules
 - . . visual flight rules
- RT air navigation
 - air traffic control
 - collision avoidance
 - National Airspace Utilization System
 - National Aviation System
 - noise reduction

flight safety

- GS safety
 - . **flight safety**
- RT aerospace safety
 - air piracy
 - air traffic control
 - aircraft accidents
 - aircraft approach spacing
 - aircraft hazards
 - aircraft icing
 - aircraft safety
 - aircraft spin
 - all-weather landing systems
 - aviation meteorology
 - collision avoidance
 - crashes
 - crashworthiness
 - destruction
 - emergency landing
- ∞ flight
- ∞ flight stress
 - flying ejection seats
 - midair collisions
 - onboard equipment
 - runway incursions
 - safety devices
 - self sealing
 - terrorism
 - visual flight

flight simulation

- GS simulation
 - . **flight simulation**
 - . . in-flight simulation
- RT acoustic simulation
 - altitude simulation
 - analog simulation
 - computerized simulation
 - control simulation
 - environment simulation
 - landing simulation
 - motion simulation
 - scene generation
 - space environment simulation
 - space flight
 - systems simulation
 - training simulators
 - virtual reality
 - weightlessness simulation

flight simulators

DEF Training devices or apparatus that simulate certain conditions of flight or of flight operations.

- GS simulators
 - . training simulators
 - . . **flight simulators**
 - . . . cockpit simulators
 - training devices
 - . training simulators
 - . . **flight simulators**
 - . . . cockpit simulators
- RT atmospheric entry simulation
 - centrifuges
 - control simulation
 - cryogenic wind tunnels
 - in-flight simulation
 - Langley complex coordinator
 - lunar orbit and landing simulators

- ∞ missile simulators
- motion simulation
- motion simulators
- pilot training
- space environment simulation
- space simulators
- test facilities
- training devices
- wind tunnels

flight stability tests

- GS flight tests
 - . **flight stability tests**
 - stability tests
 - . **flight stability tests**
- RT aerodynamic stability
- ∞ tests

∞ flight stress

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT flight fatigue
 - flight fitness
 - flight safety
 - human factors engineering
 - space flight stress
 - stress analysis
 - stresses

flight stress (biology)

- SN (EXCLUDES MECHANICAL STRESS AND AND STRAIN)
- GS stress (biology)
 - . **flight stress (biology)**
 - . . space flight stress
- RT acceleration (physics)
 - biological effects
- ∞ biology
 - flight fatigue
 - jet lag
 - physiological factors
 - psychological factors
 - stress (physiology)
 - stress (psychology)
 - weightlessness

flight surgeons

- GS personnel
 - . medical personnel
 - . . surgeons
 - . . . **flight surgeons**

flight technical error

USE **pilot error**

flight termination systems

USE **abort apparatus**

flight test instruments

- GS flight instruments
 - . **flight test instruments**
- RT aircraft instruments
 - rocket-borne instruments
 - spacecraft instruments

flight test vehicles

DEF Test vehicles for the conduct of flight tests either to test its own capabilities or to carry equipment requiring flight tests.

- GS test vehicles
 - . **flight test vehicles**
- RT ∞ aircraft
 - launch vehicles
 - missiles
 - research aircraft
- ∞ spacecraft
- ∞ vehicles
 - X-36 aircraft

flight tests

DEF Tests by means of actual or attempted flight to see how an aircraft, spacecraft, space-air vehicle, or missile flies. Tests of a component part of a flying vehicle, or of an object carried in such a vehicle, to determine its suitability or reliability in terms of its intended function by making it endure actual flight.

- GS **flight tests**
 - . flight stability tests
- RT air start

- aircraft design
- altitude tests
- certification
- DAST program
- downrange
- dynamic tests
- engine tests
- ∞ flight
 - flight envelopes
 - free flight test apparatus
 - full scale tests
 - ground tests
 - high altitude tests
 - highly maneuverable aircraft
 - in-flight monitoring
 - in-flight simulation
 - missile design
 - missile tests
 - postmission analysis (spacecraft)
 - space electric rocket tests
 - stability tests
- ∞ tests
 - vibration tests
 - wing flow method tests
- flight time**
 - DEF The time from the moment an aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing.
 - GS time
 - . **flight time**
 - RT air traffic control
 - burning time
 - ∞ flight
 - testing time
 - trajectories
 - transit time
 - turnaround (STS)
 - windows (intervals)
- flight training**
 - GS education
 - . **flight training**
 - . . pilot training
 - . . space flight training
 - . . . astronaut training
 - RT ejection training
 - flying personnel
 - training simulators
- ∞ **flight vehicles**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 - RT aircraft configurations
 - ground effect machines
 - hypersonic vehicles
 - lunar flying vehicles
 - missiles
 - reentry vehicles
 - research vehicles
 - rocket vehicles
 - ∞ vehicles
- flint**
 - GS chalcogenides
 - . oxides
 - . . dioxides
 - . . . **flint**
 - silicon compounds
 - . **flint**
 - RT quartz
- flip-flops**
 - DEF Devices having two stable states and two input terminals (or types of input signals) each of which corresponds with one of the two states. The circuits remain in either state until caused to change to the other state by application of the corresponding signal. Similar bistable devices with an input which allows it to act as a single-stage binary counter. Used for bistable amplifiers.
 - UF *bistable amplifiers*
 - GS circuits
 - . bistable circuits
 - . . **flip-flops**
 - . . multivibrators
 - . . **flip-flops**
- RT computer storage devices
 - data storage
 - fluid switching elements
 - fluidic circuits
 - oscillators
- FLIR detectors**
 - DEF Forward-looking infrared detectors for sensing all emissions of heat or light. Used for forward looking infrared detectors.
 - UF *forward looking infrared detectors*
 - GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - infrared detectors
 - **FLIR detectors**
 - . . infrared instruments
 - . . . infrared detectors
 - **FLIR detectors**
 - RT ∞ detectors
 - infrared radar
 - ∞ sensors
- float zones**
 - RT crystal growth
 - melts (crystal growth)
 - silicon
 - solar cells
 - space processing
 - zone melting
- floating**
 - RT ballast (mass)
 - buoyancy
 - floats
- floating point arithmetic**
 - GS number theory
 - . arithmetic
 - . . **floating point arithmetic**
 - RT computer programs
 - computers
 - data processing
- floats**
 - UF *flotation systems*
 - RT ballast (mass)
 - buoys
 - emergency life sustaining systems
 - floating
 - inflatable structures
 - landing gear
 - life rafts
 - rafts
 - separators
- flocculating**
 - RT agglomeration
 - coagulation
 - coalescing
 - colloiding
 - concentrating
 - flotation
 - micelles
 - precipitation (chemistry)
 - settling
 - water treatment
- flood control**
 - DEF The prevention or reduction of damage caused by flooding, as by containing water in reservoirs removed from areas where it would do damage, improving channel capacity to convey water past or through critical areas with the least amount of damage, and diverting excess water into bypasses or floodways.
 - RT canals
 - ∞ control
 - dams
 - drainage
 - hydrology
 - rainstorms
 - storm damage
 - storms (meteorology)
 - watersheds
- flood damage**
 - GS damage
 - . **flood damage**
- RT drainage patterns
 - hydrology
 - landslides
 - precipitation (meteorology)
 - seepage
 - storms
 - storms (meteorology)
 - tides
 - water erosion
 - water flow
- flood plains**
 - DEF The surfaces or strips of relatively smooth land adjacent to river channels, constructed by the present rivers in their existing regimens and covered with water when the rivers overflow.
 - GS land
 - . plains
 - . . **flood plains**
 - landforms
 - . plains
 - . . **flood plains**
 - RT floods
 - hydrogeology
 - hydrology
- flood predictions**
 - GS predictions
 - . **flood predictions**
 - RT floods
 - hydrogeology
 - hydrology
 - precipitation (meteorology)
 - rain
 - rainstorms
 - ∞ showers
 - storms (meteorology)
 - weather forecasting
- floods**
 - DEF Rising bodies of water (as in streams, lakes, seas, or behind dams) that overtop their natural or artificial confines and that cover land not normally underwater. Especially, any relatively high streamflows that overflow their banks in any reach of the stream, or that are measured by gage height of discharge quantity.
 - RT alluvium
 - drought
 - flood plains
 - flood predictions
 - hydrology
 - hydrology models
 - Mississippi River (US)
 - precipitation (meteorology)
 - storm damage
 - storms
 - storms (meteorology)
 - tides
 - water flow
 - water management
 - watersheds
- floors**
 - UF *decks (floors)*
 - RT basements
 - buildings
 - ceilings (architecture)
 - doors
 - ∞ platforms
 - substructures
 - tiles
 - walls
- Floquet theorem**
 - GS theorems
 - . **Floquet theorem**
 - RT differential equations
 - linear equations
 - periodic functions
- flora*
 - USE **plants (botany)**
- Florida**
 - GS nations
 - . United States
 - . . **Florida**
 - RT Everglades (FL)

flotation

Gulf of Mexico
Merritt Island (FL)

flotation

RT activation
beneficiation
classifiers
coagulation
concentrating
flocculating
fluid rotor gyroscopes
foaming
levitation
∞ separation
settling
size separation
suspension systems (vehicles)
water treatment

flotation systems

USE **floats**

∞ flour

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT fines
flour (food)

flour (food)

RT ∞ flour
∞ food
millet
powder (particles)

∞ flow

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF A stream or movement of air or other fluid, or the rate of fluid movement, in the open or in a duct, pipe, or passage; specifically, an airflow.

RT aerodynamics
annular flow
Brillouin flow
cavity flow
circulation
corner flow
creep properties
cross flow
exhaust nozzles
flow equations
flow velocity
fluid flow
grazing flow
heat transmission
information flow
interactional aerodynamics
inviscid flow
low density flow
mass flow
orifice flow
outlet flow
panel method (fluid dynamics)
plastic flow
reacting flow
shear flow
solids flow
steady flow
transonic flow
unsteady flow
viscous flow

flow chambers

RT ∞ chambers

flow characteristics

GS dynamic characteristics
. **flow characteristics**
. . flow distribution
. . flow stability
. . . boundary layer stability
. . . flame stability
. . . magnetohydrodynamic stability
. . . . Weibel instability
. . . . Goertler instability
. . . Taylor instability
. . flow velocity
. . . solar wind velocity
RT barotropic flow

∞ characteristics
critical flow
cross flow
eddy viscosity
inviscid flow
laminar flow
nonuniform flow
outlet flow
reattached flow
separated flow
steady flow
Strouhal number
subcritical flow
supercritical flow
turbulence
turbulent flow
viscosity
viscous flow

flow charts

DEF Graphical representations of sequences of operations using symbols to represent the operations. Flow charts are more detailed representations than diagrams.

GS charts

. **flow charts**

RT block diagrams
computer programming
data flow analysis
∞ flow graphs
mathematical models

flow coefficients

GS coefficients
. **flow coefficients**
. . discharge coefficient
RT aerodynamic coefficients
attenuation coefficients
mass flow factors
nozzle thrust coefficients
reflectance
transport properties

flow deflection

RT computational fluid dynamics
deflectors
flow distribution
flow velocity
Prandtl-Meyer expansion

flow direction indicators

GS display devices
. **flow direction indicators**
. . wind vanes
measuring instruments
. indicating instruments
. . **flow direction indicators**
. . . wind vanes

flow distortion

GS distortion
. **flow distortion**
RT aerodynamic coefficients
fluid flow
horseshoe vortices
multiphase flow
Orr-Sommerfeld equations
oscillating flow
small perturbation flow
vortices
wing tip vortices

flow distribution

UF *flow fields*
flow patterns
GS distribution (property)
. **flow distribution**
dynamic characteristics
. flow characteristics
. . **flow distribution**
RT boundary layer flow
boundary layer separation
boundary layer thickness
cavitation flow
Chapman-Enskog theory
exhaust flow simulation
field theory (physics)
flow deflection
∞ flow graphs
hydrodynamic coefficients

isothermal flow
method of characteristics
numerical flow visualization
particle image velocimetry
reattached flow
rheoelectrical simulation
separated flow
stagnation point
Strouhal number
three dimensional bodies
trapped vortices
velocity distribution
vortex sheets
water tunnel tests
wind tunnel tests

flow equations

GS **flow equations**

. boundary layer equations
. . Blasius equation
. Chaplygin equation
. Navier-Stokes equation
. Reynolds equation
. Von Karman equation
. vorticity equations
. . Helmholtz vorticity equation
. Burnett equations
RT Baldwin-Lomax turbulence model
Bernoulli theorem
computational fluid dynamics
convection-diffusion equation
∞ equations
∞ flow
fluid flow
k-epsilon turbulence model
particle in cell technique
Percus method
Rayleigh equations
Reynolds averaging
space-time CE/SE method
turbulence models

flow fields

USE **flow distribution**

flow geometry

GS geometry
. **flow geometry**
RT annular flow
axial flow
axisymmetric flow
backward facing steps
bypass ratio
channel flow
coaxial flow
core flow
cross flow
ducted flow
helical flow
horseshoe vortices
inlet airframe configurations
inlet flow
laminar flow
meridional flow
nozzle flow
one dimensional flow
parallel flow
radial flow
steady flow
stratified flow
three dimensional flow
two dimensional flow
wedge flow

∞ flow graphs

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT equipotentials
flow charts
flow distribution
signal flow graphs

flow measurement

GS mechanical measurement
. **flow measurement**
. . particle image velocimetry
RT anemometers
annuli
drag force anemometers

drag measurement
 flowmeters
 fluid flow
 gas meters
 hot-film anemometers
 hot-wire anemometers
 laser doppler velocimeters
 ∞ measurement
 multiphase flow
 nonintrusive measurement
 ∞ nozzles
 orifices
 pitot tubes
 pneumatic probes
 pressure measurement
 pressure sensitive paints
 rheology
 solids flow
 velocity measurement
 Venturi tubes
 water flow
 wind velocity

flow nets

RT equipotentials
 seepage

flow noise

(added March 2000)

DEF Noise produced by the flow of fluids around or through a body; the pressure variations associated with a turbulent flow field.

GS elastic waves
 . sound waves
 . . noise (sound)
 . . . **flow noise**
 aerodynamic noise
 blade slap noise
 propeller noise
 screech tones

RT aeroacoustics
 ducted flow
 Fflowcs Williams-Hawkings equation
 nozzle flow
 pipe flow
 underwater acoustics

flow patterns

USE **flow distribution**

flow rate

USE **flow velocity**

flow regulators

GS control equipment
 . regulators
 . . **flow regulators**
 . . . fuel flow regulators
 RT flowmeters
 oxygen regulators
 pressure regulators

flow resistance

GS friction
 . **flow resistance**
 . . friction drag
 . . . aerodynamic drag
 supersonic drag
 . . . viscous drag
 RT eddy viscosity
 ∞ high resistance
 ∞ low resistance
 ∞ resistance
 skin friction
 viscosity

flow separation

USE **boundary layer separation**
separated flow

flow stability

UF *hydrodynamic stability*
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . **flow stability**
 boundary layer stability
 flame stability
 magnetohydrodynamic stability
 Weibel instability

. . . . Goertler instability
 Taylor instability
 . flow characteristics
 . . **flow stability**
 . . . boundary layer stability
 . . . flame stability
 . . . magnetohydrodynamic stability
 Weibel instability
 . . . Goertler instability
 . . . Taylor instability
 stability
 . dynamic stability
 . . motion stability
 . . . **flow stability**
 boundary layer stability
 flame stability
 magnetohydrodynamic stability
 Weibel instability
 Goertler instability
 Taylor instability

RT aerodynamic stability
 baroclinic instability
 directional stability
 fluid flow
 hydrodynamic equations
 hydrofoil oscillations
 Kelvin-Helmholtz instability
 laminar flow
 lateral stability
 longitudinal stability
 low speed stability
 Orr-Sommerfeld equations
 rotary stability
 steady flow
 Strouhal number
 supersonic diffusers
 systems stability
 turbulent flow
 unsteady flow
 viscous fluids
 Von Karman equation
 vortex breakdown
 vortex filaments
 vortices
 vorticity

flow theory

GS **flow theory**
 . mixing length flow theory
 RT aerodynamics
 boundary layer equations
 continuum mechanics
 convection-diffusion equation
 dislocations (materials)
 fluid flow
 fluid mechanics
 hydrodynamic equations
 hydrodynamics
 Lighthill method
 mass flow
 Navier-Stokes equation
 Orr-Sommerfeld equations
 panel method (fluid dynamics)
 pneumatics
 rheology
 solids flow
 ∞ theories

flow velocity

DEF The volume per time unit given to the flow of gasses or other fluid substances which emerge from an orifice, pump, turbine, or passes along a conduit or channel. Used for flow rate.
 UF *flow rate*
 GS dynamic characteristics
 . flow characteristics
 . . **flow velocity**
 . . . solar wind velocity
 rates (per time)
 . **flow velocity**
 . . solar wind velocity
 velocity
 . **flow velocity**
 . . solar wind velocity
 RT Biot-Savart law
 choked flow
 discharge coefficient
 dump combustors

exhaust velocity
 ∞ flow
 flow deflection
 hydrodynamic coefficients
 hypersonic flow
 hypervelocity flow
 laser anemometers
 low speed
 mass flow rate
 parallel flow
 particle image velocimetry
 subsonic flow
 supersonic flow
 transonic flow
 unsteady flow
 velocity distribution
 velocity measurement
 vortex lattice method
 vortex precession

flow visualization

UF *visualization of flow*
 GS **flow visualization**
 . numerical flow visualization
 RT differential interferometry
 fluid flow
 hydraulic analogies
 particle image velocimetry
 pressure sensitive paints
 Schlieren photography
 shadowgraph photography
 water tunnel tests
 wind tunnel models

flowmeters

GS measuring instruments
 . **flowmeters**
 . . gas meters
 . . hot-wire flowmeters
 . . rheometers
 RT electrical measurement
 flow measurement
 flow regulators
 fluid flow
 fuel gages
 hot-wire anemometers
 mechanical measurement
 orifices
 pitot tubes
 pressure gages
 pressure measurement
 sonic anemometers
 speed indicators
 turbine instruments
 velocity measurement
 Venturi tubes
 vortex precession

FLOX

UF *fluorine-liquid oxygen*
 GS liquids
 . cryogenic fluids
 . . **FLOX**
 oxidizers
 . rocket oxidizers
 . . **FLOX**
 RT fluorine
 liquid oxygen

Fllsatcom

USE **Fleet Satellite Communication System**

fluctuation

USE **variations**

fluctuation theory

RT homogeneous turbulence
 squeezed states (quantum theory)
 statistical mechanics
 ∞ theories

flue gases

DEF Gaseous combustion products from a furnace.
 GS gases
 . exhaust gases
 . . **flue gases**
 RT air pollution
 combustion products

fluence

- desulfurizing
 - electric power plants
 - flues
 - pollution control
 - scrubbers
- fluence**
- RT health physics
 - ionizing radiation
 - radiation counters
- fluierics**
- GS fluidics
 - . **fluierics**
 - RT fluid amplifiers
 - fluid switching elements
 - fluidic circuits
 - hydraulic analogies
- flues**
- RT chimneys
 - draft (gas flow)
 - ducts
 - exhaust systems
 - flue gases
 - vents
- fluid amplification*
- USE **fluid amplifiers**
- fluid amplifiers**
- UF *fluid amplification*
 - fluid jet amplifiers*
 - GS amplifiers
 - . **fluid amplifiers**
 - . . jet amplifiers
 - RT amplification
 - automatic control valves
 - boundary layer control
 - Coanda effect
 - convergent nozzles
 - fluierics
 - fluidic circuits
 - fluidics
 - hydraulic equipment
 - pneumatic equipment
 - pressure recovery
 - turbulent flow
 - turbulent jets
 - wall jets
- fluid boundaries**
- GS boundaries
 - . **fluid boundaries**
 - . . gas-solid interfaces
 - . . jet boundaries
 - . . liquid-liquid interfaces
 - . . liquid-solid interfaces
 - . . liquid-vapor interfaces
 - interfaces
 - . **fluid boundaries**
 - . . gas-solid interfaces
 - . . jet boundaries
 - . . liquid-liquid interfaces
 - . . liquid-solid interfaces
 - . . liquid-vapor interfaces
 - RT backward facing steps
 - boundary layers
 - cavity flow
 - free boundaries
 - heat transfer
 - interface stability
 - liquid levels
 - liquid surfaces
 - pressure gradients
- fluid dynamics**
- UF *cascades (fluid dynamics)*
 - GS mechanics (physics)
 - . fluid mechanics
 - . . **fluid dynamics**
 - . . . computational fluid dynamics
 - . . . gas dynamics
 - . . . aerodynamics
 - aerothermodynamics
 - hypersonics
 - rotor aerodynamics
 - supersonics
 - unsteady aerodynamics
 - . . . interactional aerodynamics
 - rarefied gas dynamics
 - . . . hydrodynamics
 - elasto-hydrodynamics
 - electrohydrodynamics
 - magnetohydrodynamics
 - rotons
 - . . . vortex shedding
 - RT continuity equation
 - convection
 - ∞ dynamics
 - Eyring theory
 - fluid management
 - flux vector splitting
 - gas-solid interactions
 - geophysical fluids
 - Glimm method
 - ∞ hydraulics
 - hydromechanics
 - kinetics
 - Magnus effect
 - ocean dynamics
 - panel method (fluid dynamics)
 - piston theory
 - primitive equations
 - quasi-steady states
 - ∞ science
 - slamming
 - stagnation point
 - steady state
 - streamlining
 - thermohydraulics
 - turbulence
 - unsteady state
 - vortex filaments
- fluid filled shells**
- DEF Shells of revolution containing a gas or liquid.
 - GS shells (structural forms)
 - . **fluid filled shells**
 - . . liquid filled shells
 - RT hydrodynamic ram effect
 - propellant tanks
 - reinforced shells
 - shell stability
 - ∞ storage
 - tanks (containers)
 - ∞ vessels
- fluid films**
- GS **fluid films**
 - . squeeze films
 - RT ∞ films
 - gas bearings
 - liquid-solid interfaces
- fluid filters**
- UF *mass filters*
 - particulate filters*
 - GS separators
 - . **fluid filters**
 - . . air filters
 - RT centrifuges
 - concentrators
 - ∞ filters
 - filtration
 - fluidized bed processors
 - sieves
 - sizing screens
- fluid flow**
- UF *induced fluid flow*
 - rotational flow*
 - GS **fluid flow**
 - . adiabatic flow
 - . axial flow
 - . axisymmetric flow
 - . . annular flow
 - . . Karman-Bodewadt flow
 - . barotropic flow
 - . base flow
 - . Beltrami flow
 - . blood flow
 - . capillary flow
 - . cascade flow
 - . choked flow
 - . coaxial flow
 - . compressible flow
 - . . Ringleb flow
 - . . transonic flow
 - . conical flow
 - . convective flow
 - . . Rayleigh-Benard convection
 - . . Benard cells
 - . . buoyancy-driven flow
 - . core flow
 - . corner flow
 - . counterflow
 - . critical flow
 - . cross flow
 - . free flow
 - . fuel flow
 - . . propellant transfer
 - . gas flow
 - . . air flow
 - . . . air currents
 - jet streams (meteorology)
 - meridional flow
 - vertical air currents
 - . . . continuum flow
 - . . cooling flows (astrophysics)
 - . . equilibrium flow
 - . . . frozen equilibrium flow
 - . . . shifting equilibrium flow
 - . . free molecular flow
 - . . Knudsen flow
 - . . molecular flow
 - . . . slip flow
 - . . . transition flow
 - . . nonequilibrium flow
 - . . pipe flow
 - . . head (fluid mechanics)
 - . . head flow
 - . . pressure heads
 - . . helical flow
 - . . hypersonic flow
 - . . hypervelocity flow
 - . . incompressible flow
 - . . Stokes flow
 - . . internal flow
 - . . cavity flow
 - . . channel flow
 - . . . open channel flow
 - . . ducted flow
 - . . . Knudsen flow
 - . . inlet flow
 - . . nozzle flow
 - . . pipe flow
 - . . inviscid flow
 - . . stagnation flow
 - . . isothermal flow
 - . . jet flow
 - . . air jets
 - . . jet mixing flow
 - . . peripheral jet flow
 - . . supersonic jet flow
 - . . laminar flow
 - . . Blasius flow
 - . . Hartmann flow
 - . . stratified flow
 - . . liquid flow
 - . . open channel flow
 - . . water flow
 - . . low density flow
 - . . magnetohydrodynamic flow
 - . . mass flow
 - . . multiphase flow
 - . . two phase flow
 - . . nonNewtonian flow
 - . . nonuniform flow
 - . . one dimensional flow
 - . . orifice flow
 - . . outlet flow
 - . . parallel flow
 - . . wedge flow
 - . . pipe flow
 - . . three dimensional flow
 - . . . Karman-Bodewadt flow
 - . . . secondary flow
 - . . plastic flow
 - . . Tresca flow
 - . . potential flow
 - . . equipotentials
 - . . radial flow
 - . . reacting flow
 - . . combustable flow
 - . . recirculative fluid flow
 - . . reversed flow
 - . . shear flow

- . single-phase flow
- . small perturbation flow
- . solids flow
- . steady flow
- .. Couette flow
- .. Hartmann flow
- .. Ringleb flow
- . steam flow
- . subcritical flow
- . subsonic flow
- . supercritical flow
- . supersonic flow
- .. supersonic jet flow
- . turbulent flow
- .. cavitation flow
- .. . supercavitating flow
- . two dimensional flow
- .. Couette flow
- .. Ringleb flow
- . uniform flow
- .. Blasius flow
- . unsteady flow
- .. oscillating flow
- . viscous flow
- .. boundary layer flow
- .. . reattached flow
- .. . secondary flow
- .. . separated flow
- boundary layer separation
- .. Couette flow
- .. Karman-Bodewadt flow
- .. Stokes flow
- . wall flow
- RT acoustic streaming
- annular ducts
- Bernoulli theorem
- boundary layers
- canals
- Cartan space
- chemical engineering
- circulation
- coaxial nozzles
- ∞ conductivity
- convection currents
- ∞ currents
- dimensional analysis
- dimensionless numbers
- drag reduction
- duct geometry
- expulsion
- ∞ flow
- flow distortion
- flow equations
- flow measurement
- flow stability
- flow theory
- flow visualization
- flowmeters
- fluidics
- ∞ fluids
- friction
- Froude number
- geophysical fluid flow cells
- heat transmission
- ∞ hydraulics
- hydrodynamics
- hydromechanics
- injection
- labyrinth seals
- leakage
- Lewis numbers
- Magnus effect
- Manning theory
- materials handling
- mechanical engineering
- ocean currents
- ocean surface
- pipes (tubes)
- planetary waves
- pressure gradients
- Rayleigh waves
- Reynolds number
- skin friction
- solar convection (astronomy)
- stellar convection
- streams
- supersonic boundary layers
- surges
- syringes

- thermohydraulics
- ultrasonic cleaning
- vortices
- wing flow method tests

fluid injection

- GS injection
- . **fluid injection**
- .. gas injection
- .. liquid injection
- .. . deep well injection (wastes)
- .. . water injection
- RT channel flow
- fuel injection
- inlet flow
- laminar mixing
- nozzle flow
- secondary injection

fluid jet amplifiers

- USE **fluid amplifiers**
- jet amplifiers**

fluid jets

- GS **fluid jets**
- . air jets
- . free jets
- . gas jets
- . hydraulic jets
- . vapor jets
- RT jet amplifiers
- jet flow
- jet mixing flow
- jet streams (meteorology)
- ∞ jets
- plasma jets

fluid logic

- RT computer design
- fluidic circuits
- fluidics
- ∞ logic
- logic circuits

fluid management

DEF The isolation and separation of liquids from gas in a storage vessel which operates in a reduced or zero gravity environment using liquid acquisition devices such as those used in the Space Shuttle RCS tankage.

- RT cryogenic fluid storage
- cryogenic fluids
- cryogenic rocket propellants
- fluid dynamics
- fuel control
- microgravity

fluid mechanics

DEF The experimental and mathematical study of the mechanical properties of gases and liquids at rest and in motion.

- GS mechanics (physics)
- . **fluid mechanics**
- .. fluid dynamics
- .. . computational fluid dynamics
- .. . gas dynamics
- aerodynamics
- aerothermodynamics
- hypersonics
- rotor aerodynamics
- supersonics
- unsteady aerodynamics
- interactional aerodynamics
- rarefied gas dynamics
- .. . hydrodynamics
- elasto-hydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- rotors
- vortex shedding
- hydromechanics
- hydrodynamics
- elasto-hydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- hydrostatics
- magnetohydrostatics
- pneumatics
- RT aerostatics
- ∞ bleeding

- continuum mechanics
- diffusivity
- ∞ dynamics
- flat plates
- flow theory
- fluidics
- ∞ hydraulics
- hydrodynamic equations
- incompressibility
- kinetics
- Maxwell fluids
- micropolar fluids
- ∞ science
- statics
- supercritical fluids
- thermodynamics

fluid power

- RT compressible fluids
- fluid pressure
- fluidic circuits
- fluidics
- hydraulic control
- hydraulic equipment
- ∞ hydraulics
- hydrodynamics
- incompressible fluids
- pneumatic control
- pneumatic equipment
- pneumatics
- ∞ power
- ∞ pressure drop
- working fluids

fluid pressure

- GS pressure
- . **fluid pressure**
- .. water pressure
- RT beta factor
- fluid power
- fluidics
- ∞ fluids
- hydraulic fluids

fluid rotor gyroscopes

- GS gyroscopes
- . rotary gyroscopes
- .. **fluid rotor gyroscopes**
- RT flotation
- gimbals

fluid shifts (biology)

(added August 2004)

DEF Translocation of body fluids from one compartment to another, such as from the vascular to the interstitial compartments. Fluid shifts are associated with profound changes in vascular permeability and water-electrolyte imbalance. The shift can also be from the lower body to the upper body as in conditions of weightlessness.

- GS biological effects
- . **fluid shifts (biology)**
- RT aerospace medicine
- body fluids
- gravitational physiology
- lower body negative pressure
- orthostatic tolerance
- physiological effects

fluid switching elements

- GS circuits
- . switching circuits
- .. **fluid switching elements**
- switches
- . switching circuits
- .. **fluid switching elements**
- RT acoustic streaming
- automatic control valves
- flip-flops
- flueries
- fluidic circuits
- fluidics
- hydraulic equipment
- pneumatic equipment

fluid transmission lines

- GS transmission lines
- . **fluid transmission lines**
- RT hydraulic fluids

fluidic circuits

transmission fluids
working fluids

fluid transpiration

USE **transpiration**

fluidic circuits

GS circuits

. **fluidic circuits**

RT flip-flops

fluierics

fluid amplifiers

fluid logic

fluid power

fluid switching elements

fluidics

fly by tube control

microfluidic devices

fluidics

GS **fluidics**

. fluierics

RT amplification

∞ control

fluid amplifiers

fluid flow

fluid logic

fluid mechanics

fluid power

fluid pressure

fluid switching elements

fluidic circuits

hydraulic analogies

hydraulic control

internal flow

∞ logic

microfluidic devices

pneumatic circuits

pneumatic control

pneumatic equipment

pneumatics

fluidized bed processors

RT beds (process engineering)

chemical reactors

fluid filters

furnaces

separators

∞ fluids

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

anisotropic fluids

binary fluids

body fluids

cerebrospinal fluid

compressible fluids

conducting fluids

cryogenic fluids

ferrofluids

fluid flow

fluid pressure

gases

gyroscope fluids

high temperature fluids

hydraulic fluids

ideal fluids

incompressible fluids

liquids

magnetorheological fluids

Maxwell fluids

micropolar fluids

Newtonian fluids

nonequilibrium flow

nonNewtonian fluids

rheology

rotating fluids

serums

siphoning

solids

supercritical fluids

superfluidity

transmission fluids

viscous fluids

weightless fluids

working fluids

fluid-solid interactions

DEF The interactions of a rigid or elastic structure with an incompressible or compress-

ible fluid. Airblast loading and response, acoustic interaction, aeroelasticity, and hydroelasticity comprise its major divisions.

GS **fluid-solid interactions**

. gas-solid interactions

. . gas-metal interactions

RT gas-solid interfaces

∞ interactions

liquid-solid interfaces

surface reactions

fluorescence

DEF Emission of light or other radiant energy as a result of and only during absorption of radiation of a different wavelength from some other source. Used for fluorescent emission.

UF *fluorescent emission*

GS emission

. light emission

. . luminescence

. . . **fluorescence**

. . . . laser induced fluorescence

. . . . phosphorescence

. . . . resonance fluorescence

. . . . x ray fluorescence

RT electromagnetic absorption

extinction

Mossbauer effect

phosphors

photoexcitation

photoluminescence

plasma radiation

rhodamine

temperature sensitive paints

triboluminescence

fluorescent emission

USE **fluorescence**

fluorides

GS halogen compounds

. fluorine compounds

. . **fluorides**

. . . antimony fluorides

. . . barium fluorides

. . . boron fluorides

. . . chlorine fluorides

. . . compound A

. . . cryolite

. . . deuterium fluorides

. . . difluorides

. . . . calcium fluorides

. fluorspar

. . . hydrofluoric acid

. . . metal fluorides

. . . . aluminum fluorides

. . . . beryllium fluorides

. . . . cadmium fluorides

. . . . calcium fluorides

. fluorspar

. . . . cesium fluorides

. . . . chromium fluorides

. . . . cobalt fluorides

. . . . copper fluorides

. . . . lanthanum fluorides

. . . . lithium fluorides

. . . . magnesium fluorides

. . . . nickel fluorides

. . . . plutonium fluorides

. . . . protactinium fluorides

. . . . sodium fluorides

. . . . strontium fluorides

. . . . thorium fluorides

. . . . tungsten fluorides

. . . . uranium fluorides

. . . . zinc fluorides

. . . . zirconium fluorides

. . . nitrogen fluorides

. . . nitril fluorides

. . . oxyfluorides

. . . oxygen fluorides

. . . ozone fluoride

. . . perchloryl fluorides

. . . polyvinyl fluoride

. . . sulfur fluorides

. . . . sulfur hexafluoride

. . . . technetium fluorides

. . . halides

. . . **fluorides**

. . . . antimony fluorides

. . . barium fluorides

. . . boron fluorides

. . . chlorine fluorides

. . . compound A

. . . cryolite

. . . deuterium fluorides

. . . difluorides

. . . . calcium fluorides

. fluorspar

. . . hydrofluoric acid

. . . metal fluorides

. . . . aluminum fluorides

. . . . beryllium fluorides

. . . . cadmium fluorides

. . . . calcium fluorides

. fluorspar

. . . . cesium fluorides

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. . . . protactinium fluorides

. . . . sodium fluorides

. . . . strontium fluorides

. . . . thorium fluorides

. . . . tungsten fluorides

. . . . uranium fluorides

. . . . zinc fluorides

. . . . zirconium fluorides

. . . nitrogen fluorides

. . . nitril fluorides

. . . oxyfluorides

. . . oxygen fluorides

. . . ozone fluoride

. . . perchloryl fluorides

. . . polyvinyl fluoride

. . . sulfur fluorides

. . . . sulfur hexafluoride

. . . . technetium fluorides

RT excimer lasers

fluorination

GS chemical reactions

. halogenation

. . **fluorination**

RT defluorination

fluorine

GS chemical elements

. halogens

. . **fluorine**

. . . fluorine isotopes

. . . liquid fluorine

RT FLOX

oxidizers

fluorine compounds

GS halogen compounds

. **fluorine compounds**

. . fluorides

. . . antimony fluorides

. . . barium fluorides

. . . boron fluorides

. . . chlorine fluorides

. . . compound A

. . . cryolite

. . . deuterium fluorides

. . . difluorides

. . . . calcium fluorides

. fluorspar

. . . hydrofluoric acid

. . . metal fluorides

. . . . aluminum fluorides

. . . . beryllium fluorides

. . . . cadmium fluorides

. . . . calcium fluorides

. fluorspar

. . . . cesium fluorides

. . . . chromium fluorides

. . . . cobalt fluorides

. . . . copper fluorides

. . . . lanthanum fluorides

. . . . lithium fluorides

. . . . magnesium fluorides

. . . . nickel fluorides

. . . . plutonium fluorides

flushing

. . . fluorides
 difluorides
 calcium fluorides
 **fluorspar**
 metal fluorides
 calcium fluorides
 **fluorspar**
 . halides
 . . fluorides
 . . . difluorides
 calcium fluorides
 **fluorspar**
 metal fluorides
 calcium fluorides
 **fluorspar**
 . metal halides
 . . metal fluorides
 . . . calcium fluorides
 **fluorspar**
 minerals
 . **fluorspar**

flushing

RT cleaning
 ejection
 elution
 expellants
 leaching
 purging
 purification
 ∞ separation
 venting
 washing
 waste water

fluting

USE **grooving**

flutter

DEF An aeroelastic self excited vibration in which the external source of energy is the airstream and which depends on the elastic, inertial and dissipative forces of the system in addition to the aerodynamic forces. Used for aerodynamic buzz and aeromagneto flutter.

UF *aerodynamic buzz*
aeromagneto flutter

GS vibration
 . structural vibration
 . . **flutter**
 . . . panel flutter
 . . . subsonic flutter
 . . . supersonic flutter
 . . . transonic flutter

RT aerodynamic noise
 aerodynamic stability
 aeroelastic research wings
 aeroelasticity
 aeroservoelasticity
 airfoil oscillations
 bending
 bending vibration
 boundary layer control
 buffeting
 compressibility effects
 DAST program
 flapping
 flight characteristics
 forced vibration
 hovering
 hydrofoil oscillations
 influence coefficient
 missile vibration
 random vibration
 resonant vibration
 self induced vibration
 shaking
 spacecraft motion
 turbulence effects
 undamped oscillations
 unsteady aerodynamics
 vibration simulators
 vibration tests
 vibrational stress
 wing oscillations

flutter analysis

GS structural analysis
 . dynamic structural analysis
 . . **flutter analysis**

RT aeroelastic research wings
 airfoil oscillations
 structural vibration
 unsteady aerodynamics

∞ flux

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF The rate of flow of some quantity, often used in reference to the flow of some form of energy. In nuclear physics generally, the number of radioactive particles per unit volume times their mean velocity.

RT flux (rate)
 flux density
 flux difference splitting
 flux quantization
 fluxes
 level (quantity)

flux (rate per unit area)

USE **flux density**

flux (rate)

SN (LIMITED TO THE TOTAL EMANATION OF ENERGY, MATERIAL OR PARTICLES FROM A SINGLE SOURCE PER UNIT TIME--SEE FLUX DENSITY FOR ENERGY, MATERIAL OR PARTICLE RATE PER UNIT AREA)

DEF The total emanation of energy, material or particles from a single source per unit time. Used for electron flux, neutron flux, and particle flux.

UF *electron flux*
neutron flux

GS *particle flux*
 rates (per time)
 . **flux (rate)**
 . . heat flux
 . . magnetic flux
 . . solar flux

RT beta particles
 brightness
 corpuscular radiation
 dosimeters
 electromagnetic radiation
 emittance

∞ energy
 field theory (physics)

∞ flux

flux density
 gamma rays
 ∞ intensity
 level (quantity)
 luminous intensity
 magnetic circuits
 magnetic induction
 magnetostatics
 particle beams
 particle diffusion
 ∞ power
 radiant flux density
 ∞ radiation
 Stefan-Boltzmann law

flux density

SN (LIMITED TO ENERGY, MATERIAL OR PARTICLE RATE PER UNIT AREA, THE QUANTITY USUALLY MEASURED--SEE FLUX (RATE) FOR TOTAL EMANATION FROM A SINGLE SOURCE PER UNIT TIME)

DEF The flux (rate of flow) of any quantity, usually a form of energy, through a unit area of specified surface. (Note that this is not a volumetric density like radiant density.) Used for density (rate/area), energy density, flux (rate per unit area), and flux mapping.

UF *density (rate/area)*
energy density
flux (rate per unit area)
flux mapping

GS rates (per time)
 . **flux density**
 . . current density
 . . photon density
 . . radiant flux density
 . . . irradiance
 illuminance
 solar constant
 . . . lumens

. . . luminous intensity
 illuminance
 luminance
 . . . particle flux density
 electron flux density
 neutron flux density
 proton flux density
 . . . radiance
 . . . radiancy
 . . . solar flux density
 . . . solar constant
 . . sound intensity
 . . . zero sound

RT alpha particles
 angular distribution
 atom concentration
 ∞ density
 dosimeters
 electromagnetic radiation
 ∞ energy
 energy distribution
 field intensity meters
 field strength
 field theory (physics)

∞ flux

flux (rate)
 gamma rays
 heat flux
 ∞ intensity
 irradiation
 level (quantity)
 loudness
 mass distribution
 meteoroid concentration
 Onsager phenomenological coefficient
 ∞ power
 power spectra
 protons
 ∞ radiation
 radiation distribution
 radiation hazards
 remanence
 scattering functions
 Solar Maximum Mission
 sound pressure
 spectra
 x ray density measurement

flux difference splitting

(added May 1995)

UF *Roe flux difference splitting scheme*

GS analysis (mathematics)
 . numerical analysis
 . . **flux difference splitting**
 splitting

. **flux difference splitting**
 RT computational fluid dynamics
 finite difference theory

∞ flux

flux vector splitting

flux mapping

USE **flux density**
mapping

flux pinning

DEF In superconductors, the interaction between the magnetic and the metallurgical microstructures. It controls the critical current density in a given superconducting material.

GS pinning

. flux pinning

RT lines of force
 magnetic flux
 superconductivity
 trapped magnetic fields
 trapping

flux pumps

DEF Cryogenic DC generators.
 RT magnetic coils
 magnetic fields
 superconducting magnets
 superconductivity

flux quantization

RT ∞ flux

magnetic flux

superconductors (materials)

flux transfer events

(added July 1989)

GS magnetic properties
 . magnetoactivity

. . . **flux transfer events**

RT aeronomy
 geomagnetism
 interplanetary magnetic fields
 lines of force
 magnetic effects
 magnetic field configurations
 magnetic field reconnection
 magnetic fields
 magnetic flux
 magnetopause
 magnetosphere-ionosphere coupling
 space plasmas

flux vector splitting

DEF The splitting of the nonlinear flux vectors of the conservation law form of the inviscid gasdynamic equations into subvectors by similarity transformations so that each subvector has associated with it a specified eigenvalue spectrum.

GS analysis (mathematics)
 . numerical analysis
 . . **flux vector splitting**
 splitting

. **flux vector splitting**

RT computation
 computational fluid dynamics
 eigenvalues
 finite difference theory
 fluid dynamics
 flux difference splitting
 panel method (fluid dynamics)
 vector analysis
 vectors (mathematics)
 vortex lattice method

fluxes

RT brazing

∞ flux

limestone
 soldering
 welding

fluxmeters

USE **magnetic measurement measuring instruments**

fly ash

DEF Fine particulate, essentially noncombustible refuse, carried in a gas stream from a furnace.

GS ashes

. **fly ash**

RT air pollution
 coal
 combustion products
 electric power plants
 electrostatic precipitators
 particulates
 pollution control

fly by light control

(added December 1992)

UF **FBL control**

GS flight control

. **fly by light control**

RT aircraft control
 fiber optics
 optical fibers

fly by tube control

DEF A fluidic flight control for aircraft in which a hydraulic control signal link connects the pilot's controls to the control surface actuators.

GS flight control

. **fly by tube control**

RT aircraft control
 ∞ control
 fluidic circuits
 hydraulic equipment

servoamplifiers

fly by wire control

UF **electric aircraft**

GS flight control

. **fly by wire control**

RT aircraft control

∞ control

ground based control
 spacecraft control

flyby missions

DEF Interplanetary missions in which the vehicle passes close to the target planet but does not impact it or go into orbit around it.

GS space missions

. **flyby missions**

. . . Giotto mission

. . . Grand Tours

. . . . Mariner Jupiter-Saturn flyby

. . . . Mariner Jupiter-Uranus flyby

. . . . Voyager 1977 mission

. . Comet Nucleus Tour

. . Comet Rendezvous Asteroid Flyby

Mission

. . Deep Impact Mission

. . Mariner Venus-Mercury 1973

. . Mariner-Mercury 1973

. . Near Earth Asteroid Rendezvous

Mission

. . New Horizons mission

. . Stardust Mission

RT asteroid missions

Clementine spacecraft

Deep Space 1 Mission

Galileo project

Galileo spacecraft

interplanetary flight

long duration space flight

lunar flight

Mariner Mark 2 Spacecraft

Mariner program

∞ missions

outer planets explorers

space flight

swingby technique

TOPS (spacecraft)

Vega project

Voyager 1 spacecraft

Voyager 2 spacecraft

flying

USE **flight**

Flying Bedstead aircraft

USE **flying platforms**

Flying Crane helicopter

USE **H-17 helicopter**

flying ejection seats

GS onboard equipment

. aircraft equipment

. . ejection seats

. . . **flying ejection seats**

safety devices

. ejection seats

. . **flying ejection seats**

seats

. ejection seats

. . **flying ejection seats**

RT abort apparatus

aircraft safety

ballout

cockpits

ejectors

escape capsules

flight safety

jet engines

protection

flying in formation

(added October 2001)

USE **formation flying**

flying personnel

GS personnel

. **flying personnel**

. . astronauts

. . . orbital workers

. . . cosmonauts
 . . . flight crews
 . . . spacecrews
 . . . pilots (personnel)
 . . . aircraft pilots
 test pilots

RT flight fitness

flight training

navigators

flying platform stability

USE **aerodynamic stability flying platforms**

flying platforms

UF **Flying Bedstead aircraft**

flying platform stability

GS V/STOL aircraft

. vertical takeoff aircraft

. . **flying platforms**

RT ∞ aircraft

ground effect machines

jet aircraft

observation aircraft

∞ platforms

reconnaissance aircraft

research aircraft

∞ subsonic aircraft

VZ-8 aircraft

flying qualities

USE **flight characteristics**

flying spot scanners

GS optical equipment

. optical scanners

. . **flying spot scanners**

scanners

. optical scanners

. . **flying spot scanners**

RT display devices

electron guns

electron optics

image tubes

oscilloscopes

phototubes

picture tubes

television equipment

video equipment

flying wing aircraft

USE **tailless aircraft**

flying wing configurations

(added April 2001)

USE **blended-wing-body configurations**

flywheels

GS rotating bodies

. rotors

. . **flywheels**

wheels

. **flywheels**

RT

balancing

counter-rotating wheels

energy storage

engine parts

mechanical engineering

reaction wheels

FM (modulation)

USE **frequency modulation**

FM/PM (modulation)

DEF Phase modulation of a carrier by sub-carrier(s) which is (are) frequency modulated by information.

GS coding

. signal encoding

. . frequency modulation

. . . **FM/PM (modulation)**

. . phase modulation

. . . **FM/PM (modulation)**

modulation

. frequency modulation

. . **FM/PM (modulation)**

. . phase modulation

. . **FM/PM (modulation)**

foaming

RT data transmission

foaming

RT beneficiation
flotation
foams
metal foams
∞ separation
surface properties
swirling
wetting

foams

UF *cellular materials (non biological)*
GS **foams**
. metal foams
RT aerogels
bubbles
colloids
explosion suppression
fire extinguishers
fire fighting
foaming
low density materials
∞ materials
polyurethane foam
styrofoam (trademark)

focal plane arrays

USE **focal plane devices**

focal plane devices

DEF Radiation sensitive devices positioned at the focal area of electromagnetic detectors. Used for focal plane arrays.
UF *focal plane arrays*
RT arrays
charge coupled devices
infrared detectors
linear arrays
mosaics
photodiodes
quantum well infrared photodetectors

foci

GS **foci**
. plasma focus
RT ∞ centers
focusing
geometry
loci
∞ optics
points (mathematics)
resolution

focusing

GS **focusing**
. defocusing
. prefocusing
. self focusing
RT accommodation
adjusting
astigmatism
cameras
distance
foci
Fresnel lenses
geometrical optics
gravitational lenses
image contrast
image enhancement
laser cutting
laser drilling
lenses
panoramic cameras
solar reflectors
steering
stigmatism
thermal lensing
vignetting

foetuses

USE **fetuses**

fog

DEF A loose term applied to visible aerosols in which the dispersed phase is liquid. Formation by condensation is usually implied. In meteorology, a dispersion of water or ice.
GS mixtures

. dispersions
. . colloids
. . . aerosols
. . . . **fog**
. . liquid-gas mixtures
. . . aerosols
. . . . **fog**
particles
. aerosols
. . **fog**

RT anvil clouds
aviation meteorology
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
drop size
haze
haze detection
hydrometeors
mist
precipitation (meteorology)
smog
smoke
steam
stratus clouds
visibility

fog dispersal

GS weather modification
. **fog dispersal**
RT aerosols
climatology
cloud physics
clouds (meteorology)
dispersing
dispersions
mist
precipitation (meteorology)

foil bearings

GS bearings
. **foil bearings**
RT gas bearings
journal bearings

∞ foils

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT THE TERMS LISTED BELOW)
RT airfoils
foils (materials)
hydrofoils
multilayer insulation

foils (materials)

GS **foils (materials)**
. metal foils
RT airfoils
∞ foils
hydrofoils
∞ materials
multilayer insulation
thin plates

Fokker aircraft

GS **Fokker aircraft**
. F-27 aircraft
. F-28 transport aircraft
RT ∞ aircraft

Fokker bond testers

USE **adhesion tests**

Fokker F 27 aircraft

USE **F-27 aircraft**

Fokker F 28 aircraft

USE **F-28 transport aircraft**

Fokker Friendship aircraft

USE **F-27 aircraft**

Fokker-Planck equation

GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Fokker-Planck equation**
RT Boltzmann transport equation
Brownian movements
density distribution

diffusion theory
∞ equations
ionized gases
stochastic processes

folding

UF *crimping*
RT bending
binding
curl (materials)
distortion
flexing
kinking

Folding Fin aircraft rocket vehicle

UF *FFAR rocket vehicle*
GS rocket vehicles
. **Folding Fin aircraft rocket vehicle**
RT ∞ aircraft
solid propellant rocket engines

folding structures

UF *Rogallo wings*
telescoping structures
GS **folding structures**
. sailwings
RT antennas
balloons
ballutes
expandable structures
furlable antennas
inflatable space structures
inflatable structures
paddles
parachutes
paragliders
parawings
rotary wings
space erectable structures
spacecraft structures
∞ structures
variable geometry structures
variable sweep wings

folds (geology)

DEF Curves or bends of a planar structure such as rock strata, bedding planes, foliation, or cleavage. Folds are usually a product of deformation, although their definition is descriptive and not genetic and may include primary structures. Used for nappes.
UF *nappes*
RT Earth crust
fissures (geology)
geological faults
Great Basin (US)
∞ layers
outcrops
rocks
seamounts
strata
stratification

foliage

RT brown wave effect
canopies (vegetation)
deciduous trees
defoliant
green wave effect
herbicides
leaves
locusts
plants (botany)
timber vigor

follic acid

UF *vitamin M*
GS acids
. amino acids
. . **follic acid**
. . carboxylic acids
. . **follic acid**
nitrogen compounds
. **follic acid**
organic compounds
. amino acids
. . **follic acid**
. . carboxylic acids
. . **follic acid**
. cyclic compounds

. . heterocyclic compounds
 . . . **folic acid**
 vitamins
 . **folic acid**

∞ **food**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)

RT alfalfa
 barley
 beverages
 broths
 caloric requirements
 canning
 carbohydrates
 citrus trees
 consumables (spacecrew supplies)
 corn
 decontamination
 dehydrated food
 diets
 digesting
 distributing
 Earth resources
 eating
 eggs
 fats
 fishes
 flour (food)
 food chain
 food production (in space)
 frozen foods
 fruits
 gelatins
 hay
 leguminous plants
 milk
 millet
 nutrition
 oats
 orchards
 peppers
 potatoes
 preserving
 proteins
 provisioning
 rations
 services
 soybeans
 space flight feeding
 space rations
 spinach
 starches
 sugar cane
 sugars
 synthetic food
 tomatoes
 vegetables
 vineyards
 vitamins
 yeast

food chain

DEF The scheme of feeding relationships
 by trophic levels which unites member species
 of a biological community.

RT animals
 ecosystems

∞ food
 plants (botany)

food intake

RT fasting
 space flight feeding
 synthetic food

food processing

DEF The transformation of foodstuffs into
 forms for easy packaging, greater palatability,
 longer storage, etc.

GS **food processing**
 . canning
 . preserving

RT dehydrated food
 frozen foods

∞ processing

food production (in space)

RT closed ecological systems

consumables (spacecrew supplies)

∞ food
 ∞ production
 space flight feeding
 space rations

footprints

DEF Ground patterns or contours of an
 acoustical or microwave nature that are predict-
 able and measurable.

RT aircraft noise
 antenna radiation patterns
 mathematical models

forbidden bands

GS energy bands

. **forbidden bands**

RT band structure of solids

∞ bands
 electron energy
 free electrons
 lattice vibrations
 wave equations

forbidden transitions

RT electron transitions
 Franck-Condon principle
 quantum theory
 selection rules (nuclear physics)

∞ solid state physics

∞ transition
 wave functions

Forbush decreases

DEF The observed decreases in cosmic ray
 activity in the Earth's atmosphere about a day
 after a solar flare. Used for Forbush effect.

UF *Forbush effect*

RT cosmic rays

∞ effects
 magnetic storms
 solar flares
 solar furnaces
 solar storms

Forbush effect

USE **Forbush decreases**

∞ **force**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)

DEF The cause of the acceleration of mate-
 rial bodies measured by the rate of change of
 momentum produced on a free body. Used for
 repulsion.

UF *repulsion*
 acceleration (physics)

RT aerodynamic forces
 attraction
 centrifugal force
 centripetal force
 electric field strength
 high impulse
 inertia
 kinetics
 lines of force
 loads (forces)
 Lorentz force
 newton
 nonconservative forces
 null zones
 ponderomotive forces
 pressure
 pulling
 pushing
 thrust
 thrust measurement
 torque
 torsion
 Van der Waals forces
 weight (mass)
 zero force curves

force distribution

UF *lift distribution*
normal force distribution

GS distribution (property)

. **force distribution**

RT aerodynamic coefficients
 aerodynamic loads

angular distribution
 charge distribution
 energy distribution
 influence coefficient
 lift drag ratio
 loads (forces)
 mass distribution
 moment distribution
 scale effect
 stress concentration
 stress distribution
 stress intensity factors
 sweep effect
 thrust distribution
 transverse loads
 wing loading

force fields

USE **field theory (physics)**

force vector recorders

DEF Instrumentation for recording force dis-
 placements in a variety of disciplines.

GS measuring instruments
 . **force vector recorders**
 recording instruments

. **force vector recorders**

RT ∞ instruments

forced convection

GS convection

. **forced convection**

RT blowing
 convective heat transfer
 free convection
 heat transfer
 laminar flow
 Prandtl number
 Rayleigh-Benard convection
 Stanton number

forced oscillation

USE **forced vibration**

forced vibration

DEF An oscillation of a system in which the
 response is imposed by the excitation. If the
 excitation is periodic and continuing, the oscilla-
 tion is steady state. Used for forced oscillation
 and forced vibratory motion equations.

UF *forced oscillation*
forced vibratory motion equations

GS vibration

. **forced vibration**

RT flutter
 free vibration
 random vibration
 self excitation
 self induced vibration

forced vibratory motion equations

USE **equations**

forced vibration

force-free magnetic fields

GS magnetic fields

. **force-free magnetic fields**

RT magnetic field configurations
 magnetic flux
 magnetohydrodynamic stability
 solar flares
 solar magnetic field

forearm

GS anatomy
 . limbs (anatomy)
 . . arm (anatomy)
 . . . **forearm**
 appendages
 . arm (anatomy)
 . . **forearm**

forebodies

GS **forebodies**
 . noses (forebodies)
 . . nose cones
 . . . ablative nose cones
 . . . rocket nose cones

RT afterbodies
 aircraft structures

forecasting

bluff bodies
blunt bodies
blunt leading edges
∞ bows
centerbodies
cylindrical bodies
hammerhead configuration
leading edges
sharp leading edges

forecasting

UF *forecasts*
GS predictions
. **forecasting**
... technological forecasting
... Delphi method (forecasting)
... pattern method (forecasting)
... probe method (forecasting)
... profile method (forecasting)
... weather forecasting
... long range weather forecasting
... nowcasting
... numerical weather forecasting
... statistical weather forecasting
RT ∞ analyzing
budgeting
confidence limits
correlation
curve fitting
estimates
estimating
evaluation
expectation
extrapolation
hindcasting
management
management methods
management planning
mathematical models
maximum likelihood estimates
mission planning
noise prediction (aircraft)
operations research
planning
probability theory
project planning
∞ projection
regression analysis
regression coefficients
reliability
reserves
risk
scheduling
statistical analysis
statistical distributions
systems engineering
time series analysis
trends

forecasts

USE **forecasting**

forehead

GS anatomy
. face (anatomy)
... **forehead**
RT head (anatomy)
skull

foreign bodies

RT aircraft hazards
∞ bodies
injuries
meteorites

foreign policy

GS policies
. **foreign policy**
... international relations
... international cooperation
... outer space treaty
RT ∞ budgets
European space programs

International Hydrological Decade

foreign trade

USE **international trade**

forensic sciences

USE **law (jurisprudence)**

forest fire detection

GS detection
. **forest fire detection**
RT aerial photography
∞ detectors
haze detection
infrared detectors
infrared instruments
infrared photography
infrared radiometers
infrared scanners
measuring instruments
radiometers
satellite-borne photography
surveillance

forest fires

GS fires
. **forest fires**
RT air pollution
ashes
biomass burning
combustion
fire prevention
firebreaks
flames
forests
smoke
wastes

forest management

GS management
. resources management
... **forest management**
... reforestation
RT conservation
Earth resources
forests
land use
regional planning
timber inventory

forests

UF *lumbering areas*
GS resources
. Earth resources
... **forests**
... rain forests
RT Amazon region (South America)
canopies (vegetation)
clearings (openings)
conifers
conservation
deciduous trees
defoliants
defoliation
deforestation
firebreaks
forest fires
forest management
herbicides
logging (industry)
plants (botany)
reforestation
regional planning
silviculture
timber identification
timber inventory
timber vigor
timberline
trees (plants)
wilderness

forging

UF *metal forging*
GS forming techniques
. **forging**
metal working
. **forging**
RT ausforming
billets

bulging
casting
coining
cold working
heat treatment
hot isostatic pressing
hot pressing
hot working
piercing
pressing (forming)
rheocasting
∞ rolling
squeeze casting
stamping

forks

RT conveyors
hooks

form

USE **shapes**

form factors

RT approximation
coupling coefficients
functional analysis
harmonic analysis
rectifiers
scattering coefficients
series (mathematics)
square waves
transducers
∞ variable
waveforms
x ray scattering

form perception

USE **space perception**

formaldehyde

GS aldehydes
. **formaldehyde**
RT phenol formaldehyde

formalism

RT computer programming
dynamic programming
hardware description languages
linear programming
∞ logic
nonlinear programming
parameterization
programming languages

format

RT computer programming
documents
editing
frames (data processing)
printouts
records
syntax
texts

formates

GS **formates**
. chloroformate
. nitroformates
RT formic acid
formyl ions

∞ formation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED -- CONSULT THE TERMS LISTED BELOW)
RT formations
growth
nucleation
stratigraphy

formation flying

(added October 2001)

DEF Coordinated and closely synchronized flight of two or more aircraft or spacecraft in a relatively close spatial configuration.

UF *flying in formation*

GS positioning

. **formation flying**

RT aerobatics
air navigation
aircraft maneuvers

- ∞ flight
 - flight control
 - orbital maneuvers
 - satellite constellations
 - satellite control
 - satellite networks
 - space navigation
 - spacecraft control
 - spacecraft guidance
 - spacecraft maneuvers
 - stationkeeping
- formation heat*
 - USE **heat of formation**
- formations**
 - RT contacts (geology)
 - ∞ formation
 - fracturing
 - gas injection
 - geological faults
 - geology
 - geophysics
 - Great Basin (US)
 - ∞ layers
 - mountains
 - outcrops
 - outliers (landforms)
 - paleontology
 - perforating
 - permeability
 - petrology
 - porosity
 - rocks
 - shatter cones
 - soils
 - stairsteps
 - stratigraphy
 - terraces (landforms)
 - wettability
- formhydroxamic acid**
 - GS acids
 - . carboxylic acids
 - . . **formhydroxamic acid**
 - nitrogen compounds
 - . amides
 - . . **formhydroxamic acid**
 - organic compounds
 - . carboxylic acids
 - . . **formhydroxamic acid**
- formic acid**
 - GS acids
 - . carboxylic acids
 - . . **formic acid**
 - organic compounds
 - . carboxylic acids
 - . . **formic acid**
 - RT formates
 - formyl ions
- formica**
 - RT laminates
 - ∞ polymers
 - thermosetting resins
- forming techniques**
 - SN (TECHNIQUES OF SHAPING ITEM)
 - UF *metal forming*
 - GS **forming techniques**
 - . casting
 - . . centrifugal casting
 - . . investment casting
 - . . propellant casting
 - . . rheocasting
 - . . sand casting
 - . . slip casting
 - . . squeeze casting
 - . cold working
 - . . cold rolling
 - . . electrohydraulic forming
 - . . explosive forming
 - . . electroforming
 - . extruding
 - . . pultrusion
 - . forging
 - . hot working
 - . . ausforming
 - . injection molding
- . magnetic forming
- . metal drawing
- . metal spinning
- . . hydrosponning
- . pressing (forming)
- . . blanking (cutting)
- . . coining
- . . hot pressing
- . . stamping
- . . . hot isostatic pressing
- . resin transfer molding
- . roll forming
- RT ∞ blanking
 - cutting
 - deposition
 - electromagnetic hammers
 - hot machining
 - laser cutting
 - machining
 - metal grinding
 - metal working
 - spraying
 - upsetting
- forms (paper)**
 - RT blanks
 - data acquisition
- ∞ **formulas**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT computation
 - formulas (mathematics)
 - formulations
 - Kramers-Kronig formula
- formulas (mathematics)**
 - UF *expressions (mathematics)*
 - GS mathematical logic
 - . **formulas (mathematics)**
 - . . Bethe-Heitler formula
 - RT ∞ formulas
 - ∞ mathematics
- formulations**
 - RT admixtures
 - ∞ composition
 - ∞ formulas
 - ingredients
 - mixtures
 - parameterization
 - stoichiometry
- formyl ions**
 - GS ions
 - . molecular ions
 - . . **formyl ions**
 - . . positive ions
 - . . cations
 - . . . **formyl ions**
 - radicals
 - . **formyl ions**
 - RT atmospheric chemistry
 - formates
 - formic acid
 - hydroxyl radicals
 - interstellar chemistry
 - interstellar matter
- forsterite**
 - GS magnesium compounds
 - . **forsterite**
 - minerals
 - . olivine
 - . . **forsterite**
 - silicon compounds
 - . silicates
 - . . **forsterite**
 - RT refractories
- Forth (programming language)**
 - (added December 1992)
 - GS languages
 - . programming languages
 - . . **Forth (programming language)**
 - RT computer programming
- Fortisan (trademark)**
 - GS biopolymers
 - . polysaccharides
 - . cellulose
 - . . **Fortisan (trademark)**
 - fabrics
 - . **Fortisan (trademark)**
 - fibers
 - . synthetic fibers
 - . . **Fortisan (trademark)**
 - organic compounds
 - . carbohydrates
 - . . polysaccharides
 - . . . cellulose
 - . . . **Fortisan (trademark)**
 - RT parachute fabrics
- FORTAN**
 - UF *FAB (programming language)*
 - GS languages
 - . programming languages
 - . . **FORTAN**
 - RT Cobol
 - compilers
 - computer programming
 - PL/1
- forward facing steps**
 - (added December 1995)
 - RT backward facing steps
 - boundary layer flow
 - separated flow
- forward looking infrared detectors*
 - USE **FLIR detectors**
- forward scattering**
 - DEF The scattering of radiant energy into the hemisphere of space bounded by a plane normal to the direction of the incident radiation and lying on the side toward which the incident radiation was advancing; the opposite of backward scatter.
 - GS scattering
 - . **forward scattering**
 - RT backscattering
 - inverse scattering
 - light scattering
 - nuclear scattering
 - scatter propagation
- fossil fuels**
 - DEF A general term for any hydrocarbons that may be used for fuel; chiefly petroleum, natural gas, and coal.
 - GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . **fossil fuels**
 - coal
 - anthracite
 - lignite
 - solvent refined coal
 - crude oil
 - natural gas
 - liquefied natural gas
 - peat
 - . . . shale oil
 - resources
 - . Earth resources
 - . . **fossil fuels**
 - . . . coal
 - anthracite
 - lignite
 - solvent refined coal
 - . . . crude oil
 - . . . natural gas
 - liquefied natural gas
 - . . . peat
 - . . . shale oil
 - RT carbonaceous materials
 - underwater resources
- fossil meteorite craters*
 - USE **fossils meteorite craters**
- fossils**
 - DEF Remains, traces, or imprints of an organism preserved in the Earth's crust sometime in the geologic past. Used for fossil meteorite craters.
 - UF *fossil meteorite craters*

Foster theory

RT archaeology
paleobiology
paleontology
particle tracks
radioactive age determination

Foster theory

RT network analysis
reactance
resonance
∞ theories

fouling

GS **fouling**
. antifouling
RT biofilms
contamination
corrosion
deposition
ice formation
plugging
retarding

foundations

UF *bases (foundations)*
structural foundations
GS **foundations**
. pile foundations
RT basements
∞ bases
caissons
concrete structures
excavation
geotechnical engineering
overconsolidation
∞ pad
pavements
skirts
structural members
∞ structures
substructures
supports
underground structures

foundries

GS industrial plants
. **foundries**
RT furnaces
∞ metallurgy
molds

four body problem

RT celestial mechanics
many body problem
orbits
perturbation
∞ problems
three body problem

Fourier analysis

DEF The representation of physical or mathematical data by the use of the Fourier series of Fourier integral.

GS analysis (mathematics)
. **Fourier analysis**
. . . Fourier series
RT autocorrelation
data compression
differential equations
divergence
exponential functions
frequency distribution
harmonic analysis
harmonic excitation
harmonic functions
harmonic generations
harmonic oscillation
harmonics
information theory
kurtosis
linear transformations
measure and integration
operational calculus
periodic functions
periodic variations
real variables
simple harmonic motion
time series analysis

wavelet analysis

Fourier law

GS laws
. **Fourier law**
RT thermal conductivity

Fourier series

GS analysis (mathematics)
. calculus
. . . series (mathematics)
. . . . **Fourier series**
. . . Fourier analysis
. . . **Fourier series**
. . . real variables
. . . series (mathematics)
. . . . **Fourier series**
RT Gibbs phenomenon

Fourier transformation

GS analysis (mathematics)
. functional analysis
. . . integral transformations
. . . . **Fourier transformation**
. fast Fourier transformations
functions (mathematics)
. **Fourier transformation**
. . fast Fourier transformations
transformations (mathematics)
. . integral transformations
. . . **Fourier transformation**
. . . . fast Fourier transformations
RT BBGKY hierarchy
Gabor transformation
holographic spectroscopy
maximum entropy method
Walsh function
wavelet analysis

Fourier-Bessel transformations

GS analysis (mathematics)
. calculus
. . . **Fourier-Bessel transformations**
. . functional analysis
. . . integral transformations
. . . . **Fourier-Bessel transformations**
. . . real variables
. . . **Fourier-Bessel transformations**
functions (mathematics)
. **Fourier-Bessel transformations**
transformations (mathematics)
. . integral transformations
. . . **Fourier-Bessel transformations**
RT differential equations
series (mathematics)

four-wave mixing

(added April 1992)
GS conjugation
. phase conjugation
. . . **four-wave mixing**
RT atom optics
coherent light
collimation
laser beams
light amplifiers
light beams
nonlinear optics
optical bistability
phase coherence
signal mixing
wave interaction

fovea

DEF The central part of the retina, which contains a high concentration of the color sensitive receptors known as cones.

GS anatomy
. sense organs
. . eye (anatomy)
. . . retina
. . . . **fovea**
RT Saccadic eye movements

FR-1 satellite

GS artificial satellites
. French satellites

. . **FR-1 satellite**

fractals

DEF Highly irregular geometrical figures such as snowflakes or the boundary of a cloud whose capacity dimension is not an integer. The capacity dimension characterizes the measuring of the number of different size superimposed squares needed to cover the geometric shape. By the use of differing size boxes, one is able to determine the capacity dimension.

GS dimensions
. **fractals**
geometry
. **fractals**
RT ∞ applications of mathematics
coordinates
exponents
half spaces
∞ mathematics
ratios
set theory
∞ space
strange attractors

fractionation

GS **fractionation**
. chemical fractionation
. hydrocracking
RT refining
retort processing
∞ separation
solvent refined coal

fractions

SN (EXCLUDES MATHEMATICAL CONCEPTS)
RT ∞ components
fines
particle size distribution
ratios

fractography

GS imagery
. photography
. . **fractography**
RT brittleness
crack closure
crack geometry
crack propagation
ductility
Elber equation
fatigue (materials)
fractures (materials)
∞ metallurgy

fracture mechanics

UF *fault mechanics*
Mohr circles
GS mechanics (physics)
. solid mechanics
. . **fracture mechanics**
RT bend tests
burst tests
caustics (optics)
computational mechanics
crack bridging
crack closure
crack initiation
crack opening displacement
crack propagation
Elber equation
finite element method
fracturing
Griffith crack
hole geometry (mechanics)
isoparametric finite elements
J integral
micromechanics
plane strain
residual strength
rock mechanics
rupturing
short cracks
soil mechanics
strain distribution
stress distribution
stress intensity factors
stress tensors

time temperature parameter

fracture resistance

USE **fracture strength**

fracture strength

DEF The normal stress at the beginning of fracture. Fracture strength is calculated from the load at the beginning of fracture during a tension test and the original cross-sectional area of the specimen. Used for fracture resistance and fracture toughness.

UF *fracture resistance*
fracture toughness

GS mechanical properties

. **fracture strength**
. . flexural strength

RT bend tests
brittle materials
brittleness
burst tests
carbon-carbon composites
crack closure
crack initiation
crack opening displacement
crack propagation
creep rupture strength
ductile-brittle transition
ductility
earthquake resistance
eutectic composites
hardness
J integral
load carrying capacity
residual strength
∞ resistance
retirement for cause
∞ strength
toughness
yield strength

fracture toughness

USE **fracture strength**

fractures (materials)

GS **fractures (materials)**

. cracks
. . crack tips
. . edge cracks
. . microcracks
. . short cracks
. . surface cracks

RT crack opening displacement
damage
deformation
failure
fractography
∞ materials

fracturing

GS **fracturing**

. cracking (fracturing)
. . stress corrosion cracking
. crustal fractures

RT brittleness
chipping
crack closure
crack opening displacement
crack propagation
cutting
flaking
formations
fracture mechanics
fragmentation
fragments
metal fatigue
perforating
∞ separation
spalling
splitting
stress functions
structural failure

fragmentation

UF *shattering*

RT acoustic streaming
breaking
bursts
chipping
comminution

fracturing
fragments
penetration
Sabot projectiles
shrapnel
spalling
terminal ballistics

fragments

RT chips
debris
ejecta
fracturing
fragmentation
shrapnel

frame photography

GS imagery
. photography
. . **frame photography**
RT black and white photography
framing cameras
high speed cameras

frames

GS **frames**
. airframes
. chassis
. undercarriages
RT carriages
springs (elastic)
∞ structures
struts
supports
trusses

frames (data processing)

RT data management
data processing
format
image processing

framing cameras

GS optical equipment
. cameras
. . high speed cameras
. . . **framing cameras**
photographic equipment
. cameras
. . high speed cameras
. . . **framing cameras**
RT frame photography
rotating mirrors

France

GS nations
. **France**
. . French Guiana
. . Guadeloupe
. . Martinique
RT Andorra
English Channel
Europe
French space program
Pyrenees Mountains (Europe)
Rhône Delta (France)

francium

GS chemical elements
. alkali metals
. . **francium**
metals
. alkali metals
. . **francium**

Franck-Condon principle

RT Born-Oppenheimer approximation
color centers
conduction bands
electron transitions
forbidden transitions
optical transition

Fraunhofer line discriminators

GS circuits
. discriminators
. . **Fraunhofer line discriminators**
RT absorption spectra
luminescence
measuring instruments

spectroscopic analysis
spectroscopy

Fraunhofer lines

DEF Dark lines in the absorption spectrum of solar radiation due to absorption by gases in the outer portions of the sun and in the Earth's atmosphere.

GS spectra
. radiation spectra
. . absorption spectra
. . . **Fraunhofer lines**
. . electromagnetic spectra
. . . line spectra
. . . . **Fraunhofer lines**
. spectral bands
. . absorption spectra
. . . **Fraunhofer lines**
RT absorption spectroscopy
optogalvanic spectroscopy
solar spectra

Fraunhofer region

USE **far fields**

Fredholm equations

UF *Fredholm operators*

GS analysis (mathematics)

. functional analysis

. . integral equations

. . . **Fredholm equations**

RT ∞ equations

ill-posed problems (mathematics)

Pomeranchuk theorem

Fredholm operators

USE **Fredholm equations**

operators (mathematics)

free atmosphere

DEF That portion of the Earth's atmosphere, above the planetary boundary layer, in which the effect of the Earth's surface friction on the air is negligible, and in which the air is usually treated (dynamically) as an ideal fluid. The base of the free atmosphere is usually taken as the geostrophic wind level.

GS Earth atmosphere

. **free atmosphere**

RT biosphere

middle atmosphere

primitive Earth atmosphere

free boundaries

GS boundaries

. **free boundaries**

RT fluid boundaries

interfaces

jet flow

jet mixing flow

jet streams (meteorology)

liquid surfaces

liquid-liquid interfaces

liquid-vapor interfaces

free convection

UF *natural convection*

thermal convection

GS convection

. **free convection**

. . Rayleigh-Benard convection

. . . Benard cells

RT convection currents

convective flow

convective heat transfer

forced convection

laminar flow

Marangoni convection

porous boundary layer control

solar convection (astronomy)

stellar convection

temperature

thermosiphons

turbulent flow

free electron lasers

DEF Multifrequency lasers utilizing optical radiation amplification by a beam of free electrons passing through a vacuum in a transverse periodic magnetic field, as opposed to conven-

free electrons

tional lasers in which the oscillating electrons are bound to atoms and molecules and have a specific wavelength.

- GS stimulated emission devices
 - . lasers
 - . . **free electron lasers**
- RT diffraction radiation
 - wiggler magnets

free electrons

- DEF Electrons which are not bound to an atom.
- GS charge carriers
 - . **free electrons**
 - particles
 - . charged particles
 - . . energetic particles
 - . . . electrons
 - **free electrons**
 - . corpuscular radiation
 - . . energetic particles
 - . . . electrons
 - **free electrons**
 - . elementary particles
 - . . fermions
 - . . . leptons
 - electrons
 - **free electrons**
- RT Brillouin zones
 - conduction electrons
 - electron avalanche
 - electron density (concentration)
 - electron gas
 - forbidden bands
 - plasma frequencies
 - recombination coefficient

free energy

- GS thermodynamic properties
 - . **free energy**
 - . . Gibbs free energy
- RT chemical energy
 - ∞ energy
 - energy of formation
 - enthalpy
 - Gibbs-Helmholtz equations
 - internal energy
 - ∞ level
 - molecular energy levels
 - thermal energy
 - thermodynamics

free fall

- DEF The fall or drop of a body, such as a rocket, not guided, not under thrust, and not retarded by a parachute or a braking device. The free and unhampered motion of a body along a Keplerian trajectory, in the force of gravity is counterbalanced by the force of inertia.
- RT air drop operations
 - ballistic trajectories
 - falling spheres
 - parachute descent
 - parafoils
 - weightlessness

free flight

- DEF Unconstrained or unassisted flight, as in the flight of a rocket after consumption of its propellant or after motor shutoff, in the flight of an unguided projectile, and in the flight in certain kinds of wind tunnels of unmounted models.
- RT ∞ flight
 - gliders
 - gliding
 - hang gliders

free flight test apparatus

- RT flight tests
 - ∞ test equipment

free flow

- UF *free stream effects*
 - free streams*
- GS fluid flow
 - . **free flow**
- RT void ratio

free jets

- DEF Fluid jets without solid boundaries,

such as a jet discharging into the open.

- GS fluid jets
 - . **free jets**
- RT jet boundaries
 - jet flow
 - ∞ jets

free molecular flow

- GS fluid flow
 - . gas flow
 - . . **free molecular flow**
- RT continuum flow
 - kinetic theory
 - Knudsen flow
 - molecular beams
 - rarefied gas dynamics
 - rarefied gases
 - slip flow
 - transition flow

free oscillations

- USE **free vibration**

free radicals

- DEF Atoms or groups of atoms broken away from stable compounds by application of external energy, and, although containing unpaired electrons, remaining free for transitory or longer periods.
- GS radicals
 - . **free radicals**
 - . . hydroxyl radicals
- RT amino radical
 - atoms
 - carbenes
 - ions
 - negative ions
 - oxygen ions
 - trivalent ions
 - vinyl radical

free stream effects

- USE **free flow**

free streams

- USE **free flow**

free vibration

- DEF Oscillation of a system in the absence of external forces. Used for free oscillations.
- UF *free oscillations*
- GS vibration
 - . **free vibration**
- RT forced vibration
 - linear vibration
 - Mindlin plates
 - proton precession
 - self excitation
 - self induced vibration
 - vibration mode

free wing aircraft

- RT aerodynamics
 - ∞ aircraft
 - aircraft design
 - control surfaces

Freedom Fighter aircraft

- USE **F-5 aircraft**

Freedom Space Station

- USE **Space Station Freedom**

free-piston engines

- DEF Engines in which the pistons are not connected to the crank.
- GS engines
 - . piston engines
 - . . **free-piston engines**
- RT AC generators
 - linear alternators
 - pistons
 - spacecraft power supplies
 - Stirling engines

free-space optical communication

- (added June 1998)
- GS telecommunication
 - . communication
 - . . optical communication
 - . . . **free-space optical**

communication

- RT high power lasers
 - laser beams
 - satellite communication
 - space communication

free-space optical interconnects

- (added June 1998)
- UF *FSOI (integrated optics)*
- GS optical interconnects
 - . **free-space optical interconnects**
- RT integrated optics
 - interprocessor communication
 - optical computers
 - optical switching
 - optoelectronic devices
 - photonics

freeze drying

- GS drying
 - . **freeze drying**
- RT dehydrated food
 - dehydration
 - freezing
 - frozen foods
 - preserving

freezing

- GS phase transformations
 - . **freezing**
 - . . vibrational freezing
 - . . . zone melting
- RT antifreezes
 - bay ice
 - cloud glaciation
 - cold traps
 - cooling
 - cryogenic cooling
 - crystallization
 - freeze drying
 - frost
 - ice formation
 - ice nuclei
 - low temperature
 - melting
 - preserving
 - pressure ice
 - refrigerating
 - sea ice
 - solidification
 - solidified gases

freezing points

- USE **melting points**

freight

- USE **cargo**

freight costs

- GS costs
 - . **freight costs**
- RT cargo
 - freighters
 - transportation

freighters

- RT freight costs
 - harbors
 - transportation
 - wharves

French Equatorial Congo

- USE **Congo (Brazzaville)**

French Guiana

- GS nations
 - . France
 - . . **French Guiana**
- RT Caribbean region
 - South America

French satellites

- GS artificial satellites
 - . **French satellites**
 - . . D-1 satellite
 - . . D-2 satellites
 - . . EOLE satellites
 - . . FR-1 satellite
 - . . GEOLE satellites
 - . . PEOLE satellites

- . . Poseidon satellite
- . . SPOT (French satellite)
- . . SRET satellites
- . . . SRET 1 satellite
- . . . SRET 2 satellite
- RT European space programs
- METEOSAT satellite
- Symphonie satellites

French space program

(added December 1990)

- GS programs
- . space programs
- . . European space programs
- . . . **French space program**

- RT EOLE satellites
- France
- GEOLE satellites
- Granat satellite
- Hermes manned spaceplane
- international cooperation
- METEOSAT satellite
- ∞ research projects
- space exploration
- space missions
- ∞ spacecraft
- SRET 1 satellite
- SRET satellites

Frenkel defects

- GS defects
- . crystal defects
- . . point defects
- . . . vacancies (crystal defects)
- **Frenkel defects**

freon

- RT air conditioning
- coolants
- cooling
- cooling systems
- fluorohydrocarbons
- gas cooling
- refrigerants
- refrigerating

frequencies

DEF Of a function periodic in time, the reciprocals of primitive periods. The unit is the cycle per unit time and must be specified. Used for frequency bands.

- UF *frequency bands*

- GS **frequencies**

- . acoustic frequencies
- . . audio frequencies
- . . . quefrequencies
- . . screech tones
- . beat frequencies
- . broadband
- . Brunt-Vaisala frequency
- . carrier frequencies
- . critical frequencies
- . cyclotron frequency
- . infrasonic frequencies
- . ionization frequencies
- . maximum usable frequency
- . Nyquist frequencies
- . plasma frequencies
- . radio frequencies
- . . extremely low frequencies
- . . high frequencies
- . . intermediate frequencies
- . . low frequencies
- . . . very low frequencies
- . . microwave frequencies
- . . . C band
- . . . extremely high frequencies
- . . . P band
- . . . superhigh frequencies
- . . ultrahigh frequencies
- . . . P band
- . . very high frequencies
- . . . P band
- . resonant frequencies
- . subaudible frequencies
- . sweep frequency

- RT aeolian tones
- amplitudes
- ∞ bands
- bandwidth

- broadband amplifiers
- channel capacity
- ∞ channels
- frequency distribution
- frequency ranges
- frequency reuse
- harmonics
- line spectra
- longitudinal waves
- microchannels
- millimeter waves
- narrowband
- ∞ pitch
- radio waves
- spectral bands
- standing waves
- submillimeter waves
- superharmonics

frequency analyzers

- RT harmonic analysis
- intermodulation
- oscilloscopes
- selective fading
- signal analysis
- spectrum analysis
- sweep frequency
- ∞ test equipment
- vibration measurement

frequency assignment

DEF The specific frequency or frequencies authorized by competent authority; expressed for each channel by: (a) the authorized carrier frequency, the frequency tolerance, and the authorized emission bandwidth, (b) the authorized emission bandwidth in reference to a specific assigned frequency (when a carrier does exist), or (c) the authorized frequency band (when a carrier does not exist).

- RT communicating
- frequency reuse
- maximum usable frequency
- orbit spectrum utilization

frequency bands

- USE **frequencies**

frequency compression demodulators

- GS demodulators
- . **frequency compression demodulators**

frequency control

- UF *frequency regulation*
- GS **frequency control**
- . automatic frequency control
- RT autodynes
- ∞ control
- crystal oscillators
- frequency pulling
- quartz crystals
- signal stabilization

frequency conversion

- USE **frequency converters**

frequency converters

- UF *frequency conversion*
- frequency translation*
- GS **frequency converters**
- . down-converters
- . frequency dividers
- . frequency multipliers
- . frequency synthesizers
- . parametric frequency converters
- . up-converters
- RT ∞ conversion
- ∞ converters
- harmonic generators
- mixing circuits
- parametric amplifiers
- pulse width amplitude converters

frequency discriminators

DEF Electronic circuits which deliver output voltages proportional to the deviations of signals from predetermined frequency values.

- GS circuits
- . discriminators

. . frequency discriminators

frequency distribution

- SN (OF CYCLIC VARIATIONS)
- GS distribution (property)
- . **frequency distribution**
- . . kurtosis
- RT cycles
- Fourier analysis
- frequencies
- subaudible frequencies

frequency dividers

- GS frequency converters
- . **frequency dividers**
- RT down-converters

frequency division multiple access

DEF A method of providing multiple access to communication satellites in which the transmissions from a particular Earth station occupy a particular assigned frequency band. In the satellite, the signals are simultaneously amplified and transposed to a different frequency band and retransmitted. The Earth station identifies its receiving channel according to its assigned frequency band in the satellite signal. Used for FDMA.

- UF *FDMA*

- GS telecommunication

- . multiple access

- . . **frequency division multiple access**

- transmission

- . signal transmission

- . . data transmission

- . . . multiple access

- **frequency division multiple access**

- RT

- Aloha system

- code division multiple access

- code division multiplexing

- multiplexing

- radio communication

- time division multiple access

frequency division multiplexing

DEF The combining of a number of signals to share a medium by dividing it into different frequency bands for each signal.

- GS transmission

- . multiplexing

- . . **frequency division multiplexing**

- RT

- carrier frequencies

- communication networks

- data transmission

- demultiplexing

- multiple access

- pulse communication

- radio communication

- satellite transmission

- telecommunication

- time division multiplexing

- wavelength division multiplexing

frequency domain analysis

(added April 1999)

- GS analysis (mathematics)

- . **frequency domain analysis**

- RT

- control systems design

- dynamic response

- frequency response

- parameter identification

- signal processing

frequency hopping

DEF Random changing of frequencies in transmission to mislead or prevent interception by unauthorized equipment.

- RT

- frequency reuse

- frequency shift keying

- jamming

- spread spectrum transmission

- transmission efficiency

frequency measurement

- RT acoustic measurement

- ∞ measurement

- time measurement

frequency modulation

vibration measurement

frequency modulation

DEF Angle modulation of a sine wave carrier in which the instantaneous frequency of the modulated wave differs from the carrier frequency by an amount proportional to the instantaneous value of the modulating wave.

UF *FM (modulation)*

GS coding

. signal encoding

. . . **frequency modulation**

. . . feedback frequency modulation

. . . FM/PM (modulation)

. . . frequency shift keying

. . . pulse frequency modulation

modulation

. **frequency modulation**

. . feedback frequency modulation

. . FM/PM (modulation)

. . frequency shift keying

. . pulse frequency modulation

RT amplitude modulation

automatic frequency control

capture effect

carrier to noise ratios

companding

demodulation

demodulators

intermodulation

light modulation

line of sight communication

modulators

phase modulation

pulse frequency modulation telemetry

pulse modulation

vocoders

voltage controlled oscillators

frequency modulation photomultipliers

GS amplifiers

. current amplifiers

. . photomultiplier tubes

. . . **frequency modulation**

photomultipliers

electron tubes

. cold cathode tubes

. . phototubes

. . . photomultiplier tubes

. . . . **frequency modulation**

photomultipliers

RT cathodes

vacuum tube oscillators

frequency multipliers

GS frequency converters

. **frequency multipliers**

RT phase matching

frequency pulling

(added July 1991)

UF *pulling (frequency stability)*

RT distortion

frequency control

frequency shift

frequency stability

laser outputs

laser stability

oscillators

stable oscillations

tuning

frequency ranges

DEF Specifically designated parts of the frequency spectrum.

GS range (extremes)

. **frequency ranges**

. . octaves

. . radio range

. . subaudible frequencies

RT acoustic frequencies

bandwidth

dynamic range

frequencies

frequency response

frequency reuse

frequency regulation

USE **frequency control**

frequency response

UF *phase response*

GS responses

. **frequency response**

RT acuity

broadband

distributed amplifiers

dynamic characteristics

dynamic range

dynamic response

equalizers (circuits)

excitation

frequency domain analysis

frequency ranges

linear filters

linear receivers

log periodic antennas

logarithmic receivers

perception

pulse repetition rate

ramp functions

sensitivity

smear

spectral sensitivity

step functions

stroking tests

thresholds (perception)

frequency reuse

DEF A digital satellite communication technique which features the reuse of frequency bands in a downlink transmission to provide high power utilization and flexible accommodation of dynamic source destination traffic patterns.

RT data links

downlinking

frequencies

frequency assignment

frequency hopping

frequency ranges

maximum usable frequency

microwave transmission

radio transmission

satellite transmission

uplinking

frequency scanning

GS scanning

. **frequency scanning**

RT panoramic scanning

radar scanning

spectrum analysis

sweep circuits

sweep frequency

frequency shift

RT Brillouin effect

Doppler effect

Doppler-Fizeau effect

frequency pulling

gyrotropism

∞ shift

frequency shift keying

DEF That form of frequency modulation in which the modulating wave shifts the output frequency between predetermined values, and the output wave is coherent with no phase discontinuity.

GS coding

. signal encoding

. . frequency modulation

. . . **frequency shift keying**

keying

. **frequency shift keying**

modulation

. frequency modulation

. . **frequency shift keying**

RT frequency hopping

radio transmission

frequency stability

UF *acoustic stability*

GS dynamic characteristics

. dynamic stability

. . **frequency stability**

stability

. dynamic stability

. . **frequency stability**

RT crystal oscillators

frequency pulling

laser stability

oscillators

quartz crystals

stable oscillations

voltage controlled oscillators

frequency standards

GS standards

. **frequency standards**

RT atomic clocks

gas masers

ion storage

masers

resonators

time signals

time synchronization

frequency synchronization

GS synchronism

. **frequency synchronization**

RT bit synchronization

capture effect

homodyne reception

sweep frequency

synchronized oscillators

syntony

time synchronization

frequency synthesizers

GS frequency converters

. **frequency synthesizers**

signal generators

. **frequency synthesizers**

RT mixing circuits

oscillators

synthesizers

frequency translation

USE **frequency converters**

fresh water

DEF Water in rivers, lakes, springs, etc. containing no significant amounts of dissolved salts.

GS water

. **fresh water**

RT AgRISTARS project

aquifers

ground water

limnology

potable water

reservoirs

springs (water)

Fresnel diffraction

GS diffraction

. **Fresnel diffraction**

RT gratings (spectra)

interferometry

speckle interferometry

Fresnel integrals

UF *Fresnel-Kirchhoff integrals*

GS functions (mathematics)

. **Fresnel integrals**

RT diffraction patterns

trigonometric functions

wave diffraction

Fresnel lenses

DEF Thin lenses constructed with stepped setbacks so as to have the optical properties of much thicker lenses.

GS lenses

. **Fresnel lenses**

RT focusing

∞ optics

Fresnel reflectors

DEF Devices characterized by a set of mirrors with varying orientation arranged so as to have the optical properties of a smooth reflector, e.g., parabolic reflector.

GS mirrors

. **Fresnel reflectors**
reflectors
 . **Fresnel reflectors**
 RT interferometry
slits
speckle interferometry

Fresnel region
 DEF The region between the antenna and the Fraunhofer region.
 GS regions
 . **Fresnel region**
 RT antenna radiation patterns
diffraction patterns
far fields

Fresnel-Kirchhoff integrals
 USE **Fresnel integrals**

fretting
 RT erosion
fatigue (materials)
tribology
wear tests

fretting corrosion
 GS corrosion
 . **fretting corrosion**
 RT fatigue (materials)
stress corrosion
wear

friction
 DEF The resistance to the relative motion of one body sliding, rolling, or flowing over another body with which it is in contact.
 GS **friction**
 . dry friction
 . flow resistance
 . . friction drag
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 . internal friction
 . kinetic friction
 . . sliding friction
 . skin friction
 . . friction drag
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 . static friction
 RT abrasion
coefficient of friction
drag
drag reduction
energy dissipation
fluid flow
mechanical impedance
 ∞ pressure drop
scoring
stiction
surface properties
surface roughness
traction
tribology
triboluminescence
tribometers
wear
wear tests
wheel brakes

friction coefficient
 USE **coefficient of friction**

friction drag
 UF *nonequilibrium drag*
 GS dynamic characteristics
 . drag
 . . **friction drag**
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 friction
 . flow resistance
 . . **friction drag**
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 . skin friction

. . **friction drag**
 . . . aerodynamic drag
 supersonic drag
 viscous drag
 RT minimum drag
pressure drag
riblets
satellite drag
surface roughness effects
wave drag

friction factor
 UF *friction loss coefficient*
 RT coefficient of friction
pressure gradients
skin friction

friction loss coefficient
 USE **friction factor**

friction measurement
 UF *tribometry*
 GS mechanical measurement
 . **friction measurement**
 RT elasto-hydrodynamics
kinetic friction
 ∞ measurement
static friction
tribometers

friction pressure drop
 USE **skin friction**

friction reduction
 RT antifriction bearings
coefficient of friction
lubrication
 ∞ reduction
streamlining

friction stir welding
(added August 2002)
 DEF Solid state welding technique where a frictionally heated metal seam is stirred by a rotating pin tool to create a bond. The process involves no melting and the weld occurs via extreme plastic deformation associated with frictional straining.
 UF *FSW (welding)*
 GS welding
 . pressure welding
 . . friction welding
 . . . **friction stir welding**
 RT aluminum alloys
plastic deformation
stirring
welded joints

friction welding
 GS welding
 . pressure welding
 . . **friction welding**
 . . . friction stir welding

frictionless environments
 GS environments
 . **frictionless environments**
 RT deep space
levitation

Friedel-Craft reaction
 GS chemical reactions
 . **Friedel-Craft reaction**
 RT acylation
alkylation

Friendship 7
 GS manned spacecraft
 . Mercury spacecraft
 . . **Friendship 7**
 . . reentry vehicles
 . . recoverable spacecraft
 . . Mercury spacecraft
 . . . **Friendship 7**
 . . soft landing spacecraft
 . . Mercury spacecraft
 . . **Friendship 7**
 . . space capsules
 . . Mercury spacecraft
 . . **Friendship 7**

RT Mercury MA-6 flight

fringe multiplication
 DEF The duplicating effect of a family of curves superimposed on another family of curves so that the curves intersect at angles less than 45 degrees. A new family of curves appears which pass through intersections of the original curves.
 RT diffraction patterns
interference grating
Moire effects
Moire fringes
multiplication
photoelastic analysis
stress analysis
stress concentration

fringe patterns
 USE **diffraction patterns**

frit
 DEF A powdered ceramic prepared by fusing a physical mixture of oxides into a uniform melt, which is then quenched and milled into a fine, homogeneous powder.
 RT ceramics
fusion (melting)
glazes
vitreous materials

frogs
 GS animals
 . vertebrates
 . . amphibia
 . . . frogs

frontal areas (meteorology)
 USE **fronts (meteorology)**

frontal waves
 RT ocean currents
oceanography
tsunami waves
water waves
 ∞ waves

∞ **fronts**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT cold fronts
fronts (meteorology)
shock fronts
warm fronts
wave fronts

fronts (meteorology)
 DEF The contacts at the Earth's surface between two different air masses commonly cold and warm, that generally move in an easterly direction. Used for frontal areas (meteorology) and weather fronts.
 UF *frontal areas (meteorology)*
weather fronts
 GS **fronts (meteorology)**
 . cold fronts
 . warm fronts
 RT air masses
arc clouds
 ∞ fronts
 intertropical convergent zones
marine meteorology
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes

frost
 RT bay ice
dew
freezing
ice
low temperature

frost damage
 GS damage
 . **frost damage**
 RT cold weather

frostbite

- ∞ crops
- farm crops
- fruits
- low temperature orchards
- plants (botany)

frostbite

- GS injuries
- . **frostbite**
- RT cold tolerance

Froude number

DEF The nondimensional ratio of the inertial force to the force of gravity for a given fluid flow; the reciprocal of the Reech number.

- GS dimensionless numbers
- . **Froude number**
- ratios
- . **Froude number**
- RT fluid flow
- inertia
- kinetic energy
- potential energy
- Reynolds number
- Strouhal number

frozen equilibrium flow

- GS fluid flow
- . gas flow
- . . equilibrium flow
- . . . **frozen equilibrium flow**
- RT shifting equilibrium flow

frozen foods

- RT ∞ food
- food processing
- freeze drying
- preserving
- refrigerating

frozen soils

- USE **permafrost**

fruits

- GS farm crops
- . **fruits**
- RT agriculture
- bollworms
- botany
- ∞ food
- frost damage
- orchards

frustration

- RT disabilities
- emotional factors
- emotions
- ∞ inhibition
- lethargy
- psychological effects
- psychology

frustums

- RT cones
- geometry
- pyramids
- volume

FSOI (integrated optics)

(added June 1998)

- USE **free-space optical interconnects**

FSW (welding)

(added August 2002)

- USE **friction stir welding**

fuel capsules

- RT ∞ capsules
- nuclear fuels
- pellets
- spent fuels

fuel cell catalysts

- USE **electrocatalysts**

fuel cell power plants

DEF Power generating devices that directly produce electrical energy from chemical energy and consist of fuel processors, stacked fuel cells, and dc to ac converters. The main types,

distinguished by electrolytes which are heated to different temperatures, are base, phosphoric acid, molten carbonate, and solid oxide.

- GS electric power plants
- . **fuel cell power plants**
- RT coal gasification
- energy technology
- fuel cells

fuel cells

SN (EXCLUDES BATTERIES)

DEF Devices which convert chemical energy directly into electrical energy but differing from a storage battery in that the reacting chemicals are supplied continuously as needed to meet output requirements.

- GS electric generators
- . direct power generators
- . . **fuel cells**
- . . . biochemical fuel cells
- . . . hydrogen oxygen fuel cells
- . . . molten carbonate fuel cells
- . . . phosphoric acid fuel cells
- . . . regenerative fuel cells
- . . . solid oxide fuel cells
- electrochemical cells
- . **fuel cells**
- . . biochemical fuel cells
- . . hydrogen oxygen fuel cells
- . . molten carbonate fuel cells
- . . phosphoric acid fuel cells
- . . regenerative fuel cells
- . . solid oxide fuel cells

RT ∞ cells

- chemical auxiliary power units
- ∞ electric cells
- electrocatalysts
- electrochemistry
- electrolytes
- energy conversion efficiency
- energy storage
- fuel cell power plants
- hydrogen fuels
- hydrogen-based energy
- ion exchange membrane electrolytes
- magnetohydrodynamic generators
- solar cells
- solar generators
- thermionic converters
- thermoelectric generators
- wet cells

fuel combustion

- GS combustion
- . **fuel combustion**
- . . nuclear fuel burnup
- RT combustion efficiency
- combustion stability
- erosive burning
- hydrocarbon combustion
- hypersonic combustion
- ignition
- metal combustion
- oxidation
- propellant combustion
- solid propellant combustion
- spontaneous combustion
- supersonic combustion
- turbulent combustion

fuel conservation

- USE **fuel consumption**

fuel consumption

DEF The using of fuel by an engine or power plant; the rate of this consumption, measured, e.g., in gallons or pounds per minute.

- UF *fuel conservation*
- GS consumption
- . **fuel consumption**
- RT burning rate
- combustion efficiency
- energy consumption
- energy requirements
- engines
- internal combustion engines
- propellant consumption

refueling

fuel contamination

- GS contamination
- . **fuel contamination**
- RT antiicing additives
- contaminants
- refueling

fuel control

- RT combustion control
- ∞ control
- engine control
- fluid management
- liquid sloshing
- propellant transfer
- refueling
- rocket engine control
- turbojet engine control

fuel corrosion

- GS corrosion
- . **fuel corrosion**
- RT propellant decomposition
- propellant storability

fuel elements (nuclear reactors)

- USE **nuclear fuel elements**

fuel flow

- GS fluid flow
- . **fuel flow**
- . . propellant transfer
- RT combustible flow
- ducted flow
- particle laden jets
- reacting flow

fuel flow regulators

- GS control equipment
- . regulators
- . . flow regulators
- . . . **fuel flow regulators**

fuel gages

- GS measuring instruments
- . **fuel gages**
- . . capacitive fuel gages
- RT flowmeters

fuel injection

- UF *injection carburetors*
- GS injection
- . **fuel injection**
- RT burners
- carburetors
- fluid injection
- gas injection
- injectors
- internal combustion engines
- jet engines
- jet mixing flow
- ∞ jet nozzles
- liquid injection
- piston engines
- propellant sprays
- spray nozzles

fuel oils

- GS fuels
- . chemical fuels
- . . liquid fuels
- . . . **fuel oils**
- oils
- . **fuel oils**
- RT energy policy
- kerogen
- kerosene
- shale oil
- solvent refined coal

fuel production

- DEF Producing of conventional and/or alternative fuels by various technologies.
- GS **fuel production**
- . hydrocarbon fuel production
- chemical fuels
- RT composite propellants
- crude oil
- fission

- ∞ fusion
 - hydrocarbon fuels
 - hydrogen fuels
 - in situ resource utilization
 - liquid fuels
 - nuclear fuels
- ∞ production
 - synthesis gas
- fuel pumps**
 - GS pumps
 - . **fuel pumps**
 - RT aircraft fuel systems
 - axial flow pumps
 - centrifugal pumps
 - electromagnetic pumps
 - internal combustion engines
 - jet engines
 - jet pumps
 - materials handling
 - turbine pumps
- fuel sprays**
 - RT liquid injection
 - propellant sprays
 - sprayers
- fuel systems**
 - GS **fuel systems**
 - . aircraft fuel systems
 - RT accumulators
 - automobiles
 - bunkers (fuel)
 - carburetors
 - chokes (fuel systems)
 - engines
 - feeders
 - fuels
 - injectors
 - inlet temperature
 - intake systems
 - internal combustion engines
 - manifolds
 - plenum chambers
 - propellant transfer
 - refueling
 - self sealing
 - spray nozzles
 - ∞ systems
- fuel tank pressurization**
 - GS pressurizing
 - . **fuel tank pressurization**
 - RT aircraft fuel systems
 - exhaust systems
 - expulsion bladders
 - liquid rocket propellants
 - pressure
 - pressure regulators
 - pressure vessels
 - propellant storage
 - propellant tanks
 - propulsion
 - relief valves
 - ullage
 - vapor pressure
- fuel tanks**
 - GS tanks (containers)
 - . **fuel tanks**
 - . . wing tanks
 - RT aircraft fuel systems
 - ∞ containers
 - corrosion prevention
 - cryogenic fluid storage
 - cylindrical tanks
 - expulsion bladders
 - external tanks
 - feed systems
 - fuels
 - heating equipment
 - liquid sloshing
 - pods (external stores)
 - pressure vessels
 - propellant storage
 - propellant tanks
 - propellants
 - propulsion
 - protuberances
 - spacecraft structures
- spherical tanks
- storage tanks
- tanker aircraft
- ullage
- fuel tests**
 - GS **fuel tests**
 - . reactor startup tests
 - RT chemical analysis
 - corrosion tests
 - engine tests
 - ∞ materials tests
 - missile tests
 - propellant tests
 - stability tests
 - test firing
 - ∞ tests
- fuel valves**
 - GS valves
 - . **fuel valves**
 - RT aircraft fuel systems
 - gas valves
 - relief valves
- fuel-air ratio**
 - GS ratios
 - . **fuel-air ratio**
 - RT burning rate
 - combustion efficiency
 - compression ratio
 - gas mixtures
 - ignition limits
 - premixing
 - pressure ratio
 - volumetric efficiency
- fueling*
- USE **refueling**
- fuels**
 - GS **fuels**
 - . chemical fuels
 - . . endothermic fuels
 - . . high energy fuels
 - . . hydrocarbon fuels
 - . . . diesel fuels
 - . . . fossil fuels
 - coal
 - anthracite
 - lignite
 - solvent refined coal
 - crude oil
 - natural gas
 - liquefied natural gas
 - peat
 - shale oil
 - . . . gasoline
 - . . . jet engine fuels
 - JP-4 jet fuel
 - JP-5 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - JP-8 jet fuel
 - . . . synthane
 - . . liquid fuels
 - . . . antimisting fuels
 - . . . diesel fuels
 - . . . gasoline
 - . . . hydrogen fuels
 - . . . jet engine fuels
 - JP-4 jet fuel
 - JP-5 jet fuel
 - JP-6 jet fuel
 - JP-7 jet fuel
 - JP-8 jet fuel
 - . . . fuel oils
 - . . . kerosene
 - . . metal fuels
 - . . synthetic fuels
 - . . . gasohol (fuel)
 - . . . synthane
 - . . clean fuels
 - . . coke
 - . . gaseous fuels
 - . . natural gas
 - . . . liquefied natural gas
 - . . nuclear fuels
 - . . ceramic nuclear fuels
 - . . fissile fuels
- . . fissium
- . . spent fuels
- . aircraft fuels
- . automobile fuels
- RT bioconversion
 - burning rate
 - charcoal
 - energy policy
 - energy storage
 - flames
 - fuel systems
 - fuel tanks
 - hydrogen
 - hydrogen production
 - kerogen
 - liquid ammonia
 - liquid hydrogen
 - nuclear fuel elements
 - oils
 - oxidizers
 - premixing
 - propellants
 - rocket propellants
 - shale oil
 - transportation energy
- Fujita method**
 - RT coordinates
 - ∞ methodology
 - tornadoes
 - ∞ transformations
 - transformations (mathematics)
 - wind velocity
- full scale tests**
 - RT altitude tests
 - engine tests
 - flight tests
 - ground tests
 - high altitude tests
 - ∞ tests
- fullerenes**
 - (added August 1991)
 - DEF Molecules whose structure is similar to the shape of a soccer ball (polyhedron). The geodesic-dome-like molecular structure causes these molecules to be named after Buckminster Fuller, hence, 'fullerene.'
 - GS **fullerenes**
 - . buckminsterfullerene
 - RT atomic clusters
 - carbon
 - carbon nanotubes
 - fullerides
 - graphene
 - graphite
 - molecular clusters
 - nanoparticles
 - nanostucture growth
 - nanotubes
 - polyatomic molecules
 - polyhedrons
- fullerides**
 - (added February 1998)
 - GS carbon compounds
 - . **fullerides**
 - RT ∞ alkali metal compounds
 - ∞ chemical compounds
 - doped crystals
 - fullerenes
 - superconductors (materials)
- fulminates**
 - GS esters
 - . isocyanates
 - . . **fulminates**
 - nitrogen compounds
 - . cyano compounds
 - . . isocyanates
 - . . . **fulminates**
 - RT detonators
 - explosives
 - propellants
- fumes**
 - RT aerosols
 - dispersions
 - dust

fumigation

exhaust gases
fire damage
gas mixtures
gases
haze detection
reaction products
smoke
smoke detectors
vapors
wastes

fumigation

RT antiseptics
bactericides
spraying
sterilization

function generators

GS signal generators
. **function generators**
RT ∞ generators
pulse generators
voltage generators
wave generation

function space

GS analysis (mathematics)
. **function space**
.. Banach space
... Hilbert space
... Sobolev space
RT fibers (mathematics)
field theory (physics)
functions (mathematics)
orthogonal functions
quantum mechanics
series (mathematics)
 ∞ space
statistical mechanics
vectors (mathematics)

functional analysis

GS analysis (mathematics)
. **functional analysis**
.. Banach space
... Hilbert space
... Sobolev space
.. convolution integrals
.. harmonic analysis
.. tesseral harmonics
.. zonal harmonics
.. integral equations
.. Fredholm equations
.. J integral
.. singular integral equations
.. Volterra equations
.. Wiener Hopf equations
.. integral transformations
.. Fourier transformation
.. fast Fourier transformations
.. Fourier-Bessel transformations
.. Hilbert transformation
.. Laplace transformation
RT complex variables
form factors
functions (mathematics)
series (mathematics)
Walsh function

functional design specifications

DEF Those levels of design in which all subtasks are specified and their relationships defined so that the total collection of subsystems will perform the intended task of the entire system.

GS specifications
. **functional design specifications**
RT aeronautical engineering
 ∞ design
equipment specifications
missile design
product development
systems engineering

functional integration

GS analysis (mathematics)
. real variables
.. measure and integration
... **functional integration**
RT analog computers

differential equations
digital integrators
partial differential equations

functionally gradient materials

(added September 1992)
DEF Composite materials that consist of a gradual compositional variation from ceramic to metal from one surface to the other. These continuous changes result in property gradients which can be adjusted by controlling the composition. Used for FGM (materials).

UF *FGM (materials)*
GS composite materials
RT **functionally gradient materials**
aircraft construction materials
airframe materials
anisotropic media
bimetals
ceramic matrix composites
combustion synthesis
composite structures
fiber composites
matrix materials
metal matrix composites
prepregs
spacecraft construction materials

functionals

RT ∞ functions
functions (mathematics)
integrals

∞ functions

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT contralateral functions
functionals
functions (mathematics)
muscular function
parenteral functions
penalty function
pulmonary functions
renal function
scattering functions
work functions

functions (mathematics)

GS **functions (mathematics)**
. Abel function
. Airy function
. analytic functions
. entire functions
. aperiodic functions
. asymptotes
. Boolean functions
. composite functions
. conformal mapping
. coordinate transformations
. delta function
. discrete functions
. discriminant analysis (statistics)
. distribution functions
. probability distribution functions
. disturbing functions
. error functions
. Fourier transformation
. fast Fourier transformations
. Fourier-Bessel transformations
. Fresnel integrals
. gamma function
. Green's functions
. Hamiltonian functions
. Hankel functions
. harmonic functions
. hyperbolic functions
. hypergeometric functions
. kernel functions
. Lagrangian function
. Laguerre functions
. Lamé functions
. Laplace transformation
. Legendre functions
. Liapunov functions
. linear transformations
. Lorentz transformations
. Mathieu function
. Maxwell-Boltzmann density function
. Mellin transforms

. meromorphic functions
.. elliptic functions
.. rational functions
.. monotone functions
.. orthogonal functions
.. Walsh function
.. orthonormal functions
.. penalty function
.. point spread functions
.. Poisson density functions
.. probability density functions
.. normal density functions
.. Pearson distributions
.. Rayleigh distribution
.. Weibull density functions
.. ramp functions
.. recursive functions
.. Schwarz-Christoffel transformation
.. shape functions
.. space-time functions
.. spherical harmonics
.. spline functions
.. step functions
.. stress functions
.. time functions
.. transcendental functions
.. exponential functions
.. logarithms
.. periodic functions
.. trigonometric functions
.. cosine series
.. sine series
.. tangents
.. transfer functions
.. loop transfer functions
.. modulation transfer function
.. optical transfer function
.. membership functions
.. weighting functions
.. Whittaker functions

RT

algebra
 ∞ applications of mathematics
branching (mathematics)
calculus
continuity (mathematics)
divergence
extremum values
function space
functional analysis
functionals
 ∞ functions
infinity
inflection points
linearity
mapping
mathematical logic
mathematical models
 ∞ mathematics
nonlinearity
number theory
numerical differentiation
operations research
operators (mathematics)
random variables
range (extremes)
 ∞ transformations
transformations (mathematics)
wavelet analysis

fungal diseases

SN (EXCLUDES PLANT DISEASES)
GS diseases
. infectious diseases
.. **fungal diseases**
RT dermatitis
fungi
respiratory diseases

fungi

GS plants (botany)
. **fungi**
.. Aspergillus
.. Coccomyces
.. gibberellins
.. neurospora
.. rhizopus
.. rust fungi
.. saccharomyces
.. yeast
RT blight

- fungus diseases
 - lichens
 - microspores
 - mitra
 - ∞ mold
 - panspermia
 - plant diseases
 - spores
 - thermophiles
 - fungicides**
 - GS **fungicides**
 - . xanthenes
 - . . . caffeine
 - . . . guanines
 - . . . uric acid
 - RT antiinfectives and antibacterials
 - toxicology
 - funnels**
 - RT conical inlets
 - ∞ nozzles
 - furan resins**
 - GS plastics
 - . synthetic resins
 - . . . thermosetting resins
 - . . . **furan resins**
 - polyamide resins
 - Kevlar (trademark)
 - Nylon (trademark)
 - resins
 - . synthetic resins
 - . . . thermosetting resins
 - . . . **furan resins**
 - polyamide resins
 - Kevlar (trademark)
 - Nylon (trademark)
 - RT adhesives
 - coatings
 - furans**
 - DEF Organic heterocyclic compounds containing diunsaturated rings of four carbon atoms and one oxygen atom; also known as furfuran or tetrol.
 - GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **furans**
 - tetrahydrofuran
 - RT ∞ chemical compounds
 - plastics
 - solvents
 - thiophenes
 - furfuryl alcohol**
 - RT aldehydes
 - ∞ aromatic compounds
 - furlable antennas**
 - GS antennas
 - . **furlable antennas**
 - RT communication equipment
 - folding structures
 - satellite antennas
 - space communication
 - spacecraft antennas
 - furnaces**
 - SN (EXCLUDES DOMESTIC HEATING EQUIPMENT)
 - GS heating equipment
 - . **furnaces**
 - . . electric furnaces
 - . . image furnaces
 - . . solar furnaces
 - . . vacuum furnaces
 - RT boilers
 - burners
 - chemical engineering
 - chemical reactors
 - chimneys
 - combustion chambers
 - controlled atmospheres
 - ∞ cupolas
 - drying apparatus
 - extraction
 - fluidized bed processors
 - foundries
 - hearths
 - heat treatment
 - incinerators
 - induction heating
 - mechanical engineering
 - melting
 - ∞ metallurgy
 - mufflers
 - ovens
 - refractories
 - separators
 - sintering
 - waste energy utilization
- FUSE (satellite)*
(added November 2000)
USE **Far UV Spectroscopic Explorer**
- fuselage mounting*
USE **aircraft production**
- fuselages**
 - GS aircraft structures
 - . **fuselages**
 - RT aircraft construction materials
 - aircraft parts
 - airframes
 - bays (structural units)
 - body-wing and tail configurations
 - camber
 - centerbodies
 - cockpits
 - cylindrical bodies
 - hulls (structures)
 - wing-fuselage stores
- fuselage-wing stores*
(added August 1998)
USE **wing-fuselage stores**
- ∞ **fuses**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT circuit breakers
 - circuit protection
 - electric fuses
 - fuses (ordnance)
 - warheads
- fuses (ordnance)**
 - RT ammunition
 - caps (explosives)
 - detonators
 - ∞ fuses
 - initiators (explosives)
 - warheads
 - wicks
- fusibility**
 - GS thermodynamic properties
 - . thermophysical properties
 - . . **fusibility**
 - RT ∞ physical properties
 - ∞ resistance
 - welding
- fusiform shapes*
USE **cones**
- ∞ **fusion**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The combining of atoms and consequent release of energy.
 - RT fuel production
 - inertial fusion (reactor)
 - laser fusion
 - liquid-solid interfaces
 - nuclear fusion
- fusion (melting)**
 - GS phase transformations
 - . melting
 - . . **fusion (melting)**
 - RT adhesion
 - frit
 - fusion welding
 - heat of fusion
 - ∞ joining
- phase change materials
- fusion heat*
USE **heat of fusion**
- fusion propulsion**
(added September 1999)
 - GS propulsion
 - . nuclear propulsion
 - . . **fusion propulsion**
 - RT inertial confinement fusion
 - nuclear electric propulsion
 - nuclear fusion
 - nuclear rocket engines
 - plasma propulsion
 - spacecraft propulsion
- fusion reactors**
 - GS nuclear reactors
 - . **fusion reactors**
 - . . heliotrons
 - . . spheromaks
 - . . stellarators
 - RT beta factor
 - blankets (fusion reactors)
 - bumpy toruses
 - fusion-fission hybrid reactors
 - impact fusion
 - inertial fusion (reactor)
 - limiters (fusion reactors)
 - mirror fusion
 - nuclear fission
 - nuclear fusion
 - Q values (nuclear physics)
 - ∞ reactors
 - tandem mirrors
 - thermal barriers (plasma control)
- fusion weapons**
 - UF *hydrogen bombs*
 - GS weapons
 - . nuclear weapons
 - . . **fusion weapons**
 - RT laser weapons
 - nuclear fusion
- fusion welding**
 - GS welding
 - . **fusion welding**
 - . . electric welding
 - . . . arc welding
 - gas tungsten arc welding
 - plasma arc welding
 - electroslag welding
 - . . flash welding
 - . . electron beam welding
 - . . gas welding
 - . . . brazing
 - low temperature brazing
 - . . laser welding
 - RT fusion (melting)
 - pressure welding
 - spot welds
- fusion-fission hybrid reactors**
 - GS nuclear reactors
 - . **fusion-fission hybrid reactors**
 - RT fusion reactors
 - nuclear fission
 - nuclear fusion
 - ∞ reactors
- fuzzy sets**
 - DEF Mathematical models coupled with a provision for the effect of human factors and construction process and experience.
 - RT algorithms
 - fuzzy systems
 - membership functions
 - set theory
- fuzzy systems**
 - DEF Systems that involve fuzzy sets.
 - RT algorithms
 - fuzzy sets
 - membership functions
 - multisensor fusion
 - probability theory
 - set theory
 - system identification

FV-12A aircraft

∞ systems
systems analysis
uncertain systems

FV-12A aircraft

GS attack aircraft
. fighter aircraft
. . FV-12A aircraft

V/STOL aircraft

. FV-12A aircraft

RT ∞ aircraft

∞ military aircraft

FW-H equation

(added January 2007)

USE **Fowcs Williams-Hawkings**
equation

G

- G force*
USE **acceleration (physics)**
- G stars**
GS celestial bodies
 . stars
 . . . **G stars**
 . . . sun
RT dwarf stars
F stars
giant stars
main sequence stars
stellar spectra
- G-1 aircraft**
UF *Navion G-1 aircraft*
Navion Rangemaster aircraft
Rangemaster aircraft
GS general aviation aircraft
 . **G-1 aircraft**
 light aircraft
 . **G-1 aircraft**
 monoplanes
 . **G-1 aircraft**
 Navion aircraft
 . **G-1 aircraft**
 passenger aircraft
 . **G-1 aircraft**
 transport aircraft
 . **G-1 aircraft**
RT ∞ aircraft
- G-91 aircraft**
UF *Fiat G-91 aircraft*
GS attack aircraft
 . fighter aircraft
 . . . **G-91 aircraft**
 Fiat aircraft
 . **G-91 aircraft**
 jet aircraft
 . **G-91 aircraft**
 monoplanes
 . **G-91 aircraft**
RT ∞ aircraft
- G-95/4 aircraft**
UF *Fiat G-95/4 aircraft*
GS attack aircraft
 . fighter aircraft
 . . . **G-95/4 aircraft**
 Fiat aircraft
 . **G-95/4 aircraft**
 jet aircraft
 . **G-95/4 aircraft**
 monoplanes
 . **G-95/4 aircraft**
 supersonic aircraft
 . **G-95/4 aircraft**
 V/STOL aircraft
 . **G-95/4 aircraft**
RT ∞ aircraft
- G-222 aircraft**
UF *Fiat G-222 aircraft*
GS Fiat aircraft
 . **G-222 aircraft**
 jet aircraft
 . turboprop aircraft
 . . . **G-222 aircraft**
 monoplanes
 . **G-222 aircraft**
 passenger aircraft
 . **G-222 aircraft**
 transport aircraft
 . **G-222 aircraft**
 V/STOL aircraft
 . **G-222 aircraft**
RT ∞ aircraft
- GA-5 aircraft**
UF *Gloster GA-5 aircraft*
Javelin aircraft
GS attack aircraft
 . fighter aircraft
 . . . **GA-5 aircraft**
 Hawker Siddeley aircraft
 . **GA-5 aircraft**
 jet aircraft
 . **GA-5 aircraft**
- monoplanes
 . **GA-5 aircraft**
RT ∞ aircraft
delta wings
- gabbro**
GS rocks
 . igneous rocks
 . . . **gabbro**
RT anorthosite
 lunar rocks
- Gabon**
GS nations
 . **Gabon**
RT Africa
- Gabor filters**
(added February 1998)
GS image filters
 . **Gabor filters**
RT computer vision
 ∞ filters
 Gabor transformation
 image analysis
 image processing
 low pass filters
 neural nets
 spatial filtering
 textures
- Gabor transformation**
(added February 1998)
GS transformations (mathematics)
 . **Gabor transformation**
RT Fourier transformation
 Gabor filters
 holography
 image processing
 signal analysis
 wavelet analysis
- gadolinium**
GS chemical elements
 . rare earth elements
 . . . **gadolinium**
 . . . gadolinium isotopes
 metals
 . rare earth elements
 . . . **gadolinium**
 . . . gadolinium isotopes
RT gadolinium-gallium garnet
- gadolinium alloys**
DEF Mixtures of gadolinium, a rare earth metal, with other metals.
GS alloys
 . rare earth alloys
 . . . **gadolinium alloys**
RT metals
- gadolinium isotopes**
GS chemical elements
 . nuclides
 . isotopes
 . . . **gadolinium isotopes**
 . rare earth elements
 . . . gadolinium
 . . . **gadolinium isotopes**
 metals
 . rare earth elements
 . . . gadolinium
 . . . **gadolinium isotopes**
- gadolinium-gallium garnet**
(added August 1990)
DEF A semiconducting crystalline compound used primarily as a solid-state laser material.
UF *GGG (garnet)*
GS gallium compounds
 . **gadolinium-gallium garnet**
 minerals
 . garnets
 . . . **gadolinium-gallium garnet**
 silicon compounds
 . silicates
 . . . garnets
 . . . **gadolinium-gallium garnet**
- RT doped crystals
ecolite
ferrites
gadolinium
laser materials
lasers
magnetostatic amplifiers
semiconductor lasers
semiconductors (materials)
- gages*
USE **measuring instruments**
- Gaia hypothesis**
(added June 1990)
DEF The hypothesis that the Earth's atmosphere, biosphere, and its living organisms behave as a single system striving to maintain a stability conducive to the existence of life.
RT atmospheric composition
 atmospheric temperature
 biochemistry
 biological evolution
 biosphere
 ecology
 ecosystems
 greenhouse effect
- gain (amplification)*
USE **amplification**
- gait**
(added September 2001)
DEF The pace or manner in which a legged animal or robot moves from one place to another.
GS locomotion
 . **gait**
RT leg (anatomy)
 robot dynamics
 running
 walking
 walking machines
- galactic bulge**
(added August 1988)
UF *central bulge (galaxies)*
nuclear bulge (galaxies)
RT galactic nuclei
 galactic structure
 galaxies
 Milky Way Galaxy
 spiral galaxies
 x ray sources
- galactic clusters**
SN (RESTRICTED TO CLUSTERS OF GALAXIES; EXCLUDES OPEN CLUSTERS)
UF *galaxy groups*
GS celestial bodies
 . **galactic clusters**
 . . . local group (astronomy)
 . . . Virgo galactic cluster
RT agglomeration
 ∞ clusters
 cooling flows (astrophysics)
 disk galaxies
 elliptical galaxies
 large-scale structure of the universe
 metallicity
 missing mass (astrophysics)
 protogalaxies
 star clusters
 star distribution
 stellar systems
 Sunyaev-Zeldovich effect
- galactic cosmic rays**
DEF Energetic particles that come from outside the solar systems. They generally come from within our galaxy.
GS extraterrestrial radiation
 . galactic radiation
 . . . **galactic cosmic rays**
 ionizing radiation
 . cosmic rays
 . . . **galactic cosmic rays**
RT Advanced Composition Explorer

galactic evolution

energetic particles
galactic winds
solar activity effects
solar wind

galactic evolution

UF *galaxy formation*
GS evolution (development)
. **galactic evolution**
RT astrophysics
big bang cosmology
cooling flows (astrophysics)
cosmology
dark matter
disk galaxies
galactic mass
gravitational instability
large-scale structure of the universe
protogalaxies
ring galaxies
star distribution
star formation rate
stellar evolution
stellar mass accretion

galactic halos

(added December 1992)

DEF The tenuous, spherical cloud surrounding spiral galaxies. It is the locus of old stars and globular clusters. Halos appear to be required, at least to some extent, for the stability of disk galaxies.

RT dark matter
disk galaxies
galactic structure
globular clusters
halos
intergalactic media
interstellar gas
massive compact halo objects
missing mass (astrophysics)
molecular clouds
Population II stars
spiral galaxies
star distribution

galactic magnetic fields

USE **interstellar magnetic fields**

galactic mass

DEF The total amount of matter contained in a galaxy.

GS mass
. **galactic mass**
RT galactic evolution
galactic structure
mass distribution
stellar mass

galactic nuclei

GS **galactic nuclei**
. active galactic nuclei
RT absorption spectra
accretion disks
active galaxies
disk galaxies
galactic bulge
radio jets (astronomy)
radio sources (astronomy)
Seyfert galaxies
starburst galaxies

galactic radiation

GS extraterrestrial radiation
. **galactic radiation**
. . galactic cosmic rays
. . galactic radio waves
. . . North Polar Spur (astronomy)
. . galactic winds
RT active galactic nuclei
active galaxies
brightness distribution
corpuscular radiation
cosmic noise
cosmic rays
cosmic x rays
electromagnetic radiation
gamma ray astronomy
gamma ray bursts
gamma ray sources (astronomy)

Hubble diagram
infrared cirrus (astronomy)
interstellar radiation
irregular galaxies
mass to light ratios
nonthermal radiation
 ∞ radiation
radiative transfer
Solar Radiation 1 satellite
Solar Radiation 3 satellite
stellar radiation
Uhuru satellite

Galactic Radiation Exp Background sats

USE **GREB satellites**

galactic radio waves

DEF Radio waves emanating from our galaxy.

GS electromagnetic radiation
. radio waves
. . extraterrestrial radio waves
. . . **galactic radio waves**
. . . . North Polar Spur (astronomy)
extraterrestrial radiation
. extraterrestrial radio waves
. . **galactic radio waves**
. . . North Polar Spur (astronomy)
. galactic radiation
. . **galactic radio waves**
. . . North Polar Spur (astronomy)
RT cosmic noise
radio jets (astronomy)

galactic rotation

GS gyration
. rotation
. . **galactic rotation**
RT corotation
disk galaxies
hydrogen clouds
irregular galaxies
stellar motions
stellar systems
Tully-Fisher relation
velocity distribution

galactic structure

RT barred galaxies
compact galaxies
corotation
density wave model
disk galaxies
galactic bulge
galactic halos
galactic mass
galaxies
interacting galaxies
irregular galaxies
missing mass (astrophysics)
peculiar galaxies
ring galaxies
shell galaxies
stellar systems
 ∞ structures

galactic winds

(added May 1994)
GS extraterrestrial radiation
. galactic radiation
. . **galactic winds**
RT galactic cosmic rays
space plasmas
stellar winds

galactose

GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . hexoses
. **galactose**

Galatea

(added July 1995)

DEF A natural satellite of Saturn, orbiting at a mean distance of 62,000 kilometers.

GS celestial bodies
. natural satellites
. . Neptune satellites

. . . **Galatea**

RT Neptune (planet)

galaxies

DEF Vast assemblages of stars or nebulae, composing island universes separated from other such assemblages by great distances.

GS celestial bodies

. **galaxies**

. . active galaxies
. . . Markarian galaxies
. . . radio galaxies
. . . Seyfert galaxies
. . compact galaxies
. . disk galaxies
. . dwarf galaxies
. . elliptical galaxies
. . interacting galaxies
. . irregular galaxies
. . Maffei galaxies
. . Magellanic clouds
. . peculiar galaxies
. . ring galaxies
. . shell galaxies
. . spiral galaxies
. . . Andromeda Galaxy
. . . barred galaxies
. . . Milky Way Galaxy
. . protogalaxies
. . starburst galaxies
. . Virgo galactic cluster
RT BL Lacertae objects
faint objects
galactic bulge
galactic structure
Gum nebula
Hubble constant
Hubble diagram
metallicity
nebulae
Orion nebula
quasars
radio sources (astronomy)
red shift
star clusters
star formation rate
stars
stellar systems

Galaxy aircraft

USE **C-5 aircraft**

galaxy formation

(added May 1997)

USE **galactic evolution**

galaxy groups

USE **galactic clusters**

galaxy interaction

USE **interacting galaxies**

Galerkin method

RT linearization
meshfree methods
 ∞ methodology

Galilean satellites

DEF The four largest and brightest satellites of Jupiter (Io, Europa, Ganymede, and Callisto).

GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Galilean satellites**
. . . . Callisto
. . . . Europa
. . . . Ganymede
. . . . Io
RT Charon
Galileo project
Galileo spacecraft
icy satellites
Jupiter (planet)
Triton

Galileo mission

USE **Galileo project**

Galileo probe

DEF The NASA Jupiter atmospheric entry

probe to be deployed from the Galileo spacecraft. The probe will make in situ measurements while descending from a parachute.

- GS interplanetary spacecraft
 - . Jupiter probes
 - . . **Galileo probe**
 - unmanned spacecraft
 - . space probes
 - . . Jupiter probes
 - . . . **Galileo probe**
- RT Jupiter (planet)
 - ∞ probes
 - ∞ spacecraft

Galileo project

DEF A NASA program to probe Jupiter, its environment and natural satellites. The spacecraft was placed in Earth orbit by the Space Transportation System (STS) on October 18, 1989. Used for Galileo mission.

- UF *Galileo mission*
- GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Galileo project**
 - . projects
 - . . **Galileo project**
 - . space programs
 - . . NASA space programs
 - . . . **Galileo project**
- RT Amphitrite asteroid
 - atmospheric entry
 - flyby missions
 - Galilean satellites
 - Jupiter atmosphere
 - Jupiter probes

Galileo spacecraft

DEF A NASA orbiter spacecraft which will carry the Galileo probe and, following deployment at Jupiter, will become an orbiting platform for remote sensing of Jupiter and its satellites.

- GS interplanetary spacecraft
 - . Jupiter probes
 - . . **Galileo spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Jupiter probes
 - . . . **Galileo spacecraft**
- RT flyby missions
 - Galilean satellites
 - Gaspra asteroid
 - Ida asteroid
 - Jupiter (planet)
 - ∞ missions
 - ∞ spacecraft

gall

- RT digestive system
 - gastrointestinal system
 - secretions

gallamine triethiodide

- GS ethers
 - . **gallamine triethiodide**
 - halogen compounds
 - . iodine compounds
 - . . iodides
 - . . . **gallamine triethiodide**
 - organic compounds
 - . amines
 - . . **gallamine triethiodide**

gallates

- GS gallium compounds
 - . **gallates**
 - . . sodium gallates

gallium

- GS chemical elements
 - . **gallium**
 - . . gallium isotopes
 - metals
 - . **gallium**
 - . . gallium isotopes

gallium alloys

- GS alloys
 - . **gallium alloys**
- RT aluminum alloys

indium alloys
superconductivity

gallium antimonides

- GS antimony compounds
 - . antimonides
 - . . **gallium antimonides**
 - gallium compounds
 - . **gallium antimonides**

gallium arsenide lasers

- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **gallium arsenide lasers**
 - . . solid state lasers
 - . . . **gallium arsenide lasers**
 - stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **gallium arsenide lasers**
 - . . solid state lasers
 - . . . **gallium arsenide lasers**
- RT aluminum gallium arsenide lasers
 - injection lasers
 - stimulated emission
 - waveguide lasers

gallium arsenides

- GS arsenic compounds
 - . arsenides
 - . . **gallium arsenides**
 - . . . aluminum gallium arsenides
 - . . . indium gallium arsenides
 - gallium compounds
 - . **gallium arsenides**
 - . . aluminum gallium arsenides
 - . . . indium gallium arsenides
- RT antisite defects
 - Bragg reflectors
 - Gunn diodes
 - heterojunction devices
 - injection lasers
 - MODFETS
 - negative conductance
 - negative electron affinity
 - negative resistance devices
 - quantum well infrared photodetectors
 - Schottky diodes
 - semiconductor lasers
 - superlattices
 - transferred electron devices

gallium compounds

- GS **gallium compounds**
 - . gadolinium-gallium garnet
 - . gallates
 - . . sodium gallates
 - . gallium antimonides
 - . gallium arsenides
 - . . aluminum gallium arsenides
 - . . indium gallium arsenides
 - . gallium nitrides
 - . gallium oxides
 - . gallium phosphides
 - . gallium selenides
- RT ∞ chemical compounds
 - ∞ Group 3A compounds
 - ∞ metal compounds

gallium isotopes

- GS chemical elements
 - . gallium
 - . . **gallium isotopes**
 - . nuclides
 - . . isotopes
 - . . . **gallium isotopes**
 - metals
 - . gallium
 - . . **gallium isotopes**

gallium nitrides

- GS gallium compounds
 - . **gallium nitrides**
 - nitrogen compounds
 - . nitrides
 - . . metal nitrides
 - . . . **gallium nitrides**

RT semiconductors (materials)

gallium oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **gallium oxides**
 - gallium compounds
 - . **gallium oxides**

gallium phosphides

- GS gallium compounds
 - . **gallium phosphides**
 - phosphorus compounds
 - . phosphides
 - . . **gallium phosphides**

gallium selenides

- GS chalcogenides
 - . selenides
 - . . **gallium selenides**
 - gallium compounds
 - . **gallium selenides**
 - selenium compounds
 - . selenides
 - . . **gallium selenides**

galvanic cells

USE **electrolytic cells**

galvanic skin response

- UF *electrodermal response*
- GS responses
 - . **galvanic skin response**
- RT electrical resistance
 - lies

galvanizing

USE **zinc coatings**

galvanomagnetic effects

- UF *galvanomagnetism*
- GS **galvanomagnetic effects**
 - . Hall effect
 - . Nernst-Ettingshausen effect
 - . . quantum Hall effect
- RT ∞ effects

galvanomagnetism

USE **galvanomagnetic effects**

galvanometers

- GS measuring instruments
 - . **galvanometers**
- RT ammeters
 - electrometers
 - micromilliammeters
 - millivoltmeters
 - thermocouple pyrometers

Gambia

- GS nations
 - . **Gambia**
- RT Africa

game theory

DEF Application of mathematics to a game, business situation, or other problem to maximize gain or minimize loss.

- GS **game theory**
 - . saddle points (game theory)
- RT decision theory
 - deployment
 - games
 - information theory
 - linear programming
 - martingales
 - mathematical models
 - mathematical programming
 - minimax technique
 - Monte Carlo method
 - operations research
 - probability theory
 - risk
 - saddle points
 - simulation
 - statistical analysis
 - statistical decision theory
 - stochastic processes
 - strategy
 - ∞ theories

games

war games

games

(added October 1998)

GS **games**

. differential games
. pursuit-evasion games
. war games
. zero sum games

RT

control theory
game theory
optimization

gametocytes

UF *oocytes*

spermatocytes

GS

cells (biology)

. **gametocytes**

. . eggs

. . . zygotes

. . . spermatozoa

RT

spermatogenesis

gamma function

GS

analysis (mathematics)

. complex variables

. . **gamma function**

functions (mathematics)

. **gamma function**

RT

factorials
statistical distributions

gamma globulin

GS

antibodies

. **gamma globulin**

biopolymers

. proteins

. . globulins

. . . **gamma globulin**

organic compounds

. proteins

. . globulins

. . . **gamma globulin**

gamma radiation

USE

gamma rays

gamma ray absorptiometry

GS

density measurement

. **gamma ray absorptiometry**

RT

absorption spectra
densitometers
electromagnetic absorption
energy absorption
∞ measurement
photon absorptiometry
radiation absorption

gamma ray absorption

GS

energy absorption

. radiation absorption

. . electromagnetic absorption

. . . **gamma ray absorption**

RT

∞ absorption
electromagnetic properties
electromagnetic radiation
ionizing radiation
nuclear radiation
photon absorptiometry

gamma ray astronomy

DEF Astronomy based on the detection of gamma ray emission and interactions from supernova remnants, neutron stars, flare stars, galactic core and disc, black holes, etc.

GS

astronomy

. **gamma ray astronomy**

RT

astrophysics
cosmic x rays
energy spectra
Fermi Gamma-ray Space Telescope
galactic radiation
gamma ray bursts
gamma ray sources (astronomy)
gamma ray telescopes
Granat satellite
HEAO 4
radio astronomy
soft gamma repeaters
Swift observatory

x ray astronomy

Gamma Ray Astronomy Explorer

USE **Explorer 11 satellite**

gamma ray beams

GS

beams (radiation)

. **gamma ray beams**

electromagnetic radiation

. **gamma ray beams**

ionizing radiation

. **gamma ray beams**

nuclear radiation

. **gamma ray beams**

RT

photon beams
radioactive decay

gamma ray bursts

DEF Short (about 0. 1 - 4 sec.) intense low-energy (about 0. 1 - 1. 2 MeV) bursts recorded by the Vela satellite system in 1967. Their isotropic distribution suggests an extragalactic origin, but a galactic disk origin cannot be ruled out. Used for cosmic gamma ray bursts.

UF

cosmic gamma ray bursts

GS

bursts

. **gamma ray bursts**

electromagnetic radiation

. gamma rays

. . **gamma ray bursts**

extraterrestrial radiation

. **gamma ray bursts**

ionizing radiation

. cosmic rays

. . **gamma ray bursts**

. gamma rays

. . **gamma ray bursts**

nuclear radiation

. gamma rays

. . **gamma ray bursts**

RT

big bang cosmology
bremsstrahlung
Cerenkov radiation
cosmic x rays
galactic radiation
gamma ray astronomy
interstellar radiation
nuclear particles
radiant flux density
soft gamma repeaters
starquakes
stellar radiation
Swift observatory
x ray astronomy

gamma ray lasers

DEF Stimulated emission devices producing coherent gamma radiation.

GS

stimulated emission devices

. lasers

. . **gamma ray lasers**

RT

coherent light
light transmission
optical pumping
pulsed radiation

Gamma Ray Observatory

DEF A late 1980s NASA mission to explore the gamma ray window to the universe from 0. 06 MeV to 30 GeV.

UF

Compton Gamma Ray Observatory

GS

artificial satellites

. scientific satellites

. . astronomical satellites

. . . **Gamma Ray Observatory**

observatories

. astronomical observatories

. . astronomical satellites

. . . **Gamma Ray Observatory**

RT

gamma ray telescopes
OGO
spaceborne astronomy
spaceborne telescopes

gamma ray sources (astronomy)

(added October 1997)

SN (LIMITED TO ASTRONOMICAL SOURCES; EXCLUDES RADIATION DEVICES)

GS

gamma ray sources (astronomy)

. soft gamma repeaters

RT

COS-B satellite
galactic radiation
gamma ray astronomy
pulsars
radio sources (astronomy)
spectral counterparts (astronomy)
Swift observatory
x ray sources

gamma ray spectra

DEF The energy distribution of gamma rays emitted by nuclei.

GS

spectra
. radiation spectra
. . electromagnetic spectra

. . . **gamma ray spectra**

RT

emission spectra
ionizing radiation

gamma ray spectrometers

DEF Instruments for deriving the physical constants of materials by using induced gamma radiation as the emission source.

GS

measuring instruments

. spectrometers

. . **gamma ray spectrometers**

RT

2001 Mars Odyssey
anticoincidence detectors
optical measurement
scintillating fibers
Solar Maximum Mission
spectra
spectrum analysis

gamma ray telescopes

DEF Special telescopes for the observation (and recording) of astronomical phenomena in the gamma ray spectrum.

GS

telescopes

. **gamma ray telescopes**

. . Fermi Gamma-ray Space

Telescope

RT

cosmic rays
gamma ray astronomy
Gamma Ray Observatory
scintillating fibers
Swift observatory

gamma rays

SN (EMITTED BY NUCLEI)

DEF Quanta of electromagnetic radiation emitted by nuclei, each such photon being emitted as the result of a quantum transition between two energy levels of the nucleus. Gamma rays have energies usually between 10 thousand electron volts and 10 million electron volts with correspondingly short wavelengths and high frequencies. Used for gamma radiation.

UF

gamma radiation

GS

electromagnetic radiation

. **gamma rays**

. . gamma ray bursts

ionizing radiation

. **gamma rays**

. . gamma ray bursts

nuclear radiation

. **gamma rays**

. . gamma ray bursts

RT

bremsstrahlung
Cerenkov radiation
cosmic rays
cosmic x rays
decay
emission spectra
flux (rate)
flux density
monochromatic radiation
Mossbauer effect
photomagnetic effects
photons
∞ radiation
radiation effects
radiation shielding
radioactive decay
radioactivity

∞ rays

scintillating fibers
transverse oscillation
transverse waves
Wind/GGS spacecraft

- x rays
- Gamma-ray Large Area Space Telescope*
(added August 2008)
USE **Fermi Gamma-ray Space Telescope**
- ganglia**
GS anatomy
. nervous system
. . . nerves
. . . **ganglia**
RT cells (biology)
neuroglia
neurophysiology
- gantries*
USE **gantry cranes**
- gantry cranes**
DEF Large cranes mounted on platforms that usually run back and forth on parallel tracks astride the work area. Used for gantries.
UF *gantries*
GS handling equipment
. cranes
. . . **gantry cranes**
RT ground support equipment
launching pads
launching sites
umbilical towers
- Ganymede**
DEF A satellite of Jupiter orbiting at a mean distance of 1,071,000 kilometers. Also called Jupiter III.
GS celestial bodies
. natural satellites
. . . icy satellites
. . . **Ganymede**
. . . Jupiter satellites
. . . Galilean satellites
. . . . **Ganymede**
RT Callisto
Charon
Io
Jupiter (planet)
- GAP (propellants)*
USE **glycidyl azide polymer**
- gaps**
GS **gaps**
. energy gaps (solid state)
. spark gaps
RT ∞ arresters
∞ breakdown
crack opening displacement
∞ holes
openings
orifices
passageways
quantum wells
∞ tunnels
- gaps (geology)**
DEF Ravines or gorges cut deeply through a mountain ridge, or between hills or mountains. Used for cols and passes.
UF *cols*
passes
GS geology
. **gaps (geology)**
landforms
. **gaps (geology)**
RT mountains
∞ ridges
- garbage**
GS wastes
. **garbage**
RT composting
organic wastes (fuel conversion)
sewers
solid wastes
utilities
waste disposal
waste treatment
- garments**
GS clothing
- . **garments**
RT flight clothing
suits
vests
- garnets**
DEF Groups of minerals that are silicates of cubic crystalline form.
GS minerals
. **garnets**
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
silicon compounds
. silicates
. . **garnets**
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
RT eclogite
lasers
- GARP*
USE **Global Atmospheric Research Program**
- GARP Atlantic Tropical Experiment**
UF *GATE (experiment)*
GS programs
. Global Atmospheric Research Program
. . **GARP Atlantic Tropical Experiment**
RT Atlantic Ocean
intertropical convergent zones
meteorology
NASA programs
oceanography
tropical meteorology
tropical regions
weather forecasting
- gas analysis**
GS chemical tests
. chemical analysis
. . **gas analysis**
. . . ozonometry
. . . Van Slyke method
RT air sampling
flame probes
Hopcalite (trademark)
mass spectrometers
∞ materials tests
oxygen analyzers
qualitative analysis
quantitative analysis
volumetric analysis
- gas atomization**
DEF Atomization of fluids by high velocity
gas jets.
GS atomizing
. **gas atomization**
RT aerosols
collisions
comminution
liquid atomization
particles
- gas bags**
GS bags
. **gas bags**
expandable structures
. inflatable structures
. . **gas bags**
RT balloons
high altitude balloons
- gas bearings**
UF *air bearings*
gas lubricated bearings
GS bearings
. **gas bearings**
RT antifriction bearings
fluid films
foil bearings
high temperature lubricants
squeeze films
thrust bearings
- turbine engines
- gas chromatography**
DEF A method of chemical analysis involving the separation of volatile constituents of a mixture by means of gas flow entrainment, vapor pressure differences, and affinity of specific compounds for various liquids or solid materials.
GS chemical tests
. chemical analysis
. . chromatography
. . . **gas chromatography**
RT adsorption
paper chromatography
sorption
thin layer chromatography
- gas composition**
GS composition (property)
. **gas composition**
. . carbon dioxide concentration
RT atmospheric composition
atom concentration
chemical composition
Dalton law
expired air
ionospheric composition
plasma composition
polar gases
- gas cooled fast reactors**
GS nuclear reactors
. fast nuclear reactors
. . **gas cooled fast reactors**
. gas cooled reactors
. . **gas cooled fast reactors**
- gas cooled reactors**
UF *GCR (reactors)*
GS nuclear reactors
. **gas cooled reactors**
. . experimental gas cooled reactors
. . gas cooled fast reactors
. . high temperature nuclear reactors
. . . high temperature gas cooled reactors
. . . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. . . Tory 2 reactor
. . Tory 2-A reactor
. . Tory 2-C reactor
RT ∞ gas reactors
- gas cooling**
SN (COOLING WITH GAS)
GS cooling
. **gas cooling**
RT coolants
freon
heat exchangers
- gas density**
GS density (mass/volume)
. **gas density**
RT atom concentration
buoyancy
convective flow
gaseous diffusion
ideal gas
probability density functions
rarefied gases
real gases
- gas detectors**
RT detection
∞ detectors
haze detection
identifying
indicating instruments
monitors
∞ probes
∞ sensors
smoke detectors

gas discharge tubes

warning systems

gas diffusion

USE **gaseous diffusion**

gas discharge counters

USE **counters**
gas discharge tubes

gas discharge tubes

DEF Evacuated enclosures containing a gas at low pressure that permits the passage of electricity through the gas upon application of sufficient voltage. Note: The tubes are usually provided with metal electrodes, but one form permits an electrodeless discharge with induced voltage. Used for discharge tubes and gas discharge counters.

UF *discharge tubes*

gas discharge counters

GS electron tubes

. **gas discharge tubes**

. . ignitrons

. . thyratrons

RT Faraday dark space

∞ gas tubes

microwave equipment

microwave oscillators

microwave tubes

phototubes

radiation counters

gas discharges

GS electric current

. electric discharges

. . Townsend discharge

. . . **gas discharges**

. . . . toroidal discharge

. . . . ring discharge

RT afterglows

cold cathode tubes

cold cathodes

electric arcs

electric sparks

electrodeless discharges

electron avalanche

glow discharges

lightning

polar gases

gas dissociation

GS dissociation

. **gas dissociation**

RT thermal dissociation

gas dynamics

GS mechanics (physics)

. fluid mechanics

. . fluid dynamics

. . . **gas dynamics**

. . . . aerodynamics

. aerothermodynamics

. hypersonics

. rotor aerodynamics

. supersonics

. unsteady aerodynamics

. interactional aerodynamics

. rarefied gas dynamics

RT Dalton law

∞ dynamics

gas path analysis

gaseous diffusion

gaseous self-diffusion

gases

hydrodynamic equations

hydrodynamics

jet membrane process

kinetics

Lorentz gas

magnetohydrodynamics

molecular gases

polar gases

thermodynamics

wave rotors

gas evacuating

USE **evacuating (vacuum)**

gas evolution

GS evolution (liberation)

. **gas evolution**

RT degassing

outgassing

transpiration

gas exchange

GS exchanging

. **gas exchange**

RT oxygen production

gas expansion

GS expansion

. **gas expansion**

RT Joule-Thomson effect
pressure reduction

gas explosions

GS explosions

. chemical explosions

. . **gas explosions**

RT detonable gas mixtures

detonation waves

flame propagation

flammable gases

underground explosions

gas flow

UF *gaseous cavitation*

GS fluid flow

. **gas flow**

. . air flow

. . . air currents

. . . . jet streams (meteorology)

. . . . meridional flow

. . . . vertical air currents

. . continuum flow

. . cooling flows (astrophysics)

. . equilibrium flow

. . . frozen equilibrium flow

. . . shifting equilibrium flow

. . free molecular flow

. . Knudsen flow

. . molecular flow

. . . slip flow

. . . transition flow

. . nonequilibrium flow

. . pipe flow

RT air ducts

air jets

compressible flow

critical flow

Crocco-Lee theory

gas path analysis

gasdynamic lasers

gaseous diffusion

gases

geophysical fluid flow cells

hydraulic analogies

hypersonic flow

incompressible flow

inviscid flow

Joule-Thomson effect

laminar flow

liquid flow

magnetohydrodynamic flow

mass flow

molecular relaxation

molecular trajectories

multiphase flow

nonuniform flow

orifice flow

∞ pressure drop

radial flow

single-phase flow

steady flow

steam flow

streams

subcritical flow

subsonic flow

supercritical flow

supersonic flow

supersonic jet flow

transonic flow

turbulent flow

two phase flow

uniform flow

unsteady flow

vapor jets

viscous flow

gas generator engines

USE **engines**
gas generators

gas generators

DEF A device used to generate gases in the laboratory; a chemical plant for producing gas from coal, for example, water gas. Used for gas generator engines.

UF *gas generator engines*

RT chemical reactors

∞ generators

pneumatic equipment

pressurizing

vaporizers

wave rotors

gas giant planets

DEF The giant planets, Jupiter, Saturn, Uranus, and Neptune, of our solar system.

GS celestial bodies

. planets

. . **gas giant planets**

. . . Jupiter (planet)

. . . Neptune (planet)

. . . Saturn (planet)

. . . Uranus (planet)

RT extrasolar planets

Jupiter red spot

Neptune atmosphere

planetary composition

Saturn rings

solar system

Uranus atmosphere

gas guns

GS **gas guns**

. light gas guns

RT atmospheric entry

ballistics

∞ guns

hypervelocity guns

wind tunnels

gas heating

GS heating

. **gas heating**

RT arc heating

kinetic heating

plasma heating

radiant heating

resistance heating

thermal diffusion

gas injection

GS injection

. fluid injection

. . **gas injection**

RT formations

fuel injection

inflating

perforating

plasma pumping

porosity

pressurizing

stimulation

water injection

gas ionization

GS ionization

. **gas ionization**

. . atmospheric ionization

. . . auroral ionization

. . flame ionization

RT afterglows

electron attachment

helium afterglow

ionized gases

ionizers

Penning discharge

Penning effect

photoionization

plasma display devices

ring discharge

gas jets

GS fluid jets

. **gas jets**

- RT air jets
cold gas
∞ jets
- gas lasers**
- GS stimulated emission devices
. lasers
. **gas lasers**
. . . carbon dioxide lasers
. . . carbon monoxide lasers
. . . DF lasers
. . . excimer lasers
. . . HCL lasers
. . . . HCL argon lasers
. . . HCN lasers
. . . helium-neon lasers
. . . HF lasers
. . . nitrogen lasers
. . . rare gas-halide lasers
. . . . krypton fluoride lasers
. . . . xenon chloride lasers
. . . . xenon fluoride lasers
. . . TEA lasers
. . . ultraviolet lasers
- RT carbon lasers
chemical lasers
electron pumping
gasdynamic lasers
infrared lasers
Mach-Zehnder interferometers
molecular oscillations
nuclear pumping
organic lasers
polar gases
pulsed lasers
Q switched lasers
stimulated emission
water masers
- gas liquefaction*
USE **condensing**
- gas lubricants**
- GS lubricants
. **gas lubricants**
- RT gaseous diffusion
high temperature lubricants
metal-gas systems
solid lubricants
squeeze films
- gas lubricated bearings*
USE **gas bearings**
- gas masers**
- GS stimulated emission devices
. masers
. . **gas masers**
. . . hydrogen masers
- RT argon lasers
atomic clocks
carbon dioxide lasers
frequency standards
interstellar masers
polar gases
stimulated emission
TEA lasers
water masers
- gas meters**
- GS measuring instruments
. flowmeters
. . **gas meters**
- RT flow measurement
Venturi tubes
- gas mixtures**
- GS gases
. **gas mixtures**
. . air
. . . alveolar air
. . . compressed air
. . . expired air
. . . high temperature air
. . . liquid air
. . . detonable gas mixtures
mixtures
. solutions
. . **gas mixtures**
. . . air
- alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
. . . . detonable gas mixtures
- RT argon-oxygen atmospheres
∞ atmospheres
binary fluids
binary mixtures
controlled atmospheres
eudiometers
exhaust gases
fuel-air ratio
fumes
gaseous rocket propellants
helium-oxygen atmospheres
hydrogen-based energy
ignition limits
laminar mixing
Lighthill gas model
liquefied gases
liquid-gas mixtures
mixing ratios
premixed flames
premixing
- gas path analysis**
DEF Mathematical process of determining overall engine performance, individual module performances and sensor performances from any specific set of engine related measurements.
RT gas dynamics
gas flow
- gas phases*
USE **vapor phases**
- gas pipes**
- GS pipes (tubes)
. **gas pipes**
RT ∞ gas tubes
- gas pockets**
- RT cavities
evacuating (vacuum)
- gas pressure**
- GS pressure
. **gas pressure**
- RT atmospheric pressure
compressed gas
internal pressure
partial pressure
- ∞ **gas reactors**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT chemical reactors
gas cooled reactors
gaseous fission reactors
- gas recovery**
- GS reclamation
. materials recovery
. . **gas recovery**
- RT energy technology
exhaust gases
gaseous diffusion
gases
∞ recovery
wastes
- gas spectroscopy**
- GS spectroscopy
. **gas spectroscopy**
- RT chemical analysis
chemical tests
flame spectroscopy
magnetic spectroscopy
mass spectroscopy
optogalvanic spectroscopy
spectroscopic analysis
vacuum spectroscopy
visible spectrum
- gas streams**
- GS gases
. **gas streams**
streams
. **gas streams**
- RT jet flow
laminar flow
turbulence
wind tunnels
- gas temperature**
- GS temperature
. **gas temperature**
- RT atmospheric temperature
inlet temperature
ionized gases
rarefied gases
shock tubes
shock waves
temperature measurement
- gas transport**
- SN (ENCOMPASSES GAS DYNAMICS--EXCLUDES MATERIALS HANDLING)
- RT energy transfer
gaseous diffusion
heat transfer
kinetic theory
Lighthill gas model
magnetohydrodynamics
mass transfer
pollution transport
transport theory
- ∞ **gas tubes**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cold cathode tubes
gas discharge tubes
gas pipes
trigatrons
- gas tungsten arc welding**
- UF *TIG welding*
tungsten inert gas welding
- GS welding
. fusion welding
. . electric welding
. . . arc welding
. . . . **gas tungsten arc welding**
- RT heat affected zone
- gas turbine engines**
- GS engines
. air breathing engines
. . **gas turbine engines**
. . . hydrogen engines
. . . jet engines
. . . T-58 engine
. . . . ramjet engines
. integral rocket ramjets
. low volume ramjet engines
. pulsejet engines
. supersonic combustion ramjet engines
. turbofan engines
. turbojet engines
. Bristol-Siddeley Olympus 593 engine
. Bristol-Siddeley Viper engine
. ducted fan engines
. J-33 engine
. J-34 engine
. J-47 engine
. J-52 engine
. J-57 engine
. J-58 engine
. J-65 engine
. J-69-T-25 engine
. J-71 engine
. J-73 engine
. J-75 engine
. J-79 engine
. J-85 engine
. J-93 engine
. RA-28 engine
. turbofan engines
. Bristol-Siddeley BS 53 engine
. CF-700 engine
. convertible fan-shaft engines
. J-97 engine
. TF-30 engine

gas turbines

- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- . internal combustion engines
- . **gas turbine engines**
- . hydrogen engines
- . jet engines
- . T-58 engine
- . ramjet engines
- . integral rocket ramjets
- . low volume ramjet engines
- . pulsejet engines
- . supersonic combustion ramjet engines
- . turboramjet engines
- . turbojet engines
- . Bristol-Siddeley Olympus 593 engine
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- . J-33 engine
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- . J-47 engine
- . J-52 engine
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- . J-58 engine
- . J-65 engine
- . J-69-T-25 engine
- . J-71 engine
- . J-73 engine
- . J-75 engine
- . J-79 engine
- . J-85 engine
- . J-93 engine
- . RA-28 engine
- . turbofan engines
- . Bristol-Siddeley BS 53 engine
- . CF-700 engine
- . convertible fan-shaft engines
- . J-97 engine
- . TF-30 engine
- . TF-34 engine
- . TF-41 engine
- . turboprop engines
- . T-34 engine
- . T-38 engine
- . T-53 engine
- . T-55 engine
- . T-56 engine
- . T-63 engine
- . T-64 engine
- . T-74 engine
- . T-76 engine
- . T-78 engine
- . turboramjet engines
- . turbine engines
- . **gas turbine engines**
- . hydrogen engines
- . jet engines
- . T-58 engine
- . ramjet engines
- . integral rocket ramjets
- . low volume ramjet engines
- . pulsejet engines
- . supersonic combustion ramjet engines
- . turboramjet engines
- . turbojet engines
- . Bristol-Siddeley Olympus 593 engine
- . Bristol-Siddeley Viper engine
- . ducted fan engines
- . J-33 engine
- . J-34 engine
- . J-47 engine
- . J-52 engine
- . J-57 engine
- . J-58 engine
- . J-65 engine

- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- RT aircraft engines
- axial flow turbines
- Brayton cycle
- external combustion engines
- flameout
- steam turbines
- supersonic turbines
- turbogenerators
- two stage turbines
- wave rotors

gas turbines

DEF Turbines rotated by expanding gases, as in a turbojet engine or in a turbosupercharger.

GS turbomachinery

. turbines

. . **gas turbines**

RT axial flow turbines

Brayton cycle

closed cycles

combined cycle power generation

internal combustion engines

spray ingestion

steam turbines

supersonic turbines

turbogenerators

two stage turbines

gas valves

GS pneumatic equipment

. **gas valves**

valves

. **gas valves**

RT automatic control valves

cocks

dampers (valves)

fuel valves

relief valves

gas viscosity

GS transport properties

. viscosity

. . **gas viscosity**

RT gaseous diffusion

Lennard-Jones gas

gas welding

SN (EXCLUDES ELECTRIC WELDING IN THE PRESENCE OF A CONTROLLED GASEOUS ATMOSPHERE)

GS welding

. fusion welding

. . **gas welding**

. . brazing

. . . low temperature brazing

RT gas-metal interactions

pressure welding

gasdynamic lasers

GS stimulated emission devices

. lasers

. . gasdynamic lasers

RT

gas flow

gas lasers

laser outputs

plasmadynamic lasers

tube lasers

gaseous cavitation

USE **cavitation flow**

gas flow

gaseous diffusion

DEF A method of isotopic separation based on the fact that gas atoms or molecules with different masses will diffuse through a porous barrier (orm membrane) at different rates. The method is used to separate uranium 235 from uranium 238. It requires large gaseous diffusion plants and enormous amounts of electric power.

UF *gas diffusion*

GS diffusion

. **gaseous diffusion**

. . gaseous self-diffusion

transport properties

. **gaseous diffusion**

. . gaseous self-diffusion

RT diffusion coefficient

gas density

gas dynamics

gas flow

gas lubricants

gas recovery

gas transport

gas viscosity

gas-gas interactions

gas-ion interactions

gas-liquid interactions

gas-metal interactions

mixing ratios

molecular diffusion

pollution transport

thermal diffusion

gaseous fission reactors

GS nuclear reactors

. **gaseous fission reactors**

RT fissile fuels

fissionable materials

∞ gas reactors

nuclear lightbulb engines

nuclear propulsion

plasma propulsion

gaseous fuels

GS fuels

. **gaseous fuels**

. . natural gas

. . . liquefied natural gas

gases

. flammable gases

. . **gaseous fuels**

. . . natural gas

. . . . liquefied natural gas

RT lignite

liquid fuels

gaseous rocket propellants

GS propellants

. rocket propellants

. . **gaseous rocket propellants**

RT cryogenic rocket propellants

endothermic fuels

gas mixtures

high energy propellants

hybrid propellants

hydrogen fuels

liquid rocket propellants

man operated propulsion systems

monopropellants

storable propellants

gaseous self-diffusion

GS diffusion

. gaseous diffusion

. . **gaseous self-diffusion**

transport properties

. gaseous diffusion

. . **gaseous self-diffusion**

RT electron diffusion

gas dynamics

- kinetic theory
 - molecular diffusion
 - particle diffusion
 - plasma diffusion
- gases**
- GS **gases**
 - . ammonia
 - . . liquid ammonia
 - . carbon dioxide
 - . carbon monoxide
 - . carbon suboxides
 - . cold gas
 - . compressed gas
 - . . high pressure oxygen
 - . dissolved gases
 - . exhaust gases
 - . . flue gases
 - . flammable gases
 - . . gaseous fuels
 - . . . natural gas
 - liquefied natural gas
 - . . liquefied natural gas
 - . . pyrogen
 - . gas mixtures
 - . . air
 - . . . alveolar air
 - . . . compressed air
 - . . . expired air
 - . . . high temperature air
 - . . . liquid air
 - . . . detonable gas mixtures
 - . gas streams
 - . gray gas
 - . high temperature gases
 - . . high temperature air
 - . hydrogen
 - . . hydrogen isotopes
 - . . . deuterium
 - . . . hydrogen 4
 - . . . metallic hydrogen
 - . . . tritium
 - . . liquid hydrogen
 - . ideal gas
 - . ionized gases
 - . . Lorentz gas
 - . liquefied gases
 - . . liquefied natural gas
 - . . liquid air
 - . . liquid ammonia
 - . . liquid fluorine
 - . . liquid helium
 - . . . liquid helium 2
 - . . liquid hydrogen
 - . . liquid neon
 - . . liquid nitrogen
 - . . liquid oxygen
 - . molecular gases
 - . . polar gases
 - . . polyatomic gases
 - . . . diatomic gases
 - . . monatomic gases
 - . neutral gases
 - . nitrogen
 - . . liquid nitrogen
 - . . nitrogen isotopes
 - . . . nitrogen 15
 - . . . nitrogen 16
 - . . solid nitrogen
 - . noncondensable gases
 - . nongray gas
 - . nonpolar gases
 - . ortho hydrogen
 - . oxygen
 - . . liquid oxygen
 - . . oxygen isotopes
 - . . . oxygen 17
 - . . . oxygen 18
 - . ozone
 - . para hydrogen
 - . phosgene
 - . rare gases
 - . . argon
 - . . . argon isotopes
 - . . helium
 - . . . helium isotopes
 - . . . liquid helium
 - liquid helium 2
 - . . krypton
 - . . . krypton isotopes
 - krypton 85
 - . . neon
 - . . . liquid neon
 - . . . neon isotopes
 - . . radon
 - . . . radon isotopes
 - . . xenon
 - . . . xenon isotopes
 - xenon 129
 - xenon 133
 - xenon 135
 - . . rarefied gases
 - . . cosmic gases
 - . . . interplanetary gas
 - . . . interstellar gas
 - . rarefied plasmas
 - . real gases
 - . residual gas
 - . solidified gases
 - . . solid cryogenics
 - . . . solid nitrogen
 - . sulfur hexafluoride
 - . synthesis gas
 - RT ∞ atmospheres
 - coal gasification
 - ∞ fluids
 - fumes
 - gas dynamics
 - gas flow
 - gas recovery
 - hydrogen clouds
 - metal-gas systems
 - nonpoint sources
 - odors
 - plasmas (physics)
 - pneumatics
 - prevaporization
 - reaction products
 - vapor phases
 - vapors
- gas-gas interactions**
- GS **gas-gas interactions**
 - . association reactions
- RT Dalton law
- detonable gas mixtures
- exhaust emission
- gaseous diffusion
- ∞ interactions
- gasification**
- GS **gasification**
 - . coal gasification
 - . . hydrolysis
 - RT synthane
 - vaporizing
- gas-ion interactions**
- UF *ion-gas interactions*
- RT gaseous diffusion
- ∞ interactions
- gaskets**
- DEF Preformed deformable devices designed to be placed between two adjoining parts to prevent the passage of liquid or gas between the parts.
 - GS seals (stoppers)
 - . **gaskets**
 - RT labyrinth seals
 - O ring seals
 - pump seals
- gas-liquid interactions**
- GS **gas-liquid interactions**
 - . air water interactions
 - . . air sea ice interactions
 - RT condensing
 - energy transfer
 - evaporation
 - gaseous diffusion
 - heat transfer
 - ∞ interactions
 - interfacial tension
 - mass transfer
 - momentum transfer
 - noncondensable gases
- surface reactions
- gas-metal interactions**
- GS fluid-solid interactions
 - . gas-solid interactions
 - . . **gas-metal interactions**
 - RT ablation
 - adsorption
 - chemical reactions
 - chemisorption
 - ∞ condensation
 - condensing
 - corrosion
 - diffusion
 - evaporation
 - exhaust emission
 - flame propagation
 - gas welding
 - gaseous diffusion
 - hot corrosion
 - hydrogen embrittlement
 - ∞ interactions
 - metal combustion
 - metal vapors
 - metal-gas systems
 - occlusion
 - solid phases
 - sublimation
 - sulfidation
 - vapor phases
- gasohol (fuel)**
- DEF Synthetic fuel consisting of a mixture of gasoline and grain alcohol (ethanol).
 - GS fuels
 - . chemical fuels
 - . . synthetic fuels
 - . . . **gasohol (fuel)**
 - RT alcohols
 - gasoline
- gasoline**
- GS fuels
 - . chemical fuels
 - . . hydrocarbon fuels
 - . . . **gasoline**
 - . . liquid fuels
 - . . . **gasoline**
 - products
 - . petroleum products
 - . . **gasoline**
 - RT antiknock additives
 - automobile fuels
 - diesel fuels
 - gasohol (fuel)
 - jet engine fuels
 - kerogen
 - kerosene
 - octane number
 - shale oil
 - solvent refined coal
- GASP**
- USE Global Air Sampling Program**
- Gaspra asteroid**
(added July 1995)
- GS celestial bodies
 - . asteroids
 - . . **Gaspra asteroid**
 - RT asteroid belts
 - Galileo spacecraft
 - meteoroids
- gas-solid interactions**
- DEF Effects of the impingement of gases (particles) on solid surfaces in various environments.
 - GS fluid-solid interactions
 - . **gas-solid interactions**
 - . . gas-metal interactions
 - RT air land interactions
 - dynamic loads
 - fluid dynamics
 - impingement
 - ∞ interactions
 - panel method (fluid dynamics)
- gas-solid interfaces**
- GS boundaries

gastrointestinal system

. fluid boundaries
. . . **gas-solid interfaces**
interfaces
. fluid boundaries
. . . **gas-solid interfaces**
RT boundary layers
fluid-solid interactions
heat transfer
interface stability
metal surfaces
occlusion
solid phases
solid-solid interfaces
solubility
sublimation
vapor phases

gastrointestinal system
GS anatomy
. digestive system
. . . **gastrointestinal system**
. . . appendix (anatomy)
. . . intestines
. . . . rectum
. . . stomach
RT abdomen
colic
gall
glands (anatomy)
liver
organs
pancreas
∞ systems

GATE (experiment)
USE **GARP Atlantic Tropical Experiment**

∞ **gates**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT closures
gates (circuits)
gates (openings)

gates (circuits)
UF *OR-gates*
GS circuits
. **gates (circuits)**
. . field-programmable gate arrays
. . threshold gates
RT coincidence circuits
∞ gates
logic circuits
logical elements
switching circuits
threshold logic
trigger circuits

gates (openings)
RT apertures
∞ barriers
canals
doors
fences (barriers)
∞ gates
hatches
hydraulic equipment
openings
outlets
safety devices
vents
walls

gauge invariance
GS invariance
. **gauge invariance**
RT electromagnetic radiation
supergravity
transformations (mathematics)

gauge theory
DEF A field theory in which symmetries of the theory are implemented locally in space and time. This leads to theories where forces are generally carried by vector bosons. Some gauge theories are electrodynamics, quantum chromodynamics, and Yang Mills theory.
GS field theory (physics)
. **gauge theory**
. . quantum chromodynamics

. . unified field theory
. . . electroweak model
. . . standard model (particle physics)
RT gravitation theory
string theory
supergravity
supersymmetry
∞ theories
Yang-Mills fields
Yang-Mills theory

Gauss equation
UF *Gauss function*
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **Gauss equation**
RT ∞ equations
Maxwell equation

Gauss function
USE **Gauss equation**

Gaussian distributions
USE **normal density functions**

Gaussian elimination
DEF A technique for solving linear equations by progressive differencing.
RT elimination
linear equations
matrices (mathematics)
subtraction

Gaussian noise
USE **random noise**

Gauss-Markov theorem
GS theorems
. **Gauss-Markov theorem**
RT least squares method
statistical analysis
variance (statistics)

Gaussmeters
USE **magnetometers**

gauze
GS fabrics
. **gauze**
RT casts

GAW-1 airfoil
UF *General Aviation Whitcomb airfoil*
GS airfoils
. wings
. . **GAW-1 airfoil**
RT ATLIT project
PA-34 Seneca aircraft
wing profiles

GAW-2 airfoil
UF *General Aviation Whitcomb airfoil*
GS airfoils
. wings
. . **GAW-2 airfoil**
RT body-wing configurations
flaps (control surfaces)
general aviation aircraft
wing profiles

GC-130 aircraft
USE **C-130 aircraft**

GCR (reactors)
USE **gas cooled reactors**

GDOP
USE **geometric dilution of precision**

GE 625 computer
GS data processing equipment
. computers
. . digital computers
. . . GE computers
. . . . **GE 625 computer**

GE 635 computer
GS data processing equipment
. computers

. . digital computers
. . . GE computers
. . . . **GE 635 computer**

GE computers
UF *General Electric computers*
GS data processing equipment
. computers
. . digital computers
. . . **GE computers**
. . . . GE 625 computer
. . . . GE 635 computer

∞ **gear**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT arresting gear
gears
landing gear
mechanical drives

gear teeth
RT bevel gears
gears
mechanical drives

gearboxes
(added October 1997)
USE **transmissions (machine elements)**

gears
GS **gears**
. bevel gears
. racks (gears)
. . spiral bevel gears
RT counter-rotating wheels
∞ gear
gear teeth
idler
lubrication
mechanical drives
transmissions (machine elements)
wheels
windmills (windpowered machines)

gegenschein
DEF A round or elongated spot of light in the sky at a point 180 degrees from the sun. Also called counter glow.
GS electromagnetic radiation
. light (visible radiation)
. . **gegenschein**
extraterrestrial radiation
. **gegenschein**
RT night sky
polarized light
sky brightness
solar radiation
terrestrial dust belt
zodiacal light

gehlenite
DEF A mineral of the mellite group. It is isomorphous with akermanite. Used for ver-lardenite.
UF *velardenite*
GS aluminum compounds
. aluminum silicates
. . **gehlenite**
calcium compounds
. calcium silicates
. . **gehlenite**
minerals
. **gehlenite**
silicon compounds
. silicates
. . aluminum silicates
. . . **gehlenite**
. . calcium silicates
. . . **gehlenite**
RT aluminum oxides

Geiger counters
DEF Instruments for detecting and measuring radioactivity. In full, Geiger-Mueller counter. Used for Geiger-Mueller tubes.
UF *Geiger-Mueller tubes*
GS ionization chambers
. **Geiger counters**
measuring instruments

. counters
 . . radiation counters
 . . . **Geiger counters**
 . radiation measuring instruments
 . . radiation counters
 . . . **Geiger counters**

RT dosimeters
 neutron counters
 overvoltage
 particle telescopes
 proportional counters
 radiation detectors

Geiger-Mueller tubes
 USE **Geiger counters**

gel chromatography
(added August 2004)
 DEF Chromatography on non-ionic gels without regard to the mechanism of solute discrimination.
 UF *gel filtration chromatography*
gel permeation chromatography
 GS chemical tests
 . chemical analysis
 . . chromatography
 . . . **gel chromatography**
 RT chemical analysis
 liquid chromatography

gel filtration chromatography
(added November 2001)
 USE **gel chromatography**

gel permeation chromatography
 USE **gel chromatography**

gelatins
 RT collagens
 ∞ food
 gels
 nonNewtonian fluids

gelation
 RT coagulation
 colloid
 gels
 solidification
 thixotropy

gelbstoff
(added October 1997)
 USE **dissolved organic matter**

gelled propellants
 GS propellants
 . **gelled propellants**
 . . gelled rocket propellants
 RT chemical fuels
 colloidal propellants
 high temperature propellants
 hydrogen fuels
 metal fuels
 metal propellants
 plastic propellants
 propellant additives
 solid propellants

gelled rocket propellants
 UF *thixotropic propellants*
 GS propellants
 . gelled propellants
 . . **gelled rocket propellants**
 . rocket propellants
 . . liquid rocket propellants
 . . . **gelled rocket propellants**
 RT chemical fuels
 cryogenic rocket propellants
 gels
 high temperature propellants
 hybrid propellants
 hypergolic rocket propellants
 metal propellants
 monopropellants
 slurry propellants
 solid rocket propellants
 storable propellants

gels
 DEF Liquids containing colloidal structural

networks that form continuous matrices and completely pervade the liquid phase. Gels deform elastically upon application of shear forces less than the yield stress. At shear forces above the yield stress, the flow properties are principally determined by the gel matrices.

GS **gels**
 . double base rocket propellants
 . silica gel
 . xerogels
 RT aerogels
 colloids
 dopes
 gelatins
 gelation
 gelled rocket propellants
 nonNewtonian fluids
 slurries
 thickeners (materials)
 thixotropy

Gemini 2 spacecraft
 GS manned spacecraft
 . Gemini spacecraft
 . . **Gemini 2 spacecraft**
 reentry vehicles
 . recoverable spacecraft
 . . Gemini spacecraft
 . . . **Gemini 2 spacecraft**
 soft landing spacecraft
 . Gemini spacecraft
 . . **Gemini 2 spacecraft**
 RT manned space flight

Gemini 3 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 3 flight**
 RT Titan launch vehicles

Gemini 4 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 4 flight**

Gemini 5 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 5 flight**

Gemini 6 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 6 flight**

Gemini 7 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 7 flight**
 RT Titan launch vehicles

Gemini 8 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 8 flight**
 RT Titan launch vehicles

Gemini 9 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 9 flight**
 RT Titan launch vehicles

Gemini 10 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 10 flight**
 RT Titan launch vehicles

Gemini 11 flight
 GS space flight
 . manned space flight

. . Gemini flights
 . . . **Gemini 11 flight**
 RT Titan launch vehicles

Gemini 12 flight
 GS space flight
 . manned space flight
 . . Gemini flights
 . . . **Gemini 12 flight**
 RT Titan launch vehicles

Gemini (GT-1) spacecraft
 GS manned spacecraft
 . Gemini spacecraft
 . . **Gemini (GT-1) spacecraft**
 reentry vehicles
 . recoverable spacecraft
 . . Gemini spacecraft
 . . . **Gemini (GT-1) spacecraft**
 soft landing spacecraft
 . Gemini spacecraft
 . . **Gemini (GT-1) spacecraft**
 RT manned space flight

Gemini B spacecraft
 GS manned spacecraft
 . **Gemini B spacecraft**
 reentry vehicles
 . recoverable spacecraft
 . . **Gemini B spacecraft**
 soft landing spacecraft
 . **Gemini B spacecraft**
 RT manned space flight

Gemini flights
 GS space flight
 . manned space flight
 . . **Gemini flights**
 . . . Gemini 3 flight
 . . . Gemini 4 flight
 . . . Gemini 5 flight
 . . . Gemini 6 flight
 . . . Gemini 7 flight
 . . . Gemini 8 flight
 . . . Gemini 9 flight
 . . . Gemini 10 flight
 . . . Gemini 11 flight
 . . . Gemini 12 flight

Gemini project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Gemini project**
 . projects
 . . **Gemini project**
 . space programs
 . . NASA space programs
 . . . **Gemini project**
 RT Agena B rocket vehicle
 Agena rocket vehicles
 Atlas launch vehicles
 integrated mission control center
 Mercury project
 Titan project

Gemini spacecraft
 GS manned spacecraft
 . **Gemini spacecraft**
 . . Gemini 2 spacecraft
 . . Gemini (GT-1) spacecraft
 reentry vehicles
 . recoverable spacecraft
 . . **Gemini spacecraft**
 . . . Gemini 2 spacecraft
 . . . Gemini (GT-1) spacecraft
 soft landing spacecraft
 . **Gemini spacecraft**
 . . Gemini 2 spacecraft
 . . Gemini (GT-1) spacecraft
 RT manned space flight
 space capsules
 Titan project

Geminid meteoroids
 GS celestial bodies
 . meteoroid showers
 . . **Geminid meteoroids**
 . meteoroids

. . **Geminid meteoroids**

gene expression

DEF The process by which a gene's coded information is converted into the structures present and operating in the cell.

- UF *gene regulation*
- RT biological diversity
biological evolution
chromosomes
cloning (biology)
deoxyribonucleic acid
evolution (development)
gene expression regulation
gene therapy
genes
genetically modified plants
genetics
molecular biology
mutagenesis
oncogenes
phenotype
ribonucleic acids
transcription (genetics)

gene expression regulation

(added August 2004)

DEF Any of the processes by which nuclear, cytoplasmic, or intercellular factors influence the differential control of gene action at the level of transcription or translation. These processes include gene activation and genetic induction.

- RT gene expression
gene therapy
genes
transcription (genetics)

gene regulation

USE **gene expression**

gene therapy

(added February 2002)

DEF The introduction of new genes into cells for the purpose of treating disease by restoring or adding gene expression.

- GS therapy
 - . **gene therapy**
- RT chromosomes
deoxyribonucleic acid
gene expression
gene expression regulation
genetic engineering
plasmids

general aviation aircraft

- UF *executive aircraft*
private aircraft

GS **general aviation aircraft**

- . agricultural aircraft
- . Beechcraft 18 aircraft
- . C-33 aircraft
- . C-35 aircraft
- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft
- . Cessna 402B aircraft
- . CL-600 challenger aircraft
- . DH 125 aircraft
- . DHC 2 aircraft
- . DO-27 aircraft
- . DO-28 aircraft
- . G-1 aircraft
- . HC-3 helicopter
- . Yak 40 aircraft

- RT ∞ aeronautics
air transportation
∞ aircraft
civil aviation
commercial aircraft
commuter aircraft
GAW-2 airfoil
helicopters
jet aircraft
light aircraft
∞ low wing aircraft
passenger aircraft
Piper aircraft
single engine aircraft
∞ subsonic aircraft
training aircraft

- transport aircraft
- turboprop aircraft
- utility aircraft

General Aviation Whitcomb airfoil

USE **GAW-1 airfoil**
GAW-2 airfoil

General Dynamics aircraft

GS **General Dynamics aircraft**

- . B-58 aircraft
- . C-131 aircraft
- . CL-41 aircraft
- . CL-44 aircraft
- . CL-84 aircraft
- . CV-340 aircraft
- . CV-440 aircraft
- . CV-880 aircraft
- . CV-990 aircraft
- . F-102 aircraft
- . F-106 aircraft
- . F-111 aircraft

- RT ∞ aircraft
Canadair aircraft
PA-34 Seneca aircraft

General Electric computers

USE **GE computers**

general overviews

(added February 1993)

- RT bibliographies
recommendations
surveys
technology utilization

General Purpose Heat Sources

(added December 2002)

USE **radioisotope heat sources**

generalization (psychology)

- RT transfer of training

∞ **generation**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
cogeneration
heat generation
initiation
regeneration (engineering)
- RT

∞ **generators**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
AC generators
arc generators
boilers
cavity vapor generators
colloidal generators
DC generators
decommutators
direct power generators
duochromators
electric generators
electrostatic generators
energy conversion efficiency
function generators
gas generators
Hall generators
harmonic generators
homopolar generators
impulse generators
linear alternators
magnetohydrodynamic generators
motors
noise generators
photoelectric generators
plasma generators
pulse generators
radiation sources
report generators
rotating generators
shock wave generators
signal generators
solar sea power plants
sound generators
stators
stimulated emission devices
subharmonic generators
- RT

- test pattern generators
- thermoelectric generators
- tide powered generators
- turbogenerators
- vaporizers
- voltage generators
- vortex generators
- wave generation
- windpowered generators

genes

- GS **genes**
 - . oncogenes
 - . tumor suppressor genes
- RT chromosome aberrations
chromosomes
cloning (biology)
deoxyribonucleic acid
gene expression
gene expression regulation
genetic code
genetic engineering
genetics
genome
molecular biology
mutagenesis
mutations
phenotype
ribonucleic acids
telomeres

Genesis mission

(added February 1999)

DEF A space mission to collect solar wind samples from a halo orbit about the sun-Earth L1 point for two years, returning those samples to Earth in 2003 for analysis and examination. Analysis of the samples collected by the mission will contribute to an understanding of the origins of the solar system.

- GS space missions
 - . **Genesis mission**
- RT solar system evolution
solar wind

genetic algorithms

(added December 1992)

DEF Parameter search procedures loosely based on the mechanics of natural population genetics and the survival-of-the-fittest.

- GS mathematical logic
 - . algorithms
 - . . **genetic algorithms**
optimization
 - . **genetic algorithms**
- RT artificial intelligence
control systems design
design optimization
evolvable hardware
machine learning
multidisciplinary design optimization
neural nets
optimal control
parameter identification
trajectory optimization

genetic code

DEF The sequence of nucleotides, coded in triplets along the messenger RNA that determines the sequence of amino acids in protein synthesis.

- RT chromosomes
cloning (biology)
genes
genetics
genome

genetic diversity

USE **biological diversity**

genetic engineering

DEF The intentional production of new genes and alteration of genomes by the substitution or addition of new genetic material. Used for hybrids (biology).

- UF *hybrids (biology)*
- RT biochemistry
bioengineering
∞ biology
biosynthesis

- clone cells
cloning (biology)
gene therapy
genes
genetically modified plants
genetics
genome
phenotype
plasmids
polymerase chain reaction
- genetically modified plants**
(added August 2004)
DEF Plants, or their progeny, whose genome has been altered by genetic engineering.
GS plants (botany)
 . **genetically modified plants**
RT agriculture
 botany
 crop vigor
 gene expression
 genetic engineering
 genome
 phenotype
- genetics**
RT biological diversity
 biological evolution
∞ biology
 breeding (reproduction)
 chromosomes
 cloning (biology)
 congenital anomalies
 cytogenesis
 dominance
 evolution (development)
 gene expression
 genes
 genetic code
 genetic engineering
 mutagens
 mutations
 neurospora
 nuclei (cytology)
 nucleogenesis
 species diffusion
 transcription (genetics)
- Genie rocket vehicle**
UF *MB-1 rocket vehicle*
GS rocket vehicles
 . single stage rocket vehicles
 . . **Genie rocket vehicle**
RT Astrobee rocket vehicles
 solid propellant rocket engines
- genitourinary system**
GS anatomy
 . **genitourinary system**
 . . bladder
 . . kidneys
 . . . glomerulus
 . . . reproductive systems
 . . . sex glands
 gonads
 ovaries
 testes
 prostate gland
 . . . uterus
RT gynecology
 kidney stones
 organs
∞ systems
 urology
- genome**
(added September 2001)
DEF An organism's genetic complement as represented in its DNA or, in some cases, its RNA.
RT deoxyribonucleic acid
 genes
 genetic code
 genetic engineering
 genetically modified plants
 proteome
- ribonucleic acids
- GEO environments*
USE **Earth orbital environments**
- geostrophysics*
USE **astrophysics**
- geobotany**
GS botany
 . **geobotany**
RT biogeochemistry
 geographic distribution
 plants (botany)
 rain forests
 trees (plants)
- geocentric coordinates**
GS coordinates
 . planetocentric coordinates
 . . **geocentric coordinates**
RT astronomical coordinates
 celestial reference systems
 inertial coordinates
 planet ephemerides
 spherical coordinates
- geochemistry**
DEF The study of the distribution of the amounts of the chemical elements in minerals, ores, rocks, soils, water, and the atmosphere. Also, the study of the circulation of the elements in nature, on the basis of the properties of the atom and ions. A major concern of geochemistry is the synoptic evaluation of the abundance of the elements of the Earth's crust and in major classes of rocks and minerals.
GS environmental chemistry
 . **geochemistry**
 . . biogeochemistry
RT abundance
∞ chemistry
 cosmochemistry
 Earth sciences
 geochronology
 geology
 geophysics
 hydrology
 isotope ratios
 limnology
 marine chemistry
 mineralogy
 paleobiology
 paleontology
 petrology
 radioactivity
 siderophile elements
 submarine hydrothermal vents
- geochronology**
DEF The study of time in relationship to the history of the Earth, especially by the absolute age determination and relative dating systems developed for this purpose.
GS chronology
 . **geochronology**
 geology
 . **geochronology**
RT Cambrian Period
 Cenozoic Era
 Cretaceous Period
 Cretaceous-Tertiary boundary
 dendrochronology
 geochemistry
 geophysics
 Holocene epoch
 isotope ratios
 magnetostratigraphy
 Mesozoic Era
 paleobiology
 paleontology
 Paleozoic Era
 particle tracks
 petrogenesis
 Pleistocene epoch
 Quaternary period
 radioactive age determination
 stratigraphy
- Tertiary Period
- geocoronal emissions**
GS atmospheric radiation
 . sky radiation
 . . airglow
 . . . **geocoronal emissions**
 electromagnetic radiation
 . light (visible radiation)
 . . sky radiation
 . . . airglow
 **geocoronal emissions**
- geocyclotrons**
GS particle accelerators
 . cyclotrons
 . . **geocyclotrons**
RT ∞ accelerators
 elementary particles
- geodesic lines**
GS geometry
 . Euclidean geometry
 . . lines (geometry)
 . . . **geodesic lines**
RT chords (geometry)
 curves (geometry)
- geodesy**
DEF The science which deals mathematically with the size and shape of the Earth, and the Earth's external gravity field, and with surveys of such precision that overall size and shape of the Earth must be taken into consideration. Used for Earth figure, Earth shape, and Lszak ellipsoid.
UF *Earth figure*
 Earth shape
 Lszak ellipsoid
GS **geodesy**
 . celestial geodesy
RT altimetry
 Earth (planet)
 Earth axis
 geodetic accuracy
 geodetic surveys
 geoids
 geology
 geophysics
 gravimeters
 lunar retroreflectors
 oblate spheroids
 OGO-4
 OGO-5
 perturbation
 photomapping
 polar wandering (geology)
 satellite altimetry
 satellite doppler positioning
 topography
 vinti theory
- geodetic accuracy**
DEF The degree to which point positions or boundaries indicated on maps or imagery correspond with true geodetic positions.
GS accuracy
 . **geodetic accuracy**
RT Earth surface
 geodesy
 geoids
 geopotential height
 satellite doppler positioning
- geodetic coordinates**
DEF Quantities that define the position of a point on the spheroid of reference with respect to the planes of the geodetic equator and of a reference meridian.
GS coordinates
 . **geodetic coordinates**
RT International Satellite Geodesy
 Experiment
 latitude
 longitude
∞ nets
 satellite doppler positioning
- geodetic satellites**
GS artificial satellites

geodetic surveys

. geodetic satellites

- . . ANNA satellites
- . . Explorer 29 satellite
- . . Explorer 36 satellite
- . . GEOLE satellites
- . . GEOS 1 satellite
- . . GEOS 2 satellite
- . . GEOS 3 satellite
- . . Geosat satellites
- . . LARGOS satellite
- . . PAGEOS satellite
- . . Vanguard 1 satellite

RT

- active satellites
- celestial geodesy
- navigation satellites
- NAVSTAR satellites
- passive satellites
- satellite altimetry
- satellite doppler positioning
- satellite laser ranging
- Vanguard satellites

geodetic surveys

DEF Surveys which takes into account the size and shape of the Earth.

GS surveys

. geodetic surveys

RT

- geodesy
- geological surveys
- Phoenix quadrangle (AZ)
- satellite doppler positioning
- topography

geodimeters

DEF Trade name of electronic-optical devices that measure ground distances precisely by electronic timing and phase comparison of modulated light waves that travel from a master unit to a reflector and return to a light-sensitive tube where an electric current is set up. They are normally used at night and are effective with first-order accuracy up to distances of 5-40 km (3-25 miles). The term is derived from GEoDetic DIstance METER.

GS measuring instruments

- . distance measuring equipment

. . geodimeters

- . optical measuring instruments

. . geodimeters

- optical equipment

- . optical measuring instruments

. . geodimeters

RT optical measurement

- range finders
- tellurometers

Geodynamic Experimental Ocean Satellite

USE **GEOS-D satellite**

geodynamics

DEF Study of the dynamic forces or processes within the Earth. Used for crustal dynamics.

UF *crustal dynamics*

RT Chandler wobble

- crustal fractures

∞ dynamics

- Earth movements

- Earth sciences

- geomorphology

- geophysics

- planetary quakes

- shock waves

- terradyamics

geoelectricity

DEF The Earth's natural electric fields and phenomena. It is closely related to geomagnetism.

GS electricity

- . **geoelectricity**

- . . telluric currents

RT Earth (planet)

- field aligned currents
- geophysics

geopotential

geofabrics

USE **geotechnical fabrics**

geofractures

USE **geological faults**

geographic applications program

GS programs

- . space programs

. . geographic applications program

RT

- Earth resources
- Earth Resources Program
- geography
- mapping
- NASA programs
- remote sensors
- satellite-borne photography
- soil mapping
- terrain analysis

geographic distribution

(added June 1995)

GS distribution (property)

- . spatial distribution

. . geographic distribution

RT ∞ distribution

- economic development
- geobotany
- geomorphology
- populations
- remote sensing
- species diffusion
- vegetative index

geographic information systems

DEF Computer assisted systems that acquire, store, manipulate, and display geographic data. Some systems are not automated.

GS information systems

. geographic information systems

RT

- aerial photography
- data systems
- geography
- imagery
- infrared photography
- remote sensing

geography

DEF The study of all aspects of the Earth's surface including its natural and political divisions, the distribution and differentiation of areas and, often, man in relationship to his environment.

GS **geography**

- . hypsography

- . orography

RT

- Arctic regions
- cadastral mapping
- climatology
- continents
- Earth (planet)
- Eastern Hemisphere
- economic development
- estuaries
- geographic applications program
- geographic information systems
- geomorphology
- Heat Capacity Mapping Mission
- mapping
- maps
- oceanography
- oceans
- plains
- polar regions
- selenography
- temperate regions
- tropical regions
- tundra
- Western hemisphere

geoids

DEF The figure of the Earth as defined by the geopotential surface which most nearly coincides with mean sea level over the entire surface of the Earth.

RT

- altimetry
- geodesy

geodetic accuracy

geometry

geophysics

GRACE mission

oblate spheroids

satellite altimetry

shapes

spheroids

symmetrical bodies

GEOLE satellites

GS

- artificial satellites
- . French satellites
- . . **GEOLE satellites**
- . . geodetic satellites
- . . . **GEOLE satellites**
- . . meteorological satellites
- . . . **GEOLE satellites**

RT

- EOLE satellites
- French space program

geological faults

DEF A surface or zone of rock fracture along which there has been displacement, from a few centimeters to a few kilometers in scale. Used for closed faults, cross faults, echelon faults, geofractures, grabens, rifts, splits (geology), step faults, and thrust faults.

UF

closed faults

cross faults

echelon faults

geofractures

grabens

rifts

splits (geology)

step faults

thrust faults

GS

geological faults

- . African rift system

RT

- . San Andreas Fault

crevasses

crustal fractures

earthquake damage

earthquakes

∞ faults

fissures (geology)

folds (geology)

formations

inliers (landforms)

landforms

massifs

mid-ocean ridges

plates (tectonics)

Rouse belts

San Andreas Fault experiment

synclines

geological surveys

GS surveys

. **geological surveys**

RT

- exploration
- geodetic surveys
- geology
- geophysics
- paleontology
- petrology
- photogeology
- radar geology

geology

DEF The study of the planet Earth--the materials of which it is made, the processes that act on these materials, the products formed, and the history of the planet and its life forms since its origin. Geology considers the physical forces that act on the Earth, the chemistry of its constituent materials, and the biology of its past inhabitants as revealed by fossils. Clues on the origin of the planet are sought in a study of the Moon and other extraterrestrial bodies. The knowledge thus obtained is placed in the service of man--to aid in the discovery of minerals and fuels of value in the Earth's crust, to identify geologically stable sites for major structures, and to provide foreknowledge of some of the dangers associated with the mobile forces in a dynamic Earth.

GS

geology

- . beds (geology)

- . . salt beds

- . cones (volcanoes)
- . contacts (geology)
- . crossbedding (geology)
- . domes (geology)
- . gaps (geology)
- . geochronology
- . geomorphology
- . glaciology
- . hydrogeology
- . kettles (geology)
- . lunar geology
- . orography
- . petrology
- . . lithology
- . . petrogenesis
- . . petrography
- . photogeology
- . planetary geology
- . . Mars volcanoes
- . radar geology
- . structural properties (geology)
- . subduction (geology)
- . tectonics
- . . neotectonics
- . volcanoes
- . . Mars volcanoes
- . volcanology
- RT bedrock
- boreholes
- bridges (landforms)
- Canadian Shield
- continental shelves
- Earth (planet)
- Earth planetary structure
- Earth sciences
- exploitation
- exploration
- fiords
- formations
- geochemistry
- geodesy
- geological surveys
- geophysical observatories
- geophysics
- geopressure
- geotemperature
- gravimetry
- Great Basin (US)
- inliers (landforms)
- isthmuses
- kreep
- massifs
- meteorology
- mineral deposits
- mineralogy
- minerals
- morphology
- ocean bottom
- oceanography
- oil exploration
- outcrops
- paleomagnetism
- paleontology
- photomapping
- ∞ physical sciences
- Precambrian period
- regolith
- rock mechanics
- rocks
- ∞ science
- seismology
- shatter cones
- soils
- stratigraphy
- structural basins
- geomagnetic anomalies*
- USE **magnetic anomalies**
- geomagnetic crotchets*
- USE **sudden ionospheric disturbances**
- geomagnetic effects*
- USE **magnetic effects**
- geomagnetic equator*
- USE **magnetic equator**
- geomagnetic field*
- USE **geomagnetism**
- geomagnetic hollow**
- GS anomalies
- . magnetic anomalies
- . . **geomagnetic hollow**
- RT Earth magnetosphere
- magneto-hydrodynamic flow
- plasma clouds
- geomagnetic latitude**
- DEF Angular distances from the geomagnetic equator, measured northward or southward through 90 degrees and labeled N or S to indicate the direction of measurement.
- GS latitude
- . **geomagnetic latitude**
- RT coordinates
- geomagnetism
- polar cusps
- geomagnetic micropulsations**
- GS pulses
- . geomagnetic pulsations
- . . **geomagnetic micropulsations**
- . micropulsations
- . . **geomagnetic micropulsations**
- variations
- . magnetic variations
- . . geomagnetic pulsations
- . . . **geomagnetic micropulsations**
- RT nocturnal variations
- telluric currents
- geomagnetic pulsations**
- GS pulses
- . **geomagnetic pulsations**
- . . geomagnetic micropulsations
- variations
- . magnetic variations
- . . **geomagnetic pulsations**
- . . . geomagnetic micropulsations
- RT geomagnetism
- KP index
- magnetospheric instability
- nocturnal variations
- geomagnetic storms*
- USE **magnetic storms**
- geomagnetic tail**
- SN (RESTRICTED TO THE EARTH MAGNETOTAL)
- UF *Earth magnetotail*
- GS environments
- . Earth magnetosphere
- . . **geomagnetic tail**
- RT field aligned currents
- geomagnetism
- magnetic fields
- magnetic islands
- ∞ magnetotails
- planetary magnetic fields
- planetary magnetotails
- polar cusps
- geomagnetically trapped particles*
- USE **radiation belts**
- geomagnetism**
- DEF The magnetic phenomena, collectively considered, exhibited by the Earth and its atmosphere and by extension the magnetic phenomena in interplanetary space. The study of the magnetic field of the Earth. Used for geomagnetic field and terrestrial magnetism.
- UF *geomagnetic field*
- terrestrial magnetism*
- GS magnetic fields
- . **geomagnetism**
- magnetic properties
- . **geomagnetism**
- RT aeromagnetism
- barium ion clouds
- Birkeland currents
- continental drift
- dynamo theory
- Earth (planet)
- Earth gravitation
- Earth magnetosphere
- Earth sciences
- electrojets
- field aligned currents
- field theory (physics)
- flux transfer events
- geomagnetic latitude
- geomagnetic pulsations
- geomagnetic tail
- geophysics
- ∞ inclination
- International Magnetospheric Study
- KP index
- M region
- magnetic anomalies
- magnetic disturbances
- magnetic effects
- magnetic equator
- magnetic poles
- magnetic surveys
- magnetoionics
- magnetometers
- magnetosheath
- MagSat 1 satellite
- Magsat A satellite
- MagSat B satellite
- MagSat satellites
- paleomagnetism
- planetary magnetic fields
- polar cusps
- Polar/GGS spacecraft
- space plasmas
- space weather
- variometers
- geometric accuracy**
- DEF The internal geometric fidelity of an imaging system.
- GS accuracy
- . **geometric accuracy**
- RT distortion
- geometric rectification (imagery)
- image processing
- image resolution
- geometric dilution of precision**
- DEF A navigation and positioning system performance index expressing the dilution of range measurement precision due to the geometric relationship between user and satellites. It is formulated as the square root of the sum of the variances of position estimates in the three orthogonal directions and can be employed to determine the optimal locations for network satellites and in the selection of optimal satellite signals sources. Used for GDOP.
- UF *GDOP*
- GS dilution
- . **geometric dilution of precision**
- RT precision
- geometric rectification (imagery)**
- DEF The correction of image distortions due to sensor view angle, platform attitude, or target surface features.
- GS image processing
- . **geometric rectification (imagery)**
- rectification
- . **geometric rectification (imagery)**
- RT atmospheric correction
- geometric accuracy
- image enhancement
- imagery
- geometrical acoustics**
- DEF The study of the behavior of sound under the assumption that sound transversing a homogeneous medium travels along straight lines or rays. Used for ray acoustics.
- UF *ray acoustics*
- GS acoustics
- . **geometrical acoustics**
- RT geometrical theory of diffraction
- geometry
- wave propagation
- geometrical hydromagnetics*
- USE **magneto-hydrodynamics**
- geometrical optics**
- DEF The geometry of paths of light rays and their imagery through optical systems. Used for ray optics.
- UF *ray optics*
- RT acousto-optics

asphericity
 astigmatism
 Cassegrain optics
 crystal optics
 diffraction propagation
 eikonal equation
 fiber optics
 focusing
 geometrical theory of diffraction
 gradient index optics
 holographic optical elements
 light (visible radiation)
 light transmission
 nonlinear optics
 numerical aperture
 optical equipment
 optical measurement
 optical paths
 optical properties
 optical reflection
 ∞ optics
 physical optics
 ray tracing
 Snells law
 underwater optics
 x ray optics

geometrical theory of diffraction

DEF A ray theory of diffraction process.
 RT diffraction
 diffraction patterns
 geometrical acoustics
 geometrical optics
 ray tracing
 reflectance
 ∞ theories
 wave diffraction

geometroynamics

USE **relativity**

geometry

GS **geometry**
 . Bose geometry
 . computational geometry
 . crack geometry
 . curvature
 . curves (geometry)
 . . catenaries
 . . cycloids
 . . epicycloids
 . . S curves
 . . . Gompertz curves
 . . cusps (mathematics)
 . . double cusps
 . differential geometry
 . . lie groups
 . . . spinor groups
 . . Riemann manifold
 . . tensor analysis
 . duct geometry
 . Euclidean geometry
 . . analytic geometry
 . . . catenaries
 . . . circumferences
 . . . conics
 ellipses
 hyperbolas
 parabolas
 . . . cycloids
 . . . epicycloids
 . . . loci
 . . Mercator projection
 . . . quadrants
 . . . S curves
 Gompertz curves
 . . . spheroids
 oblate spheroids
 prolate spheroids
 . . . tangents
 . . . toruses
 . . . trigonometry
 . . angles (geometry)
 . . . angle of attack
 zero angle of attack
 . . . Bragg angle
 . . . Brewster angle
 . . . dihedral angle
 . . . elevation angle
 . . . look angles (electronics)

. . . look angles (tracking)
 . . . sweep angle
 sweepback
 leading edge sweep
 . . Cartesian coordinates
 . . circles (geometry)
 . . . great circles
 . . descriptive geometry
 . . lines (geometry)
 . . . chords (geometry)
 . . . geodesic lines
 . . points (mathematics)
 . . . fixed points (mathematics)
 . . . inflection points
 . . polygons
 . . . hexagons
 . . . tetragons
 parallelograms
 rhomboids
 rectangles
 squares (mathematics)
 trapezoids
 . . . triangles
 . . polyhedrons
 . . . cubes (mathematics)
 . . . icosahedrons
 . . . octahedrons
 . . . parallelepipeds
 . . . pyramids
 . . . rhombohedrons
 . . . tetrahedrons
 . . projective geometry
 . . . Mercator projection
 . . radii
 . . . Larmor radius
 . flow geometry
 . fractals
 . nozzle geometry
 . specimen geometry
 . tank geometry
 . topology
 . . fixed points (mathematics)
 . . homotopy theory
 . . imbeddings (mathematics)
 . . . invariant imbeddings
 . . links (mathematics)
 . . metric space
 . . Hilbert space
 . . . Sobolev space
 . vector analysis
 . . collinearity
 . . coplanarity
 . . curl (vectors)
 . . . vorticity
 RT analysis (mathematics)
 area
 bodies of revolution
 complex numbers
 congruences
 coordinates
 ∞ cross sections
 crystal lattices
 diagrams
 diameters
 dimensions
 distance
 foci
 frustums
 geoids
 geometrical acoustics
 hypergeometric functions
 hyperspheres
 infinity
 ∞ mathematics
 ∞ measurement
 planforms
 Poincare spheres
 position (location)
 ∞ profiles
 reciprocal theorems
 ∞ science
 shapes
 sides
 spheres
 ∞ surface geometry
 surveys
 symmetry
 toroids
 uniqueness theorem

Venn diagrams
 volume
 Voronoi diagrams

geomorphology

DEF A science that deals with the land and submarine relief features of the Earth's surface and genetic interpretation of them through using the principles of physiography in its descriptive aspects and of dynamic and structural geology in its explanatory phases. Used for physiography.

UF *physiography*
 GS geology
 . **geomorphology**
 morphology
 . **geomorphology**
 RT cones (volcanoes)
 contours
 geodynamics
 geographic distribution
 geography
 glaciology
 isostasy
 lunar geology
 mountains
 orography
 photogeology
 shatter cones
 slumping
 terrain
 topography
 volcanoes
 volcanology

Geon (trademark)

USE **polyvinyl chloride**

geophysical fluid flow cells

DEF Apparatus used in model experiments for deep solar convection and Jovian atmospheric circulation for Spacelab 1 and Spacelab 3.

GS payloads
 . Spacelab payloads
 . . **geophysical fluid flow cells**
 RT aerospace environments
 ∞ cells
 convective flow
 fluid flow
 gas flow
 investigation
 Jupiter atmosphere
 Space Transportation System flights
 spaceborne experiments
 Spacelab
 ∞ test equipment

geophysical fluids

DEF General term for the liquids and gases on or in the Earth (from water in all forms, to petroleum and hydrocarbons in liquid and gaseous form, and molten rock material within the Earth).

GS **geophysical fluids**
 . crude oil
 . ground water
 . lava
 . magma
 . natural gas
 . . liquefied natural gas
 RT Earth core
 fluid dynamics
 geothermal resources
 geothermal technology

geophysical observatories

GS observatories
 . **geophysical observatories**
 . . OGO
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
 . . OSO
 . . . AOSO

... OSO-1
 ... OSO-2
 ... OSO-3
 ... OSO-4
 ... OSO-5
 ... OSO-6
 ... OSO-7
 ... OSO-8
 ... OSO-C
 RT astronomical observatories
 geology
 geophysics

geophysical satellites
 GS artificial satellites
 . **geophysical satellites**
 . . Cosmos satellites
 . . . Cosmos 2 satellite
 . . . Cosmos 3 satellite
 . . . Cosmos 5 satellite
 . . . Cosmos 6 satellite
 . . . Cosmos 14 satellite
 . . . Cosmos 44 satellite
 . . . Cosmos 54 satellite
 . . . Cosmos 71 satellite
 . . . Cosmos 110 satellite
 . . . Cosmos 137 satellite
 . . . Cosmos 144 satellite
 . . . Cosmos 149 satellite
 . . . Cosmos 166 satellite
 . . . Cosmos 186 satellite
 . . . Cosmos 188 satellite
 . . . Cosmos 206 satellite
 . . . Cosmos 213 satellite
 . . . Cosmos 224 satellite
 . . . Cosmos 225 satellite
 . . . Cosmos 381 satellite
 . . . Cosmos 954 satellite
 . . . Cosmos 1129 satellite
 . . . Intercosmos satellites
 . . Explorer 6 satellite
 . . Explorer 10 satellite
 . . Explorer 12 satellite
 . . Explorer 45 satellite
 . . OGO
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
 . . OSO
 . . . AOSO
 . . . OSO-1
 . . . OSO-2
 . . . OSO-3
 . . . OSO-4
 . . . OSO-5
 . . . OSO-6
 . . . OSO-7
 . . . OSO-8
 . . . OSO-C
 . . Polar/GGS spacecraft
 . . Radiation and Meteoroid satellite
 . . Sputnik 3 satellite
 . . Vanguard 3 satellite
 . . Wind/GGS spacecraft
 RT Ariel satellites
 communication satellites
 EOLE satellites
 meteorological satellites
 PEOPLE satellites
 space laboratories
 unmanned spacecraft
 Vanguard satellites

geophysics
 DEF The physics of the Earth and its environment, i.e., its solid earth, air, waters, and (by extension) space. Classically, geophysics is concerned with the nature of and physical occurrences at and below the surface of the Earth including, therefore, geology, oceanography, geodesy, seismology, and hydrology. The trend is to extend the scope of geophysics to include meteorology, geomagnetism, astrophysics, and

other sciences concerned with the physical nature of the universe.
 RT aeronomy
 astrophysics
 Chandler wobble
 continental drift
 Earth (planet)
 Earth planetary structure
 Earth sciences
 field aligned currents
 formations
 geochemistry
 geochronology
 geodesy
 geodynamics
 geoelectricity
 geoids
 geological surveys
 geology
 geomagnetism
 geophysical observatories
 gravimeters
 gravimetry
 heat transmission
 hydrography
 hydrology
 International Geophysical Year
 International Geosphere-Biosphere program
 isostasy
 limnology
 meteorology
 Mission to Planet Earth
 oceanography
 paleomagnetism
 petrology
 ∞ physics
 plates (tectonics)
 polar cusps
 ∞ radiation
 radioactivity
 ∞ science
 seismology
 stratigraphy
 structural properties (geology)
 tectonics
 theoretical physics
 tiltmeters
 topography

geopotential
 DEF The potential energy of a unit mass relative to sea level, numerically equal to the work that would be done in lifting the unit mass from sea level to the height at which the mass is located; commonly expressed in terms of dynamic height or geopotential potential.
 GS **geopotential**
 . geopotential height
 RT Earth gravitation
 geoelectricity
 gravitational fields
 height
 ∞ potential
 potential energy

geopotential height
 DEF The height of a given point in the atmosphere in units proportional to the potential energy of unit mass (geopotential) at this height, relative to sea level.
 GS geopotential
 . **geopotential height**
 potential energy
 . **geopotential height**
 RT atmospheric pressure
 Earth atmosphere
 Earth gravitation
 geodetic accuracy
 gravitational fields
 head (fluid mechanics)
 scale height

Geopotential Research Mission
 DEF A NASA gravity field mapping mission utilizing the low-low satellite tracking concept to measure the Doppler shift between two coorbiting polar satellites. Used for Gravsat satellites.
 UF *Gravsat satellites*
 GS artificial satellites

. scientific satellites
 . . **Geopotential Research Mission**
 gravitation
 gravitational fields

geopressure
 DEF Pressures that exceed the normal hydrostatic pressure of about 0. 465 psi per foot of depth.
 GS pressure
 . **geopressure**
 RT geology
 geothermal resources
 geothermal technology
 pressure gradients

Georgia
 GS nations
 . United States
 . . **Georgia**
 RT Atlanta (GA)
 Sand Hills Region (GA-NC-SC)

Georgia (Eurasia)
(added August 1993)
 GS nations
 . **Georgia (Eurasia)**
 RT Asia
 Europe

GEOS 1 satellite
 GS artificial satellites
 . geodetic satellites
 . . **GEOS 1 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 Explorer 29 satellite
 LARGOS satellite
 PAGEOS satellite

GEOS 2 satellite
 UF *GEOS-B satellite*
 GS artificial satellites
 . geodetic satellites
 . . **GEOS 2 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 Explorer 36 satellite
 LARGOS satellite
 PAGEOS satellite

GEOS 3 satellite
 UF *GEOS-C satellite*
 GS artificial satellites
 . geodetic satellites
 . . **GEOS 3 satellite**
 RT active satellites
 ANNA satellites
 celestial geodesy
 LARGOS satellite
 PAGEOS satellite
 satellite altimetry

GEOS satellites (ESA)
 UF *GEOS satellites (ESRO)*
 GS artificial satellites
 . ESA satellites
 . . **GEOS satellites (ESA)**
 ESA spacecraft
 . ESA satellites
 . . **GEOS satellites (ESA)**
 RT Earth magnetosphere
 European space programs
 Geosari project

GEOS satellites (ESRO)
 USE **GEOS satellites (ESA)**

Geosari project
 DEF Launch of GEOS on second development flight of Ariane launcher into a geostationary elliptical orbit in 1979. The name is derived from a combination of GEOS and Ariane.
 GS programs
 . projects
 . . **Geosari project**
 RT Ariane launch vehicle
 European Space Agency

Geosat satellites

GEOS satellites (ESA)

Geosat satellites

- GS artificial satellites
- . geodetic satellites
- . . **Geosat satellites**
- RT satellite altimetry

GEOS-B satellite

USE **GEOS 2 satellite**

GEOS-C satellite

USE **GEOS 3 satellite**

GEOS-D satellite

DEF Another in a series of the European Space Agency's geostationary scientific satellites launched by NASA for long-term cosmic radiation studies. Used for Geodynamic Experimental Ocean Satellite.

- UF *Geodynamic Experimental Ocean Satellite*
- GS artificial satellites
- . **GEOS-D satellite**

geosphere

USE **lithosphere**

Geostationary Operational Environ Sats

USE **GOES satellites**

Geostationary Operatl Environ Satellite B

USE **GOES 2**

geostationary platforms

USE **synchronous platforms**

geostationary satellites

USE **synchronous satellites**

geostrophic wind

DEF The horizontal wind velocity for which the coriolis acceleration exactly balances the horizontal pressure force.

- GS wind (meteorology)
- . winds aloft
- . . **geostrophic wind**
- RT baroclinic instability
- baroclinic waves
- divergence
- isobars (pressure)
- sea breeze
- wind shear

Geosynchronous Earth Orbital Environments

USE **Earth orbital environments**

geosynchronous orbits

- GS orbits
- . Earth orbits
- . . **geosynchronous orbits**
- . . spacecraft orbits
- . . satellite orbits
- . . . **geosynchronous orbits**
- RT circular orbits
- equatorial orbits
- Infrared Astronomy Satellite
- stationary orbits
- synchronous platforms
- twenty-four hour orbits

geosynclines

DEF Mobile downwarplings of the crust of the Earth, either elongate or basinlike, measured in scores of kilometers, in which sedimentary and igneous rocks accumulate to thicknesses of thousands of meters.

- RT anticlines
- domes (geology)
- ∞ layers
- strata
- stratification
- stratigraphy
- synclines

geotechnical engineering

DEF The science and practice of that part of civil engineering involving the inter-relationship between a geologic environment and the works of man.

- RT foundations

soil mechanics
structural design criteria
structural engineering

geotechnical fabrics

DEF Generic term for a variety of artificial fiber products used in engineering construction of civil works such as embankments. Also called geofabrics, filter cloth, geotextiles and civil engineering fabrics. Used for geofabrics and geotextiles.

- UF *geofabrics*
- geotextiles*
- RT fabrics
- soil mechanics

geotemperature

DEF Internal temperature of the planet Earth. Used for geothermometry.

- UF *geothermometry*
- RT geology
- geothermal anomalies
- temperature

geotextiles

USE **geotechnical fabrics**

geothermal anomalies

- GS anomalies
- . **geothermal anomalies**
- RT geotemperature
- geothermal resources
- surface temperature
- thermal mapping

geothermal energy conversion

- GS energy conversion
- . **geothermal energy conversion**
- RT clean energy
- ∞ conversion
- Earth resources
- engines
- geothermal technology
- heat transfer
- heat transmission
- ocean thermal energy conversion
- renewable energy
- thermal energy
- turbines
- turbogenerators

geothermal energy extraction

DEF The removal for storage and/or utilization of heat from natural sources within the Earth (hot springs, geysers, hot rocks, etc.)

- GS extraction
- . **geothermal energy extraction**
- RT energy conversion
- energy technology
- geothermal technology
- heat exchangers
- heat pumps
- heat transmission
- heating
- turbines
- turbogenerators
- water heating

geothermal energy utilization

DEF Any application of energy derived from sources within the Earth.

- GS renewable energy
- . **geothermal energy utilization**
- utilization
- . **geothermal energy utilization**
- RT cooling
- ∞ electric power
- energy storage
- geothermal technology
- heat pipes
- heat storage
- heating
- ∞ power plants
- turbogenerators

geothermal resources

- GS heat sources
- . thermal resources
- . . **geothermal resources**
- . . . geysers

resources

- . Earth resources
- . . thermal resources
- . . . **geothermal resources**
- geysers

RT dry heat

∞ energy sources

- geophysical fluids
- geopressure
- geothermal anomalies
- heat transmission
- hydrothermal systems
- thermal energy
- thermal mapping
- underwater resources
- volcanoes

geothermal technology

DEF The gamut of operations involved in the exploration, exploitation, and conversion of energy derived from geothermal sources.

- GS technologies
- . energy technology
- . . **geothermal technology**
- RT dry heat
- exploration
- geophysical fluids
- geopressure
- geothermal energy conversion
- geothermal energy extraction
- geothermal energy utilization
- geysers
- heat sources
- heat transfer
- ocean thermal energy conversion
- resources
- thermal resources

geothermometry

USE **geotemperature**

geotropism

- GS tropism
- . **geotropism**
- RT gravitational effects
- physiological effects
- plants (botany)

GEP telescopes

USE **particle telescopes**

Gerdien arc heaters

USE **arc heating**
heating equipment

Gerdien condensers

- GS measuring instruments
- . **Gerdien condensers**
- RT capacitors
- ion density (concentration)

geriatrics

- GS medical science
- . **geriatrics**
- RT aging (biology)
- gerontology

German Democratic Republic

USE **East Germany**

German Infrared Laboratory

DEF A proposed infrared telescope for Spacelab that was discontinued in 1985. It superseded the LIRTS (telescope).

- GS telescopes
- . spaceborne telescopes
- . . **German Infrared Laboratory**
- RT payloads
- space shuttles
- Spacelab
- West Germany

German space program

(added December 1990)

- GS programs
- . space programs
- . . European space programs
- . . . **German space program**
- RT East Germany
- Germany

- Saenger space transportation system
West Germany
- germanates**
GS germanium compounds
. **germanates**
. . magnesium germanates
- germanides**
GS germanium compounds
. **germanides**
. . magnesium germanides
RT germanium alloys
- germanium**
GS chemical elements
. metalloids
. . **germanium**
. . . germanium isotopes
- germanium alloys**
GS alloys
. **germanium alloys**
RT germanides
silicon alloys
- germanium antimonides**
GS antimony compounds
. antimonides
. . **germanium antimonides**
germanium compounds
. **germanium antimonides**
- germanium chlorides**
GS germanium compounds
. **germanium chlorides**
halogen compounds
. chlorine compounds
. . chlorides
. . . **germanium chlorides**
. halides
. . chlorides
. . . **germanium chlorides**
- germanium compounds**
GS **germanium compounds**
. germanates
. . magnesium germanates
. germanides
. . magnesium germanides
. germanium antimonides
. germanium chlorides
. germanium oxides
. organic germanium compounds
RT ∞ chemical compounds
 ∞ Group 4A compounds
 ∞ metal compounds
- germanium diodes**
UF *germanium rectifiers*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **germanium diodes**
. solid state devices
. . semiconductor devices
. . . **germanium diodes**
rectifiers
. **germanium diodes**
RT junction diodes
transistors
- germanium isotopes**
GS chemical elements
. metalloids
. . germanium
. . . **germanium isotopes**
. nuclides
. . isotopes
. . . **germanium isotopes**
- germanium oxides**
GS chalcogenides
. oxides
. . **germanium oxides**
germanium compounds
. **germanium oxides**
- RT ∞ oxygen compounds
- germanium rectifiers*
USE **germanium diodes**
- Germany**
(added December 1990)
GS nations
. **Germany**
RT Central Europe
East Germany
Europe
German space program
West Germany
- germicides*
USE **bactericides**
- germination**
RT crop growth
growth
phytotrons
plant physiology
viability
- germinators*
USE **phytotrons**
- gerontology**
RT age factor
aging (biology)
geriatrics
life span
- GERT**
UF *graphic evaluation and review techniques*
RT critical path method
management
management analysis
management methods
management planning
 ∞ methodology
PERT
project management
- Gestalt theory**
RT psychotherapy
 ∞ theories
- Get Away Specials (STS)**
DEF Low-cost, man-independent Space Shuttle experimental payloads.
GS payloads
. Space Shuttle payloads
. . **Get Away Specials (STS)**
RT OSS-1 payload
Space Shuttle missions
spaceborne experiments
Spacelab
Spacelab payloads
- GETOL aircraft**
GS ground effect machines
. **GETOL aircraft**
RT ∞ aircraft
 ∞ subsonic aircraft
vertical takeoff aircraft
- getters**
DEF Materials which are included in a vacuum system or device for removing gas by sorption.
RT ion pumps
propargyl groups
purification
residual gas
vacuum
vapor traps
- geysers**
GS heat sources
. thermal resources
. . geothermal resources
. . . **geysers**
resources
. Earth resources
. . thermal resources
. . . geothermal resources
. . . . **geysers**
RT anomalous temperature zones
- geothermal technology
hydrogeology
hydrothermal systems
- GGG (*garnet*)
USE **gadolinium-gallium garnet**
- Ghana**
GS nations
. **Ghana**
RT Africa
- ghosts**
RT distortion
radar echoes
radio echoes
- Giacobini-Zinner comet**
GS celestial bodies
. comets
. . **Giacobini-Zinner comet**
RT Draconid meteoroids
solar system
- giant stars**
GS celestial bodies
. stars
. . **giant stars**
. . . asymptotic giant branch stars
. . . Omicron Ceti star
. . . red giant stars
. . . carbon stars
RT cool stars
F stars
G stars
horizontal branch stars
K stars
late stars
M stars
main sequence stars
S stars
subgiant stars
supergiant stars
- gibberellins**
GS plants (botany)
. fungi
. . **gibberellins**
RT hemostatics
regulators
- Gibbs adsorption equation**
RT adsorption
 ∞ equations
 ∞ Gibbs equations
interfacial tension
- ∞ **Gibbs equations**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ equations
Gibbs adsorption equation
Gibbs free energy
Gibbs-Helmholtz equations
phase rule
- Gibbs free energy**
GS heat
. enthalpy
. . **Gibbs free energy**
thermodynamic properties
. enthalpy
. . **Gibbs free energy**
. free energy
. . **Gibbs free energy**
RT ∞ Gibbs equations
Gibbs-Helmholtz equations
Mayer problem
- Gibbs phenomenon**
RT discontinuity
Fourier series
series (mathematics)
- Gibbs-Helmholtz equations**
RT electric potential
enthalpy
 ∞ equations
free energy
 ∞ Gibbs equations

Gibraltar

Gibbs free energy
internal energy
pressure
temperature

Gibraltar

(added February 1992)

GS nations
. United Kingdom
. . Gibraltar

RT Europe
Mediterranean Sea
Spain
straits

gimballess inertial navigation

GS navigation
. inertial navigation
. . gimballess inertial navigation

RT gyroscopes
inertial platforms
navigation instruments

gimbals

DEF Devices with two mutually perpendicular and intersecting axes of rotation, thus giving free angular movement in two directions, on which engines or other objects may be mounted. In gyros, supports which provide the spin axes with degrees of freedom.

RT bearings
control moment gyroscopes
fluid rotor gyroscopes
gyrodampers
gyroscopes
pivots
stabilized platforms
supports
swivels

Ginga satellite

(added June 1992)

GS artificial satellites
. scientific satellites
. . astronomical satellites
. . . Ginga satellite
Japanese spacecraft
. Ginga satellite
observatories
. astronomical observatories
. . astronomical satellites
. . . Ginga satellite

RT Japanese space program
x ray astronomy
x ray spectra
x ray stars

Giotto mission

DEF The European Space Agency's mission to fly through the head of Halley's Comet in order to make in situ measurements of the composition and physical state as well as the structures of the head. Included in the onboard equipment are cameras to determine the structures, spectrometers to determine the composition, and a plasma detector and a magnetometer to measure the interactions with the solar wind. The time of encounter with the comet was during the second week of March 1986.

GS ESA spacecraft
. Giotto mission
space missions
. flyby missions
. . Giotto mission
unmanned spacecraft
. space probes
. . Giotto mission

RT Halley's comet

girder webs

GS structural members
. plates (structural members)
. . girder webs
webs (supports)
. girder webs

RT elastic sheets
girders

metal plates

girders

GS structural members
. girders

RT beams (supports)
box beams
girder webs
plates (structural members)
trusses

girdles

RT ∞ belts
pelvis

glacial drift

DEF A general term for drift transported by glaciers or icebergs and deposited directly on land or in seas. Used for drumlins, end moraines, eskers, glaciofluvial deposits, moraines, and Stoss-and-Lee topography.

UF drumlins
end moraines
eskers
glaciofluvial deposits
moraines
Stoss-and-Lee topography

RT debris
glaciers
kettles (geology)
land ice
landforms
sea ice
sediments

glaciers

DEF Large masses of ice formed, at least in part, on land by the compaction and recrystallization of snow, moving slowly by creeping downslope or outward in all directions due to the stress of their own weight, and surviving from year to year. Included are small mountain glaciers as well as ice sheets continental in size, and ice shelves which float on oceans but are fed in part by ice formed on land. Used for active glaciers and advancing glaciers.

UF active glaciers
advancing glaciers

GS crevasses
. glaciers
ice
. glaciers
resources
. Earth resources
. . glaciers

RT cirques (landforms)
glacial drift
glaciology
land ice
sea ice

glaciofluvial deposits

USE glacial drift

glaciology

DEF The study of all aspects of snow and ice; the science that treats quantitatively the whole range of processes associated with all forms of solid existing water.

GS geology
. glaciology

RT geomorphology
glaciers
hydrogeology
isostasy

∞ glands

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT glands (anatomy)
glands (seals)
pump seals

glands (anatomy)

GS anatomy
. glands (anatomy)
. . endocrine glands
. . . adrenal gland
. . . gonads
. . . ovaries

. . . testes
. . . hypothalamus
. . . pancreas
. . . parathyroid gland
. . . pineal gland
. . . pituitary gland
. . . thymus gland
. . . thyroid gland
. . . mammary glands
. . . salivary glands
. . . sebaceous glands
. . . sex glands
. . . gonads
. . . ovaries
. . . testes
. . . prostate gland

RT endocrine systems
gastrointestinal system

∞ glands
liver
organs
secretions

glands (seals)

GS seals (stoppers)
. glands (seals)

RT ∞ glands
labyrinth seals
O ring seals
packings (seals)
pump seals
sealing

glare

DEF A condition of vision in which there is discomfort or a reduction in ability to see details, objects, or both, caused by an unsuitable distribution or range of luminance, or by extreme conditions in space.

RT brightness
comfort
dayglow
electromagnetic radiation
human factors engineering
illuminating
light (visible radiation)
luminance
luster
optical properties
radiance
sky brightness
specular reflection
spread reflection
visibility
vision

glass

GS glass
. borosilicate glass
. E glass
. . S glass
. glass fibers
. metallic glasses
. obsidian glass
. Pyroceram (trademark)
. silica glass
. spin glass
. Vycor

RT amorphous materials
ceramics
electrostatic bonding
glass transition temperature
glassware
glassy carbon
Griffith crack

∞ materials
moldavite
obsidian
optical coatings
optical materials
optical properties
photographic plates
porcelain
silicon dioxide
vitreous materials
vitrification

glass coatings

SN (COATINGS CONSISTING OF GLASS)
GS coatings

- RT . **glass coatings**
- GS glazes
- metallic glasses
- protective coatings
- silica glass
- glass electrodes**
- GS electrodes
- RT . **glass electrodes**
- electrochemistry
- ion exchanging
- silica glass
- glass fiber reinforced plastics**
- GS composite materials
- . fiber composites
- . . **glass fiber reinforced plastics**
- . polymer matrix composites
- . . reinforced plastics
- . . . **glass fiber reinforced plastics**
- plastics
- . reinforced plastics
- . . **glass fiber reinforced plastics**
- RT airframe materials
- composite structures
- E glass
- fiber orientation
- fibers
- laminates
- plastic aircraft structures
- pultrusion
- reinforcing fibers
- S glass
- thermoplastic resins
- thermosetting resins
- woven composites
- glass fibers**
- UF *fiberglass*
- GS fibers
- . synthetic fibers
- . . **glass fibers**
- glass
- . **glass fibers**
- optical materials
- . **glass fibers**
- RT boron fibers
- E glass
- gradient index optics
- metallic glasses
- optical fibers
- plastic fibers
- reinforcing fibers
- S glass
- silica glass
- Vycor
- glass lasers**
- DEF High power lasers used in laser fusion technology research.
- GS stimulated emission devices
- . lasers
- . . **glass lasers**
- RT high power lasers
- laser fusion
- laser outputs
- laser plasma interactions
- laser targets
- neodymium lasers
- optical pumping
- pulsed lasers
- ultrashort pulsed lasers
- glass transition temperature**
- GS temperature
- . **glass transition temperature**
- RT curing
- epoxy resins
- glass
- polymer chemistry
- polymer physics
- temperature effects
- transition temperature
- glassware**
- RT borosilicate glass
- bottles
- burettes
- ∞ containers
- flasks
- glass
- laboratory equipment
- pipettes
- silica glass
- glassy carbon**
- DEF Form of carbon with unique properties and characteristics. Formed by carbonizing phenolic resins made by reacting phenols with celulosics, aldehydes, and ketones.
- GS composite materials
- . **glassy carbon**
- RT carbon
- glass
- ∞ materials
- GLAST*
- (added August 2008)
- USE **Fermi Gamma-ray Space Telescope**
- Glauber theory**
- RT approximation
- elastic scattering
- Pomeranchuk theorem
- ∞ theories
- glaucoma**
- GS diseases
- . eye diseases
- . . **glaucoma**
- RT intraocular pressure
- Glauert coefficient*
- USE **aerodynamic forces**
- Mach number**
- glazes**
- GS coatings
- . **glazes**
- finishes
- . **glazes**
- RT ceramics
- frit
- glass coatings
- porcelain
- protective coatings
- glide angles*
- USE **glide paths**
- glide landings**
- GS landing
- . **glide landings**
- . . horizontal spacecraft landing
- RT aircraft landing
- crash landing
- ditching (landing)
- planetary landing
- soft landing
- spacecraft landing
- water landing
- glide paths**
- DEF Flight paths of aeronautical vehicles in a glide, seen from the side. The paths used by aircraft or spacecraft in approach procedure and which are generated by instrument landing facilities. Used for glide angles and glide slopes.
- UF *glide angles*
- glide slopes*
- GS flight paths
- . **glide paths**
- slopes
- . **glide paths**
- RT aircraft approach spacing
- approach control
- approach indicators
- gliding
- instrument approach
- instrument landing systems
- terminal guidance
- glide slopes*
- USE **glide paths**
- gliders**
- DEF A heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its lifting surface and whose free flight does not depend principally on an engine.
- UF *sailplanes*
- GS **gliders**
- . ASSET gliders
- . boostglide vehicles
- . . X-20 aircraft
- . hang gliders
- . HL-10 reentry vehicle
- . hypersonic gliders
- . . X-20 aircraft
- . Janus spacecraft
- . paragliders
- . . inflatable gliders
- RT aerospace planes
- ∞ aircraft
- flexible wings
- free flight
- gliding
- lifting reentry vehicles
- ∞ military aircraft
- monoplanes
- observation aircraft
- sails
- sailwings
- Schleicher aircraft
- soaring
- ∞ subsonic aircraft
- towed bodies
- ∞ winged vehicles
- gliding**
- RT boostglide vehicles
- descent
- ∞ flight
- flight paths
- free flight
- glide paths
- gliders
- lift
- ∞ motion
- soaring
- Glimm method**
- DEF Numerical technique for solving gas dynamics problems involving hyperbolic systems of conservation laws.
- GS analysis (mathematics)
- . numerical analysis
- . . **Glimm method**
- procedures
- . **Glimm method**
- RT ∞ equations
- fluid dynamics
- ∞ methodology
- glint**
- RT angels (radar)
- radar echoes
- scintillation
- global air pollution**
- GS pollution
- . environment pollution
- . . air pollution
- . . . **global air pollution**
- RT Earth atmosphere
- environments
- global warming
- pollution monitoring
- pollution transport
- Global Air Sampling Program**
- UF *GASP*
- RT air pollution
- air sampling
- environmental quality
- sampling
- Global Atmospheric Research Program**
- UF *GARP*
- GS programs
- . **Global Atmospheric Research Program**
- . . GARP Atlantic Tropical Experiment
- RT aerology
- integrated global ocean station
- systems
- meteorology
- NASA programs
- weather

Global Positioning System

weather reconnaissance aircraft

Global Communications Antenna Grid (navy)
USE **Seafarer project**

Global Orbiting Navigation Satellite Sys.
USE **GLONASS**

Global Positioning System

DEF A satellite navigation system which will display many (up to 24) satellites in three sets of orbits by means of a precise time standard and three-dimensional information on position and velocity.

GS satellite navigation systems
. **Global Positioning System**
RT autonomous spacecraft clocks
flight paths
GLONASS
navigation
orbit determination
position indicators
positioning
satellite constellations
space navigation
∞ systems
time synchronization

Global Tracking Network

UF *GLOTRAC (tracking network)*
GS networks
. tracking networks
. . **Global Tracking Network**
stations
. tracking stations
. . **Global Tracking Network**
RT data acquisition
ground stations
minitrack system
NASCOM network
optical tracking
radio relay systems
range and range rate tracking
satellite tracking
Space Flight Tracking and Data
Network
STDN (network)

global warming

(*added December 1989*)
GS heating
. atmospheric heating
. . **global warming**
RT atmospheric temperature
CLARREO (observatory)
climate change
global air pollution
Glory Mission satellite
greenhouse effect
Mission to Planet Earth
radiative forcing
stratospheric warming

∞ globes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Earth (planet)
luminaires
maps
spheres

globular clusters

GS celestial bodies
. star clusters
. . **globular clusters**
RT ∞ clusters
color-magnitude diagram
galactic halos
horizontal branch stars
metallicity
Population II stars
star distribution

globules

RT falling spheres
interfacial tension
liquids
microballoons

spheres

globulins

GS biopolymers
. proteins
. . **globulins**
. . . fibrinogen
. . . gamma globulin
organic compounds
. proteins
. . **globulins**
. . . fibrinogen
. . . gamma globulin

glomerulus

GS anatomy
. circulatory system
. . cardiovascular system
. . . blood vessels
. . . . capillaries (anatomy)
. . . . **glomerulus**
. . . . genitourinary system
. . . . kidneys
. . . **glomerulus**
RT renal function

GLONASS

(*added September 1994*)
UF *Global Orbiting Navigation Satellite Sys.*
GS satellite navigation systems
. **GLONASS**
RT Global Positioning System
international cooperation
positioning
Russian Space Program
U.S.S.R. space program

Glory Mission satellite

(*added July 2006*)
DEF A low Earth orbit (LEO) scientific research satellite designed to collect data on the properties of aerosols and black carbon in the Earth's atmosphere and climate system; and collect data on solar irradiance for the long-term effects on the Earth climate record.

GS artificial satellites
. scientific satellites
. . **Glory Mission satellite**
observatories
. **Glory Mission satellite**
RT aerosols
climate change
climatology
global warming
satellite observation
soot

glossaries

USE **dictionaries**

Gloster GA-5 aircraft

USE **GA-5 aircraft**

GLOTRAC (tracking network)

USE **Global Tracking Network**

glottis

GS anatomy
. respiratory system
. . larynx
. . . **glottis**
RT vocal cords

gloveboxes

(*added April 2009*)
DEF Sealed containers with attached gloves allowing object manipulation in a controlled and separate environment, thereby preventing object contamination and protecting the user from hazard or injury.
GS laboratory equipment
. **gloveboxes**
RT spaceborne experiments

gloves

GS clothing
. **gloves**

RT protective clothing

glow

USE **luminescence**

glow discharges

DEF Electrical discharges that produce luminosity.
GS electric current
. electric corona
. . **glow discharges**
RT cathode glow
electric arcs
electric corona
electrodeless discharges
Faraday dark space
gas discharges
light sources
plasma display devices
plasma radiation

glucocorticoids

(*added December 1999*)

DEF Adrenocortical steroid hormones that are involved in the metabolism of fats, proteins, and carbohydrates, and have anti-inflammatory properties.

GS organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . **glucocorticoids**
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . **glucocorticoids**
RT adrenal gland
atrophy
carbohydrate metabolism
hormone metabolisms
hypokinesia
lipid metabolism
muscles
protein metabolism

glucose

GS organic compounds
. carbohydrates
. . sugars
. . . monosaccharides
. . . . hexoses
. **glucose**

glucosides

UF *glycosides*
GS organic compounds
. carbohydrates
. . **glucosides**
. . . nucleosides
. . . . adenines
. guanosines

glues

GS adhesives
. **glues**
RT pastes
sizing materials
tetraethyl orthosilicate

gluons

DEF The carriers of the strong force which holds atomic nuclei together (holding together groups of quarks making up stable particles, which in turn are bound together in the atomic nuclei).
GS particles
. elementary particles
. . hypothetical particles
. . . **gluons**
RT leptons
mesons
quantum chromodynamics
quarks

glutamates

GS esters
. **glutamates**

RT glutamic acid

glutamic acid

GS acids
 . amino acids
 . . **glutamic acid**
 organic compounds
 . amino acids
 . . **glutamic acid**

RT glutamates

glutamine

GS acids
 . amino acids
 . . **glutamine**
 organic compounds
 . amino acids
 . . **glutamine**

glutathione

GS organic compounds
 . coenzymes
 . . **glutathione**
 . peptides
 . . polypeptides
 . . . **glutathione**

glycerides

GS esters
 . **glycerides**
 RT glycerols
 nitroglycerin

glycerins

USE **glycerols**

glycerols

UF *glycerins*
 RT alcohols
 carbohydrates
 glycerides
 lipids
 liquids
 nitroglycerin
 triacetin

glycidyl azide polymer

(added August 1990)
 UF *GAP (propellants)*
 RT ∞ polymers
 propellant binders
 solid rocket binders

glycine

GS acids
 . amino acids
 . . **glycine**
 organic compounds
 . amino acids
 . . **glycine**

glycogens

GS biopolymers
 . polysaccharides
 . . **glycogens**
 organic compounds
 . carbohydrates
 . . polysaccharides
 . . . **glycogens**

glycols

GS hydroxyl compounds
 . alcohols
 . . **glycols**
 RT hydroxyl radicals

glycolysis

GS chemical reactions
 . **glycolysis**
 decomposition
 . **glycolysis**

glycosides

USE **glucosides**

gneiss

DEF A foliated rock formed by regional metamorphism, in which bands or lenticles of granular materials alternate with bands or lenticles in which minerals having flaky or elongate prismatic habits predominate. Generally less

than 50 percent of the minerals show preferred parallel orientation. Although a gneiss is commonly feldspar- and quartz-rich, the mineral composition is not an essential factor in its definition.

GS rocks
 . **gneiss**
 RT soils

gnomonic projection

DEF A projection on a plane tangent to the surface of a sphere having the point of projection at the center of the sphere. Used in cartography and in crystallography.

RT photomapping
 ∞ projection
 projective geometry

gnotobiotics

DEF The study of germ free animals.

RT bacteria
 bacteriology
 closed ecological systems
 controlled atmospheres
 isolation
 microbiology
 microorganisms
 sterilization

GNP

USE **gross national product**

goal theory

RT goals
 ∞ theories

goals

RT achievement
 engineering management
 goal theory
 project planning
 purposes
 research management

goats

GS animals
 . vertebrates
 . . mammals
 . . . **goats**
 RT grazing
 livestock

Gobi desert

GS land
 . deserts
 . . **Gobi desert**
 RT arid lands
 desertification

Goddard experiment package telescope

USE **particle telescopes**

Goddard Trajectory Determination System

UF *GTDS*
 RT computer programs
 interplanetary trajectories
 moon-Earth trajectories
 orbit calculation
 orbital mechanics
 orbital position estimation
 spacecraft trajectories
 ∞ systems
 trajectory analysis
 trajectory optimization

Godunov method

(added February 1998)

DEF Non-oscillatory finite-volume scheme that incorporates the exact or approximate solution to the Riemann initial-value problem, or a generalization of it.

GS analysis (mathematics)
 . numerical analysis
 . . finite volume method
 . . . **Godunov method**
 procedures
 . finite volume method
 . . **Godunov method**
 RT approximation
 Cauchy problem

Cauchy-Riemann equations
 computational fluid dynamics
 Euler equations of motion
 finite difference theory
 shock wave interaction
 supersonic flow

Goertler instability

DEF Counter-rotating ring vortices formed in the annulus between two cylinders rotating with respect to each other.

UF *Taylor-Goertler instability*
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . flow stability
 **Goertler instability**
 . flow characteristics
 . . flow stability
 . . . **Goertler instability**
 stability
 . dynamic stability
 . . motion stability
 . . . flow stability
 **Goertler instability**

RT boundary layer stability
 boundary layer transition
 centrifugal force
 laminar boundary layer
 rotating fluids
 rotating liquids
 Taylor instability
 vortices
 wall flow

GOES 1

DEF The first in a series of geostationary operational environmental satellites launched in October 1975. It ceased operation in June of 1977.

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 1**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 1**
 RT meteorological satellites

GOES 2

DEF The second in a series of geostationary operational environmental satellites launched in June 1977. Used for Geostationary Operatl Environ Satellite B.

UF *Geostationary Operatl Environ Satellite B*
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 2**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 2**
 RT meteorological satellites
 SMS 1
 SMS 2

GOES 3

DEF The third in a series of geostationary operational environmental satellites launched in June 1978.

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 3**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 3**
 RT meteorological satellites

GOES 4

DEF The fourth in a series of geostationary operational environmental satellites launched in September 1980.

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 4**
 . synchronous satellites
 . . GOES satellites

GOES 5

... **GOES 4**
 RT meteorological satellites

GOES 5

DEF The fifth in a series of geostationary operational environmental satellites launched in May 1981.

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 5**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 5**
 RT meteorological satellites

GOES 6

DEF The sixth in a series of geostationary operational environmental satellites launched in April 1983.

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 6**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 6**

GOES 7

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 7**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 7**

GOES 8

(added July 1995)

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 8**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 8**

GOES 9

(added July 1995)

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 9**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 9**

GOES 10

(added March 2000)

GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 10**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 10**

GOES 13

(added August 2005)

DEF A joint NASA/NOAA satellite launched on August 15, 2005 for radiometric imagery, atmospheric sounding, and space weather monitoring.

UF *GOES N*
 GS artificial satellites
 . meteorological satellites
 . . GOES satellites
 . . . **GOES 13**
 . synchronous satellites
 . . GOES satellites
 . . . **GOES 13**
 RT marine meteorology
 space weather

storms (meteorology)

GOES N
 (added August 2005)
 USE **GOES 13**

GOES satellites

DEF Geostationary operational environmental satellites. Used for Geostationary Operational Environ Sats.

UF *Geostationary Operational Environ Sats*
 GS artificial satellites
 . meteorological satellites
 . . **GOES satellites**
 . . . GOES 1
 . . . GOES 2
 . . . GOES 3
 . . . GOES 4
 . . . GOES 5
 . . . GOES 6
 . . . GOES 7
 . . . GOES 8
 . . . GOES 9
 . . . GOES 10
 . . . GOES 13
 . synchronous satellites
 . . **GOES satellites**
 . . . GOES 1
 . . . GOES 2
 . . . GOES 3
 . . . GOES 4
 . . . GOES 5
 . . . GOES 6
 . . . GOES 7
 . . . GOES 8
 . . . GOES 9
 . . . GOES 10
 . . . GOES 13
 RT ISCCP Project

goggles

GS clothing
 . **goggles**
 RT eye protection
 flight clothing
 helmets
 protective clothing
 sunglasses

Golay detector cells

GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . **Golay detector cells**
 RT energy absorption films
 pneumatic equipment
 radiation absorption

gold

GS chemical elements
 . **gold**
 . . gold isotopes
 . . . gold 198
 metals
 . noble metals
 . . **gold**
 . . . gold isotopes
 gold 198
 . transition metals
 . . **gold**
 . . . gold isotopes
 gold 198

gold 198

GS chemical elements
 . gold
 . . gold isotopes
 . . . **gold 198**
 . nuclides
 . . isotopes
 . . . gold isotopes
 **gold 198**
 . . . radioactive isotopes
 **gold 198**
 metals
 . noble metals
 . . gold
 . . . gold isotopes
 **gold 198**

. transition metals
 . . gold
 . . . gold isotopes
 **gold 198**

gold alloys

GS alloys
 . **gold alloys**
 RT copper alloys
 nickel alloys
 silver alloys

gold coatings

UF *gold plate*
 GS coatings
 . metal coatings
 . . **gold coatings**
 RT nickel plate
 protective coatings

gold isotopes

GS chemical elements
 . gold
 . . **gold isotopes**
 . . . gold 198
 . nuclides
 . . isotopes
 . . . **gold isotopes**
 gold 198
 metals
 . noble metals
 . . gold
 . . . **gold isotopes**
 gold 198
 . transition metals
 . . gold
 . . . **gold isotopes**
 gold 198
 RT radioactive isotopes

gold plate

USE **gold coatings**

Gompertz curves

GS charts
 . graphs (charts)
 . . **Gompertz curves**
 geometry
 . curves (geometry)
 . . S curves
 . . . **Gompertz curves**
 . Euclidean geometry
 . . analytic geometry
 . . . S curves
 **Gompertz curves**

gonads

GS anatomy
 . genitourinary system
 . . reproductive systems
 . . . sex glands
 **gonads**
 ovaries
 testes
 . . glands (anatomy)
 . . endocrine glands
 . . . **gonads**
 ovaries
 testes
 . . sex glands
 . . . **gonads**
 ovaries
 testes
 RT physiological effects

gondolas

RT aircraft compartments
 airships
 balloons
 baskets

goniometers

DEF Instruments for measuring angles.
 GS measuring instruments
 . **goniometers**
 . . photogoniometers
 . . radiogoniometers
 RT angles (geometry)
 diffractometers
 etalons

interferometers
 Mach-Zehnder interferometers
 monochromators
 optical measuring instruments
 refractometers
 spectrometers

goodness of fit
 DEF The degree to which the observed frequencies of occurrence of events in an experiment correspond to the probabilities in a model of the experiment.
 GS statistical analysis
 . **goodness of fit**
 RT fitting
 mathematical models
 maximum likelihood estimates
 probability distribution functions
 probability theory
 statistical distributions
 statistical tests
 variance (statistics)

gores
 RT fabrics
 parachute fabrics

gorges
 USE **canyons**

GOSS (support system)
 USE **ground operational support system**

government procurement
 GS procurement
 . **government procurement**
 RT commercial off-the-shelf products
 commodities
 contracts
 federal budgets
 services

government/industry relations
 RT commerce lab
 commercialization
 contract negotiation
 contractors
 contracts
 procurement

governments
 RT constitution
 culture (social sciences)
 policies
 politics
 regimes
 voting

governors
 USE **speed regulators**

GPHS (nucleonics)
 (added December 2002)
 USE **radioisotope heat sources**

grabens
 USE **geological faults**

GRACE mission
 (added August 2008)
 DEF The second mission under the NASA Earth System Science Pathfinder (ESSP) Program which maps variations in the Earth's gravity field. The mission includes two identical spacecrafts flying about 200 kilometers apart in a polar orbit 500 kilometers above the Earth.
 UF *Gravity Recovery and Climate Experiment mission*
 GS space missions
 . **GRACE mission**
 RT climate change
 Earth atmosphere
 Earth gravitation
 geoids
 GRAIL mission
 gravitational fields
 remote sensing

satellite observation

∞ **grade**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT angles (geometry)
 gradients
 level (horizontal)
 position (title)
 quality
 slopes

graded index optics
 USE **gradient index optics**

gradient index devices
 USE **gradient index optics**

gradient index optics
 DEF Optical systems with components whose refractive indexes vary continuously within the material used for the optical elements.
 UF *graded index optics*
gradient index devices
GRIN (optics)
 RT fiber optics
 geometrical optics
 glass fibers
 lens design
 lenses
 nonlinear optics
 optical properties
 ∞ optics
 physical optics
 ray tracing
 refractivity

gradients
 GS **gradients**
 . electron density profiles
 . potential gradients
 . pressure gradients
 . temperature gradients
 . . thermoclines
 RT angles (geometry)
 composition (property)
 conjugate gradient method
 ∞ cross sections
 differences
 distribution (property)
 ∞ drop
 ∞ grade
 gravity gradiometers
 isobars (pressure)
 isotherms
 level (horizontal)
 optimization
 ∞ profiles
 slopes
 variations
 vector analysis

∞ **gradiometers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT gravity gradiometers
 magnetometers

graduation
 USE **calibrating**

Graeff calculus
 GS analysis (mathematics)
 . calculus
 . . **Graeff calculus**
 . numerical analysis
 . . **Graeff calculus**

grafting
 RT implantation
 insertion

GRAIL mission
 (added June 2010)
 DEF Mission selected through NASA's Discovery Program that will use a pair of spacecraft to conduct high-quality gravity field mapping of the Moon. Primary science objectives are to determine the structure of the lunar interior from crust to core, and to advance understanding of

the thermal evolution of the Moon. As a secondary objective, GRAIL will extend knowledge gained from the Moon to the other terrestrial planets.
 UF *Gravity Recovery and Interior Laboratory*
 GS space missions
 . **GRAIL mission**
 RT GRACE mission
 gravitational fields
 lunar evolution
 lunar geology
 lunar gravitation
 lunar mantle
 planetary structure

grain boundaries
 GS boundaries
 . **grain boundaries**
 RT antiphase boundaries
 crystal dislocations
 embedded atom method
 grain size
 intergranular corrosion
 interstices
 interstitials
 precipitates
 transgranular corrosion
 twinning

grain bridging
 USE **crack bridging**

grain formation
 (added June 2005)
 SN (EXCLUDES FOOD--LIMITED TO MATERIALS AND PARTICULATES)
 RT ∞ grains
 granular materials
 nucleation
 particulates

grain size
 GS size (dimensions)
 . **grain size**
 RT grain boundaries
 metal fatigue
 microstructure
 nanocomposites
 nanocrystals
 nanostructure (characteristics)
 Ostwald ripening
 particle size distribution

∞ **grains**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT crystals
 grain formation
 grains (food)
 granular materials
 particles
 propellant grains

grains (food)
 GS farm crops
 . **grains (food)**
 . . barley
 . . corn
 . . millet
 . . oats
 . . rice
 . . sorghum
 . . wheat
 RT angiosperms
 Earth resources
 ∞ grains
 grasses
 seeds

grammars
 RT languages
 parsing algorithms
 semantics
 syntax
 vowels
 words (language)

Granat satellite
 (added April 1995)

Grand Canyon (AZ)

- GS artificial satellites
 - . Soviet satellites
 - . . **Granat satellite**
- RT French space program
 - gamma ray astronomy
 - international cooperation
 - Mir space station
 - Russian Space Program
 - spaceborne astronomy
 - x ray astronomy

Grand Canyon (AZ)

- GS landforms
 - . canyons
 - . . **Grand Canyon (AZ)**
- RT Arizona

Grand Tours

- UF *outer planet missions*
- GS space missions
 - . flyby missions
 - . . **Grand Tours**
 - . . . Mariner Jupiter-Saturn flyby
 - . . . Mariner Jupiter-Uranus flyby
 - . . . Voyager 1977 mission
- RT ∞ missions
 - outer planets explorers
 - space flight
 - Voyager 1 spacecraft
 - Voyager 2 spacecraft

grand unified theory

- DEF A theory describing the unification of gravity with the other elementary forces in physics, i.e., the weak force, the strong force and the electromagnetic force. Used for GUT.
- UF *GUT*
- GS field theory (physics)
 - . **grand unified theory**
- RT astrophysics
 - big bang cosmology
 - broken symmetry
 - cosmology
 - Einstein equations
 - electromagnetic fields
 - electromagnetic interactions
 - electromagnetism
 - gravitation theory
 - gravitational fields
 - particle theory
 - plasma physics
 - relativity
 - string theory
 - strong interactions (field theory)
 - supersymmetry
 - symmetry
 - theoretical physics
 - weak energy interactions
 - weak interactions (field theory)

granite

- GS rocks
 - . igneous rocks
 - . . **granite**
- RT batholiths
 - Earth resources
 - soils

grants

- DEF Assets bestowed or transferred, such as money or land, for a particular purpose.
- RT appropriations
 - budgeting
 - contracts
 - insurance (contracts)
 - NASA programs
 - patents
 - subcontracts

granular materials

- RT brittle materials
 - grain formation
- ∞ grains
 - low density materials
- ∞ materials
 - particles
 - pellets

powder (particles)

graph theory

- DEF The mathematical study of the structure of graphs and networks.
- RT combinatorial analysis
 - graphs (charts)
 - greedy algorithms
 - mathematical models
- ∞ nets
 - set theory
- ∞ theories
 - topology
 - trees (mathematics)

graphene

- (*added April 2011*)
- DEF A single-layer sheet of carbon atoms with a single (0001) basal plane graphite structure; a building block for graphitic materials of other dimensionalities.
- GS nanostructures (devices)
 - . **graphene**
- RT carbon
 - carbon nanotubes
 - fullerenes
 - graphite
 - nanotechnology
 - polycyclic aromatic hydrocarbons

graphic arts

- GS arts
 - . **graphic arts**
 - . . animation
 - . . . computer animation
- RT charts
 - diagrams
 - drafting (drawing)
 - drawings
 - engineering drawings
 - imagery
 - inks
 - motion pictures
 - multimedia
 - photography
- ∞ projection

graphic evaluation and review techniques

- USE **GERT**

graphical user interface

- (*added July 1993*)
- DEF A man-computer interface which relies on graphical and/or pictorial means for presenting the user with command options and their results. Input to a graphical user interface relies heavily on the use of point-and-click devices (such as a 'mouse'). Most graphical user interfaces are designed to facilitate multitasking through separate application windows (computer programs).
- UF *GUI (computers)*
- GS interfaces
 - . **graphical user interface**
 - . . windows (computer programs)
- RT computer graphics
 - disk operating system (DOS)
 - display devices
 - human-computer interface

graphite

- GS carbonaceous materials
 - . **graphite**
 - . . pyrolytic graphite
 - minerals
 - . **graphite**
 - . . pyrolytic graphite
- RT aluminum graphite composites
 - buckminsterfullerene
 - carbon
 - carbon nanotubes
 - electrodes
 - fiber composites
 - fullerenes
 - graphene
 - graphite-epoxy composites
 - intercalation
 - lubricants
 - moderators
 - nanotubes

single crystals
solid lubricants
synthetic metals

graphite-epoxy composites

- DEF Structural materials composed of epoxy resins reinforced with graphite.
- GS composite materials
 - . polymer matrix composites
 - . . epoxy matrix composites
 - . . . **graphite-epoxy composites**
 - . resin matrix composites
 - . . **graphite-epoxy composites**
 - . superhybrid materials
 - . . **graphite-epoxy composites**
- RT braided composites
 - carbon fiber reinforced plastics
- ∞ construction materials
 - epoxy resins
 - fiber composites
 - graphite
 - graphite-polyimide composites
- ∞ materials
 - reinforced plastics
 - reinforcing fibers
 - sheet molding compounds
 - woven composites

graphite-polyimide composites

- DEF Composite materials utilizing graphite reinforcing fibers in a resin matrix.
- GS composite materials
 - . polymer matrix composites
 - . . **graphite-polyimide composites**
- RT graphite-epoxy composites

graphitization

- RT annealing
 - heat treatment

graphoepitaxy

- DEF The use of artificial surface relief structures to induce crystallographic orientation in thin films.
- RT amorphous materials
 - crystal lattices
 - crystal structure

graphology

- GS handwriting
 - . **graphology**
 - recognition
 - . pattern recognition
 - . . **graphology**
- RT character recognition

graphs (charts)

- UF *polarization charts*
- GS charts
 - . **graphs (charts)**
 - . . bond graphs
 - . . Gompertz curves
 - . . Mollier diagram
 - . . Patterson map
- RT conformal mapping
- ∞ curves
 - fault trees
 - graph theory
 - histograms
 - nomographs
- ∞ origins
 - Petri nets
 - recording instruments
 - representations
 - statistical analysis
 - trees (mathematics)

Grashof number

- DEF A nondimensional parameter used in the theory of heat transfer. The Grashof number is associated with the Reynolds number and the Prandtl number in the study of convection.
- GS dimensionless numbers
 - . **Grashof number**
 - ratios
 - . **Grashof number**
- RT convection
 - Prandtl number

- Reynolds number
- grasses**
- GS plants (botany)
 . **grasses**
 . . hay
 . . reeds (plants)
 . . sea grasses
 . . sorghum
- RT alfalfa
 canopies (vegetation)
 defoliation
 farm crops
 farmlands
 grains (food)
 grasslands
 millet
 oats
 sod
- grasshoppers**
- GS animals
 . invertebrates
 . . arthropods
 . . . insects
 **grasshoppers**
- grasslands**
- UF *grazing lands*
meadowlands
prairies
savannahs
- GS land
 . **grasslands**
 . . Llanos Orientales (Colombia)
- RT agriculture
 crop growth
 Earth resources
 farm crops
 farmlands
 grasses
 hay
 land use
 plains
 plowing
 rangelands
 rural areas
 rural land use
 sod
 steppes
- Grassmann algebra*
 USE **vector spaces**
- ∞ **gratings**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT gratings (spectra)
 interference grating
 optical filters
- gratings (spectra)**
- UF *diffraction gratings*
- GS **gratings (spectra)**
 . Bragg gratings
 . echelette gratings
 . echelle gratings
- RT apodization
 corrugated waveguides
 diffraction radiation
 Fresnel diffraction
- ∞ gratings
 optical filters
 photorefractivity
 Ronchi test
 Rowland circles
- graupe**
(added March 1989)
- GS precipitation (meteorology)
 . **graupe**
- RT cloud glaciation
 cloud physics
 hail
 hailstorms
 ice formation
 ice nuclei
- snow
- gravel deposits*
 USE **gravels**
- gravels**
- DEF Coarse, granular aggregates, with pieces larger than sand grains, resulting from the natural erosion of rocks. Used for gravel deposits.
- UF *gravel deposits*
- GS sediments
 . **gravels**
 soils
 . **gravels**
- RT aggregates
 alluvium
 aquifers
 boreholes
 fans (landforms)
 grit
 sands
- gravimeters**
(added January 1991)
- DEF Instruments for measuring variations in the gravitational field, generally by registering differences in the weight of a constant mass as the gravimeter is moved from place to place. Used for gravity meters.
- UF *gravity meters*
- GS measuring instruments
 . **gravimeters**
- RT accelerometers
 densitometers
 geodesy
 geophysics
 gravimetry
 gravitation
 microdensitometers
- gravimetry**
- DEF The measurement of gravity or gravitational acceleration, especially in geophysics and geodesy.
- RT ∞ acceleration
 accelerometers
 geology
 geophysics
 gravimeters
 gravitational fields
 ∞ measurement
 networks
 quantitative analysis
- gravireceptors**
- DEF Highly specialized nerve endings and receptor organs located in skeletal muscles, tendons, joints, and in the inner ear which furnish information to the brain with respect to body position, equilibrium and the direction of gravitational forces.
- GS anatomy
 . sense organs
 . . **gravireceptors**
 . . . otolith organs
 receptors (physiology)
 . **gravireceptors**
 . . otolith organs
- RT oculogravic illusions
 sensitometry
 vertical perception
- gravitation**
- DEF The acceleration produced by the mutual attraction of two masses, and of magnitude inversely proportional to the square of the distance between the two centers of mass. Used for gravity.
- UF *gravity*
- GS **gravitation**
 . artificial gravity
 . Earth gravitation
 . gravity anomalies
 . lunar gravitation
 . microgravity
 . planetary gravitation
 . stellar gravitation
 . . solar gravitation
- RT antigavity
- drag
 environments
 Geopotential Research Mission
 gravimeters
 gravitational constant
 gravitational effects
 gravitational fields
 gravitational waves
 gravity gradiometers
 high gravity environments
 isostasy
 low weight
 Lunar Gravity Simulator
 pendulums
 Roche limit
 similitude law
 terminal velocity
 weight (mass)
 weightlessness
- gravitation theory**
- GS **gravitation theory**
 . supergravity
- RT bimetric theories
 dark energy
 event horizon
 gauge theory
 grand unified theory
 gravitational fields
 gravitational wave antennas
 gravitinos
 gravitons
 string theory
 supersymmetry
 ∞ theories
 unified field theory
- gravitational binding energy**
(added May 1995)
- GS binding energy
 . **gravitational binding energy**
- RT accretion disks
 astrophysics
 binary stars
 ∞ energy
 gravitational collapse
 neutron stars
 nuclear binding energy
 stellar gravitation
- gravitational collapse**
- GS collapse
 . **gravitational collapse**
- RT astrophysics
 black holes (astronomy)
 gravitational binding energy
 gravitational instability
 naked singularities
 neutral currents
 protogalaxies
 quasars
 relativistic plasmas
 stellar cores
 stellar interiors
 stellar systems
 supernovae
 white holes (astronomy)
- gravitational constant**
- DEF The coefficient of proportionality in Newton's law of gravitation.
- GS constants
 . **gravitational constant**
- RT big bang cosmology
 gravitation
- gravitational effects**
- GS **gravitational effects**
 . gravitational lenses
 . Lagrangian equilibrium points
 . lunar gravitational effects
- RT acceleration stresses (physiology)
 acceleration tolerance
 Bond number
 clinorotation
 clinostats
 drop towers
 ∞ effects
 geotropism
 gravitation

gravitational fields

gravitational instability
gravitational physiology
gravitropism
gravity perception
Gravity Probe B
Langley complex coordinator
lower body negative pressure
orbital resonances (celestial mechanics)
Reissner-Nordstrom solution
stellar mass accretion
stellar systems
swingby technique
weightlessness

gravitational fields

DEF Regions that give rise to forces of gravitational attraction.

UF *gravitational potential*

RT attraction

center of gravity
Earth gravitation
Earth-Moon system
field strength
field theory (physics)
∞ fields
geopotential
geopotential height
Geopotential Research Mission
GRACE mission
GRAIL mission
grand unified theory
gravimetry
gravitation
gravitation theory
gravitational instability
gravitational lenses
gravity anomalies
Lagrangian equilibrium points
multipolar fields
satellite perturbation
Schwarzschild metric
stellar gravitation
unified field theory
Yang-Mills fields

gravitational instability

(added August 1997)

GS dynamic characteristics

. dynamic stability
. . **gravitational instability**
stability
. dynamic stability
. . **gravitational instability**

RT

astrophysics
galactic evolution
gravitational collapse
gravitational effects
gravitational fields
interstellar matter
Jeans theory
perturbation
stellar evolution
stellar gravitation

gravitational lenses

GS gravitational effects

. **gravitational lenses**
lenses
. **gravitational lenses**

RT

black holes (astronomy)
focusing
gravitational fields
light scattering
massive compact halo objects
neutron stars
relativistic effects
relativity
stellar gravitation
white holes (astronomy)

gravitational physiology

GS physiology

. **gravitational physiology**
RT acceleration stresses (physiology)
aerospace medicine
centrifuging stress
clinorotation
clinostats
fluid shifts (biology)

gravitational effects
head up tilt
hindlimb suspension
physiological acceleration
physiological effects
physiological responses
space flight stress
stress (physiology)
tilt-table test

gravitational potential

USE **gravitational fields**

gravitational radiation

USE **gravitational waves**

gravitational wave antennas

DEF Devices for receiving propagating gravitational fields produced by some change in the distribution of matter.

GS antennas

. **gravitational wave antennas**
. . LIGO (observatory)
. . LISA (observatory)

RT

antenna design
cryogenic equipment
gravitation theory

gravitational waves

DEF Hypothetical waves that travel at the speed of light, by which gravitational attraction is propagated.

UF *gravitational radiation*

RT

celestial bodies
celestial mechanics
Earth-Moon system
gravitation
gravity waves
LIGO (observatory)
LISA (observatory)
∞ radiation
∞ waves

gravitinos

GS particles

. elementary particles
. . hypothetical particles
. . . **gravitinos**
. neutral particles
. . **gravitinos**

RT

baryons
cosmology
decoupling
gravitation theory
gravitons
neutrinos
particle mass
supergravity
weak energy interactions

gravitons

DEF The hypothetical elementary units of gravitation which are equivalent in the electrons in electromagnetic theory.

GS particles

. elementary particles
. . hypothetical particles
. . . **gravitons**

RT

atomic structure
gravitation theory
gravitinos
supergravity

gravitropism

GS tropism

. **gravitropism**
RT auxins
calmodulin
gravitational effects
gravity perception
plant physiology
plants (botany)
vegetation growth

gravity

USE **gravitation**

gravity anomalies

DEF The differences between the observed values of gravity at different points and the

theoretical calculated value. They are based on a simple gravity model, usually modified in accordance with some generalized hypothesis of variation in subsurface density as related to surface topography.

GS anomalies

. **gravity anomalies**
gravitation

. **gravity anomalies**

RT

Earth gravitation

gravitational fields

mascons

gravity assist trajectories

USE **swingby technique**

gravity gradient satellites

GS artificial satellites

. **gravity gradient satellites**

. . ATS

. . . ATS 1

. . . ATS 2

. . . ATS 3

. . . ATS 4

. . . ATS 5

. . . ATS 6

. . . ATS 7

. . . ATS 8

. . ORBIS CAL satellite

RT

artificial gravity
expulsion
manned spacecraft
OV-1 satellites
OV-2 satellites
OV-3 satellites
OV-4 satellites
OV-5 satellites
satellite attitude control
satellite control
spin reduction
unmanned spacecraft

gravity gradiometers

GS measuring instruments

. **gravity gradiometers**

RT

gradients

∞ gradiometers

gravitation

gravity meters

USE **gravimeters**

gravity perception

(added August 2004)

DEF Process whereby a bodily structure or organism (animal or plant) receives or detects a gravity stimulus. The sensing may be direct or indirect and may or may not initiate a reaction to the stimulus.

GS perception

. **gravity perception**

RT

acceleration stresses (physiology)
acceleration tolerance
aerospace medicine
centrifuging stress
gravitational effects
gravitropism
head up tilt
proprioception
space flight stress

Gravity Probe B

DEF An experiment designed to measure general relativistic induced torques on a gyroscope in orbit about the Earth.

RT

gravitational effects
gyroscopes
NASA programs
relativity

Gravity Recovery and Climate Experiment mission

(added August 2008)

USE **GRACE mission**

Gravity Recovery and Interior Laboratory

(added June 2010)

USE **GRAIL mission**

gravity waves

DEF Waves in an interface between fluids of

different density in which the restoring force is gravity.

- GS
 - elastic waves
 - capillary waves
 - gravity waves
 - baroclinic waves
 - surface waves
 - capillary waves
 - gravity waves
 - baroclinic waves
- RT
 - cnoidal waves
 - gravitational waves
 - Kelvin waves
 - planetary waves
 - ripples
 - traveling ionospheric disturbances
 - water waves
 - wind (meteorology)

Gravsat satellites

USE **Geopotential Research Mission**

gray gas

- GS
 - gases
 - gray gas
- RT
 - nongray atmospheres
 - radiation absorption
 - Rayleigh scattering
 - thermal absorption

gray scale

DEF Images that are not colored or multi-spectral.

- RT
 - aerial photography
 - image contrast
 - image enhancement
 - image processing
 - imaging techniques
 - optical data processing
 - pattern recognition

grazing

- GS
 - ingestion (biology)
 - grazing
- RT
 - animals
 - cattle
 - deer
 - goats
 - horses
 - rangelands
 - rural land use
 - swine

grazing flow

- RT
 - acoustic attenuation
 - acoustic ducts
 - acoustic impedance
 - acoustic measurement
 - acoustic properties
 - aeroacoustics
- ∞ flow
 - noise reduction
 - orifice flow
 - resonators
 - shear flow

grazing incidence

- DEF Incidence at a small glancing angle.
- GS
 - incidence
 - grazing incidence
- RT
 - aberration
 - angles (geometry)
 - grazing incidence telescopes
 - optical measurement
 - ray tracing
 - x ray optics

Grazing Incidence Solar Telescope

USE **GRIST (telescope)**

grazing incidence telescopes

- GS
 - telescopes
 - grazing incidence telescopes
 - GRIST (telescope)
- RT
 - grazing incidence
 - x ray astronomy

x ray telescopes

grazing lands

USE **grasslands**

greases

- RT
 - fats
 - kerogen
 - lubricants
 - oils
 - petroleum products
 - thickeners (materials)

Great Basin (US)

- GS
 - landforms
 - structural basins
 - Great Basin (US)
 - terraces (landforms)
 - plateaus
 - Great Basin (US)
 - regions
 - Great Basin (US)

- RT
 - California
 - Earth resources
 - fold (geology)
 - formations
 - geology
 - Nevada
 - structural properties (geology)
 - Utah

Great Britain

USE **United Kingdom**

great circles

DEF Circles which intersect a sphere and a plane through its center.

- GS
 - geometry
 - Euclidean geometry
 - circles (geometry)
 - great circles

- RT
 - flight optimization
 - flight paths
 - ground tracks
 - trajectories

Great Lakes (North America)

- GS
 - lakes
 - Great Lakes (North America)
 - Lake Erie
 - Lake Huron
 - Lake Michigan
 - Lake Ontario
 - Lake Superior
- RT
 - Canada
 - canals
 - Earth resources
 - inland waters
 - International Field Year for Great Lakes
 - resources
 - United States
 - water flow
 - water resources

Great Plains Corridor (North America)

- GS
 - corridors
 - Great Plains Corridor (North America)
 - regions
 - Great Plains Corridor (North America)
- RT
 - agriculture
 - Canada
 - plains
 - rural land use
 - United States

Great Salt Lake (UT)

- GS
 - lakes
 - Great Salt Lake (UT)
- RT
 - Earth resources
 - hydrology
 - inland waters
 - ponds
 - Utah

Great Smoky Mountains (NC-TN)

- GS
 - landforms
 - mountains

. . . **Great Smoky Mountains (NC-TN)**

- RT
 - North Carolina
 - Tennessee

GREB satellites

- SN (GALACTIC RADIATION EXPERIMENTAL BACKGROUND SATELLITES)
- UF *Galactic Radiation Exp Background sats*
- GS
 - artificial satellites
 - GREB satellites

Greece

- GS
 - nations
 - Greece
- RT
 - Cyprus
 - Europe
 - Greek space program

greedy algorithms

(added March 2000)

DEF Any algorithm characterized by a procedure that selects the most extreme element from a set to satisfy a given goal. A recursive procedure for constructing a set of objects from the smallest possible elements.

- GS
 - mathematical logic
 - algorithms
 - greedy algorithms
- RT
 - graph theory
 - heuristic methods
 - minimax technique
 - optimization

Greek space program

(added August 1990)

- GS
 - programs
 - space programs
 - European space programs
 - Greek space program
- RT
 - Greece

green wave effect

- RT
 - annual variations
 - botany
 - chlorophylls
- ∞ effects
 - foliage
 - leaves

greenhouse effect

DEF The heating of the Earth's surface because outgoing long-wavelength terrestrial radiation is absorbed and re-emitted by the carbon dioxide and water vapor in the lower atmosphere and eventually returns to the surface.

- RT
 - atmospheric heat budget
 - atmospheric radiation
 - chlorofluorocarbons
 - climate change
 - Earth atmosphere
- ∞ effects
 - environment effects
 - Gaia hypothesis
 - global warming
 - insolation
 - Orbiting Carbon Observatory (OCO)
 - radiative forcing
 - terrestrial radiation
 - thermal radiation
 - Venus clouds

greenhouses

DEF Structures enclosed by glass or plastic devoted to the cultivation or protection of tender plants or to the production of plants out of season.

- RT
 - buildings
 - phytotrons
 - plants (botany)

Greenland

- GS
 - landforms
 - islands
 - Greenland
- RT
 - Arctic Ocean
 - Denmark

Green's functions

- UF *Green's theorem*
- GS
 - analysis (mathematics)

Gregorian antennas

. real variables
. . **Green's functions**
functions (mathematics)
. **Green's functions**
RT differential equations
field theory (algebra)
field theory (physics)
half planes
half spaces
Jacobi integral
many body problem

Green's theorem

USE **Green's functions**

Gregorian antennas

GS antennas
. **Gregorian antennas**
RT antenna design
antenna feeds
antenna radiation patterns
Cassegrain antennas
microwave antennas

Grenada

(added February 1989)

GS landforms
. islands
. . West Indies
. . . **Grenada**
nations
. **Grenada**
RT Caribbean region

grenades

RT ammunition
incendiary ammunition
pyrotechnics

grid computing (computer networks)

(added December 2003)

SN (LIMITED TO DISTRIBUTED COMPUTING
RESOURCES; DOES NOT INCLUDE
COMPUTATIONAL MESHES USED FOR
MATHEMATICAL ANALYSIS)

DEF The use and development of large-scale distributed systems that enable location-independent access to geographically dispersed computational resources such as supercomputers, data archives, and computational software; may also incorporate remote access to instrumentation and test-facility interfaces, and supporting information resources.

UF *computational grids (computer networks)*

Information Power Grid

IPG (NASA Information Power Grid)

metacomputing

GS data processing
. distributed processing
. . **grid computing (computer networks)**

RT computer networks
information systems
supercomputers

grid generation (mathematics)

(added August 1988)

DEF Numerical generation of curvilinear-coordinate systems for the numerical solution of partial differential equations.

UF *mesh generation (mathematics)*

RT computational fluid dynamics
computational grids
coordinates
finite difference theory
finite element method
grid refinement (mathematics)
multigrid methods
structured grids (mathematics)
unstructured grids (mathematics)
Voronoi diagrams

grid refinement (mathematics)

(added August 2003)

DEF The dynamic modification of computational grids using either derived or user-supplied criteria to produce a more highly resolved grid.

UF *mesh refinement (mathematics)*

RT computational grids

grid generation (mathematics)

gridfree methods

(added May 2008)

USE **meshfree methods**

∞ grids

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT computational grids
coordinates
ionizers
∞ matrices
mesh
reticles
tube grids
turnstile antennas
wire grid lenses

grids (mathematics)

USE **computational grids**

Griffith crack

RT crack closure
crack propagation
fracture mechanics
glass
∞ theories

Griffon aircraft

USE **Nord 1500 aircraft**

Grigg-Skjellerup comet

GS celestial bodies
. comets
. . **Grigg-Skjellerup comet**
RT ∞ coma
comet tails
solar system
solar wind

Grignard reactions

GS chemical reactions
. **Grignard reactions**
RT catalysts

GRIN (optics)

USE **gradient index optics**

∞ grinding

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT grinding (material removal)

grinding (comminution)

UF *pulverizing*
GS comminution
. **grinding (comminution)**
RT atomizing
compounding
crushing
disintegration
grinding (material removal)
mixing

grinding (material removal)

GS **grinding (material removal)**
. metal grinding
RT abrasion
countersinking
cutting
∞ grinding
grinding (comminution)
grooving
machining
metal cutting
micromachining
planing
polishing
scarfing
wear

grinding machines

GS tools
. machine tools
. . **grinding machines**
RT lathes
∞ machinery
metal grinding
milling machines

shapers
ultrasonic cleaning

grinding mills

RT atomizers
atomizing
comminution
crushers
impactors
mixers

Gripen aircraft

USE **JAS-39 aircraft**

GRIST (telescope)

DEF An ESA Spacelab payload designed for grazing incidence solar phenomena. Used for grazing incidence solar telescope.

UF *Grazing Incidence Solar Telescope*

GS telescopes

. grazing incidence telescopes

. . **GRIST (telescope)**

RT energy spectra
solar cosmic rays
Spacelab
sun

grit

RT abrasives
gravels
particles
sands
sediments

grooves

GS **grooves**
. V grooves
. . riblets
RT corrugating
grooving

grooving

UF *fluting*
RT cutting
grinding (material removal)
grooves
knurling
machining
micromachining
milling (machining)
striation

gross national product

DEF The total value of the goods and services produced in a nation during a specific period and also comprising the total expenditures by consumers and government plus gross private investment. Used for GNP.

UF *GNP*

GS products

. **gross national product**

RT commerce
costs
econometrics
finance
industries

ground based control

GS **ground based control**

. air traffic control
. . automated en route ATC
. . radar approach control

RT air traffic controllers (personnel)
aircraft approach spacing
aircraft control
airport surface detection equipment
airport towers
approach
approach control
automatic control
automatic traffic advisory and resolution

∞ control

flight control
flight management systems
fly by wire control
guidance (motion)
instrument landing systems
integrated mission control center
landing aids

- missile control
 - radar navigation
 - radio control
 - remote control
 - spacecraft control
 - spacecraft guidance
 - traffic control
- ground clouds*
- USE **exhaust clouds**
- ground crews**
- GS personnel
 - . **ground crews**
 - RT maintenance
- ground effect (aerodynamics)**
- DEF Increase in the lift of an aircraft operating close to the ground caused by reaction between high-velocity downwash from its wing or rotor and the ground.
- RT aerodynamic drag
 - aerodynamics
 - air cushion landing systems
 - cushions
 - downwash
 - drag
 - ∞ effects
 - ground resonance
 - jet blast effects
 - lift
 - peripheral jet flow
 - wakes
 - wing-in-ground effect vehicles
- ground effect (communications)**
- DEF The effect of ground conditions on radio communications.
- RT echoes
 - ∞ effects
 - electromagnetic interference
 - electromagnetic noise
 - radio attenuation
 - signal fading
 - wave reflection
- ground effect machines**
- UF *air cushion vehicles*
 - DTMB-111 ground effect machine*
 - DTMB-430 ground effect machine*
 - hovercraft*
 - GS **ground effect machines**
 - . Cushioncraft ground effect machine
 - . GETOL aircraft
 - . hovercraft ground effect machines
 - . Westland ground effect machines
 - . wing-in-ground effect vehicles
 - RT ∞ aircraft
 - commercial aircraft
 - ∞ effects
 - ∞ flight vehicles
 - flying platforms
 - hovering
 - lifting rotors
 - ∞ machinery
 - ∞ military aircraft
 - passenger aircraft
 - peripheral jet flow
 - rapid transit systems
 - research aircraft
 - ∞ subsonic aircraft
 - surface vehicles
 - ∞ transport vehicles
 - V/STOL aircraft
 - ∞ vehicles
 - water takeoff and landing aircraft
- ground handling**
- GS materials handling
 - . **ground handling**
 - RT air cargo
 - baggage
 - crew procedures (preflight)
 - ∞ facilities
 - flight operations
 - hangars
 - mobile lounges
 - tractors
- trucks
- ground operational support system**
- UF *GOSS (support system)*
 - GS ground support equipment
 - . **ground operational support system**
 - support systems
 - . **ground operational support system**
 - weapon systems
 - . **ground operational support system**
 - RT ∞ systems
- ground penetrating radar**
- (added August 1995)
- DEF A radar imaging technique in which coherent background propagation of the received reflected wavefield forms a spatial image of the scattering interface within the region of interest.
- GS radar
 - . **ground penetrating radar**
 - RT archaeology
 - Mars Reconnaissance Orbiter
 - nondestructive tests
 - planetary mapping
 - radar geology
 - soil mapping
 - synthetic aperture radar
 - tomography
- ground resonance**
- DEF Mechanical phenomenon occurring when a rotor, operating within a certain speed range, experiences coupling between a rotor in-plane mode and a model support system mode, causing vibration in the system.
- RT aerodynamic stability
 - ground effect (aerodynamics)
 - helicopters
 - rotary wings
 - rotor aerodynamics
- ground speed**
- GS rates (per time)
 - . **ground speed**
 - velocity
 - . **ground speed**
 - RT airspeed
 - high speed
 - low speed
- ground squirrels**
- GS animals
 - . vertebrates
 - . . mammals
 - . . . rodents
 - squirrels
 - **ground squirrels**
- ground state**
- GS level (quantity)
 - . energy levels
 - . . **ground state**
 - RT atomic energy levels
 - atomic theory
 - density functional theory
 - electron states
 - quantum theory
 - yrast state
- ground stations**
- GS stations
 - . **ground stations**
 - . . Deep Space Instrumentation Facility
 - . . Earth terminals
 - . . integrated mission control center
 - . . polystation doppler tracking system
 - RT data acquisition
 - data collection platforms
 - downlinking
 - Global Tracking Network
 - hangars
 - integrated global ocean station systems
 - Jodrell Bank Observatory
 - land mobile satellite service
- MSAT
 - networks
 - ocean data acquisitions systems
 - pollution monitoring
 - Space Flight Tracking and Data Network
 - tracking stations
 - weather stations
- ground support equipment**
- DEF That equipment on the ground, including all implements, tools, and devices (mobile or fixed), required to inspect, test, adjust, calibrate, appraise, gage, measure, repair, overhaul, assemble, transport, safeguard, record, store, or otherwise function in support of a rocket, space vehicle, or the like, either in the research and development phase or in operational phase, or in support of the guidance system used with the missile, vehicle, or the like.
- GS **ground support equipment**
 - . ground operational support system
 - RT air traffic control
 - aircraft maintenance
 - airport planning
 - auxiliary power sources
 - ballistic cameras
 - Cape Kennedy launch complex
 - command and control
 - command guidance
 - crawler tractors
 - Earth terminal measurement system
 - ∞ equipment
 - flight control
 - gantry cranes
 - handling equipment
 - landing aids
 - launching bases
 - launching pads
 - launching sites
 - maintenance
 - missile launchers
 - missile storage
 - missiles
 - ordnance
 - propellant storage
 - radio telemetry
 - refueling
 - rocket launchers
 - satellite ground support
 - ∞ spacecraft
 - storable propellants
 - ∞ test equipment
 - tracking networks
 - tracking stations
- ground support systems**
- GS support systems
 - . **ground support systems**
 - RT commonality
 - ∞ systems
- ground tests**
- GS **ground tests**
 - . cold flow tests
 - . prelaunch tests
 - . . static firing
 - RT aircraft runup
 - captive tests
 - crew procedures (preflight)
 - electric equipment tests
 - engine tests
 - flight tests
 - full scale tests
 - missile tests
 - prefiring tests
 - preflight operations
 - space electric rocket tests
 - stability tests
 - static tests
 - test firing
 - ∞ tests
 - wing flow method tests
- ground tracks**
- DEF The inclination of a satellite, together with its orbital altitude and period of its orbit, create a track defined by an imaginary line connecting the satellite and the Earth's center;

ground truth

the satellite's apparent path over the ground.

- GS **ground tracks**
 - . satellite ground tracks
- RT area navigation
 - flight paths
 - great circles
 - orbits
- ∞ paths
- ∞ tracks

ground truth

DEF Data obtained on the ground concerning the significance of anomalies observed in remote sensing to help interpretation.

- RT aerial photography
 - aerial reconnaissance
 - Airborne Integrated Reconnaissance System
 - crop identification
 - imagery
 - in situ measurement
 - photointerpretation
 - photoreconnaissance
 - spectrophotography

ground water

(added February 1991)

DEF That part of the subsurface water that is in the zone of saturation, including underground streams.

- UF *groundwater*
- GS geophysical fluids
 - . **ground water**
 - water
 - . inland waters
 - . . **ground water**
- RT aquifers
 - Earth resources
 - fresh water
 - limnology
 - lysimeters
 - potable water
 - soil pollution
 - springs (water)
 - surface water
 - water flow
 - water resources
 - water runoff
 - water sampling
 - water tables
 - wells

ground wave propagation

- GS transmission
 - . wave propagation
 - . . **ground wave propagation**
- RT radio waves
 - selective fading
 - sky waves

ground wind

- GS wind (meteorology)
 - . **ground wind**
- RT air currents
 - atmospheric circulation
 - cyclones
 - gust loads
 - gusts
 - monsoons
 - squalls
 - storms (meteorology)
 - tornadoes
 - wind direction
 - wind effects
 - wind erosion
 - wind pressure
 - wind profiles
 - wind shear
 - wind velocity
 - windmills (windpowered machines)
 - windpower utilization
 - windpowered generators

ground-air-ground communication

- GS communicating
 - . **ground-air-ground communication**
 - telecommunication
 - . **ground-air-ground communication**
- RT aeronautical satellites
 - air traffic control

aircraft communication
automated en route ATC
communication satellites
discrete address beacon system
optical communication
radio communication
satellite communication
spacecraft communication
voice communication

ground-to-air missiles

USE **surface to air missiles**

groundwater

USE **ground water**

Group 1A compounds

USE **alkali metal compounds**

∞ **Group 1B compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 - copper compounds
 - noble metals
 - silver compounds

Group 2A compounds

USE **alkaline earth compounds**

∞ **Group 2B compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cadmium compounds
 - ∞ chemical compounds
 - mercury compounds
 - zinc compounds

∞ **Group 3A compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aluminum compounds
 - boron compounds
 - ∞ chemical compounds
 - gallium compounds
 - indium compounds

∞ **Group 3B compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT actinide series compounds
 - ∞ chemical compounds
 - curium compounds
 - rare earth compounds
 - scandium compounds
 - yttrium compounds

∞ **Group 4A compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT carbon compounds
 - ∞ chemical compounds
 - germanium compounds
 - lead compounds
 - silicon compounds
 - tin compounds

∞ **Group 4B compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 - hafnium compounds
 - titanium compounds
 - zirconium compounds

∞ **Group 5A compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- UF *pnictides*
- RT antimony compounds
 - arsenic compounds
 - bismuth compounds
 - ∞ chemical compounds
 - nitrogen compounds
 - oxynitrides

phosphorus compounds

∞ **Group 5B compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 - niobium compounds
 - tantalum compounds
 - vanadium compounds

∞ **Group 6A compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT chalcogenides
 - ∞ chemical compounds
 - polonium compounds
 - selenium compounds
 - sulfur compounds
 - tellurium compounds

∞ **Group 6B compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 - chromium compounds
 - molybdenum compounds
 - tungsten compounds

Group 7A compounds

USE **halogen compounds**

∞ **Group 7B compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 - manganese compounds
 - rhenium compounds
 - technetium compounds

∞ **Group 8 compounds**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ chemical compounds
 - cobalt compounds
 - iridium compounds
 - iron compounds
 - nickel compounds
 - osmium compounds
 - platinum compounds
 - rhodium compounds

group behavior

USE **group dynamics**

group dynamics

- UF *group behavior*
- RT dependence
 - ∞ dynamics
 - ethnic factors
 - problem solving
 - sociology

group technology (manufacturing)

(added April 2000)

DEF A manufacturing methodology where production processes are organized into groups or cells based on similarities in the manufacturing requirements of product parts or production equipment capabilities.

UF *cellular manufacturing*

GS manufacturing

- . **group technology (manufacturing)**
- production engineering
- . **group technology (manufacturing)**
- RT computer aided manufacturing
 - industrial management
 - operations research
 - process control (industry)
 - production management

group theory

- GS algebra
 - . **group theory**
 - . . homomorphisms
 - . . . automorphisms
 - . . . monoids
 - . . . subgroups
- RT chiral dynamics
 - chirality

- fibers (mathematics)
lie groups
supergravity
supersymmetry
∞ theories
- group velocity**
DEF The velocity of a wave disturbance as a whole, i.e., of an entire group of component simple harmonic waves.
GS rates (per time)
. **group velocity**
velocity
. **group velocity**
velocity
RT beat frequencies
harmonic motion
phase velocity
propagation velocity
quantum mechanics
wave propagation
- ∞ **groups**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT categories
classes
subdivisions
- grout**
RT amorphous materials
cements
clays
concretes
∞ construction materials
mortars (material)
mud
plasters
tiles
- growth**
UF *hypertrophy*
maturing
GS **growth**
. crystal growth
. . . Czochralski method
. . . directional solidification (crystals)
. . . epitaxy
. . . atomic layer epitaxy
. . . electroepitaxy
. . . liquid phase epitaxy
. . . molecular beam epitaxy
. . . vapor phase epitaxy
. . . hydrothermal crystal growth
. . . protein crystal growth
. . . traveling solvent method
. . . Verneuil process
. vegetation growth
. . . crop growth
. nanostructure growth
RT accumulations
angiogenesis
crop calendars
∞ development
evolution (development)
∞ formation
germination
increasing
inflating
ontogeny
phytotrons
shrinkage
sintering
swelling
timber vigor
timberline
tissue engineering
trends
viability
warping
youth
- growth chambers*
USE **phytotrons**
- growth hormone*
(added August 2004)
USE **pituitary hormones**
- Grumman aircraft**
GS **Grumman aircraft**
- . A-6 aircraft
. C-1A aircraft
. C-2 aircraft
. E-2 aircraft
. F-9 aircraft
. F-14 aircraft
. F-111 aircraft
. Jetstream aircraft
. OV-1 aircraft
RT ∞ aircraft
AWACS aircraft
- Grumman OV-1C aircraft*
USE **OV-1 aircraft**
- Gruneisen constant**
GS constants
. **Gruneisen constant**
RT compressibility
specific heat
thermal expansion
- GTDS*
USE **Goddard Trajectory Determination System**
- Guadeloupe**
GS landforms
. islands
. . . West Indies
. . . **Guadeloupe**
nations
. France
. **Guadeloupe**
- Guam**
GS landforms
. islands
. . . Pacific islands
. . . **Guam**
nations
. United States
. **Guam**
- guanethidine**
GS organic compounds
. amines
. . . diamines
. . . guanidines
. . . . **guanethidine**
. cyclic compounds
. heterocyclic compounds
. . . **guanethidine**
- guanidines**
GS organic compounds
. amines
. . . diamines
. . . **guanidines**
. . . . guanethidine
. . . . triaminoguanidinium azide
RT perfluoroguanidine
- guanines**
GS bases (chemical)
. **guanines**
fungicides
. xanthines
. . . **guanines**
nitrogen compounds
. xanthines
. . . **guanines**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . purines
. . . . xanthines
. **guanines**
RT cyclic AMP
- guanosines**
DEF Guanine riboside; a nucleoside composed of guanine and ribose. Used for vermine.
UF *vernine*
GS organic compounds
. carbohydrates
. . . glucosides
. . . nucleosides
. . . . **guanosines**
RT nucleic acids
- ribonucleic acids
- guards (shields)**
RT ∞ barriers
coverings
housings
safety devices
safety management
shielding
- Guatemala**
GS nations
. **Guatemala**
RT Central America
- guayule**
DEF A desert shrub native to southwestern United States and north Mexico that produces polymeric isoprene essentially identical to that made by Hevea rubber trees in southeast Asia.
GS plants (botany)
. **guayule**
RT brush (botany)
rubber
- GUI (computers)*
USE **graphical user interface**
- guidance (motion)**
DEF The process of directing the movements of an aeronautical vehicle or space vehicle, with particular reference to the selection of a flight path.
GS **guidance (motion)**
. aircraft guidance
. beam rider guidance
. command guidance
. entry guidance (STS)
. inertial guidance
. . . strapdown inertial guidance
. injection guidance
. map matching guidance
. midcourse guidance
. reentry guidance
. rendezvous guidance
. spacecraft guidance
. . . satellite guidance
. standardized space guidance
. terminal guidance
. . . laser guidance
RT air navigation
approach
ascent trajectories
astrionics
automatic control
avionics
control surfaces
flight control
flight paths
ground based control
homing
homing devices
impact prediction
landing
manual control
missiles
navigation
∞ platforms
pointing control systems
radio navigation
remote control
stationkeeping
∞ systems
trajectory control
visual control
- guidance sensors**
RT attitude control
image dissector tubes
optical measuring instruments
∞ sensors
solar sensors
spacecraft instruments
star trackers
- guide vanes**
DEF Control surfaces that may be moved into or against a rocket's jetstream, used to change the direction of the jet flow for thrust vector control. Used for jetavators.

guided missile submarines

UF *jetavators*
 GS control surfaces
 . **guide vanes**
 . . jet vanes
 vanes
 . **guide vanes**
 . . jet vanes
 RT airfoils
 hydrofoils
 thrust vector control

guided missile submarines
 UF *Polaris submarines*
 GS water vehicles
 . ships
 . . submarines
 . . . **guided missile submarines**
 . underwater vehicles
 . . submarines
 . . . **guided missile submarines**
 RT fleet ballistic missiles
 Poseidon missiles

Guinea
 GS nations
 . **Guinea**
 RT Africa

guinea pigs
 GS animals
 . vertebrates
 . . mammals
 . . . rodents
 **guinea pigs**

Gulf of Alaska
 GS gulfs
 . **Gulf of Alaska**
 RT Alaska
 Pacific Ocean

Gulf of California (Mexico)
 GS gulfs
 . **Gulf of California (Mexico)**
 RT Mexico
 Pacific Ocean

Gulf of Mexico
 GS gulfs
 . **Gulf of Mexico**
 RT Alabama
 Caribbean Sea
 Florida
 Louisiana
 Mexico
 Mississippi
 Rio Grande (North America)
 texas

Gulf Stream
 GS circulation
 . water circulation
 . . water currents
 . . . ocean currents
 **Gulf Stream**
 RT Atlantic Ocean
 Caribbean Sea
 Lomonosov current
 Sargasso Sea
 TOPEX

gulfs
 DEF Relatively large parts of oceans or seas extending far into the land, partly enclosed by an extensive sweep of the coasts, and opened to the sea through straits. Gulfs are the largest of various forms of inlets of seas. They are usually larger, more enclosed, and more deeply indented than bays (topographic features).
 GS **gulfs**
 . Gulf of Alaska
 . Gulf of California (Mexico)
 . Gulf of Mexico
 . Persian Gulf
 RT bays (topographic features)
 Delaware Bay (US)
 inlets (topography)

topography

Gum nebula
 GS celestial bodies
 . nebulae
 . . **Gum nebula**
 RT galaxies
 irregular galaxies
 Orion nebula

gum vulcanizates
 USE **vulcanized elastomers**

Gumbel theory
 USE **range (extremes)**

gums (substances)
 GS **gums (substances)**
 . rosin
 RT chitin
 polysaccharides
 rubber
 tars

gun launchers
 SN (LIMITED TO ORDNANCE DEVICES FOR FIRING MISSILES AND ROCKETS WITH INITIAL ATTITUDE CONTROL)
 DEF Ordnance devices for firing missiles and rockets with initial attitude control.
 GS launchers
 . **gun launchers**
 RT artillery
 ∞ barrels
 gunfire
 howitzers
 hypervelocity launchers
 missile launchers
 rocket catapults
 rocket launchers
 Sabot projectiles

gun propellants
 UF *gunpowder*
 GS propellants
 . **gun propellants**
 RT explosives
 guns (ordnance)

gun turrets
 RT ∞ cupolas
 guns (ordnance)
 ∞ turret

gunfire
 RT artillery fire
 fire control
 firing (igniting)
 gun launchers
 guns (ordnance)
 projectiles

Gunn diodes
 GS electronic equipment
 . diodes
 . . semiconductor diodes
 . . . **Gunn diodes**
 transferred electron devices
 RT gallium arsenides
 negative resistance devices
 semiconductor devices

Gunn effect
 RT ∞ effects
 negative conductance
 negative resistance devices
 semiconductor devices
 semiconductor lasers

gunnery training
 GS education
 . **gunnery training**
 RT artillery
 fire control
 guns (ordnance)
 howitzers

weapons

gunpowder
 USE **gun propellants**

∞ **guns**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT crossed field guns
 electron guns
 gas guns
 guns (ordnance)
 hypervelocity guns
 plasma guns

guns (ordnance)
 UF *cannons*
 GS weapons
 . **guns (ordnance)**
 . . artillery
 . . . howitzers
 . . . precision guided projectiles
 . . rifles
 RT ammunition
 explosives
 gun propellants
 gun turrets
 gunfire
 gunnery training
 ∞ guns
 heat of combustion
 hypervelocity guns
 incendiary ammunition
 projectiles
 propellants
 Sabot projectiles

gust alleviators
 RT deflectors
 gusts
 mission adaptive wings
 spoilers
 turbulent flow
 vortex alleviation

gust loads
 GS aerodynamic forces
 . aerodynamic loads
 . . **gust loads**
 loads (forces)
 . dynamic loads
 . . aerodynamic loads
 . . . **gust loads**
 . . transient loads
 . . . **gust loads**
 . random loads
 . . **gust loads**
 RT atmospheric turbulence
 blast loads
 ground wind
 gusts
 structural design criteria
 wind pressure
 wing loading

gustatory perception
 USE **taste**

gusts
 GS turbulence
 . atmospheric turbulence
 . . **gusts**
 wind (meteorology)
 . **gusts**
 RT clear air turbulence
 ground wind
 gust alleviators
 gust loads
 sea breeze
 storm damage
 storms
 storms (meteorology)
 vortex avoidance

GUT
 USE **grand unified theory**

Gutenberg zone
 GS models
 . **Gutenberg zone**

regions
 . **Gutenberg zone**
 RT acoustic velocity
 seismic waves

guy wires
 UF *stays*
 GS wire
 . **guy wires**
 RT anchors (fasteners)
 structural members

Guyana
 UF *British Guinea*
 GS nations
 . **Guyana**
 RT Caribbean region
 South America

gymnastics
 USE **physical exercise**

gynecology
 GS medical science
 . **gynecology**
 RT females
 genitourinary system

gypsum
 DEF The mineral consisting primarily of fully hydrated calcium sulfate (calcium sulfate dihydrate).
 GS minerals
 . **gypsum**
 plasters
 . **gypsum**
 RT calcium
 chalk
 rocks
 sedimentary rocks
 sulfates

gyrals
 USE **gyres**

gyration
 GS **gyration**
 . precession
 . . Larmor precession
 . . proton precession
 . . quenching (atomic physics)
 . revolving
 . rotation
 . . autorotation
 . . corotation
 . . counter rotation
 . . Earth rotation
 . . galactic rotation
 . . image rotation
 . . lunar rotation
 . . molecular rotation
 . . muon spin rotation
 . . planetary rotation
 . . satellite rotation
 . . stellar rotation
 . . . solar rotation
 . . clinorotation
 . . superrotation
 RT angular velocity
 coning motion
 ∞ motion
 spin dynamics

gyrators
 UF *Tellegen theory*
 GS microwave equipment
 . **gyrators**
 . . microwave filters
 RT ferrites
 microwave switching
 network analysis
 phase shift circuits
 waveguides

gyres
 DEF Closed circulatory systems in a body of water, larger than an eddy or a whirlpool. There is a circular motion of water in each of the major ocean basins, centered on a subtropical high-pressure region. These movements are gener-

ated by connective flow of warm surface water poleward, by the deflective effect of the Earth's rotation and by the effects of prevailing winds. The water within each gyre turns clockwise in the Northern Hemisphere and counterclockwise in the Southern Hemisphere. Acceleration causes sea level to fall along mainland coasts; deceleration leads to rise.

UF *gyrals*
 RT air water interactions
 coastal currents
 Coriolis effect
 ocean currents
 oceanography

gyro horizons

DEF Artificial horizons or attitude gyroscopes.

GS display devices
 . **gyro horizons**
 flight instruments
 . attitude indicators
 . . **gyro horizons**
 gyroscopes
 . attitude gyros
 . . **gyro horizons**
 horizon
 . **gyro horizons**
 measuring instruments
 . indicating instruments
 . . attitude indicators
 . . . **gyro horizons**
 navigation aids
 . navigation instruments
 . . attitude indicators
 . . . **gyro horizons**

gyrocompasses

DEF Compasses consisting of a continuously driven Foucault gyroscope whose supporting ring normally confines the spinning axis to a horizontal plane, so that the Earth's rotation causes the spinning axis to assume a position in a plane passing through the Earth's axis, and thus to point to true north.

GS gyroscopes
 . **gyrocompasses**
 measuring instruments
 . indicating instruments
 . . compasses
 . . . **gyrocompasses**
 navigation aids
 . navigation instruments
 . . compasses
 . . . **gyrocompasses**
 RT magnetic compasses
 radio direction finders
 solar compasses

gyrodampers

DEF Single-gimbal control moment gyros actively controlled to extract the structural vibratory energy through the local rotational deformations of a structure; used in large space structures.

RT control moment gyroscopes
 gimbals
 gyroscopic stability
 structural vibration
 vibration damping

Gyrodyne aircraft

DEF A rotorcraft whose rotors are not engine-driven except for initial starting, but are made to rotate by action of the air when the rotorcraft is moving; and whose means of propulsion, consisting usually of conventional propellers, is independent of the rotor system.

GS **Gyrodyne aircraft**
 . QH-50 helicopter
 RT ∞ aircraft

Gyrodyne DSN-3 helicopter

USE **QH-50 helicopter**

Gyrodyne military aircraft

USE **QH-50 helicopter**

gyrofrequency

DEF The natural period of revolution of a

free electron in the Earth's magnetic field.

GS magnetic properties
 . **gyromagnetism**
 . . **gyrofrequency**
 RT charged particles
 magnetoionics

gyrointeraction

USE **magnetic rigidity**

gyromagnetism

GS magnetic properties
 . **gyromagnetism**
 . . gyrofrequency
 RT Larmor radius

gyroplanes

USE **helicopters**

gyros

USE **gyroscopes**

gyroscope fluids

RT damping
 ∞ fluids
 rotary gyroscopes
 suspending (hanging)

gyroscopes

DEF Devices which utilize the angular momentum of a spinning mass (rotor) to sense angular motion of its base about one or two axes orthogonal to the spin axis. Used for gyros, gyroscopic drift, and gyrostats.

UF *gyros*
gyroscopic drift
gyrostats
 GS **gyroscopes**
 . attitude gyros
 . . gyro horizons
 . control moment gyroscopes
 . cryogenic gyroscopes
 . electrostatic gyroscopes
 . gyrocompasses
 . gyroscopic pendulums
 . gyrostabilizers
 . laser gyroscopes
 . nuclear gyroscopes
 . optical gyroscopes
 . rotary gyroscopes
 . . fluid rotor gyroscopes
 . tuning fork gyroscopes
 RT automatic pilots
 gimballess inertial navigation
 gimbals
 Gravity Probe B
 gyroscopic stability
 precession
 ∞ stabilizers
 torquers

gyroscopic coupling

GS coupling
 . **gyroscopic coupling**
 RT navigation

gyroscopic drift

USE **gyroscopes**
gyroscopic stability

gyroscopic pendulums

UF *pendulous gyroscopes*
 GS gyroscopes
 . **gyroscopic pendulums**
 oscillators
 . mechanical oscillators
 . . pendulums
 . . . **gyroscopic pendulums**
 RT accelerometers
 damping
 Schuler tuning

gyroscopic stability

UF *gyroscopic drift*
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . attitude stability
 directional stability
 **gyroscopic stability**

gyrostabilizers

- . . . rotary stability
- **gyroscopic stability**
- stability
- . dynamic stability
- . . motion stability
- . . . attitude stability
- directional stability
- **gyroscopic stability**
- rotary stability
- **gyroscopic stability**

RT damping
gyrodampers
gyroscopes
hovering stability
inertial platforms

precession
rotary gyroscopes
Schuler tuning
sea keeping
stabilized platforms
stable oscillations
yo-yo devices

gyrostabilizers

GS gyroscopes
. **gyrostabilizers**

RT navigation aids
sea keeping
stabilized platforms

thrust vector control

gyrostats
USE **gyroscopes**

gyrotrons
USE **cyclotron resonance devices**

gyrotropism

GS tropism
. **gyrotropism**

RT electromagnetic properties
frequency shift

H

- H alpha line**
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 H lines
 **H alpha line**
 RT absorption spectra
 emission spectra
 H II regions
 solar spectra
- H beta line**
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 H lines
 **H beta line**
 RT absorption spectra
 Balmer series
 emission spectra
 solar spectra
- H gamma line**
 GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 H lines
 **H gamma line**
 RT absorption spectra
 Balmer series
 emission spectra
 solar spectra
- H I regions**
 GS celestial bodies
 . nebulae
 . . **H I regions**
 hydrogen clouds
 . **H I regions**
 RT ∞ clouds
 hydrogen atoms
 interstellar gas
 interstellar matter
 neutral atoms
 neutral gases
 radio spectra
- H II regions**
 GS celestial bodies
 . nebulae
 . . **H II regions**
 hydrogen clouds
 . **H II regions**
 RT ∞ clouds
 emission spectra
 H alpha line
 hydrogen ions
 interstellar gas
 interstellar matter
 ionized gases
- H lines**
 SN (EXCLUDES SURFACES OF CONSTANT
 MAGNETIC FIELD STRENGTH)
 spectra
 GS . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **H lines**
 H alpha line
 H beta line
 H gamma line
 RT absorption spectra
 Balmer series
 D lines
 emission spectra
 K lines
 Lyman spectra
 Paschen series
 Rydberg series
 solar spectra
 telluric lines
- H waves**
 GS electromagnetic radiation
 . **H waves**
- oscillations
 . transverse oscillation
 . . **H waves**
 transverse waves
 . **H waves**
 RT electric field strength
- H-1 engine**
 GS engines
 . rocket engines
 . . booster rocket engines
 . . . **H-1 engine**
 . . liquid propellant rocket engines
 . . . **H-1 engine**
 RT Saturn 1 launch vehicles
 Saturn 1B launch vehicles
- H-2 control**
(added February 1998)
 GS automatic control
 . optimal control
 . . **H-2 control**
 optimization
 . optimal control
 . . **H-2 control**
 RT control systems design
 control theory
 controllers
 feedback control
 H-infinity control
 linear quadratic Gaussian control
- H-2 orbiting plane*
 USE **HOPE aerospace plane**
- H-13 helicopter*
 USE **OH-13 helicopter**
- H-17 helicopter**
 UF *Flying Crane helicopter*
 GS Hughes aircraft
 . **H-17 helicopter**
 jet aircraft
 . **H-17 helicopter**
 research vehicles
 . research aircraft
 . . **H-17 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **H-17 helicopter**
 RT ∞ aircraft
- H-19 helicopter**
 GS passenger aircraft
 . **H-19 helicopter**
 Sikorsky aircraft
 . **H-19 helicopter**
 transport aircraft
 . **H-19 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **H-19 helicopter**
 RT ∞ aircraft
- H-21 helicopter*
 USE **CH-21 helicopter**
- H-23 helicopter*
 USE **OH-23 helicopter**
- H-25 helicopter**
 GS Boeing aircraft
 . **H-25 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . tandem rotor helicopters
 **H-25 helicopter**
 RT antisubmarine warfare aircraft
- H-34 helicopter*
 USE **CH-34 helicopter**
- H-43 helicopter**
 GS Kaman aircraft
 . **H-43 helicopter**
- V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **H-43 helicopter**
 RT ∞ aircraft
- H-51 helicopter*
 USE **XH-51 helicopter**
- H-53 helicopter**
 UF *CH-53 helicopter*
HXX helicopter
Sikorsky S-65 helicopter
 GS passenger aircraft
 . **H-53 helicopter**
 Sikorsky aircraft
 . **H-53 helicopter**
 transport aircraft
 . **H-53 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **H-53 helicopter**
 RT ∞ aircraft
- H-54 helicopter**
 GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **H-54 helicopter**
 RT ∞ aircraft
- H-56 helicopter**
 GS passenger aircraft
 . **H-56 helicopter**
 Sikorsky aircraft
 . **H-56 helicopter**
 transport aircraft
 . **H-56 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **H-56 helicopter**
 RT ∞ aircraft
- H-60 Helicopter**
 DEF The Black Hawk (Sikorsky) assault helicopter. Used for Black Hawk assault helicopter.
 UF *Black Hawk assault helicopter*
Jayhawk helicopter
 GS Sikorsky aircraft
 . **H-60 Helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **H-60 Helicopter**
 RT ∞ aircraft
 ∞ military aircraft
- H-126 aircraft**
 UF *Hunting H-126 aircraft*
 GS BAC aircraft
 . **H-126 aircraft**
 jet aircraft
 . **H-126 aircraft**
 monoplanes
 . **H-126 aircraft**
 research vehicles
 . research aircraft
 . . **H-126 aircraft**
 RT ∞ aircraft
 jet flaps
- habitability**
 RT ecology
 environmental control
 environments
 shelters
- habitats**
 SN (LIMITED TO PLANTS AND ANIMALS)
 DEF The areas or types of environment in which plants or animals normally occur or live.
 GS regions

habits

. habitats
RT animals
∞ biology
botany
conservation
Earth resources
ecology
endangered species
environment effects
environments
wildlife

habits
RT learning
psychological factors

habituation (learning)
GS learning
. habituation (learning)
RT conditioning (learning)

hadrons
GS particles
. elementary particles
. **hadrons**
. . . baryons
. . . . hyperons
. xi hyperons
. omega-mesons
. rho-mesons
. sigma-mesons
. . . mesons
. . . . eta-mesons
. . . . hyperons
. xi hyperons
. . . . kaons
. . . . meson resonance
. X mesons
. . . . muons
. . . . omega-mesons
. . . . pions
. . . . vector mesons
. rho-mesons
. sigma-mesons
RT charm (particle physics)
flavor (particle physics)
particle decay
partons
quark parton model
vector dominance model

hafnium
GS chemical elements
. hafnium
. hafnium isotopes
metals
. transition metals
. **hafnium**
. . hafnium isotopes

hafnium alloys
GS alloys
. hafnium alloys
RT heat resistant alloys
niobium alloys
tantalum alloys
tungsten alloys
zirconium alloys

hafnium carbides
GS carbon compounds
. carbides
. **hafnium carbides**
hafnium compounds
. hafnium carbides

hafnium compounds
GS **hafnium compounds**
. hafnium carbides
. hafnium iodides
. hafnium oxides
RT ∞ chemical compounds
∞ Group 4B compounds
∞ metal compounds

hafnium iodides
GS hafnium compounds
. hafnium iodides
halogen compounds
. halides

. . metal halides
. . . **hafnium iodides**
. iodine compounds
. . iodides
. . . **hafnium iodides**

hafnium isotopes
GS chemical elements
. hafnium
. **hafnium isotopes**
. nuclides
. . isotopes
. . . **hafnium isotopes**
metals
. transition metals
. hafnium
. . **hafnium isotopes**

hafnium oxides
GS chalcogenides
. oxides
. . metal oxides
. . . **hafnium oxides**
hafnium compounds
. hafnium oxides

hahnium
(added November 1994)
GS chemical elements
. hahnium
RT ∞ elements

hail
DEF Precipitation in the form of spheroidal layered ice pellets that usually fall from cumulonimbus clouds during thunderstorms. The layered structure of hail is produced by successive accretions of clear and frothy ice.
UF *hailstones*
GS precipitation (meteorology)
. hail
RT cloud glaciation
graupel
hailstorms
ice formation
storms (meteorology)
thunderstorms

hailstones
USE **hail**

hailstorms
GS storms
. storms (meteorology)
. **hailstorms**
RT climatology
graupel
hail
meteorology
precipitation (meteorology)
rainstorms
storm damage
storm enhancement
storm suppression
thunderstorms

hair
GS fibers
. hair
RT keratins
skin (anatomy)
wool

hairpin vortices
USE **horseshoe vortices**

Haiti
GS landforms
. islands
. . West Indies
. . . **Haiti**
nations
. Haiti
RT Caribbean region
Caribbean Sea

HAL/S (language)
DEF Programming language developed for the flight software of the NASA Space Shuttle program.

GS languages
. programming languages
. . **HAL/S (language)**
RT computer programming
computers

Halden Boiling Water Reactor
UF *Halden reactor*
HBWR reactor
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Halden Boiling Water Reactor**

Halden reactor
USE **Halden Boiling Water Reactor**

Hale-Bopp comet
(added July 1998)
DEF Long-period comet discovered July 23, 1995; designated C/1995 O1.
GS celestial bodies
. comets
. **Hale-Bopp comet**
RT Oort cloud

half cones
GS cones
. half cones
RT aerodynamic configurations
circular cones
conics
nose cones

half life
DEF The average time required for one half the atoms in a sample of radioactive element to decay.
GS life (durability)
. half life
RT decay
nuclear reactions
post-blast nuclear radiation
radiative lifetime
radioactive age determination
radioactive decay
radioactivity
reaction kinetics

half planes
GS analysis (mathematics)
. half planes
RT boundary value problems
coordinates
differential equations
Green's functions

half spaces
GS analysis (mathematics)
. half spaces
RT boundary value problems
coordinates
elliptic differential equations
fractals
Green's functions

halides
GS halogen compounds
. halides
. bromides
. . ammonium bromides
. . cesium bromides
. . chromium bromides
. . dibromides
. . hydrobromic acid
. . hydrobromides
. . magnesium bromides
. . potassium bromides
. . silver bromides
. . sodium bromides
. . strontium bromides
. chlorides
. . aluminum chlorides
. . ammonium chlorides
. . beryllium chlorides
. . boron chlorides
. . cadmium chlorides
. . calcium chlorides
. . carbon tetrachloride

. . . copper chlorides
 . . . dichlorides
 . . . germanium chlorides
 . . . hydrochlorides
 . . . hydrogen chlorides
 . . . hydrochloric acid
 . . . iron chlorides
 . . . lanthanum chlorides
 . . . lead chlorides
 . . . lithium chlorides
 . . . magnesium chlorides
 . . . nitrosyl chlorides
 . . . nitroxychlorides
 . . . nitryl chlorides
 . . . phosgene
 . . . potassium chlorides
 . . . silicon tetrachloride
 . . . silver chlorides
 . . . sodium chlorides
 . . . sulfur chlorides
 . . . tetrachlorides
 . . . titanium chlorides
 . . . tungsten chlorides
 . . . zinc chlorides
 . . . fluorides
 . . . antimony fluorides
 . . . barium fluorides
 . . . boron fluorides
 . . . chlorine fluorides
 . . . compound A
 . . . cryolite
 . . . deuterium fluorides
 . . . difluorides
 . . . calcium fluorides
 . . . fluorspar
 . . . hydrofluoric acid
 . . . metal fluorides
 . . . aluminum fluorides
 . . . beryllium fluorides
 . . . cadmium fluorides
 . . . calcium fluorides
 . . . fluorspar
 . . . cesium fluorides
 . . . chromium fluorides
 . . . cobalt fluorides
 . . . copper fluorides
 . . . lanthanum fluorides
 . . . lithium fluorides
 . . . magnesium fluorides
 . . . nickel fluorides
 . . . plutonium fluorides
 . . . protactinium fluorides
 . . . sodium fluorides
 . . . strontium fluorides
 . . . thorium fluorides
 . . . tungsten fluorides
 . . . uranium fluorides
 . . . zinc fluorides
 . . . zirconium fluorides
 . . . nitrogen fluorides
 . . . nitryl fluorides
 . . . oxyfluorides
 . . . oxygen fluorides
 . . . ozone fluoride
 . . . perchloryl fluorides
 . . . polyvinyl fluoride
 . . . sulfur fluorides
 . . . sulfur hexafluoride
 . . . technetium fluorides
 . . . metal halides
 . . . alkali halides
 . . . cesium halides
 . . . cesium bromides
 . . . cesium fluorides
 . . . cesium iodides
 . . . potassium iodides
 . . . sodium bromides
 . . . sodium chlorides
 . . . sodium fluorides
 . . . sodium iodides
 . . . aluminum chlorides
 . . . barium fluorides
 . . . beryllium chlorides
 . . . cadmium chlorides
 . . . calcium chlorides
 . . . chromium bromides
 . . . copper chlorides
 . . . hafnium iodides
 . . . iron chlorides

. . . lanthanum chlorides
 . . . lead chlorides
 . . . lithium chlorides
 . . . magnesium bromides
 . . . metal fluorides
 . . . aluminum fluorides
 . . . beryllium fluorides
 . . . cadmium fluorides
 . . . calcium fluorides
 . . . fluorspar
 . . . cesium fluorides
 . . . chromium fluorides
 . . . cobalt fluorides
 . . . copper fluorides
 . . . lanthanum fluorides
 . . . lithium fluorides
 . . . magnesium fluorides
 . . . nickel fluorides
 . . . plutonium fluorides
 . . . protactinium fluorides
 . . . sodium fluorides
 . . . strontium fluorides
 . . . thorium fluorides
 . . . tungsten fluorides
 . . . uranium fluorides
 . . . zinc fluorides
 . . . zirconium fluorides
 . . . niobium iodides
 . . . potassium bromides
 . . . potassium chlorides
 . . . silver halides
 . . . silver bromides
 . . . silver chlorides
 . . . silver iodides
 . . . strontium bromides
 . . . technetium fluorides
 . . . titanium chlorides
 . . . tungsten halides
 . . . tungsten chlorides
 . . . tungsten fluorides
 . . . zinc chlorides
 . . . zirconium iodides
 . . . oxyhalides
 RT halogens
 molten salts
 nitrosyls

halites

UF *rock salt*
 RT molten salts
 ∞ salts

Hall accelerators

RT ∞ accelerators
 alpha plasma devices
 Hall thrusters
 magnetohydrodynamics
 plasma physics

Hall coefficient

USE **Hall effect**

Hall currents

USE **electric current**
Hall effect

Hall effect

DEF The electrical polarization of a horizontal conducting sheet of limited extent, when that sheet moves laterally through a magnetic field having a component vertical to the sheet. The Hall effect is important in determining the behavior of the electrical currents generated by winds in the lower atmosphere. Used for Hall coefficient and Hall currents.

UF *Hall coefficient*
Hall currents
 GS galvanomagnetic effects
 . **Hall effect**
 . quantum Hall effect
 RT carrier mobility
 ∞ effects
 Hall resistance
 magnetohydrodynamics
 mobility
 Pedersen currents
 polarization (charge separation)
 semiconductor devices

transport properties

Hall generators

DEF Hall plates, together with leads, and where used, encapsulation and ferrous or non-ferrous backing plates.

RT circulators (phase shift circuits)
 Faraday effect
 ∞ generators
 plasma generators
 signal generators

Hall resistance

(added July 2000)

DEF For a current-carrying conductor within a magnetic field, the ratio of the transverse voltage induced by the Hall effect, to the conductor current.

GS electrical properties
 . electrical impedance
 . . electrical resistance
 . . . **Hall resistance**
 impedance
 . electrical impedance
 . . electrical resistance
 . . . **Hall resistance**
 RT electrical resistivity
 Hall effect
 magnetoresistivity
 quantum Hall effect
 ∞ resistance
 transport properties

Hall thrusters

(added June 2000)

DEF Gridless ion engines that produce thrust by electrostatically accelerating plasma ions out of an annular discharge chamber.

GS engines
 . rocket engines
 . . electric rocket engines
 . . . electrostatic engines
 ion engines
 **Hall thrusters**
 RT electric propulsion
 Hall accelerators
 plasma engines
 spacecraft propulsion

Hallam Nuclear Power Facility

UF *HINPF (Hallam Nuclear Power Facility)*
 GS electric power plants
 . nuclear power plants
 . . **Hallam Nuclear Power Facility**
 nuclear electric power generation
 . nuclear power plants
 . . **Hallam Nuclear Power Facility**
 RT ∞ power plants
 sodium graphite reactors

Halley's comet

DEF A member of the solar system with an orbit and a period of about 76 years. It appeared in 1985-1986.

GS celestial bodies
 . comets
 . . **Halley's comet**
 RT Giotto mission
 solar system
 Vega project

hallucinations

GS psychological effects
 . illusions
 . . **hallucinations**
 RT signs and symptoms

Halo Orbit space station

GS artificial satellites
 . space stations
 . . **Halo Orbit space station**
 stations
 . space stations
 . . **Halo Orbit space station**
 RT lunar spacecraft

halocarbons

DEF Compounds consisting of halogen atoms and carbon atoms.

halogen compounds

GS carbon compounds
 . halocarbons
 . . chlorocarbons
 . . chlorofluorocarbons
 . . fluorocarbons
 . . halon
 halogen compounds
 . halocarbons
 . . chlorocarbons
 . . chlorofluorocarbons
 . . fluorocarbons
 . . halon

RT bromine compounds
 ∞ chemical compounds
 chlorine compounds
 fluorine compounds
 fluoro compounds
 iodine compounds

HALOE

USE **Halogen Occultation Experiment**

halogen compounds

UF *Group 7A compounds*

GS **halogen compounds**

. bromine compounds
 . . bromates
 . . bromides
 . . ammonium bromides
 . . cesium bromides
 . . chromium bromides
 . . dibromides
 . . hydrobromic acid
 . . hydrobromides
 . . magnesium bromides
 . . potassium bromides
 . . silver bromides
 . . sodium bromides
 . . strontium bromides
 . . halon
 . chlorine compounds
 . . chlorates
 . . chlorides
 . . aluminum chlorides
 . . ammonium chlorides
 . . beryllium chlorides
 . . boron chlorides
 . . cadmium chlorides
 . . calcium chlorides
 . . carbon tetrachloride
 . . copper chlorides
 . . dichlorides
 . . germanium chlorides
 . . hydrochlorides
 . . hydrogen chlorides
 . . . hydrochloric acid
 . . iron chlorides
 . . lanthanum chlorides
 . . lead chlorides
 . . lithium chlorides
 . . magnesium chlorides
 . . nitrosyl chlorides
 . . nitroxychlorides
 . . nitril chlorides
 . . phosgene
 . . potassium chlorides
 . . silicon tetrachloride
 . . silver chlorides
 . . sodium chlorides
 . . sulfur chlorides
 . . tetrachlorides
 . . titanium chlorides
 . . tungsten chlorides
 . . zinc chlorides
 . . chlorine fluorides
 . . chlorine oxides
 . . chlorocarbons
 . . chlorosilanes
 . . DDT
 . . meclizine
 . . perchlorates
 . . aluminum perchlorates
 . . ammonium perchlorates
 . . hydrazine perchlorates
 . . hydrogen perchlorate
 . . hydroxylammonium perchlorates
 . . lithium perchlorates
 . . magnesium perchlorates
 . . nitronium perchlorate

. . . potassium perchlorates
 . . trichloroethylene
 . fluorine compounds
 . . fluorides
 . . . antimony fluorides
 . . . barium fluorides
 . . . boron fluorides
 . . . chlorine fluorides
 . . . compound A
 . . . cryolite
 . . . deuterium fluorides
 . . . difluorides
 . . . calcium fluorides
 fluorspar
 . . . hydrofluoric acid
 . . . metal fluorides
 aluminum fluorides
 beryllium fluorides
 cadmium fluorides
 calcium fluorides
 fluorspar
 cesium fluorides
 chromium fluorides
 cobalt fluorides
 copper fluorides
 lanthanum fluorides
 lithium fluorides
 magnesium fluorides
 nickel fluorides
 plutonium fluorides
 protactinium fluorides
 sodium fluorides
 strontium fluorides
 thorium fluorides
 tungsten fluorides
 uranium fluorides
 zinc fluorides
 zirconium fluorides
 . . nitrogen fluorides
 . . nitril fluorides
 . . oxyfluorides
 . . oxygen fluorides
 . . ozone fluoride
 . . perchloryl fluorides
 . . polyvinyl fluoride
 . . sulfur fluorides
 . . . sulfur hexafluoride
 . . technetium fluorides
 . . fluorite
 . . fluoro compounds
 . . . cryolite
 . . . difluoro compounds
 perfluoroalkane
 polytetrafluoroethylene
 teflon (trademark)
 . . . fluorine organic compounds
 fluoroamines
 nitrofluoroamines
 trifluoroamine oxide
 fluorocarbons
 fluorohydrocarbons
 carbon tetrafluoride
 chlorofluoromethane
 polytetrafluoroethylene
 teflon (trademark)
 fluoropolymers
 polytetrafluoroethylene
 teflon (trademark)
 KEL-F
 polyvinyl fluoride
 perfluoroalkane
 perfluoroguanidine
 . . . fluorosilicates
 . . tetrafluorohydrazine
 . halides
 . . bromides
 . . . ammonium bromides
 . . . cesium bromides
 . . . chromium bromides
 . . . dibromides
 . . . hydrobromic acid
 . . . hydrobromides
 . . . magnesium bromides
 . . . potassium bromides
 . . . silver bromides
 . . . sodium bromides
 . . . strontium bromides
 . . chlorides
 . . . aluminum chlorides

. . . ammonium chlorides
 . . . beryllium chlorides
 . . . boron chlorides
 . . . cadmium chlorides
 . . . calcium chlorides
 . . . carbon tetrachloride
 . . . copper chlorides
 . . . dichlorides
 . . . germanium chlorides
 . . . hydrochlorides
 . . . hydrogen chlorides
 . . . hydrochloric acid
 . . . iron chlorides
 . . . lanthanum chlorides
 . . . lead chlorides
 . . . lithium chlorides
 . . . magnesium chlorides
 . . . nitrosyl chlorides
 . . . nitroxychlorides
 . . . nitril chlorides
 . . . phosgene
 . . . potassium chlorides
 . . . silicon tetrachloride
 . . . silver chlorides
 . . . sodium chlorides
 . . . sulfur chlorides
 . . . tetrachlorides
 . . . titanium chlorides
 . . . tungsten chlorides
 . . . zinc chlorides
 . . . fluorides
 antimony fluorides
 barium fluorides
 boron fluorides
 chlorine fluorides
 compound A
 cryolite
 deuterium fluorides
 difluorides
 calcium fluorides
 fluorspar
 hydrofluoric acid
 metal fluorides
 aluminum fluorides
 beryllium fluorides
 cadmium fluorides
 calcium fluorides
 fluorspar
 cesium fluorides
 chromium fluorides
 cobalt fluorides
 copper fluorides
 lanthanum fluorides
 lithium fluorides
 magnesium fluorides
 nickel fluorides
 plutonium fluorides
 protactinium fluorides
 sodium fluorides
 strontium fluorides
 thorium fluorides
 tungsten fluorides
 uranium fluorides
 zinc fluorides
 zirconium fluorides
 . . . nitrogen fluorides
 . . . nitril fluorides
 . . . oxyfluorides
 . . . oxygen fluorides
 . . . ozone fluoride
 . . . perchloryl fluorides
 . . . polyvinyl fluoride
 . . . sulfur fluorides
 sulfur hexafluoride
 . . . technetium fluorides
 . . . metal halides
 alkali halides
 cesium halides
 cesium bromides
 cesium fluorides
 cesium iodides
 potassium iodides
 sodium bromides
 sodium chlorides
 sodium fluorides
 sodium iodides
 . . . aluminum chlorides
 . . . barium fluorides
 . . . beryllium chlorides

- ... cadmium chlorides
 - ... calcium chlorides
 - ... chromium bromides
 - ... copper chlorides
 - ... hafnium iodides
 - ... iron chlorides
 - ... lanthanum chlorides
 - ... lead chlorides
 - ... lithium chlorides
 - ... magnesium bromides
 - ... metal fluorides
 - ... aluminum fluorides
 - ... beryllium fluorides
 - ... cadmium fluorides
 - ... calcium fluorides
 - ... fluorspar
 - ... cesium fluorides
 - ... chromium fluorides
 - ... cobalt fluorides
 - ... copper fluorides
 - ... lanthanum fluorides
 - ... lithium fluorides
 - ... magnesium fluorides
 - ... nickel fluorides
 - ... plutonium fluorides
 - ... protactinium fluorides
 - ... sodium fluorides
 - ... strontium fluorides
 - ... thorium fluorides
 - ... tungsten fluorides
 - ... uranium fluorides
 - ... zinc fluorides
 - ... zirconium fluorides
 - ... niobium iodides
 - ... potassium bromides
 - ... potassium chlorides
 - ... silver halides
 - ... silver bromides
 - ... silver chlorides
 - ... silver iodides
 - ... strontium bromides
 - ... technetium fluorides
 - ... titanium chlorides
 - ... tungsten halides
 - ... tungsten chlorides
 - ... tungsten fluorides
 - ... zinc chlorides
 - ... zirconium iodides
 - ... oxyhalides
 - ... halocarbons
 - ... chlorocarbons
 - ... chlorofluorocarbons
 - ... fluorocarbons
 - ... halon
 - ... iodine compounds
 - ... iodates
 - ... lithium iodates
 - ... iodides
 - ... cesium iodides
 - ... gallamine triethiodide
 - ... hafnium iodides
 - ... niobium iodides
 - ... potassium iodides
 - ... silver iodides
 - ... sodium iodides
 - ... zirconium iodides
 - ... iodoacetic acid
 - ... nitrosyls
 - ... nitrosyl chlorides
 - RT ∞ chemical compounds
- Halogen Occultation Experiment**
- DEF Shuttle experiment to provide global stratospheric vertical concentration profiles of key chemical species involved in the catalytic destruction of ozone due to chlorine compounds. Used for HALOE.
- UF *HALOE*
- GS payloads
 - ... Space Shuttle payloads
 - ... **Halogen Occultation Experiment**
- RT ozone
- halogenation**
- GS chemical reactions
 - ... **halogenation**
 - ... bromination
 - ... chlorination
 - ... fluorination
- RT defluorination
halogens
- halogens**
- GS chemical elements
 - ... **halogens**
 - ... astatine
 - ... bromine
 - ... bromine isotopes
 - ... chlorine
 - ... fluorine
 - ... fluorine isotopes
 - ... liquid fluorine
 - ... iodine
 - ... iodine isotopes
 - ... iodine 125
 - ... iodine 131
 - ... iodine 132
- RT excimer lasers
halides
halogenation
- halon**
- (added January 2000)
- DEF A bromofluorocarbon compound that was widely used as an agent for fire suppression and explosion protection. After being recognized as an ozone-depleting substance, the U.S. production and import of halons was banned in 1994.
- GS carbon compounds
 - ... halocarbons
 - ... **halon**
- halogen compounds
 - ... bromine compounds
 - ... **halon**
 - ... halocarbons
 - ... **halon**
- RT fire extinguishers
flame retardants
fluorocarbons
- halophiles**
- RT agriculture
plants (botany)
- halos**
- GS scattering
 - ... wave scattering
 - ... electromagnetic scattering
 - ... light scattering
 - ... **halos**
- transmission
 - ... electromagnetic wave transmission
 - ... light transmission
 - ... light scattering
 - ... **halos**
- ... wave propagation
- ... light scattering
- ... **halos**
- RT astronomy
atmospheric scattering
coronas
galactic halos
haze
images
rainbows
- Halphen method**
- RT ∞ methodology
- Hamburger aircraft**
- GS **Hamburger aircraft**
 - ... C-160 aircraft
 - ... HFB-320 aircraft
- RT ∞ aircraft
- Hamburger HFB-320 aircraft*
- USE **HFB-320 aircraft**
- Hamiltonian functions**
- GS functions (mathematics)
 - ... **Hamiltonian functions**
- RT classical mechanics
cluster variation method
 ∞ dynamics
Hamilton-Jacobi equation
quantum theory
- von Zeipel method
- Hamilton-Jacobi equation**
- RT ∞ equations
equations of motion
Hamiltonian functions
relativistic particles
- hammerhead configuration**
- RT forebodies
missile configurations
- hammers**
- GS tools
 - ... **hammers**
 - ... electromagnetic hammers
- RT impactors
presses
rams (presses)
- hamsters**
- GS animals
 - ... vertebrates
 - ... mammals
 - ... rodents
 - ... **hamsters**
- hand (anatomy)**
- GS anatomy
 - ... limbs (anatomy)
 - ... **hand (anatomy)**
 - ... fingers
 - ... appendages
 - ... **hand (anatomy)**
 - ... fingers
- RT wrist
- handbooks**
- GS documents
 - ... **handbooks**
 - ... user manuals (computer programs)
- RT bibliographies
directories
indexes (documentation)
manuals
subjects
textbooks
training analysis
- handedness**
- RT chirality
lateral stability
- handicaps*
- USE **disabilities**
- handles**
- RT knobs
levers
manual control
- Handley Page aircraft**
- GS **Handley Page aircraft**
 - ... HP-115 aircraft
 - ... Victor MK-1 aircraft
- RT ∞ aircraft
- Handley Page HP-115 aircraft*
- USE **HP-115 aircraft**
- handling equipment**
- GS **handling equipment**
 - ... cranes
 - ... gantry cranes
- RT crawler tractors
 ∞ equipment
ground support equipment
harbors
locomotives
propellant storage
 ∞ storage
tractors

handwriting

transportation

handling qualities

USE **controllability**

hands (robotics)

USE **end effectors**

handwriting

GS **handwriting**

. graphology

RT character recognition

orthography

Hanford reactors

GS nuclear reactors

. **Hanford reactors**

RT reactor design

reactor physics

reactor technology

hang gliders

DEF Ultralight, unpowered aircraft in which the pilot controls the flight attitude and glide path by shifting his position on a suspended seat (swing seat).

GS gliders

. **hang gliders**

RT ∞ aircraft

flexible wings

free flight

man powered aircraft

parawings

sailwings

soaring

ultralight aircraft

∞ winged vehicles

hangars

(added December 1990)

UF *aircraft hangars*

RT airfield surface movements

airports

buildings

ground handling

ground stations

heliports

military air facilities

Hankel functions

GS analysis (mathematics)

. complex variables

. . Bessel functions

. . . **Hankel functions**

. real variables

. . Bessel functions

. . . **Hankel functions**

functions (mathematics)

. **Hankel functions**

RT boundary value problems

differential equations

orthogonal functions

Hansen lunar theory

RT Earth orbits

orbital mechanics

perturbation theory

∞ theories

haploscopes

GS measuring instruments

. optical measuring instruments

. . **haploscopes**

optical equipment

. optical measuring instruments

. . **haploscopes**

RT astigmatism

binocular vision

eye examinations

∞ instruments

optometry

harbors

DEF Small bays or sheltered parts of seas, lakes, or other large bodies of water, usually well protected either naturally or artificially against high waves and strong currents. Harbors are furnished deep enough to provide safe anchorage for ships; especially such places in which port facilities are furnished.

GS waterways

. **harbors**

. . artificial harbors

RT boats

breakwaters

cargo

dredging

estuaries

freighters

handling equipment

marine transportation

oceanography

∞ ports

regional planning

ship terminals

ships

tanker ships

terminal facilities

traffic

∞ travel

water vehicles

wharves

hard coal

USE **anthracite**

hard landing

DEF An impact landing of a spacecraft on the surface of a planet or natural satellite destroying all equipment except possibly a very rugged package.

GS landing

. **hard landing**

RT aircraft landing

crash landing

emergency landing

lunar landing

planetary landing

soft landing

spacecraft landing

water landing

hardeners

RT alloys

hardening (materials)

heat treatment

∞ hardening

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT hardening (materials)

hardening (systems)

hardening (materials)

UF *metal hardening*

GS **hardening (materials)**

. carburizing

. cold hardening

. hot pressing

. . hot isostatic pressing

. nitriding

. precipitation hardening

. . maraging

. pulse heating

. shot peening

. silicizing

. work hardening

. . strain hardening

RT aging (materials)

aging (metallurgy)

annealing

coagulation

dispersion strengthening

hardeners

∞ hardening

heat treatment

martensite

metal working

∞ metallurgy

microstructure

normalizing (heat treatment)

oxide dispersion strengthening

peening

quenching (cooling)

∞ setting

softening

tempering

hardening (systems)

DEF Techniques for decreasing the suscep-

tibility or vulnerability of weapon systems and components.

GS **hardening (systems)**

. radiation hardening

RT ∞ hardening

missile defense

nuclear warfare

∞ systems

hardness

DEF Resistance of metal to plastic deformation usually by indentation. However, the term may also refer to stiffness or temper, or to resistance to scratching, abrasion, or cutting.

GS mechanical properties

. **hardness**

. . microhardness

. . . Knoop hardness

. . . Rockwell hardness

. . Vickers hardness

RT abrasion resistance

brittle materials

brittleness

Charpy impact test

cold hardening

ductility

fatigue (materials)

fracture strength

impact strength

indentation

notch tests

plastic properties

softness

surface properties

temper (metallurgy)

toughness

wear

wear resistance

hardness tests

RT compression tests

high temperature tests

impact tests

Knoop hardness

low temperature tests

∞ materials tests

nanindentation

nondestructive tests

static tests

∞ tests

Vickers hardness

wear tests

∞ hardware

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Physical equipment as contrasted to ideas or design that may exist only on paper.

RT computers

electronic modules

∞ equipment

evolvable hardware

firmware

fixtures

reconfigurable hardware

tools

hardware description languages

(added January 1994)

DEF Formal languages and notations used in the specification, design, simulation, and documentation of computer hardware systems and their component circuits.

UF *HDL (computers)*

VHDL (computers)

GS languages

. **hardware description languages**

RT computer design

computer systems simulation

formalism

integrated circuits

logic design

very large scale integration

hardware utilization lists

UF *HUL*

GS lists

. **hardware utilization lists**

RT ∞ catalogs

- documents
- hardware-in-the-loop simulation**
(added February 1999)
UF *hardware-in-the-loop tests*
GS simulation
RT **hardware-in-the-loop simulation**
computerized simulation
control simulation
performance tests
systems simulation
- hardware-in-the-loop tests*
(added February 1999)
USE **hardware-in-the-loop simulation**
- Harleton meteorite**
GS celestial bodies
. meteorites
. . . stony meteorites
. . . . chondrites
. . . . **Harleton meteorite**
RT iron meteorites
- harmonic analysis**
DEF A statistical method for determining the amplitude and period of certain harmonic or wave components in a set of data with the aid of Fourier series.
GS analysis (mathematics)
. functional analysis
. . **harmonic analysis**
. . . tesseral harmonics
. . . . zonal harmonics
RT Banach space
form factors
Fourier analysis
frequency analyzers
microwave resonance
- harmonic control**
RT ∞ control
harmonic oscillation
harmonics
helicopter control
rotary wings
vibration damping
- harmonic excitation**
GS excitation
. wave excitation
. . **harmonic excitation**
harmonics
. **harmonic excitation**
RT acoustics
Fourier analysis
simple harmonic motion
- harmonic functions**
DEF Any solution of the Laplace equations.
GS analysis (mathematics)
. complex variables
. . **harmonic functions**
functions (mathematics)
. **harmonic functions**
RT Airy function
Fourier analysis
Laplace equation
maximum principle
- harmonic generations**
GS harmonics
. **harmonic generations**
RT acoustics
carrier frequencies
Fourier analysis
phase matching
wave generation
- harmonic generators**
RT comparators
frequency converters
 ∞ generators
harmonics
oscillators
- subharmonic generators
- harmonic motion**
DEF The projection on a diameter of the circle of such motion.
GS **harmonic motion**
. simple harmonic motion
RT group velocity
 ∞ motion
- harmonic oscillation**
GS harmonics
. **harmonic oscillation**
oscillations
. **harmonic oscillation**
RT acoustics
Fourier analysis
harmonic control
transverse oscillation
- harmonic oscillators**
GS oscillators
. **harmonic oscillators**
RT harmonics
mechanical oscillators
subharmonic generators
- harmonic radiation**
RT electromagnetic radiation
 ∞ radiation
- harmonics**
DEF Eigenfrequency oscillations excited in a vibrating system. Used for overtones.
UF *overtones*
GS **harmonics**
. harmonic excitation
. harmonic generations
. harmonic oscillation
. simple harmonic motion
. spherical harmonics
. superharmonics
. tesseral harmonics
. zonal harmonics
RT acoustics
cycles
Fourier analysis
frequencies
harmonic control
harmonic generators
harmonic oscillators
nodes (standing waves)
resonant frequencies
sound-sound interactions
standing waves
subaudible frequencies
subharmonic generators
vibration
wavelengths
- harnesses**
RT couches
safety devices
seat belts
seats
transmission lines
- Harpoon missile**
GS missiles
. air to surface missiles
. . **Harpoon missile**
RT surface to surface missiles
weapon systems
- Harrier aircraft**
(added February 1993)
UF *AV-8A aircraft*
AV-8B aircraft
YAV-8B aircraft
GS attack aircraft
. fighter aircraft
. . **Harrier aircraft**
Hawker Siddeley aircraft
. **Harrier aircraft**
RT ∞ aircraft
Buccaneer aircraft
 ∞ military aircraft
 ∞ P-1127 aircraft
Saab 37 aircraft
Vampire MK 35 aircraft
- Vulcan aircraft
- Hartmann flow**
GS fluid flow
. laminar flow
. . **Hartmann flow**
. steady flow
. . **Hartmann flow**
RT Couette flow
magneto hydrodynamic flow
magneto hydrodynamics
two dimensional flow
- Hartmann number**
GS dimensionless numbers
. **Hartmann number**
ratios
. **Hartmann number**
RT magneto hydrodynamics
viscous drag
- Hartmann-Sprenger tubes**
(added August 2003)
DEF A passive, pulsed-flow device in which under-expanded, sonic or supersonic jet flows impinge on a tube closed on one end, thus producing gas dynamic oscillations and converting a steady flow into a continuous source of pulsed flow.
RT pulse generators
 ∞ test equipment
- Hartree approximation**
UF *Hartree-Appleton approximation*
Hartree-Fock approximation
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Hartree approximation**
RT atomic structure
density functional theory
many body problem
perturbation theory
self consistent fields
wave functions
- Hartree-Appleton approximation*
USE **Hartree approximation**
- Hartree-Fock approximation*
USE **Hartree approximation**
- Hartree-Fock-Slater method**
DEF A refined approximation method for the calculation from wave function of electron total energies, kinetic energies, etc., for chemical elements.
RT atomic physics
electron energy
 ∞ methodology
Slater orbitals
- Harvard Radio Meteor Project**
GS programs
. projects
. . **Harvard Radio Meteor Project**
RT radio echoes
- hassium**
(added May 1998)
GS chemical elements
. **hassium**
RT bohrium
meitnerium
- Hastelloy (trademark)**
GS alloys
. nickel alloys
. . **Hastelloy (trademark)**
RT iron alloys
molybdenum alloys
- hatches**
RT air locks
doors
egress
gates (openings)
ingress (spacecraft passageway)
- hauling**
RT cargo

Hawaii

delivery
materials handling
packaging
transportation
transportation energy
trucks

Hawaii

GS landforms
. islands
. . **Hawaii**
nations
. United States
. . **Hawaii**

Hawk missile

GS missiles
. surface to air missiles
. . **Hawk missile**
RT solid propellant rocket engines

Hawker Hunter aircraft

USE **F-2 aircraft**

Hawker P-1127 aircraft

USE **P-1127 aircraft**

Hawker P-1154 aircraft

USE **P-1154 aircraft**

Hawker Siddeley aircraft

GS **Hawker Siddeley aircraft**
. Argosy MK-1 aircraft
. AVRO 707 aircraft
. Buccaneer aircraft
. Comet 4 aircraft
. DH 112 aircraft
. DH 115 aircraft
. DH 121 aircraft
. DH 125 aircraft
. F-2 aircraft
. GA-5 aircraft
. Harrier aircraft
. HS-748 aircraft
. HS-801 aircraft
. P-1127 aircraft
. P-1154 aircraft
. Shackleton bomber
. Vampire MK 35 aircraft
. Vulcan aircraft
RT ∞ aircraft

Hawkeye 1 satellite

USE **Explorer 52 satellite**

Hawkeye aircraft

USE **E-2 aircraft**

Hawkeye satellites

GS artificial satellites
. scientific satellites
. . **Hawkeye satellites**

hay

GS farm crops
. **hay**
plants (botany)
. grasses
. . **hay**
RT agriculture
botany
Earth resources
farmlands
∞ food
grasslands
leguminous plants

Haynes Stellite

USE **Stellite (trademark)**

HAZ (metallurgy)

USE **heat affected zone**

hazardous material disposal (in space)

DEF The disposal in space of hazardous material. When radioactive materials are involved, the expected lifetime of orbit exceeds the lifetime of the radioactivity.

GS disposal
. waste disposal

. . hazardous material disposal (in space)

management
. waste management
. . waste disposal
. . . **hazardous material disposal (in space)**
RT aerospace environments
public health
radioactive wastes
toxicity and safety hazard

hazardous materials

(added March 1997)

GS hazardous materials

. hazardous wastes
RT biological hazards
carcinogens
contaminants
explosives
hazards
∞ materials
poisons
radiation hazards
toxic hazards
toxins and antitoxins
waste disposal

hazardous wastes

(added March 1997)

GS hazardous materials

. **hazardous wastes**
wastes

RT hazardous wastes

biological hazards
contaminants
environmental cleanup
hazards
radiation hazards
toxic hazards
waste disposal

hazards

UF *danger*
noise hazards
GS **hazards**
. aircraft hazards
. . runway incursions
. flight hazards
. . meteoroid hazards
. biological hazards
. operational hazards
. radiation hazards
. toxic hazards
RT accident prevention
accidents
aircraft spin
avoidance
crash injuries
∞ detectors
explosions
fires
flammable gases
hazardous materials
hazardous wastes
incompatibility
injuries
low visibility
noise tolerance
occupational diseases
protection
risk
risk assessment
sabotage
safety
safety devices
safety factors
safety management
spacecraft breakup
spontaneous combustion
toxicology
warning systems

haze

DEF Fine particles of dust, salt, or water dispersed through a part of the atmosphere, diminishing transparency of the air, causing colors to assume a characteristic subdued opalescent appearance, and reducing the horizontal visibility to more than one, but less than two

kilometers. The obscuration, or lack of transparency, of the atmosphere near the Earth's surface, is often caused by haze or by heat refraction (shimmering).

RT air pollution
atmospheric optics
clarity
fog
halos
light transmission
low visibility
mist
opacity
optical properties
transparence
turbidity
visibility

haze detection

GS detection
. **haze detection**
RT fog
forest fire detection
fumes
gas detectors
mist
remote sensors
smoke
vapors

HBNQ

USE **nitroguanidine**

HBWR reactor

USE **Halden Boiling Water Reactor**

HC-1 helicopter

USE **CH-47 helicopter**

HC-3 helicopter

UF *Omnipol HC-3 helicopter*
GS general aviation aircraft
. **HC-3 helicopter**
transport aircraft
. **HC-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **HC-3 helicopter**
RT passenger aircraft

HCL argon lasers

DEF Gas lasers in which the active material is gaseous hydrogen chloride and argon.

GS stimulated emission devices
. lasers
. . chemical lasers
. . . HCL lasers
. . . . **HCL argon lasers**
. . gas lasers
. . . HCL lasers
. . . . **HCL argon lasers**

HCL lasers

DEF Gas lasers in which the active material is gaseous hydrogen chloride. Used for hydrogen chloride lasers.

UF *hydrogen chloride lasers*
GS stimulated emission devices
. lasers
. . chemical lasers
. . . **HCL lasers**
. . . . HCL argon lasers
. . gas lasers
. . . **HCL lasers**
. . . . HCL argon lasers

HCMM

USE **Heat Capacity Mapping Mission**

HCN lasers

UF *hydrogen cyanide lasers*
GS stimulated emission devices
. lasers
. . gas lasers
. . . **HCN lasers**
RT chemical lasers
coherent light
hydrocyanic acid

light amplifiers
light sources
optical pumping
stimulated emission

HD-1 ground effect machines

USE **hovercraft ground effect machines**

HDL (computers)

USE **hardware description languages**

HDTV

USE **high definition television**

head (anatomy)

GS anatomy
. **head (anatomy)**
.. skull
... cranium
... intracranial cavity
... mastoids
RT brain
chin
eye (anatomy)
face (anatomy)
forehead
lips (anatomy)
nose (anatomy)
sense organs

head (fluid mechanics)

GS fluid flow
. **head (fluid mechanics)**
.. head flow
.. pressure heads
RT elevation
geopotential height
hydrostatic pressure
hydrostatics
liquid flow
pressure
scale height

head (pressure)

USE **pressure heads**

head down tilt

GS posture
. **head down tilt**
RT aerospace medicine
bed rest
bioastronautics
body sway test
head up tilt
hemodynamic responses
hindlimb suspension
hypokinesia
orthostatic tolerance
physiological effects
tilt-table test
vestibular tests
weightlessness simulation

head flow

GS fluid flow
. head (fluid mechanics)
.. **head flow**
RT base flow
Blasius flow
inlet flow
liquid flow
∞ pressure drop

head movement

RT acceleration stresses (physiology)
aerospace medicine
eye movements
∞ motion
motion sickness
vestibular tests

head up tilt

(added March 1998)

DEF Body posture while lying on a tilt table with the head higher than the rest of the body.

UF *HUT (physiology)*

GS posture

. **head up tilt**

RT aerospace medicine
bed rest

bioastronautics
cardiovascular system
gravitational physiology
gravity perception
head down tilt
hemodynamic responses
hindlimb suspension
lower body negative pressure
orthostatic tolerance
physiological responses
supine position
tilt-table test
weightlessness simulation

headache

UF *cephalalgia*
GS diseases
. **headache**
signs and symptoms
. **headache**

∞ headers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT beams (supports)
chassis
hermetic seals
pipes (tubes)
supports
∞ terminals

headsets

USE **earphones**

head-up displays

GS display devices
. **head-up displays**
RT avionics
consoles
flight instruments
image tubes
indicating instruments
landing aids
navigation aids
position indicators
spacecraft position indicators
warning systems

healing

GS **healing**
. wound healing
RT clinical medicine
cures
therapy

health

GS **health**
. health physics
.. public health
.. mental health
RT chronic conditions
clinical medicine
hygiene
oral hygiene
psychotherapy
sanitation

health and usage monitoring systems (added April 2001)

USE **systems health monitoring**

health physics

GS biophysics
. **health physics**
.. public health
health
. **health physics**
.. public health
RT fluence
industrial safety
nuclear medicine
nuclear physics
nuclear radiation
occupational diseases
∞ physics
radiation detectors
radiation dosage
radiation effects
radiation hazards
radiation injuries

radiation measuring instruments
radiation protection
radiation sickness
radiobiology
safety factors
∞ science

Health Physics Research Reactor

UF *HPRR*

GS nuclear reactors
. nuclear research and test reactors

.. **Health Physics Research Reactor**

RT ∞ physics

Health-Education Telecommunications exp

USE **HET experiment**

HEAO

UF *High Energy Astronomy Observatories*

GS artificial satellites
. scientific satellites
.. astronomical satellites
... **HEAO**
.... HEAO 1
.... HEAO 2
.... HEAO 3
.... HEAO 4
observatories
. astronomical observatories
.. astronomical satellites
... **HEAO**
.... HEAO 1
.... HEAO 2
.... HEAO 3
.... HEAO 4
RT OAO

HEAO 1

DEF The first of three NASA High Energy Astronomy Observatories launched during 1977 for the study of cosmic rays and Earth's magnetic field to study the x ray and gamma ray sky. Used for HEAO A, High Energy Astronomy Observatory A, and High Energy Astronomy Observatory 1.

UF *HEAO A*

High Energy Astronomy Observatory 1

High Energy Astronomy Observatory A

GS artificial satellites
. scientific satellites
.. astronomical satellites
... **HEAO**
.... **HEAO 1**
observatories
. astronomical observatories
.. astronomical satellites
... **HEAO**
.... **HEAO 1**
unmanned spacecraft
. **HEAO 1**
RT OAO

HEAO 2

DEF The second of three NASA High Energy Astronomy Observatories. It was launched during 1978 for the study of specific x ray objects, quasars, x ray pulsars, and candidate black holes. Used for Einstein Observatory, HEAO B, High Energy Astronomy Observatory B, and High Energy Astronomy Observatory 2.

UF *Einstein Observatory*

HEAO B

High Energy Astronomy Observatory 2

High Energy Astronomy Observatory B

GS artificial satellites
. scientific satellites
.. astronomical satellites
... **HEAO**
.... **HEAO 2**
observatories
. astronomical observatories
.. astronomical satellites
... **HEAO**
.... **HEAO 2**

HEAO 3

unmanned spacecraft

. **HEAO 2**

RT OAO

HEAO 3

DEF The third of four NASA High Energy Astronomy Observatories. It was launched during 1979 for the study of cosmic rays and elemental and isotropic composition as a corollary to a search of narrow gamma ray lines. Used for HEAO C, High Energy Astronomy Observatory C, and High Energy Astronomy Observatory 3.

UF *HEAO C*

High Energy Astronomy Observatory

3

High Energy Astronomy Observatory

C

GS artificial satellites

. scientific satellites

. . . astronomical satellites

. . . HEAO

. . . . **HEAO 3**

observatories

. astronomical observatories

. . astronomical satellites

. . . HEAO

. . . . **HEAO 3**

unmanned spacecraft

. **HEAO 3**

RT OAO

HEAO 4

(added May 1997)

UF *HEAO D*

High Energy Astronomy Observatory

4

High Energy Astronomy Observatory

D

GS artificial satellites

. scientific satellites

. . . astronomical satellites

. . . HEAO

. . . . **HEAO 4**

observatories

. astronomical observatories

. . astronomical satellites

. . . HEAO

. . . . **HEAO 4**

RT gamma ray astronomy

x ray astronomy

HEAO A

USE **HEAO 1**

HEAO B

USE **HEAO 2**

HEAO C

USE **HEAO 3**

HEAO D

(added May 1997)

USE **HEAO 4**

hearing

GS **hearing**

. binaural hearing

RT audiology

audiometry

auditory fatigue

auditory tasks

ear

loudness

stereophonics

thresholds (perception)

hearing loss

USE **auditory defects**

heart

GS anatomy

. circulatory system

. . cardiovascular system

. . . **heart**

. . . . cardiac auricles

. . . . cardiac ventricles

. . . . epicardium

. . . . heart conduction system

. . . . myocardium

RT aorta

artificial cardiac pacemaker

artificial heart valves

blood

blood pumps

cardiograms

cardiography

cardiology

cardiotachometers

coronary circulation

diastole

muscles

phonocardiography

heart conduction system

(added August 2004)

DEF An impulse-conducting system composed of modified cardiac muscle and having the power of spontaneous rhythmicity and conduction more highly developed than the rest of the heart.

GS anatomy

. circulatory system

. . cardiovascular system

. . . heart

. . . . **heart conduction system**

RT artificial cardiac pacemaker

blood circulation

heart function

myocardium

heart diseases

GS diseases

. **heart diseases**

. . angina pectoris

. . coronary artery disease

. . infarction

. . . myocardial infarction

RT

bradycardia

cardiography

cardiology

cardiovascular system

echocardiography

electrocardiography

fat embolisms

fibrillation

His bundle

phonocardiography

heart function

GS **heart function**

. diastole

. fibrillation

. systole

RT

angina pectoris

blood circulation

blood pressure

cardiac output

cardiography

carotid sinus reflex

cyanosis

echocardiography

heart conduction system

heart minute volume

heart rate

hemodynamics

His bundle

physiology

stroke volume

heart implantation

GS implantation

. **heart implantation**

RT

artificial heart valves

biotechnology

blood circulation

pulmonary circulation

surgery

transplantation

heart minute volume

GS output

. cardiac output

. . **heart minute volume**

RT

heart function

spirometers

heart rate

UF *pulse (cardiovascular)*

GS rates (per time)

. **heart rate**

. . arrhythmia

. . bradycardia

. . tachycardia

RT

angina pectoris

baroreflexes

biofeedback

biomedical data

cardiac output

cardiology

diastole

epinephrine

heart function

Hering-Breuer reflex

sphygmography

stroke volume

systole

heart valves

GS valves

. **heart valves**

. . artificial heart valves

RT

coronary circulation

hearths

RT furnaces

refractories

heat

DEF Energy transferred by a thermal process.

GS

heat

. dry heat

. enthalpy

. . Gibbs free energy

. . heat of dissociation

. . heat of formation

. . heat of solution

. . latent heat

. . . heat of fusion

. . . heat of vaporization

. heat of combustion

. nuclear heat

. process heat

. specific heat

RT

activation energy

∞

energy

entropy

heating

heating equipment

infrared radiation

temperature

thermal energy

thermal insulation

thermal radiation

thermochemistry

thermodynamic properties

thermodynamics

work

heat acclimatization

GS adaptation

. acclimatization

. . **heat acclimatization**

RT

body temperature

cold acclimatization

high temperature environments

human tolerances

perspiration

physiological effects

heat affected zone

DEF That portion of the base metal, the structure or properties of which have been altered by the heat of welding or gas-cutting operation. Used for HAZ (metallurgy).

UF *HAZ (metallurgy)*

RT

arc welding

gas tungsten arc welding

heat treatment

metal bonding

∞

metallurgy

metal-metal bonding

soldering

temperature dependence

temperature effects

thermomechanical treatment

weldability

welding

heat balance

DEF The equilibrium which exists on the average between the radiation received by a planet and its atmosphere from the sun and that emitted by the planet and the atmosphere. The equilibrium which is known to exist when all sources of heat gain and loss for a given region of body are accounted for. In general, this balance includes advective or evaporative terms as well as a radiation term.

GS balance

. **heat balance**

RT atmospheric heat budget
boilers
combustion
material balance
pyrometallurgy
thermochemical properties
thermochemistry
thermodynamic properties

heat budget

DEF The accounting for the total amount of heat received and lost by a particular system.

GS energy budgets

. **heat budget**

. . atmospheric heat budget

RT ∞ budgets

Earth radiation budget
specific heat

heat capacityUSE **specific heat****Heat Capacity Mapping Mission**UF *HCMM*

RT Applications Explorer Satellites
geography
mapping
∞ missions
planetary mapping
thermal mapping

heat conductionUSE **conductive heat transfer****heat content**USE **enthalpy****heat dissipation**USE **cooling****heat dissipation chilling**USE **cooling****heat effects**USE **temperature effects****heat engines***(added September 1992)*

RT ceramics
energy technology
engines
thermodynamic cycles

heat equationsUSE **thermodynamics****heat exchangers**

DEF Devices for transferring heat from one fluid to another without intermixing the fluids, as a regenerator and, an apparatus for cooling or heating the air in a wind tunnel.

GS **heat exchangers**

. tube heat exchangers

RT condensers (liquefiers)
coolants
cooling
cooling fins
cooling systems
counterflow
evaporators
∞ exchangers
finned bodies
gas cooling
geothermal energy extraction
heating
heating equipment
regenerative cooling

regenerators

SNAP

SNAP 1

SNAP 2

SNAP 8

SNAP 10A

space cooling (buildings)

space power reactors

space power unit reactors

waste heat

water heating

heat flowUSE **heat transmission****heat flux**

SN (LIMITED TO HEAT ENERGY TRANSMISSION RATE)

DEF The thermal intensity indicated by the amount of energy transmitted per unit area.

GS rates (per time)

. flux (rate)

. . **heat flux**

RT flux density

solar flux

heat gainUSE **heating****heat generation**

SN (EXCLUDES BIOLOGICAL PRODUCTION OF HEAT)

RT cogeneration
combustion
direct power generators
∞ generation
heating
heating equipment
process heat
solid propellant combustion

heat islands

RT cities
climatology
urban planning
weather modification

heat measurement

UF *calorimetry*
RT bolometers
bomb calorimeters
calorimeters
drop calorimeters
enthalpy
flame calorimeters
∞ measurement
shell anodes

heat of combustion

UF *combustion heat*
GS chemical properties
. thermochemical properties
. . **heat of combustion**
heat
. **heat of combustion**
thermodynamic properties
. thermochemical properties
. . **heat of combustion**
RT combustion physics
guns (ordnance)

heat of dissociation

GS chemical properties
. thermochemical properties
. . **heat of dissociation**
heat
. enthalpy
. . **heat of dissociation**
thermodynamic properties
. enthalpy
. . **heat of dissociation**
. thermochemical properties
. . **heat of dissociation**
RT chemical equilibrium
dissociation
∞ equilibrium
reaction kinetics
thermal dissociation
thermochemistry

thermodynamic equilibrium

heat of formation

UF *formation heat*
GS chemical properties
. thermochemical properties
. . **heat of formation**
heat
. enthalpy
. . **heat of formation**
thermodynamic properties
. enthalpy
. . **heat of formation**
. thermochemical properties
. . **heat of formation**

heat of fusion

DEF The increase in enthalpy accompanying the conversion of one mole, or a unit mass, of a solid to a liquid at its melting point at constant pressure and temperature. Used for latent heat of fusion.

UF *fusion heat*. *latent heat of fusion*

GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of fusion**

heat

. enthalpy
. . latent heat
. . . **heat of fusion**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of fusion**
. thermochemical properties
. . latent heat
. . . **heat of fusion**
. thermophysical properties
. . latent heat
. . . **heat of fusion**

RT fusion (melting)
melting
phase change materials
phase diagrams
phase transformations
specific heat
thermal energy
thermochemistry
thermodynamics
transition temperature

heat of solution

GS chemical properties
. thermochemical properties
. . **heat of solution**
heat
. enthalpy
. . **heat of solution**
thermodynamic properties
. enthalpy
. . **heat of solution**
. thermochemical properties
. . **heat of solution**
. thermophysical properties
. . **heat of solution**
RT molecular energy levels
thermal energy
thermochemistry
thermodynamics

heat of vaporization

UF *vaporization heat*
GS chemical properties
. thermochemical properties
. . latent heat
. . . **heat of vaporization**
heat
. enthalpy
. . latent heat
. . . **heat of vaporization**
thermodynamic properties
. enthalpy
. . latent heat
. . . **heat of vaporization**
. thermochemical properties
. . latent heat
. . . **heat of vaporization**
. thermophysical properties

heat pipes

- . . latent heat
- . . . **heat of vaporization**
- RT vaporizing

heat pipes

- SN (EXCLUDES PIPES AND TUBES USED FOR THE TRANSMISSION OF HEATED LIQUIDS OR GASES)
- RT geothermal energy utilization
spacecraft temperature

heat pumps

- RT air conditioning
air conditioning equipment
condensers (liquefiers)
cooling systems
geothermal energy extraction
heating equipment
pumps
refrigerating machinery
residential energy
space cooling (buildings)
thermoelectric cooling
waste heat

heat radiators

- UF *condenser radiators*
heat rejection devices
- GS **heat radiators**
. spacecraft radiators
- RT black body radiation
cooling
cooling fins
cooling systems
heating equipment
- ∞ insulated structures
radiative heat transfer
- ∞ radiators
Stefan-Boltzmann law

heat regulation

- USE **temperature control**

heat rejection devices

- USE **heat radiators**

heat resistance

- USE **thermal resistance**

heat resistant alloys

DEF Alloys developed for very high temperature service where relatively high stresses (tensile, thermal, vibratory, and shock) are encountered and where oxidation resistance is frequently required. Used for high temperature alloys and superalloys.

- UF *high temperature alloys*
superalloys
- GS alloys
- . **heat resistant alloys**
- . . . nimonic alloys
- . . . refractory metal alloys
- . . . molybdenum alloys
- Rene 41
- Rene 63
- Rene 77
- Rene 95
- . . . niobium alloys
- . . . osmium alloys
- . . . rhenium alloys
- . . . tantalum alloys
- . . . tungsten alloys
- . . . Udimet alloys
- . . . Waspaloy
- RT aluminides
cermets
chromium alloys
cobalt alloys
dispersion strengthening
hafnium alloys
nickel alloys
oxide dispersion strengthening
refractory metals
sulfidation
superplasticity

heat shielding

DEF The use of devices that protect something from heat. Specifically, the protective structure necessary to protect a reentry body from

aerodynamic heating. Used for thermal shielding.

- UF *thermal shielding*
- GS shielding
- . **heat shielding**
- . . reentry shielding
- . . reusable heat shielding
- RT ablation
ablative materials
ablative nose cones
cooling
infrared suppression
- ∞ insulated structures
Ludox (trademark)
pyrolytic graphite
solar reflectors
spacecraft shielding
temperature
temperature control
thermal control coatings
thermal insulation
thermal protection

heat sinks

- UF *thermal sinks*
- GS sinks
- . **heat sinks**
- RT ablative materials
absorbers (materials)
cooling systems
endothermic reactions
energy absorption
reentry shielding
regenerators
thermal absorption
thermal insulation

heat sources

- UF *hydraulic heating sources*
- GS **heat sources**
- . thermal resources
- . . geothermal resources
- . . . geysers
- . . radioisotope heat sources
- RT ∞ energy sources
energy storage
engines
geothermal technology
laser heating
light sources
- ∞ power supplies
radiation sources
thermodynamic efficiency

heat storage

- UF *thermal energy storage*
- GS energy storage
- . **heat storage**
- RT geothermal energy utilization
heat tapes
phase change materials
solar dynamic power systems
solar houses
temperature
Trombe walls

heat stroke

- RT body temperature
heat tolerance
hot weather
hyperthermia
physiological effects
thermal comfort
thermal environments

heat tapes

- RT heat storage
ice prevention
- ∞ tapes

heat tests

- USE **high temperature tests**

heat tolerance

- GS tolerances (physiology)
- . **heat tolerance**
- RT body temperature
cold tolerance
heat stroke

human tolerances

heat transfer

- SN (TRANSMISSION ACROSS AN INTERFACE)
- DEF The transfer or exchange of heat by radiation, conduction, or convection with a substance and between the substance and its surroundings. Used for nonadiabatic processes.
- UF *nonadiabatic processes*
- GS transmission
- . heat transmission
- . . **heat transfer**
- . . . aerodynamic heat transfer
- hypersonic heat transfer
- supersonic heat transfer
- conductive heat transfer
- convective heat transfer
- laminar heat transfer
- radiative heat transfer
- turbulent heat transfer
- RT advection
atmospheric heat budget
baths
Biot number
boiling
Boussinesq approximation
capillary pumped loops
chemical engineering
compressibility effects
- ∞ conduction
cooling
counterflow
cryogenic cooling
diffuse radiation
dimensionless numbers
energy transfer
film boiling
film condensation
flat plates
fluid boundaries
forced convection
gas transport
gas-liquid interactions
gas-solid interfaces
geothermal energy conversion
geothermal technology
heating
hot surfaces
Leidenfrost phenomenon
Lewis numbers
liquid-liquid interfaces
liquid-solid interfaces
liquid-vapor interfaces
mass transfer
mechanical engineering
metal vapors
nonadiabatic conditions
nongray gas
nonisothermal processes
nucleate boiling
Nusselt number
Peclet number
phase change materials
Prandtl number
radiative transfer
Rayleigh equations
reusable heat shielding
stagnation point
Stanton number
temperature profiles
temperature ratio
temperature sensitive paints
thermal diffusion
thermal expansion
thermal insulation
thermal pollution
thermoacoustic effects
thermodynamics
thermomigration
transferring
transport properties
waste energy utilization

heat transfer coefficients

- SN (HEAT FLUX PER UNIT AREA PER UNIT TEMPERATURE DIFFERENCE)
- DEF The rate of heat transfer per unit area per unit temperature difference, a quantity having the dimensions of reciprocal length.

- GS coefficients
 . **heat transfer coefficients**
- RT accommodation coefficient
 evaporation rate
 heating
 mass flow factors
 nucleate boiling
- heat transmission**
 DEF Heat transmitted from one substance to another. Used for heat flow.
 UF *heat flow*
 GS transmission
 . **heat transmission**
 . . heat transfer
 . . . aerodynamic heat transfer
 hypersonic heat transfer
 supersonic heat transfer
 . . . conductive heat transfer
 . . . convective heat transfer
 . . . laminar heat transfer
 . . . radiative heat transfer
 . . . turbulent heat transfer
- RT adiabatic equations
 annular flow
 convection
 convective flow
 ducted flow
 equilibrium flow
 ∞ flow
 fluid flow
 geophysics
 geothermal energy conversion
 geothermal energy extraction
 geothermal resources
 mass flow factors
 nonequilibrium flow
 potential flow
 radial flow
 radiative transfer
 steady flow
 thermal analysis
 thermal insulation
 thermohydraulics
 uniform flow
 unsteady flow
 wall flow
- heat treatment**
 DEF Heating and cooling a solid metal or alloy in such a way as to obtain desired conditions or properties.
 GS **heat treatment**
 . annealing
 . . laser annealing
 . . pulse heating
 . maraging
 . nitriding
 . normalizing (heat treatment)
 . stress relieving
 . tempering
- RT aging (metallurgy)
 alloys
 baking
 critical temperature
 ferritic stainless steels
 forging
 furnaces
 graphitization
 hardeners
 hardening (materials)
 heat affected zone
 heating
 martensite
 ∞ metallurgy
 microstructure
 nucleation
 phase diagrams
 precipitation hardening
 quenching (cooling)
 recrystallization
 salt baths
 ∞ soaking
 ∞ stabilization
 supercooling
 supersaturation
 temper (metallurgy)
 temperature distribution
 thermochemistry
- thermomechanical treatment
 ∞ treatment
- ∞ **heaters**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
 RT deicers
 deicing
 electron tubes
 heating equipment
 vaporizers
 water heating
- heating**
 UF *heat gain*
preheating
reheating
warming
 GS **heating**
 . arc heating
 . atmospheric heating
 . . global warming
 . . stratospheric warming
 . baking
 . base heating
 . gas heating
 . induction heating
 . ionospheric heating
 . kinetic heating
 . . aerodynamic heating
 . . . shock heating
 . laser heating
 . magnetohydrodynamic shear heating
 . pasteurizing
 . plasma heating
 . . electron cyclotron heating
 . radiant heating
 . radio frequency heating
 . resistance heating
 . solar heating
 . space heating (buildings)
 . superheating
 . transient heating
 . . pulse heating
 . . shock heating
 . water heating
- RT air conditioning
 annealing
 autoclaving
 boiling
 cementation
 ∞ conduction
 convection
 cooling
 decarburization
 defrosting
 environmental engineering
 geothermal energy extraction
 geothermal energy utilization
 heat
 heat exchangers
 heat generation
 heat transfer
 heat transfer coefficients
 heat treatment
 heating equipment
 Hilsch tubes
 hydrothermal systems
 ice prevention
 integrated energy systems
 jackets
 laser annealing
 laser welding
 melting
 Modular Integrated Utility System
 ∞ radiation
 roasting
 sintering
 ∞ soaking
 temperature
 temperature control
 temperature distribution
 thermal cycling tests
 thermal shock
 thermal stresses
 vaporizing
- waste energy utilization
- heating equipment**
 UF *Gerdien arc heaters*
preheaters
 GS **heating equipment**
 . boilers
 . furnaces
 . . electric furnaces
 . . image furnaces
 . . solar furnaces
 . . vacuum furnaces
 . ovens
 . vaporizers
 . . evaporators
- RT air conditioning
 air conditioning equipment
 crucibles
 deicers
 deicing
 ∞ electric equipment
 ∞ equipment
 fuel tanks
 heat
 heat exchangers
 heat generation
 heat pumps
 heat radiators
 ∞ heaters
 heating
 onboard equipment
 space heating (buildings)
 temperature control
 thermal insulation
 water heating
- heaving**
 RT bending
 ∞ bows
 buckling
 displacement
 distortion
 flexing
 kinking
 ∞ motion
 pitch (inclination)
 warpage
- heavy cosmic ray primaries*
 USE **heavy nuclei**
primary cosmic rays
- heavy elements**
 GS chemical elements
 . **heavy elements**
 RT ∞ elements
 heavy ions
- heavy fermion superconductors**
(added April 1999)
 GS conductors
 . superconductors (materials)
 . . **heavy fermion superconductors**
 intermetallics
 . heavy fermion systems
 . . **heavy fermion superconductors**
- heavy fermion systems**
(added April 1999)
 GS intermetallics
 . **heavy fermion systems**
 . . heavy fermion superconductors
- RT fermions
 superconductors (materials)
- heavy ion collisions*
 USE **ionic collisions**
- heavy ions**
 GS ions
 . **heavy ions**
 RT heavy elements
 ion stripping
 isotope separation
 isotopes
 light ions
- heavy lift airships**
 DEF Airships designed to lift heavy materials.

heavy lift helicopters

- GS airships
 - . **heavy lift airships**
- RT materials handling rotors

heavy lift helicopters

- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - **heavy lift helicopters**
 - CH-62 helicopter
- RT air cargo
 - ∞ aircraft
 - cargo aircraft
 - helicopter design

heavy lift launch vehicles

- UF *HLLV*
- GS launch vehicles
 - . **heavy lift launch vehicles**
 - . . Ares 5 cargo launch vehicle
 - . . Delta 4 Heavy launch vehicle
 - . . Energiya launch vehicle
 - . . Proton launch vehicle
- RT Advanced Launch System (STS)
Long March launch vehicles
rocket engines
 - ∞ rockets
 - spacecraft launching
 - ∞ vehicles

heavy metals

- (added July 1999)
- DEF Metals or alloys having a high specific gravity; usually ones with a density greater than 5 grams per cubic centimeter.
- GS metals
 - . **heavy metals**
 - RT cadmium
 - chromium
 - contaminants
 - copper
 - industrial wastes
 - lead (metal)
 - mercury (metal)
 - soil pollution
 - toxic hazards
 - zinc

heavy nuclei

- UF *heavy cosmic ray primaries*
- GS particles
 - . charged particles
 - . . energetic particles
 - . . . nuclei (nuclear physics)
 - **heavy nuclei**
 - corpuscular radiation
 - energetic particles
 - nuclei (nuclear physics)
 - **heavy nuclei**
- RT primary cosmic rays

heavy water

- DEF Water in which the hydrogen of the water molecule consists entirely of the heavy hydrogen isotope of mass 2 (deuterium). Used for deuterium oxides and hydrogen deuterium oxide.
- UF *deuterium oxides*
hydrogen deuterium oxide
- GS chalcogenides
 - . oxides
 - . . **heavy water**
 - hydrogen compounds
 - . deuterium compounds
 - . . **heavy water**
 - water
 - . **heavy water**
- RT deuterium
moderators
tritium

heavy water components test reactors

- GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . heavy water reactors
 - **heavy water components test reactors**
 - . nuclear research and test reactors

- . . **heavy water components test reactors**
- . water moderated reactors
- . . **heavy water components test reactors**

heavy water reactors

- GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . **heavy water reactors**
 - heavy water components test reactors
 - plutonium recycle test reactor
 - zero power reactor 2
- RT light water breeder reactors

HEF (high energy fuels)

- USE **high energy fuels**

height

- DEF Vertical distance; the distance above some reference point or plane, as, height above sea level. The vertical dimension of anything; the distance which something extends above its foot or root, as blade height.
- GS dimensions
 - . **height**
 - . . scale height
- RT altitude
depth
distance
geopotential
 - ∞ level
 - slopes

Heinkel aircraft

- RT ∞ aircraft

Heisenberg theory

- GS atomic theory
 - . **Heisenberg theory**
- RT atomic excitations
Dyson theory
energy transfer
 - ∞ theories

Helene

- (added January 1996)
- DEF A natural satellite of Saturn orbiting at a mean distance of 377,400 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . Saturn satellites
 - . . . **Helene**
- RT Saturn (planet)

helical antennas

- DEF Antennas used where circular polarization is required. The driven element consists of a helix supported above a ground plane.
- GS antennas
 - . directional antennas
 - . . **helical antennas**
- RT antenna design
 - ∞ helices
 - microwave antennas

helical flow

- GS fluid flow
 - . **helical flow**
- RT axisymmetric flow
flow geometry
 - ∞ helices
 - magnetohydrodynamic stability
 - three dimensional flow

helical inducers

- GS intake systems
 - . **helical inducers**
- RT field coils
 - ∞ helices
 - plasma control

helical windings

- GS winding
 - . **helical windings**
- RT ∞ helices
magnetic field configurations
plasma control

stellarators

∞ helices

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT curves (geometry)
helical antennas
helical flow
helical inducers
helical windings
- ∞ spirals

helicopter attitude indicators

- USE **attitude indicators**

helicopter control

- GS aircraft control
 - . **helicopter control**
- RT airborne radar approach
attitude control
automatic control
 - ∞ control
 - controllability
 - directional control
 - flight control
 - harmonic control
 - helicopters
 - lateral control
 - longitudinal control
 - manual control
 - speed control
 - tail rotors

helicopter design

- GS aircraft design
 - . **helicopter design**
- RT compound helicopters
computer aided design
 - ∞ design
 - engine design
 - heavy lift helicopters
 - helicopters
 - product development
 - rotor body interactions
 - streamlining
 - structural design
 - UH-60A helicopter
 - UH-61A helicopter
 - whirl towers

helicopter engines

- GS engines
 - . aircraft engines
 - . . **helicopter engines**
 - . . . internal combustion engines
 - . . . **helicopter engines**
- RT convertible fan-shaft engines
helicopters
jet engines
T-53 engine
T-55 engine
T-58 engine
T-63 engine
T-64 engine
T-74 engine
T-76 engine

helicopter impulsive noise

- USE **blade slap noise**

helicopter performance

- GS aircraft performance
 - . **helicopter performance**
- RT aerodynamic stability
aircraft reliability
controllability
Cooper-Harper ratings
flight characteristics
flight envelopes
helicopters
maneuverability
pilot ratings

helicopter propeller drive

- GS mechanical drives
 - . propeller drive
 - . . **helicopter propeller drive**
- RT helicopters
jet propulsion
rotary wings

- tilted propellers
- variable pitch propellers
- helicopter rotors*
- USE **rotary wings**
- helicopter tail rotors**
 - GS rotating bodies
 - . rotors
 - . tail rotors
 - . . . **helicopter tail rotors**
 - RT helicopters
 - rotary wings
 - ∞ rotor blades
- helicopter wakes**
 - GS wakes
 - . aircraft wakes
 - . . . **helicopter wakes**
 - RT downwash
 - helicopters
- helicopters**
 - DEF Rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors.
 - UF *drone helicopters*
gyroplanes
 - GS V/STOL aircraft
 - . rotary wing aircraft
 - . . . **helicopters**
 - . . . Alouette helicopters
 - SA-330 helicopter
 - SE-3160 helicopter
 - Bell 214A helicopter
 - compound helicopters
 - S-67 helicopter
 - H-17 helicopter
 - heavy lift helicopters
 - CH-62 helicopter
 - light helicopters
 - OH-4 helicopter
 - OH-5 helicopter
 - OH-6 helicopter
 - OH-58 helicopter
 - military helicopters
 - AH-1G helicopter
 - AH-1S helicopter
 - AH-1W helicopter
 - AH-63 helicopter
 - AH-64 helicopter
 - BO-105 helicopter
 - CH-3 helicopter
 - CH-21 helicopter
 - CH-34 helicopter
 - CH-46 helicopter
 - CH-47 helicopter
 - CH-54 helicopter
 - CH-62 helicopter
 - H-19 helicopter
 - H-43 helicopter
 - H-53 helicopter
 - H-54 helicopter
 - H-56 helicopter
 - H-60 Helicopter
 - HC-3 helicopter
 - HH-43 helicopter
 - HH-65 helicopter
 - OH-4 helicopter
 - OH-5 helicopter
 - OH-6 helicopter
 - OH-13 helicopter
 - OH-23 helicopter
 - OH-58 helicopter
 - P-531 helicopter
 - QH-50 helicopter
 - S-67 helicopter
 - SA-321 helicopter
 - SA-330 helicopter
 - SH-3 helicopter
 - SH-4 helicopter
 - Sikorsky Whirlwind helicopter
 - UH-1 helicopter
 - UH-2 helicopter
 - UH-34 helicopter
 - UH-60A helicopter
 - UH-61A helicopter
 - Westland Whirlwind helicopter
 - XV-9A aircraft
 - rigid rotor helicopters
 - CH-3 helicopter
 - F-28 helicopter
 - XH-51 helicopter
 - S-58 helicopter
 - S-61 helicopter
 - tandem rotor helicopters
 - CH-46 helicopter
 - CH-47 helicopter
 - H-25 helicopter
 - EH-101 helicopter
 - TH-55 helicopter
 - RT airborne radar approach
 - ∞ aircraft
 - aircraft survivability
 - blade slap noise
 - blade-vortex interaction
 - general aviation aircraft
 - ground resonance
 - helicopter control
 - helicopter design
 - helicopter engines
 - helicopter performance
 - helicopter propeller drive
 - helicopter tail rotors
 - helicopter wakes
 - heliports
 - ∞ military aircraft
 - nap-of-the-earth navigation
 - recovery vehicles
 - rotor systems research aircraft
 - short takeoff aircraft
 - ∞ subsonic aircraft
 - tilt rotor aircraft
 - Tilt Rotor Research Aircraft Program
 - utility aircraft
 - V-22 aircraft
 - vertical takeoff aircraft
 - Weser aircraft
 - Westland aircraft
 - XV-15 aircraft
- Heliliner (helicopter)*
(added April 1997)
- USE **EH-101 helicopter**
- Helio aircraft**
 - UF *Helio military aircraft*
 - GS **Helio aircraft**
 - . U-10 aircraft
 - RT ∞ aircraft
- Helio military aircraft*
- USE **Helio aircraft**
- heliocentric orbits*
- USE **solar orbits**
- heliographs*
- USE **spectroheliographs**
- heliography*
- USE **spectroheliographs**
- heliomagnetism*
- USE **solar magnetic field**
- heliometers**
 - UF *heliometry*
 - GS measuring instruments
 - . **heliometers**
 - . . pyroheliometers
 - optical equipment
 - . **heliometers**
 - . . pyroheliometers
 - telescopes
 - . **heliometers**
 - . . pyroheliometers
- heliometry*
- USE **heliometers**
pyroheliometers
- Helios 1**
 - GS artificial satellites
 - . Helios satellites
 - . . **Helios 1**
 - unmanned spacecraft
 - . space probes
 - . . solar probes
- . . . **Helios 1**
- Helios 2**
 - GS artificial satellites
 - . Helios satellites
 - . . **Helios 2**
 - unmanned spacecraft
 - . space probes
 - . . solar probes
 - . . . **Helios 2**
- Helios A**
 - GS artificial satellites
 - . Helios satellites
 - . . **Helios A**
 - unmanned spacecraft
 - . space probes
 - . . solar probes
 - . . . **Helios A**
- Helios B**
 - GS artificial satellites
 - . Helios satellites
 - . . **Helios B**
 - unmanned spacecraft
 - . space probes
 - . . solar probes
 - . . . **Helios B**
- Helios Project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Helios Project**
 - . projects
 - . . **Helios Project**
 - . space programs
 - . . NASA space programs
 - . . . **Helios Project**
 - RT charged particles
 - high temperature plasmas
 - solar probes
 - zodiacal light
- Helios satellites**
 - GS artificial satellites
 - . **Helios satellites**
 - . . Helios 1
 - . . Helios 2
 - . . Helios A
 - . . Helios B
 - RT magnetic fields
 - particle flux density
 - solar flux density
- helioseismology**
 - UF *solar dynamics*
solar seismology
 - GS seismology
 - . asteroseismology
 - . . **helioseismology**
 - RT astrophysics
 - ∞ science
 - solar interior
 - solar physics
- heliosphere**
 - DEF The region around the sun whose plasma processes are dominated by solar wind.
 - RT cosmic rays
 - interplanetary space
 - interstellar gas
 - SOHO Mission
 - solar activity effects
 - solar wind
- heliostats**
 - DEF Instruments consisting of mirrors moved by clockwork for reflecting the sun's rays in a fixed direction.
 - RT ∞ instruments
 - mirrors
 - reflectors
 - servomotors
 - solar reflectors
 - synchronizers
- heliotrons**
(added September 1988)
- GS nuclear reactors

heliports

- . fusion reactors
- . . . **heliotrons**
- RT plasma control stellarators

heliports

- DEF An area of land, water, or structure used, or intended to be used, for the landing and takoff of helicopters.
- GS airports
- . **heliports**
- RT air traffic control airport planning airport towers hangars helicopters landing aids landing sites military air facilities navigation aids solar compasses V/STOL aircraft

helitrons

- GS electron tubes . vacuum tubes . . . microwave tubes . . . traveling wave tubes . . . backward wave tubes **helitrons** microwave equipment . microwave tubes . . . traveling wave tubes . . . backward wave tubes **helitrons**
- RT carcinotrons

helium

- GS chemical elements . rare gases . . **helium** . . . helium isotopes . . . liquid helium liquid helium 2 gases . rare gases . . **helium** . . . helium isotopes . . . liquid helium liquid helium 2
- RT alpha particles helium afterglow helium atoms helium film helium ions Wolf-Rayet stars

helium 2

- USE **helium isotopes** **liquid helium**

helium 3

- USE **helium isotopes**

helium 4

- USE **helium isotopes**

helium afterglow

- GS afterglows . **helium afterglow**
- RT gas ionization helium plasma decay

helium atoms

- GS atoms . **helium atoms**
- RT helium

helium compounds

- RT ∞ rare gas compounds

helium film

- RT ∞ films helium

helium hydrogen atmospheres

- GS environments . extraterrestrial environments . . planetary environments . . . planetary atmospheres

. . . . helium hydrogen atmospheres

helium ions

- GS ions . **helium ions**
- RT alpha particles helium

helium isotopes

- UF *helium 2* *helium 3* *helium 4*
- GS chemical elements . nuclides . . isotopes . . . **helium isotopes** . rare gases . . helium . . . **helium isotopes** gases . rare gases . . helium . . . **helium isotopes**

helium plasma

- GS particles . charged particles . . energetic particles . . . plasmas (physics) **helium plasma** . corpuscular radiation . . energetic particles . . . plasmas (physics) **helium plasma**
- RT argon plasma electron plasma hydrogen plasma oxygen plasma

helium stars

- USE **B stars**

helium-neon lasers

- GS stimulated emission devices . lasers . . gas lasers . . . **helium-neon lasers**
- RT laser modes laser outputs

helium-oxygen atmospheres

- GS controlled atmospheres . **helium-oxygen atmospheres**
- RT aerospace environments ∞ atmospheres ∞ breathing gas mixtures portable life support systems underwater breathing apparatus

helix tubes

- USE **traveling wave tubes**

Hellmann-Feynman theorem

- GS theorems . **Hellmann-Feynman theorem**

helmet mounted displays

- UF *HMD (displays)*
- GS display devices . **helmet mounted displays**
- RT crew workstations ∞ detectors images indicating instruments ∞ instruments monitors personnel

helmets

- GS clothing . protective clothing . . **helmets** safety devices . **helmets**
- RT armor flight clothing goggles

pressure suits

∞ Helmholtz equations

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ∞ equations Helmholtz vorticity equation Kelvin-Helmholtz instability time dependence wave equations

Helmholtz resonators

- DEF An enclosure having a small opening consisting of a straight tube of such dimensions that the enclosure resonates at a single frequency determined by the geometry of the resonator.
- GS resonators . **Helmholtz resonators**
- RT cavity resonators noise reduction

Helmholtz vorticity equation

- GS analysis (mathematics) . real variables . . differential equations . . . partial differential equations **Helmholtz vorticity equation** . . . vorticity equations **Helmholtz vorticity equation** equations of motion . kinetic equations . . hydrodynamic equations . . . **Helmholtz vorticity equation** flow equations . vorticity equations . . **Helmholtz vorticity equation**
- RT ∞ equations ∞ Helmholtz equations vorticity

HELOS (satellite)

- USE **Exosat satellite**

hematite

- DEF A common iron mineral; ferric oxide.
- GS chalcogenides . oxides . . metal oxides . . . iron oxides **hematite** iron compounds . iron oxides . . **hematite** minerals . iron ores . . **hematite**

hematocrit

- RT blood blood cell count blood circulation blood flow blood plasma blood volume erythrocytes hematology hemoglobin

hematocrit ratio

- GS ratios . **hematocrit ratio**
- RT anemias blood cell count erythrocytes hematology

hematology

- RT blood cell count carboxyhemoglobin test hematocrit hematocrit ratio reticulocytes

hematopoiesis

- GS cyto genesis . **hematopoiesis**
- RT blood blood cell count blood cells

- bone marrow
cardiovascular system
cells (biology)
physiological effects
radiation effects
- hematopoietic system**
RT angiogenesis
blood cells
blood volume
bone marrow
cardiovascular system
physiological effects
∞ systems
- hematuria**
GS signs and symptoms
. **hematuria**
RT urine
- hemisphere cylinder bodies**
RT ∞ cylinders
cylindrical bodies
hemispherical shells
pressure vessels
- ∞ **hemispheres**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT aerodynamic configurations
bodies of revolution
Eastern Hemisphere
hemispherical shells
Northern Hemisphere
Southern Hemisphere
spheres
- hemispherical shells**
GS shells (structural forms)
. **hemispherical shells**
RT bodies of revolution
circular shells
domes (structural forms)
hemisphere cylinder bodies
∞ hemispheres
metal shells
reinforced shells
spheres
spherical shells
- hemocytes**
GS cells (biology)
. blood cells
. . . **hemocytes**
RT invertebrates
- hemodynamic responses**
GS physiological effects
. physiological responses
. . . **hemodynamic responses**
responses
. physiological responses
. . . **hemodynamic responses**
RT baroreflexes
blood circulation
blood pressure
head down tilt
head up tilt
tilt-table test
- hemodynamics**
GS **hemodynamics**
. lower body negative pressure
RT blood circulation
blood volume
cardiovascular system
∞ dynamics
heart function
hemoperfusion
physiology
- hemoglobin**
GS biopolymers
. proteins
. . . **hemoglobin**
. . . carboxyhemoglobin
. . . oxyhemoglobin
organic compounds
. proteins
. . . **hemoglobin**
. . . carboxyhemoglobin
. . . oxyhemoglobin
organometallic compounds
. **hemoglobin**
. . . carboxyhemoglobin
. . . oxyhemoglobin
anemias
RT blood
blood cell count
blood cells
cells (biology)
erythrocytes
hematocrit
hemolysis
polycythemia
porphines
porphyrins
reticulocytes
- hemolysis**
RT complement (biology)
erythrocytes
hemoglobin
polycythemia
reticulocytes
- hemoperfusion**
DEF Type of poison treatment in which the patient's blood is passed over a bed of absorbent material (activated carbon, resin, etc.) to remove the toxin from the bloodstream.
RT activated carbon
adsorbents
blood flow
blood pressure
hemodynamics
toxicology
- hemorrhages**
GS **hemorrhages**
. petechia
RT ∞ bleeding
blood
cardiovascular system
coagulation
hemostatics
hypotension
injuries
pathology
polycythemia
reticulocytes
- hemostasis*
USE **hemostatics**
- hemostatics**
UF *hemostasis*
GS drugs
. **hemostatics**
RT blood coagulation
fibrinogen
gibberellins
hemorrhages
thrombin
thromboplastin
vasopressins
- HEMT (electronics)*
USE **high electron mobility transistors**
- Henry law**
RT composition (property)
partial pressure
Raoult law
solubility
solutions
vapor pressure
- HEOS A satellite**
GS artificial satellites
. ESA satellites
. . . HEOS satellites
. . . **HEOS A satellite**
ESA spacecraft
. ESA satellites
. . . HEOS satellites
. . . **HEOS A satellite**
- HEOS B satellite**
GS artificial satellites
- . ESA satellites
. . . HEOS satellites
. . . **HEOS B satellite**
ESA spacecraft
. ESA satellites
. . . HEOS satellites
. . . **HEOS B satellite**
- HEOS satellites**
UF *Highly Eccentric Orbit satellites*
GS artificial satellites
. ESA satellites
. . . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite
ESA spacecraft
. ESA satellites
. . . **HEOS satellites**
. . . HEOS A satellite
. . . HEOS B satellite
RT European space programs
solar orbits
- heparins**
RT anticoagulants
- hepatitis**
DEF An inflammation of the liver, commonly of viral origin, but also associated with other diseases.
GS diseases
. infectious diseases
. . . **hepatitis**
RT acquired immunodeficiency syndrome
anatomy
liver
viral diseases
- heptadiene**
GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . dienes
. . . . **heptadiene**
- heptanes**
GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . alkanes
. . . . **heptanes**
RT hydrocarbon fuels
- herbicides**
DEF Chemical agents used for the eradication of undesirable plants or for the inhibition of their growth.
RT brush (botany)
defoliants
foliage
forests
leaves
plants (botany)
toxicity
trees (plants)
- Herbig-Haro objects**
DEF Celestial objects having many of the characteristics of a T Tauri star (e.g., their spectra show a weak continuum with strong emission lines), believed to be stars in the very early stages of development. All known Herbig-Haro objects have been found within the boundaries of dark clouds. These strong infrared sources are characterized by mass loss.
GS celestial bodies
. nebulae
. . . **Herbig-Haro objects**
RT B stars
∞ bodies
infrared sources (astronomy)
infrared stars
stellar radiation
stellar spectra

Hercules engine

- T Tauri stars
- Hercules aircraft*
 - USE **C-130 aircraft**
- Hercules engine**
 - GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **Hercules engine**
 - RT Honest John rocket vehicle
 - Little John rocket vehicle
- Hercules nova**
 - GS celestial bodies
 - . stars
 - . . variable stars
 - . . . novae
 - **Hercules nova**
 - RT dwarf novae
- heredity**
 - RT breeding (reproduction)
 - congenital anomalies
 - cytogenesis
 - evolution (development)
- Hering-Breuer reflex**
 - GS reflexes
 - . respiratory reflexes
 - . . **Hering-Breuer reflex**
 - RT heart rate
- Hermes manned spaceplane**
 - GS manned spacecraft
 - . space shuttles
 - . . **Hermes manned spaceplane**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . space shuttles
 - **Hermes manned spaceplane**
 - RT French space program
 - space transportation system
 - spacecraft design
- Hermes satellite*
 - USE **Communications Technology Satellite**
- hermetic seals**
 - GS seals (stoppers)
 - . **hermetic seals**
 - RT ∞ headers
 - labyrinth seals
 - O ring seals
 - pump seals
- Hermitian polynomial**
 - GS algebra
 - . polynomials
 - . . **Hermitian polynomial**
 - RT Jacobi matrix method
 - matrices (mathematics)
 - real variables
 - vector spaces
- HERO Reactor**
 - GS nuclear reactors
 - . nuclear research and test reactors
 - . . **HERO Reactor**
- Hertzsprung-Russell diagram**
 - UF *HR diagram*
 - GS diagrams
 - . **Hertzsprung-Russell diagram**
 - RT asymptotic giant branch stars
 - color-color diagram
 - color-magnitude diagram
 - horizontal branch stars
 - stellar evolution
 - stellar luminosity
 - stellar spectra
- Herzberg bands**
 - GS spectra
 - . radiation spectra
 - . . absorption spectra
 - . . . **Herzberg bands**
 - spectral bands
 - absorption spectra

- . . . **Herzberg bands**
- RT ∞ bands
- oxygen spectra
- Schumann-Runge bands
- ultraviolet spectra
- Herzegovina*
 - (added June 1996)
 - USE **Bosnia and Herzegovina**
- Hessian matrices**
 - DEF Given a real value function of N variables, an N by N symmetric of all second order partial derivatives.
 - GS algebra
 - . vector spaces
 - . . matrices (mathematics)
 - . . . **Hessian matrices**
 - RT algorithms
 - optimization
- HET experiment**
 - UF *Health-Education Telecommunications exp*
 - GS telecommunication
 - . teleconferencing
 - . . **HET experiment**
 - RT ATS 6
 - communication satellites
 - satellite networks
- heterocyclic compounds**
 - GS organic compounds
 - . cyclic compounds
 - . . **heterocyclic compounds**
 - . . . acriflavine
 - . . . adenosines
 - adenosine diphosphate
 - adenosine monophosphate
 - adenosine triphosphate
 - cyclic AMP
 - . . . alkaloids
 - . . . atropine
 - . . . betaines
 - . . . caffeine
 - . . . colchicine
 - . . . ergotamine
 - . . . hyoscine
 - . . . lysergine
 - . . . morphine
 - . . . nicotinamide
 - . . . nicotine
 - . . . pilocarpine
 - . . . reserpine
 - . . . strychnine
 - . . . tropanyl compounds
 - . . . anisole
 - . . . ascorbic acid
 - . . . azines
 - . . . cyanurates
 - . . . cyanuric acid
 - . . . meclizine
 - . . . methylene blue
 - . . . phenothiazines
 - . . . azoles
 - acetazolamide
 - oxazole
 - pyrroles
 - carbazoles
 - . . . azulene
 - . . . bioflavonoids
 - . . . biotin
 - . . . carnitine
 - . . . cyanocobalamin
 - . . . cytidylic acid
 - . . . dimenhydrinate
 - . . . endrin
 - . . . ethylene oxide
 - . . . folic acid
 - . . . furans
 - . . . tetrahydrofuran
 - . . . guanethidine
 - . . . HMX
 - . . . nicotinic acid
 - . . . phthalocyanin
 - . . . phyloquinone
 - . . . piperidine
 - . . . promethazine
 - . . . purines
 - adenines

- xanthines
- caffeine
- guanines
- uric acid
- . . . pyridines
- . . . pyridoxine
- . . . pyrimidines
- alloxan
- thymidine
- thymine
- uracil
- . . . indoles
- . . . RDX
- . . . retinene
- . . . riboflavin
- . . . tetracyclines
- . . . tetrazoles
- . . . thiamine
- . . . thiazine (trademark)
- . . . thiophenes
- . . . tocopherol
- . . . trimethadione
- tryptamines
- tryptophan
- melatonin
- serotonin
- imidazoles
- RT ∞ chemical compounds
- heterodyning**
 - DEF Mixing two radio signals of different frequencies to produce a third signal which is of lower frequency; i.e., to produce beating.
 - GS **heterodyning**
 - . optical heterodyning
 - RT autodynes
 - demodulation
 - intermediate frequency amplifiers
 - mixing circuits
 - superheterodyne receivers
- heterogeneity**
 - DEF Having different properties at different points.
 - RT deviation
 - impurities
 - inclusions
 - inhomogeneity
 - range (extremes)
 - sampling
 - standard deviation
 - statistical tests
 - variability
 - variance (statistics)
- heterojunction devices**
 - DEF Electronic devices utilizing junctions between different semiconducting materials. The characteristics and performance of the devices are dependent on the relative lineup of the energy bands at the junctions.
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . **heterojunction devices**
 - high electron mobility transistors
 - MODFETS
 - RT band structure of solids
 - distributed feedback lasers
 - gallium arsenides
 - homojunctions
 - ITO (semiconductors)
 - junction diodes
 - modulation doping
 - quantum efficiency
 - quantum well lasers
 - quantum wells
 - semiconductor junctions
 - solar energy conversion
 - waveguide lasers
- heterojunctions**
 - DEF Junctions between semiconductors that differ in their doping level conductivities, and also in their atomic or alloy compositions.
 - GS semiconductor junctions
 - . **heterojunctions**
 - RT homojunctions
 - junction diodes
 - modulation doping

- quantum cascade lasers
 - quantum wells
 - resonant tunneling diodes
 - silicon junctions
 - solar cells
 - thin films
 - tunnel junctions
- heterophoria**
- UF *exophoria*
 - RT vision
- heterosphere**
- DEF The upper portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; the layer above the homosphere. The heterosphere is characterized by variation in composition and mean molecular weight of constituent gases. This region starts at 80 to 100 kilometers above the Earth, and therefore closely coincides with the ionosphere and the thermosphere.
 - GS Earth atmosphere
 - . **heterosphere**
 - environments
 - . **heterosphere**
 - RT chemosphere
 - Earth ionosphere
 - Earth magnetosphere
 - exosphere
 - lower atmosphere
 - middle atmosphere
 - thermosphere
 - upper atmosphere
- heterotrophs**
- RT animals
 - autotrophs
 - metabolism
 - plants (botany)
- heuristic methods**
- RT automata theory
 - computer programming
 - greedy algorithms
 - ∞ methodology
 - simulation
 - sorting algorithms
- HEUS rocket engines**
- GS engines
 - . rocket engines
 - . . **HEUS rocket engines**
 - RT rocket engine control
 - rocket vehicles
- Hewlett-Packard computers**
- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **Hewlett-Packard computers**
- hexadiene**
- GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . dienes
 - **hexadiene**
- hexagonal cells**
- RT ∞ cells
 - crystal lattices
 - honeycomb structures
- hexagons**
- GS geometry
 - . Euclidean geometry
 - . . polygons
 - . . . **hexagons**
- hexahedrite**
- GS magnesium compounds
 - . magnesium sulfates
 - . . **hexahedrite**
 - minerals
 - . **hexahedrite**
 - sulfur compounds
 - . sulfates
 - . . magnesium sulfates
- . . . **hexahedrite**
- hexamethonium**
- RT ammonium compounds
 - anticonvulsants
- hexamethylenetetramine**
- GS organic compounds
 - . amines
 - . . **hexamethylenetetramine**
- hexanitrostilbene**
- UF *HNST*
 - RT stilbene
- hexenes**
- GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkenes
 - **hexenes**
 - RT cyclohexane
 - hydrocarbon fuels
- Hexogenes (trademark)**
- GS acids
 - . carboxylic acids
 - . . **Hexogenes (trademark)**
 - organic compounds
 - . carboxylic acids
 - . . **Hexogenes (trademark)**
- hexokinase**
- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **hexokinase**
 - organic compounds
 - . proteins
 - . . enzymes
 - . . . **hexokinase**
- hexoses**
- GS organic compounds
 - . carbohydrates
 - . . sugars
 - . . . monosaccharides
 - **hexoses**
 - galactose
 - glucose
- hexyl compounds**
- GS alkyl compounds
 - . **hexyl compounds**
 - RT ∞ chemical compounds
- HF lasers**
- UF *hydrogen fluoride lasers*
 - GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . **HF lasers**
 - RT chemical lasers
 - infrared lasers
 - TEA lasers
- HFB-320 aircraft**
- UF *Hamburger HFB-320 aircraft*
 - GS Hamburger aircraft
 - . **HFB-320 aircraft**
 - jet aircraft
 - . **HFB-320 aircraft**
 - monoplanes
 - . **HFB-320 aircraft**
 - passenger aircraft
 - . **HFB-320 aircraft**
 - transport aircraft
 - . **HFB-320 aircraft**
 - RT ∞ aircraft
- HFIR*
- USE **high flux isotope reactors**
- HFIR (reactor)*
- USE **high flux isotope reactors**
- HH-43 helicopter**
- UF *HH-43B helicopter*
 - Huskie helicopter*
 - GS Kaman aircraft
 - . **HH-43 helicopter**
- utility aircraft
 - . **HH-43 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **HH-43 helicopter**
- HH-43B helicopter*
- USE **HH-43 helicopter**
- HH-65 helicopter**
- (added August 1995)
 - GS V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **HH-65 helicopter**
 - RT ∞ aircraft
 - rescue operations
- HHX helicopter*
- USE **H-53 helicopter**
- hibernation**
- RT adaptation
 - thermoregulation
- HICAT (radar technique)*
- USE **high resolution coverage antennas**
- HICAT project*
- USE **high resolution coverage antennas**
- hierarchies**
- GS classifications
 - . **hierarchies**
 - . . BBGKY hierarchy
 - . . dichotomies
- Higgs bosons**
- (added April 1994)
 - GS particles
 - . elementary particles
 - . . bosons
 - . . . **Higgs bosons**
 - . . nuclear particles
 - . . bosons
 - . . . **Higgs bosons**
 - RT broken symmetry
 - electroweak model
 - particle theory
- high acceleration**
- GS rates (per time)
 - . acceleration (physics)
 - . . **high acceleration**
 - RT ∞ acceleration
 - acceleration stresses (physiology)
 - acceleration tolerance
 - electron runaway (plasma physics)
 - mechanical shock
 - ∞ motion
 - shock resistance
- high alt target and background measurement**
- UF *HITAB program*
 - RT ∞ measurement
 - target acquisition
- high altitude**
- UF *high altitude flight*
 - GS altitude
 - . **high altitude**
 - RT midaltitude
 - skyhook balloons
 - upper atmosphere
- high altitude balloons**
- GS expandable structures
 - . inflatable structures
 - . . balloons
 - . . . **high altitude balloons**
 - jimsphere balloons
 - skyhook balloons
 - superpressure balloons
 - RT balloon-borne instruments
 - gas bags
 - meteorological balloons
 - ROBIN balloons

high altitude breathing

rockoons

high altitude breathing
GS respiration
. **high altitude breathing**
RT altitude tolerance
∞ breathing
emergency life sustaining systems
hypobaric atmospheres
oxygen masks

high altitude environments
GS environments
. **high altitude environments**
RT altitude simulation
altitude tests
altitude tolerance
escape capsules
hypobaric atmospheres
low pressure
low temperature environments
mountain inhabitants
thermal vacuum tests
timberline
vacuum chambers

high altitude flight
USE **flight**
high altitude

high altitude nuclear detection
GS detection
. **high altitude nuclear detection**
RT space surveillance (spaceborne)
Vela satellites

high altitude pressure
GS pressure
. low pressure
. . **high altitude pressure**
RT altitude tolerance
atmospheric pressure
hypobaric atmospheres
vacuum chambers

high altitude sounding projectile
USE **WASP sounding rocket**

high altitude tests
GS altitude tests
. **high altitude tests**
RT background radiation
environmental tests
Fishbowl Operation
flight tests
full scale tests
test vehicles
∞ tests
Vela satellites

high aspect ratio
GS ratios
. aspect ratio
. . **high aspect ratio**

high aspect ratio wings
USE **slender wings**

high current
GS electric current
. **high current**
RT high voltages
plasma currents

high definition television
(added August 1990)
UF *HDTV*
GS television systems
. **high definition television**
RT communication equipment
digital television
high resolution
image resolution
imaging techniques
television transmission
video communication
video data

high dispersion spectrographs
GS measuring instruments
. optical measuring instruments

. . photometers
. . . ultraviolet spectrometers
. . . . **high dispersion spectrographs**
. radiation measuring instruments
. . actinometers
∞ ultraviolet detectors
. . . ultraviolet spectrometers
. . . . **high dispersion spectrographs**
. . photometers
. . . ultraviolet spectrometers
. . . . **high dispersion spectrographs**
. spectrometers
. . ultraviolet spectrometers
. . . **high dispersion spectrographs**
optical equipment
. optical measuring instruments
. . photometers
. . . ultraviolet spectrometers
. . . . **high dispersion spectrographs**
spectrographs
. **high dispersion spectrographs**
RT ultraviolet spectra

High Eccentric Lunar Occultation Satellite
USE **Exosat satellite**

high electron mobility transistors

(added November 1992)
DEF A recently developed field effect transistor based on the technique of modulation doping of GaAs/Al(x)Ga(1-x) as heterojunctions. This technique achieves high mobility in part by introducing carriers into high purity GaAs from donor ions in an adjacent AlGaAs layer, the electrons and ions being separated by the built-in heterojunction potential. Used for HEMT (electronics)

UF *HEMT (electronics)*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . heterojunction devices
. . . . **high electron mobility transistors**
. MODFETS
. . . transistors
. . . . **high electron mobility transistors**
. MODFETS
RT cascode devices
electron mobility
field effect transistors
indium aluminum arsenides
modulation doping

High Energy Astronomy Observatories
USE **HEAO**

High Energy Astronomy Observatory 1
USE **HEAO 1**

High Energy Astronomy Observatory 2
USE **HEAO 2**

High Energy Astronomy Observatory 3
USE **HEAO 3**

High Energy Astronomy Observatory 4
(added May 1997)
USE **HEAO 4**

High Energy Astronomy Observatory A
USE **HEAO 1**

High Energy Astronomy Observatory B
USE **HEAO 2**

High Energy Astronomy Observatory C
USE **HEAO 3**

High Energy Astronomy Observatory D
(added May 1997)
USE **HEAO 4**

high energy electrons

GS particles
. charged particles

. . energetic particles
. . . electrons
. . . . **high energy electrons**
. relativistic electron beams
. corpuscular radiation
. energetic particles
. . electrons
. . . . **high energy electrons**
. relativistic electron beams
. elementary particles
. fermions
. . leptons
. . . electrons
. **high energy electrons**
. relativistic electron beams
RT *SCATHA satellite*

high energy fuels

SN (HEAT CONTENT GREATER THAN OR EQUAL TO APPROXIMATELY 25,000 BTU/LB)
UF *HEF (high energy fuels)*
GS fuels
. chemical fuels
. . **high energy fuels**
RT additives
boron compounds
catalysts
cryogenic rocket propellants
hybrid propellants
hydrocarbon fuels

high energy interactions

GS particle interactions
. elementary particle interactions
. . **high energy interactions**
. . . strong interactions (field theory)
RT annihilation reactions
beam interactions
fission products
∞ interactions
nuclear explosions
nuclear fission
nuclear fusion
nuclear interactions
nuclear radiation
nuclear reactions
nuclear research
pair production
particle production
Pomeranchuk theorem
proton-antiproton interactions
thermonuclear reactions
vector dominance model

high energy oxidizers

GS oxidizers
. **high energy oxidizers**
RT rocket oxidizers

high energy propellants

GS propellants
. **high energy propellants**
. . Domino propellants
RT cryogenic rocket propellants
gaseous rocket propellants
hybrid propellants
liquid rocket propellants

high field magnets

UF *supermagnets*
GS magnets
. electromagnets
. . **high field magnets**
RT superconducting magnets

high flux beam reactors

RT nuclear reactors

high flux isotope reactors

UF *HFIR*
HFIR (reactor)
GS nuclear reactors
. **high flux isotope reactors**
RT neutron flux density

high frequencies

SN (3 - 30 MHz)
GS frequencies
. radio frequencies
. . **high frequencies**

RT decametric waves
intermediate frequencies
low frequencies
maximum usable frequency
ring discharge
short wave radiation
short wave radio transmission
toroidal discharge

high gain
GS amplification
. **high gain**
RT antenna gain
pilot induced oscillation
power gain
transfer functions

high gravity (acceleration)
USE **high gravity environments**

high gravity environments
UF *high gravity (acceleration)*
hypergravity
GS environments
. **high gravity environments**
rates (per time)
. acceleration (physics)
. . . **high gravity environments**
RT ∞ acceleration
centrifuges
extraterrestrial environments
gravitation
human centrifuges
microgravity
rotating environments

high impulse
GS impulses
. **high impulse**
RT ∞ force
propulsion

high intensity lasers
USE **high power lasers**

high latitudes
USE **polar regions**

high level languages
DEF Computer languages whose instructions or statements each correspond to several machine language instructions.
UF *higher order languages*
GS languages
. programming languages
. . . **high level languages**
. . . Ada (programming language)
. . . C (programming language)
. . . C++ (programming language)
. . . Java (programming language)
RT communication theory
language programming
symbols

high melting compounds
USE **refractory materials**

high pass filters
DEF Wave filters having a single transmission band extending from some critical or cutoff frequency, not zero, up to infinite frequency.
RT bandstop filters
electric filters
electromagnetic wave filters
∞ filters
microwave filters
optical filters

high polymers
RT ∞ polymers

high power lasers
DEF Stimulated emission devices having high energy flux density outputs. Used for high intensity lasers.
UF *high intensity lasers*
GS stimulated emission devices
. lasers
. . . **high power lasers**
. . . Nova Laser System
. . . Shiva laser system

RT free-space optical communication
glass lasers
laser fusion
laser outputs
optical communication

high pressure
GS pressure
. **high pressure**
RT anticyclones
critical pressure
degenerate matter
hyperbaric chambers
low pressure
supercritical pressures
transition pressure
vacuum

high pressure oxygen
GS gases
. compressed gas
. . . **high pressure oxygen**
RT fire prevention
oxygen
pressure
spacecraft cabin atmospheres

high Q
USE **Q factors**

∞ **high resistance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical properties
electrical resistance
flow resistance
mechanical properties
∞ physical properties
∞ resistance
ruggedness
thermal resistance

high resolution
GS resolution
. **high resolution**
RT accuracy
angular resolution
high definition television
precision
spatial resolution

high resolution coverage antennas
UF *HICAT (radar technique)*
HICAT project
GS antennas
. **high resolution coverage antennas**
RT radar antennas
radar resolution
resolution

high Reynolds number
SN (RN ABOVE 3,000)
DEF A Reynolds number above the critical Reynolds number of a sphere.
GS dimensionless numbers
. Reynolds number
. . . **high Reynolds number**
ratios
. Reynolds number
. . . **high Reynolds number**
RT low Reynolds number

high speed
UF *high speed flight*
GS rates (per time)
. **high speed**
velocity
. **high speed**
RT airspeed
escape velocity
ground speed
hypersonic speed
landing speed
light speed
relativistic velocity
rotor speed

supersonic speed

high speed cameras
GS optical equipment
. cameras
. . . **high speed cameras**
. . . framing cameras
photographic equipment
. cameras
. . . **high speed cameras**
. . . framing cameras
RT ballistic cameras
frame photography
high speed photography
rotating mirrors
streak photography
stroboscopes

high speed flight
USE **flight**
high speed

high speed photography
GS imagery
. photography
. . . **high speed photography**
RT high speed cameras
photographic recording

high speed transportation
USE **rapid transit systems**

high strength
GS mechanical properties
. **high strength**
RT compressive strength
shear strength
∞ strength
tensile strength
tensile stress
yield strength

high strength alloys
GS alloys
. **high strength alloys**
. . . Astroloy (trademark)
. . . high strength steels
. . . maraging steels
RT aluminum-lithium alloys
tensile properties

high strength steels
UF *low alloy steels*
GS alloys
. high strength alloys
. . . **high strength steels**
. . . maraging steels
. iron alloys
. steels
. . . **high strength steels**
. . . maraging steels
RT carbon steels

high temperature
GS temperature
. **high temperature**
RT sialon
temperature measurement

high temperature air
UF *hot air*
GS gases
. gas mixtures
. air
. . . **high temperature air**
. high temperature gases
. . . **high temperature air**
high temperature fluids
. high temperature gases
. . . **high temperature air**
mixtures
. solutions
. gas mixtures
. air
. . . **high temperature air**

high temperature alloys
USE **heat resistant alloys**

high temperature environments
GS environments

high temperature fluids

. **high temperature environments**
RT dry heat
heat acclimatization
lunar temperature
thermal environments
thermal fatigue

high temperature fatigue
USE **thermal fatigue**

high temperature fluids

GS **high temperature fluids**
. high temperature gases
. . high temperature air
RT ∞ fluids
hydraulic fluids
plasmas (physics)
working fluids

high temperature gas cooled reactors

UF *HTGR*
GS nuclear reactors
. gas cooled reactors
. . high temperature nuclear reactors
. . . **high temperature gas cooled reactors**
. nuclear research and test reactors
. . high temperature nuclear reactors
. . . **high temperature gas cooled reactors**
RT nuclear power reactors

high temperature gases

UF *hot gas systems*
hot gases
hot jet exhaust
GS gases
. **high temperature gases**
. . high temperature air
high temperature fluids
. **high temperature gases**
. . high temperature air
RT combustion products
exhaust emission
ionized gases
pneumatic probes
rarefied gases
shock wave propagation

high temperature lubricants

GS lubricants
. **high temperature lubricants**
RT gas bearings
gas lubricants
thermal resistance

high temperature materials
USE **refractory materials**

high temperature nuclear reactors

UF *Los Alamos Turret Reactor*
UHTREX (nuclear reactors)
GS nuclear reactors
. gas cooled reactors
. . **high temperature nuclear reactors**
. . . high temperature gas cooled reactors
. nuclear research and test reactors
. . **high temperature nuclear reactors**
. . . high temperature gas cooled reactors
RT nuclear propulsion
reactor design
reactor technology
∞ reactors

high temperature plasmas

UF *hot plasmas*
GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **high temperature plasmas**
. corpuscular radiation
. . energetic particles
. . . plasmas (physics)
. . . . **high temperature plasmas**
RT Boltzmann-Vlasov equation

collisional plasmas
dense plasmas
electron plasma
Helios Project
relativistic plasmas
strongly coupled plasmas
thermal plasmas

high temperature propellants

GS propellants
. **high temperature propellants**
RT electrothermal engines
gelled propellants
gelled rocket propellants
ion propulsion
nuclear propulsion
plasma engines
solid propellants
storable propellants

high temperature research

GS research
. **high temperature research**
RT plasma generators
refractory materials

high temperature superconductors

(added December 1992)
DEF New superconducting materials consisting of mixed metal oxide ceramics that maintain their superconductivity at higher temperature ranges (above 24 K) than the more traditional superconductors.
UF *HTSC (superconductors)*
GS conductors
. superconductors (materials)
. . **high temperature superconductors**
. . . BSCCO superconductors
. . . YBCO superconductors
RT barium oxides
ceramics
critical temperature
cryogenic gyroscopes
cryogenic magnets
cryogenics
electrical resistivity
Josephson junctions
liquid nitrogen
low temperature physics
metal oxides
mixed oxides
operating temperature
SIS (superconductors)
strontium oxides
superconducting magnets
superconducting power transmission
superconductivity
yttrium oxides

high temperature tests

UF *heat tests*
GS environmental tests
. **high temperature tests**
RT bomb calorimeters
calorimeters
chemical tests
cold strength
cold weather tests
cryostats
drop calorimeters
flame calorimeters
hardness tests
lubricant tests
∞ materials tests
melting points
nondestructive tests
temperature control
∞ tests
thermal expansion
thermal resistance
thermal shock
thermal stability
thermodynamic properties
transport properties

high thrust

GS thrust
. **high thrust**
RT jet thrust

low thrust
rocket thrust
thrust augmentation
variable thrust

high vacuum

GS pressure
. vacuum
. . **high vacuum**
RT cold welding
low vacuum
molecular shields
residual gas
space manufacturing
ultrahigh vacuum
vacuum apparatus
vacuum tests

High Vacuum Orbital Simulator

UF *HIVOS (simulator)*
GS simulators
. environment simulators
. . space simulators
. . . **High Vacuum Orbital Simulator**
RT space environment simulation

high velocity oxy-fuel spraying
(added July 2001)

USE **HVOF thermal spraying**

high velocity oxygen fuel thermal spraying
(added July 2001)

USE **HVOF thermal spraying**

high voltages

GS potential energy
. electric potential
. . **high voltages**
RT electric current
high current

higher order languages

USE **high level languages**

highlands

DEF A general term for large areas of elevated or mountainous land standing prominently above adjacent low areas; mountainous regions.

RT Colorado Plateau (US)
mesas
mountains
plateaus
topography

Highly Eccentric Orbit satellites

USE **HEOS satellites**

highly maneuverable aircraft

UF *HIMAT*
RT airborne/spaceborne computers
∞ aircraft
aircraft maneuvers
automatic flight control
automatic pilots
computerized simulation
fighter aircraft
flight characteristics
flight tests
remotely piloted vehicles

highways

GS roads
. **highways**
RT air bag restraint devices
bridges (structures)
construction
crashes
intersections
pavements
ramps (structures)
rapid transit systems
regional planning
streets
transportation
transportation networks

- urban planning
- H-II orbiting plane*
USE **HOPE aerospace plane**
- hijacking*
USE **air piracy**
- Hilbert space**
GS algebra
. vector spaces
.. Banach space
... **Hilbert space**
.... Sobolev space
analysis (mathematics)
. function space
.. Banach space
... **Hilbert space**
.... Sobolev space
. functional analysis
.. Banach space
... **Hilbert space**
.... Sobolev space
geometry
. topology
.. metric space
... **Hilbert space**
.... Sobolev space
- Hilbert transformation**
GS analysis (mathematics)
. functional analysis
.. integral transformations
... **Hilbert transformation**
transformations (mathematics)
. integral transformations
.. **Hilbert transformation**
- Hill curves*
USE **Hill method**
- Hill determinant**
GS analysis (mathematics)
. **Hill determinant**
RT differential equations
eigenvalues
Mathieu function
- Hill lunar theory**
RT Earth orbits
orbital mechanics
perturbation theory
∞ theories
- Hill method**
UF *Hill curves*
RT Earth orbits
∞ methodology
orbital mechanics
perturbation theory
- Hiller aircraft**
GS **Hiller aircraft**
. OH-5 helicopter
RT ∞ aircraft
- Hilsch tubes**
UF *vortex tubes*
RT coaxial flow
cooling
heating
∞ tubes
vortex generators
vortices
- Himalayas**
GS landforms
. mountains
.. **Himalayas**
RT Asia
Bhutan
India
Pakistan
Sikkim
Tibet
- Himalia**
(added July 1995)
DEF A natural satellite of Jupiter, orbiting at a mean distance of 11,480,000 kilometers.
GS celestial bodies
- . natural satellites
.. Jupiter satellites
... **Himalia**
RT Jupiter (planet)
- HIMAT**
USE **highly maneuverable aircraft**
- hindcasting**
(added July 1999)
DEF The process of reconstructing the time and space evolution of an atmospheric or oceanic phenomenon that has occurred in the past, through an analysis of historical data, a mathematical-model simulation of the processes involved, or a combination of data analysis and modeling.
GS predictions
. **hindcasting**
RT forecasting
meteorological parameters
nowcasting
oceanographic parameters
weather forecasting
- hindlimb suspension**
(added June 2001)
DEF Technique for limiting use, activity, or movement by immobilizing or restraining animal by suspending from hindlimbs or tails. This immobilization is used to simulate some effects of reduced gravity and study weightlessness physiology.
UF *hindlimb unloading*
GS immobilization
. **hindlimb suspension**
suspending (hanging)
. **hindlimb suspension**
RT aerospace medicine
atrophy
bioastronautics
bone demineralization
gravitational physiology
head down tilt
head up tilt
hypodynamia
hypokinesia
limbs (anatomy)
tilt-table test
weightlessness simulation
- hindlimb unloading*
(added June 2001)
USE **hindlimb suspension**
- hindrance*
USE **constraints**
- H-infinity control**
(added November 1992)
GS automatic control
. optimal control
.. **H-infinity control**
optimization
. optimal control
.. **H-infinity control**
RT control systems design
control theory
controllers
feedback control
H-2 control
linear parameter-varying control
linear quadratic Gaussian control
- hinge moments*
USE **torque**
- hinged rotor blades*
USE **hinges**
rotary wings
- hingeless rotors*
USE **rigid rotors**
- hinges**
UF *hinged rotor blades*
GS **hinges**
. flapping hinges
RT bearingless rotors
pivots
- swivels
- HIP (process)*
USE **hot isostatic pressing**
- Hipparcos satellite**
DEF An ESA astrometric satellite to determine trigonometric parallaxes, proper motions, and positions of 100,000 stars, mainly for stars brighter than magnitude 10. The satellite was launched in August 1989.
GS artificial satellites
. ESA satellites
.. **Hipparcos satellite**
ESA spacecraft
. ESA satellites
.. **Hipparcos satellite**
RT astrometry
European space programs
spaceborne astronomy
stellar motions
stellar parallax
- hippocampus**
GS anatomy
. nervous system
.. central nervous system
... brain
.... **hippocampus**
- hippuric acid**
GS acids
. amino acids
.. **hippuric acid**
organic compounds
. amino acids
.. **hippuric acid**
- His bundle**
RT cardiac auricles
cardiac ventricles
electrophysiology
heart diseases
heart function
nerves
- hiss**
DEF Random noise in the audiofrequency range, having subjective characteristics analogous to prolonged sibilant sounds.
GS electromagnetic interference
. radio frequency interference
.. electromagnetic noise
... atmospheric
.... ionospheric
..... **hiss**
- histamines**
GS drugs
. **histamines**
RT amines
antihistaminics
itching
- histidine**
GS acids
. amino acids
.. **histidine**
organic compounds
. amines
.. **histidine**
. amino acids
.. **histidine**
- histochemical analysis**
DEF In biochemistry, the analysis of chemical components in tissues.
RT bioassay
biochemistry
cells (biology)
organic chemistry
tissues (biology)
- histograms**
RT discrete functions
graphs (charts)
normal density functions
- histology**
GS medical science
. **histology**

histories

RT epithelium
in vitro methods and tests
in vivo methods and tests
morphology
platelets
tissue engineering
tissues (biology)

histories
GS **histories**
. case histories
RT documentation
museums
paleontology
peacetime
records

HITAB program
USE **high alt target and background measurement**

HIV (virus)
USE **human immunodeficiency virus**

HIVOS (simulator)
USE **High Vacuum Orbital Simulator**

HL-10 reentry vehicle
GS gliders
. **HL-10 reentry vehicle**
lifting bodies
. lifting reentry vehicles
. . **HL-10 reentry vehicle**
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . **HL-10 reentry vehicle**
RT hypersonic gliders

HLD-35 reentry vehicle
GS lifting bodies
. lifting reentry vehicles
. . **HLD-35 reentry vehicle**
reentry vehicles
. maneuverable reentry bodies
. . lifting reentry vehicles
. . . **HLD-35 reentry vehicle**
RT hypersonic gliders

HLLV
USE **heavy lift launch vehicles**

HMD (displays)
USE **helmet mounted displays**

HMX
UF *cyclotetramethylene tetranitramine*
tetranitrotetraazacyclooctane
GS explosives
. **HMX**
nitrogen compounds
. azo compounds
. . **HMX**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **HMX**
propellants
. rocket propellants
. . solid rocket propellants
. . . **HMX**
solid propellants
. . solid rocket propellants
. . . **HMX**
pyrotechnics
. **HMX**

HNPF (Hallam Nuclear Power Facility)
USE **Hallam Nuclear Power Facility**

HNST
USE **hexanitrostilbene**

HO-4 helicopter
USE **OH-4 helicopter**

HO-5 helicopter
USE **OH-5 helicopter**

HO-6 helicopter
USE **OH-6 helicopter**

holographs
RT Chaplygin equation

kinematics
vector spaces

hodoscopes
GS measuring instruments
. radiation measuring instruments
. . **hodoscopes**
RT anticoincidence detectors
radiation counters
scintillating fibers

hogbacks
USE **ridges**

hohlraums
DEF In radiation thermodynamics, cavities whose walls are in radiative equilibrium with the radiant energy with the cavity.
RT black body radiation
emissivity

Hohmann trajectories
USE **elliptical orbits transfer orbits**

Hohmann transfer orbits
USE **elliptical orbits transfer orbits**

holders
GS **holders**
. flame holders
RT anchors (fasteners)
∞ bands
bolts
brackets
clamps
clips
fasteners
jigs
latches
lugs
mechanical devices
nuts (fasteners)
pins
positioning devices (machinery)
rivets
screws
∞ spikes
splines
straps
studs (structural members)
zippers

∞ **holding**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT constraints
delay
retaining
stopping

hole burning
DEF A laser process that depletes, spatially or spectrally, the electron/hole pair density in a region of space or frequency of high coherent light, being spatial hole burning and spectral hole burning respectively.
RT computer storage devices
holography
laser applications
lasers
lasing
memory (computers)

∞ **hole distribution**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT current distribution
hole distribution (electronics)
hole distribution (mechanics)

hole distribution (electronics)
GS distribution (property)
. **hole distribution (electronics)**
RT charge distribution
current distribution
∞ hole distribution
holes (electron deficiencies)

semiconductors (materials)

hole distribution (mechanics)
GS distribution (property)
. **hole distribution (mechanics)**
RT cavities
∞ hole distribution
holes (mechanics)
perforated shells
porosity
stress concentration
void ratio

hole geometry (mechanics)
DEF The sizes, locations, and shapes of perforations created in materials.
RT fracture mechanics
holes (mechanics)
perforated plates
perforated shells
stress concentration
stress intensity factors
structural analysis

hole mobility
GS electrical properties
. carrier mobility
. . **hole mobility**
mobility
. carrier mobility
. . **hole mobility**
transport properties
. carrier mobility
. . **hole mobility**
RT atomic mobilities
charge carriers
electromigration
electron mobility
holes (electron deficiencies)
∞ solid state physics

∞ **holes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT boreholes
cavities
coronal holes
gaps
holes (electron deficiencies)
holes (mechanics)

holes (electron deficiencies)
(added November 1991)
UF *electron holes*
GS charge carriers
. **holes (electron deficiencies)**
RT acceptor materials
crystal defects
donor materials
electrons
excitons
hole distribution (electronics)
hole mobility
∞ holes
majority carriers
∞ materials
minority carriers
order-disorder transformations
p-type semiconductors
resonant tunneling diodes
semiconductor plasmas
semiconductors (materials)
Suhl effect
vacancies (crystal defects)

holes (mechanics)
(added September 1988)
RT cavities
hole distribution (mechanics)
hole geometry (mechanics)
∞ holes
perforated plates
perforated shells
∞ perforation

porous boundary layer control

*Holland*USE **Netherlands**∞ **hollow**

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Low tract of land surrounded by hills or mountains; small sheltered valley or basin, especially in a rugged area.

RT cavities
∞ depression
recesses**hollow cathodes**GS electrodes
. cathodes
. . **hollow cathodes**
RT tube cathodes
tunnel cathodes**holmium**GS chemical elements
. rare earth elements
. . **holmium**
. . . holmium isotopes
metals
. rare earth elements
. . **holmium**
. . . holmium isotopes**holmium isotopes**GS chemical elements
. nuclides
. . isotopes
. . . **holmium isotopes**
. rare earth elements
. . holmium
. . . **holmium isotopes**
metals
. rare earth elements
. . holmium
. . . **holmium isotopes****Holocene epoch***(added May 2001)*

DEF Most recent geologic epoch of the Quaternary period extending from about 10,000 years ago to, and including, the present.

GS Cenozoic Era
. Quaternary period
. . **Holocene epoch**RT geochronology
Pleistocene epoch**hologrammetry**RT holography
imaging techniques
photographic recording
photomapping
speckle holography
terrain analysis**holographic interferometry**GS interferometry
. **holographic interferometry**
RT coherent light
diffraction patterns
holographic optical elements
holography
laser outputs
Moire interferometry
scatter plates (optics)
speckle holography
wave front reconstruction**holographic optical elements***(added April 1995)*

DEF Holograms used to control transmitted light beams, rather than to display images, based on the principles of diffraction.

RT diffraction paths
geometrical optics
holographic interferometry
imagery
laser beams
light transmission
optical paths
pulse diffractionwave diffraction
white light holography**holographic spectroscopy**GS spectroscopy
. **holographic spectroscopy**
RT Fourier transformation
holography
spectrum analysis
wave front reconstruction**holographic subtraction**

DEF A holographic technique by which two dissimilar optical fields can be subtracted to yield only their difference. Used for self subtraction holography.

UF *self subtraction holography*
RT holography**holography**

DEF The interferometry technique used to make three-dimensional pictures of surfaces. One light beam illuminates a surface, and sets up interference patterns with a reference beam.

GS imagery
. photography
. . **holography**
. . . acoustical holography
. . . microwave holography
. . . speckle holography
. . . white light holography
RT coherent electromagnetic radiation
coherent light
data storage
differential interferometry
diffractive optics
Gabor transformation
hole burning
hologrammetry
holographic interferometry
holographic spectroscopy
holographic subtraction
image correlators
image reconstruction
kinoform
lasers
optical memory (data storage)
photopolymers
scatter plates (optics)
spatial filtering
speckle patterns
wave front reconstruction*holomorphism*USE **analytic functions****homeostasis**RT acclimatization
acid base equilibrium
adaptation
body temperature
cold tolerance
colloids
∞ equilibrium
fibrinogen
hormones
metabolism
nervous system
osmosis
physiology
respiratory system
skin (anatomy)
stress (physiology)
thermoregulation
thromboplastin
water balance**homeotherms**UF *warm blooded animals*
GS animals
. **homeotherms**
RT birds
body temperature
mammals
vertebrates**homing**

DEF The following of a path of energy waves to or toward their source or point of reflection.

RT automatic pilots
beacons
guidance (motion)
missile control
proportional navigation
radio direction finders
terminal guidance**homing devices**UF *seekers*
RT beacons
guidance (motion)
infrared tracking
laser guidance
missiles
navigation
navigation aids
radio beacons
radio direction finders
radio navigation
rendezvous guidance
solar compasses
trajectory control**homodyne reception**GS signal reception
. **homodyne reception**
RT frequency synchronization
radio reception**homogeneity**DEF Having the same properties at all points.
RT anisotropic media
homogenizing
sampling
statistical tests
unity
variance (statistics)**homogeneous turbulence**GS turbulence
. **homogeneous turbulence**
RT atmospheric turbulence
fluctuation theory
isotropic turbulence
low level turbulence
magneto hydrodynamic turbulence*homogenization*USE **homogenizing****homogenizing**UF *homogenization*
GS mixing
. **homogenizing**
RT agitation
colloiding
compounding
dispersing
dissolving
homogeneity
premixing
∞ separation
suspending (mixing)**homojunctions**

DEF Junctions between semiconductors that differ in their doping level conductivities but not in their atomic or alloy composition.

GS semiconductor junctions
. **homojunctions**
RT heterojunction devices
heterojunctions
silicon junctions
solar cells**homology**UF *cohomology*
RT analogies
duality theorem
matching
∞ relationships
topology**homomorphisms**GS algebra
. group theory
. . **homomorphisms**
. . . automorphisms

homopolar generators

- . . . monoids
- . . . subgroups
- RT field theory (algebra)
- isomorphism

homopolar generators

DEF Rotating electric machines for converting mechanical power into pure direct current by utilizing poles having the same polarity at the armature.

- GS electric generators
 - . direct power generators
 - . . DC generators
 - . . . **homopolar generators**
 - . rotating generators
 - . . **homopolar generators**
- RT direct current
- ∞ electric equipment
- electromechanical devices
- ∞ generators

homosphere

DEF The lower portion of a two part division of the atmosphere according to the general homogeneity of atmospheric composition; opposed to the heterosphere. The region in which there is no gross change in atmospheric composition, that is, all the atmosphere from the Earth's surface to about 90 kilometers. The homosphere is about equivalent to the neutrosphere, and includes the troposphere, stratosphere, and mesosphere; it also includes the ozonosphere and at least part of the chemosphere.

- GS Earth atmosphere
 - . **homosphere**
- RT biosphere
- chemosphere
- Earth ionosphere
- lower atmosphere
- mesosphere
- middle atmosphere
- ozonosphere
- stratosphere
- thermosphere
- troposphere
- upper atmosphere

homotopy theory

- GS geometry
 - . topology
 - . . **homotopy theory**
- RT curves (geometry)
- fibers (mathematics)
- ∞ theories

homotropy

- RT algebra
- problem solving
- set theory
- topology

Honduras

- GS nations
 - . **Honduras**
- RT Central America

Honest John rocket vehicle

- GS rocket vehicles
 - . single stage rocket vehicles
 - . . **Honest John rocket vehicle**
 - . surface to surface rockets
 - . . **Honest John rocket vehicle**
- RT Argo rocket vehicles
- EXOS sounding rocket
- Hercules engine
- solid propellant rocket engines
- Trailblazer 1 reentry vehicle

honeycomb cores

DEF Lightweight strengthening materials of structures resembling honeycomb meshes.

- GS cores
 - . **honeycomb cores**
 - honeycomb structures
 - . **honeycomb cores**
- RT ceramic honeycombs
- composite structures
- low density materials

- sandwich structures

honeycomb mirrors

(added August 1995)

DEF High strength to weight telescope mirrors constructed of spun-cast borosilicate glass in a honeycomb structure that optically represents a single large mirror.

- GS honeycomb structures
 - . **honeycomb mirrors**
 - mirrors
 - . **honeycomb mirrors**
- RT adaptive optics
- astronomical observatories
- borosilicate glass
- optical correction procedure
- reflecting telescopes
- segmented mirrors

honeycomb structures

- GS **honeycomb structures**
 - . honeycomb cores
 - . honeycomb mirrors
- RT ∞ cells
- ceramic honeycombs
- composite structures
- hexagonal cells
- insulation
- laminates
- low density materials
- metal foils
- porous materials
- sandwich structures
- ∞ structures

Honeywell 600/6000 computer

- GS data processing equipment
 - . computers
 - . . analog computers
 - . . . **Honeywell 600/6000 computer**
 - . . digital computers
 - . . . Honeywell computers
 - **Honeywell 600/6000 computer**

Honeywell ADEPT computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . Honeywell computers
 - **Honeywell ADEPT computer**

Honeywell computers

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **Honeywell computers**
 - DDP 516 computer
 - Honeywell 600/6000 computer
 - Honeywell ADEPT computer
 - Honeywell DDP 116 computer

Honeywell DDP 116 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . Honeywell computers
 - **Honeywell DDP 116 computer**

Hong Kong

- RT Asia
- China
- nations
- Taiwan

honoring

- RT scrapers
- smoothing

Hookes law

- GS laws
 - . **Hookes law**
- RT elastic properties
- fiber strength
- Maxwell bodies
- modulus of elasticity
- shear properties
- stress-strain diagrams

hooks

- RT fasteners

- forks
- swivels

hoop column antennas

- GS antennas
 - . **hoop column antennas**
- RT large space structures
- satellite communication
- spacecraft communication

hoops

- RT ring structures
- tensile stress

Hopcalite (trademark)

- GS catalysts
 - . **Hopcalite (trademark)**
 - chalcogenides
 - . oxides
 - . . metal oxides
 - . . . manganese oxides
 - **Hopcalite (trademark)**
 - manganese compounds
 - . manganese oxides
 - . . **Hopcalite (trademark)**
- RT air purification
- carbon monoxide
- gas analysis

HOPE aerospace plane

(added September 1995)

- UF *H-2 orbiting plane*
- H-II orbiting plane*
- GS aerospace vehicles
 - . aerospace planes
 - . . **HOPE aerospace plane**
 - maneuverable spacecraft
 - . aerospace planes
 - . . **HOPE aerospace plane**
 - manned spacecraft
 - . **HOPE aerospace plane**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . aerospace planes
 - **HOPE aerospace plane**
 - soft landing spacecraft
 - . aerospace planes
 - . . **HOPE aerospace plane**
- RT hypersonic vehicles
- Japanese space program
- lifting reentry vehicles
- space transportation

hoppers

- RT ∞ containers
- materials handling
- packaging

horizon

DEF That great circle or the celestial sphere midway between the zenith and nadir, or a line resembling or approximating such a circle.

- GS **horizon**
 - . event horizon
 - . gyro horizons
 - . radio horizons
- RT celestial sphere
- range (extremes)

horizon scanners

- UF *horizon sensing*
- infrared horizon scanners*
- GS flight instruments
 - . **horizon scanners**
 - scanners
 - . **horizon scanners**
- RT attitude control
- infrared scanners
- navigation instruments
- optical equipment
- photometers
- radio horizons
- radiometers

- Scanner project
- horizon sensing*
USE **horizon scanners**
- horizontal branch stars**
DEF Horizontal strips of stars on the Hertzsprung-Russell diagram of globular clusters to the left of the red giant branch.
GS celestial bodies
. stars
. . **horizontal branch stars**
RT color-magnitude diagram
giant stars
globular clusters
Hertzsprung-Russell diagram
Population II stars
stellar evolution
stellar luminosity
stellar spectra
stellar spectrophotometry
- horizontal distribution**
(added September 1992)
GS distribution (property)
. spatial distribution
. . **horizontal distribution**
RT atmospheric circulation
atmospheric composition
atmospheric models
horizontal orientation
vertical distribution
- horizontal flight**
RT aerodynamic balance
aircraft stability
climbing flight
cruising flight
∞ flight
flight paths
rocket flight
soaring
transition flight
turning flight
- horizontal orientation**
DEF The attitude of an object in reference to the plane which is perpendicular to the direction of gravity.
RT alignment
attitude (inclination)
directional stability
dynamic stability
horizontal distribution
∞ orientation
stabilization
vertical orientation
- horizontal spacecraft landing**
GS landing
. glide landings
. . **horizontal spacecraft landing**
. spacecraft landing
. . **horizontal spacecraft landing**
RT approach and landing tests (STS)
crash landing
planetary landing
soft landing
water landing
- horizontal stabilizers*
USE **stabilizers (fluid dynamics)**
- horizontal tail surfaces**
UF *tail planes*
GS airfoils
. **horizontal tail surfaces**
assemblies
. tail assemblies
. . **horizontal tail surfaces**
control surfaces
. **horizontal tail surfaces**
stabilizers (fluid dynamics)
. **horizontal tail surfaces**
tail surfaces
. **horizontal tail surfaces**
RT aerial rudders
elevators (control surfaces)
∞ surfaces
- trapezoidal tail surfaces
- horizontally polarized shear waves*
USE **SH waves**
- hormone metabolisms**
GS metabolism
. **hormone metabolisms**
RT glucocorticoids
hormones
- hormones**
GS secretions
. endocrine secretions
. . **hormones**
. . . corticosteroids
. . . . aldosterone
. . . . hydroxycorticosteroid
. cortisone
. glucocorticoids
. . . estrogens
. hypertensin
. pituitary hormones
. adrenocorticotropin (ACTH)
. vasopressins
. prostaglandins
. thyroxine
RT catecholamine
endocrine systems
epinephrine
homeostasis
hormone metabolisms
melatonin
regulatory mechanisms (biology)
steroids
- horn antennas**
DEF Antennas shaped like a horn.
GS antennas
. directional antennas
. . **horn antennas**
. . . radio antennas
. . . . microwave antennas
. **horn antennas**
. waveguide antennas
. **horn antennas**
microwave equipment
. microwave antennas
. . **horn antennas**
radio equipment
. radio antennas
. . microwave antennas
. . . **horn antennas**
RT antenna design
lens antennas
parabolic antennas
radar antennas
Schelkunoff principle
sidelobe reduction
slot antennas
- horns**
RT auditory signals
Schwarzschild antennas
∞ signals
sirens
sound generators
warning
warning systems
- horsepower**
RT physical work
∞ power
power efficiency
work
- horses**
GS animals
. vertebrates
. . mammals
. . . **horses**
RT grazing
livestock
- horseshoe vortices**
(added July 1989)
UF *hairpin vortices*
GS vortices
. **horseshoe vortices**
RT Abrikosov theory
- flow distortion
flow geometry
vortex filaments
vortex generators
vortex rings
vorticity
wakes
wing tip vortices
- hoses**
RT pipes (tubes)
∞ tubes
- hospitals**
RT evacuating (transportation)
medical equipment
- hot air*
USE **high temperature air**
- hot atoms**
DEF Atoms with high internal or kinetic energy as a result of a nuclear process such as beta decay or neutron capture.
GS atoms
. **hot atoms**
RT beta particles
decay
neutron decay
- hot cathodes**
DEF Cathodes that function primarily by the process of thermionic emission.
GS electrodes
. cathodes
. . tube cathodes
. . . **hot cathodes**
RT Bayard-Alpert ionization gages
ionization gages
thermionic cathodes
- hot corrosion**
DEF The corrosion at high temperatures as a result of the reduction of protective oxide coatings and scales and the subsequent accelerated oxidation.
GS corrosion
. **hot corrosion**
RT coatings
damage
degradation
deterioration
erosion
gas-metal interactions
metal coatings
oxidation
pitting
rusting
scale (corrosion)
surface properties
temperature dependence
- hot cycle propulsion system*
USE **tip driven rotors**
- hot electrons**
GS particles
. charged particles
. . energetic particles
. . . electrons
. . . . **hot electrons**
. corpuscular radiation
. energetic particles
. electrons
. **hot electrons**
. elementary particles
. fermions
. leptons
. electrons

hot isostatic pressing

. **hot electrons**

hot extruding

USE **extruding**

hot forming

USE **hot working**

hot gas systems

USE **high temperature gases**

hot gases

USE **high temperature gases**

hot isostatic pressing

DEF A thermomechanical process for forming metal-powder compacts or ceramic shapes by use of isostatically applied gas pressure in order to achieve high density in the treated material. Used for HIP (process).

UF *HIP (process)*

GS forming techniques

. pressing (forming)

. . hot pressing

. . . **hot isostatic pressing**

hardening (materials)

. hot pressing

. . **hot isostatic pressing**

thermomechanical treatment

. hot pressing

. . **hot isostatic pressing**

RT coining

cold pressing

compacting

forging

isostatic pressure

metal working

∞ pressing

sintering

stamping

upsetting

hot jet exhaust

USE **high temperature gases**
jet exhaust

hot jets

USE **jet flow**

hot machining

GS machining

. **hot machining**

RT forming techniques

hot plasmas

USE **high temperature plasmas**

hot pressing

DEF The simultaneous heating and molding of a compact.

GS forming techniques

. pressing (forming)

. . **hot pressing**

. . . hot isostatic pressing

hardening (materials)

. **hot pressing**

. . hot isostatic pressing

thermomechanical treatment

. **hot pressing**

. . hot isostatic pressing

RT coining

cold pressing

compacting

forging

metal working

∞ pressing

sintering

stamping

upsetting

hot stars

GS celestial bodies

. stars

. . early stars

. . . **hot stars**

. . . . A stars

. . . . B stars

. shell stars

. Sigma Orionis

. . . . blue stars

. . . . O stars

. . . . white dwarf stars

. . . . Wolf-Rayet stars

RT cataclysmic variables

peculiar stars

red dwarf stars

hot surfaces

RT heat transfer

Rayleigh-Benard convection

∞ surfaces

hot water rocket engines

GS engines

. rocket engines

. . **hot water rocket engines**

hot weather

GS weather

. **hot weather**

RT heat stroke

summer

tropical regions

hot working

DEF Controlled mechanical operations for shaping a product at temperatures above the recrystallization temperature. Used for hot forming.

UF *hot forming*

GS forming techniques

. **hot working**

. . ausforming

RT bulging

forging

metal drawing

metal spinning

metal working

pultrusion

shearing

upsetting

hot-film anemometers

GS measuring instruments

. anemometers

. . **hot-film anemometers**

RT flow measurement

meteorological instruments

sonic anemometers

velocity measurement

wind (meteorology)

wind measurement

wind vanes

wind velocity

wind velocity measurement

HOTOL launch vehicle

DEF A British unmanned horizontal takeoff and landing single-stage-to-orbit launch vehicle. Later launches will be manned.

GS

aerospace vehicles

. aerospace planes

. . **HOTOL launch vehicle**

launch vehicles

. reusable launch vehicles

. . single stage to orbit vehicles

. . . **HOTOL launch vehicle**

maneuverable spacecraft

. aerospace planes

. . **HOTOL launch vehicle**

reentry vehicles

. recoverable spacecraft

. . reusable spacecraft

. . . aerospace planes

. . . . **HOTOL launch vehicle**

. . . . single stage to orbit vehicles

. . . . **HOTOL launch vehicle**

soft landing spacecraft

. aerospace planes

. . **HOTOL launch vehicle**

unmanned spacecraft

. **HOTOL launch vehicle**

RT

launch vehicle configurations

space shuttles

space transportation

spacecraft launching

UK space program

∞ vehicles

hotshot wind tunnels

GS test facilities

. wind tunnels

. . hypersonic wind tunnels

. . . **hotshot wind tunnels**

. . . hypervelocity wind tunnels

. . . **hotshot wind tunnels**

RT

blowdown wind tunnels

shock tubes

shock tunnels

hot-wire anemometers

GS measuring instruments

. anemometers

. . **hot-wire anemometers**

RT

flow measurement

flowmeters

meteorological instruments

velocity measurement

hot-wire flowmeters

UF *hot-wire turbulence meters*

GS measuring instruments

. flowmeters

. . **hot-wire flowmeters**

RT

Pirani gages

plasma electrodes

thermal conductivity

turbulence meters

hot-wire turbulence meters

USE **hot-wire flowmeters**

turbulence meters

Hound Dog missile

GS missiles

. air to surface missiles

. . **Hound Dog missile**

RT

turbojet engines

Householder transformations

GS transformations (mathematics)

. **Householder transformations**

RT

problem solving

housekeeping (spacecraft)

GS cleaning

. **housekeeping (spacecraft)**

cleanliness

. **housekeeping (spacecraft)**

RT

hygiene

sanitation

sterilization

washing

hosings

GS **hosings**

. cowlings

. doghouses (electronics)

. radomes

RT

∞ containers

coverings

domes (structural forms)

enclosure

enclosures

fairings

guards (shields)

nacelles

perforated shells

protection

protectors

protuberances

shells (structural forms)

shielding

walls

Houston (TX)

GS cities

. **Houston (TX)**

RT

texas

hovercraft

USE **ground effect machines**

hovercraft ground effect machines

UF *HD-1 ground effect machines*

GS ground effect machines

. **hovercraft ground effect**

machines

RT

∞ aircraft

research aircraft

- water takeoff and landing aircraft
- hovering**
- GS maneuvers
 - . **hovering**
 - RT aerodynamic stability
 - Cushioncraft ground effect machine
 - flutter
 - ground effect machines
 - hovering rocket vehicles
 - terrain following
 - transition flight
 - V/STOL aircraft
 - vertical flight
 - whirl towers
- hovering rocket vehicles**
- GS rocket vehicles
 - . **hovering rocket vehicles**
 - RT hovering
 - soft landing spacecraft
 - ∞ vehicles
- hovering stability**
- GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . aircraft stability
 - **hovering stability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . aircraft stability
 - **hovering stability**
 - RT attitude stability
 - directional stability
 - gyroscopic stability
 - lateral stability
 - longitudinal stability
 - low speed stability
 - whirl towers
- howitzers**
- GS weapons
 - . guns (ordnance)
 - . . artillery
 - . . . **howitzers**
 - RT ballistics
 - gun launchers
 - gunnery training
- HP-115 aircraft**
- UF *Handley Page HP-115 aircraft*
 - GS Handley Page aircraft
 - . **HP-115 aircraft**
 - jet aircraft
 - . **HP-115 aircraft**
 - monoplanes
 - . **HP-115 aircraft**
 - research vehicles
 - . research aircraft
 - . . **HP-115 aircraft**
 - tailless aircraft
 - . **HP-115 aircraft**
 - RT ∞ aircraft
 - wing planforms
- HPRR**
- USE **Health Physics Research Reactor**
- HR diagram**
- USE **Hertzsprung-Russell diagram**
- HRB-1 helicopter**
- USE **CH-46 helicopter**
- HS-125 aircraft**
- USE **DH 125 aircraft**
- HS-748 aircraft**
- UF *AVRO Whitworth HS-748 aircraft*
 - GS Hawker Siddeley aircraft
 - . **HS-748 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . **HS-748 aircraft**
 - monoplanes
 - . **HS-748 aircraft**
 - passenger aircraft
 - . **HS-748 aircraft**
- HS-801 aircraft**
- GS Hawker Siddeley aircraft
 - . **HS-801 aircraft**
 - jet aircraft
 - . **HS-801 aircraft**
 - reconnaissance aircraft
 - . **HS-801 aircraft**
 - RT aerial reconnaissance
 - ∞ aircraft
 - observation aircraft
 - photography
 - photoreconnaissance
- HSS-2 helicopter**
- USE **SH-3 helicopter**
- HTGR**
- USE **high temperature gas cooled reactors**
- HTML**
- USE **document markup languages**
- HTPB propellants**
- DEF Solid rocket propellants containing hydroxyl terminated polybutadiene as bonding material.
 - GS propellants
 - . rocket propellants
 - . . solid rocket propellants
 - . . . **HTPB propellants**
 - . solid propellants
 - . . solid rocket propellants
 - . . . **HTPB propellants**
 - RT plastic propellants
 - polybutadiene
- HTSC (superconductors)**
- USE **high temperature superconductors**
- HU-1 helicopter**
- USE **UH-1 helicopter**
- HU2K-1 helicopter**
- USE **UH-2 helicopter**
- Hubble constant**
- DEF The rate at which the velocity of recession of the galaxies increases with distance.
 - GS constants
 - . **Hubble constant**
 - RT cosmology
 - galaxies
 - irregular galaxies
 - red shift
 - velocity measurement
- Hubble diagram**
- GS cosmology
 - . **Hubble diagram**
 - RT barred galaxies
 - galactic radiation
 - galaxies
 - irregular galaxies
 - red shift
 - velocity measurement
- Hubble Space Telescope**
- UF *Large Space Telescope*
 - GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Hubble Space Telescope**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Hubble Space Telescope**
 - telescopes
 - . spaceborne telescopes
 - . . **Hubble Space Telescope**
 - RT faint object camera
 - James Webb Space Telescope
 - Space Shuttle payloads
 - spaceborne astronomy
 - ultraviolet astronomy
- hubs**
- UF *rotor hubs*
- RT spokes
wheels
- Hudson Bay (Canada)**
- GS bays (topographic features)
 - . **Hudson Bay (Canada)**
 - RT Canada
- Hudson River (NY-NJ)**
- GS rivers
 - . **Hudson River (NY-NJ)**
 - RT New Jersey
 - New York
- Hueckel theory**
- RT ∞ theories
- Hughes aircraft**
- GS **Hughes aircraft**
 - . AH-64 helicopter
 - . H-17 helicopter
 - . OH-6 helicopter
 - . TH-55 helicopter
 - . XV-9A aircraft
 - RT ∞ aircraft
- Hugoniot adiabat**
- USE **Hugoniot equation of state**
- Hugoniot equation of state**
- UF *Hugoniot adiabat*
 - GS equations of state
 - . **Hugoniot equation of state**
 - RT compressible flow
 - ∞ equations
 - loads (forces)
 - one dimensional flow
 - shock waves
- HUL**
- USE **hardware utilization lists**
- hulls (structures)**
- GS **hulls (structures)**
 - . ship hulls
 - RT aircraft structures
 - bays (structural units)
 - bulkheads
 - fuselages
 - hydrofoils
 - keels
 - metal shells
 - perforated shells
 - seaplanes
 - shells (structural forms)
 - skin (structural member)
 - strakes
 - ∞ structures
 - SWATH (ship)
- hum**
- DEF Electrical disturbance at the power supply frequency or harmonics thereof.
 - RT acoustics
 - ∞ interference
 - ∞ noise
- human behavior**
- GS behavior
 - . **human behavior**
 - RT boredom
 - detachment
 - disorders
 - dithers
 - emotions
 - extroversion
 - introversion
 - lethargy
 - neuropsychiatry
 - panic
- human beings**
- UF *man*
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . primates
 - **human beings**
 - RT aborigines
 - anthropology
 - census

human body

children
chimpanzees
clinical medicine
cultural resources
demography
females
males
man environment interactions
parents
patients
race factors
races (anthropology)
youth

human body

GS anatomy
. **human body**
RT appendages
∞ bodies
body measurement (biology)
exercise physiology
limbs (anatomy)
lumbar region
posture
sciatic region

human centrifuges

UF *piloted centrifuges*
GS centrifuges
. **human centrifuges**
RT acceleration tolerance
artificial gravity
high gravity environments

human engineering

USE **human factors engineering**

human factors engineering

DEF Application of information on physical and psychological characteristics of man to the design of devices and systems for human use. Used for ergonomics and human engineering.

UF *ergonomics*
human engineering
RT ∞ aeronautics
aircraft accidents
aircraft hazards
anthropometry
architecture
astronaut maneuvering equipment
astronaut performance
∞ aeronautics
bioengineering
biofeedback
bionics
body measurement (biology)
brightness
color
comfort
cybernetics
education
efficiency
∞ engineering
environmental engineering
environments
fatigue (biology)
flat panel displays
∞ flight stress
glare
human resources
human-computer interface
illuminating
life support systems
man machine systems
manned space flight
manual control
monocular vision
noise (sound)
∞ performance
pilot error
production engineering
psychological effects
safety devices
safety management
situational awareness
systems engineering
teleoperators
visibility
vision
wheelchairs

workstations

human factors laboratories

GS laboratories
. **human factors laboratories**
RT environmental laboratories

human immunodeficiency virus

(added August 1991)
DEF A virus which attacks the human immune system and causes acquired immunodeficiency syndrome (AIDS).

UF *HIV (virus)*
GS microorganisms
. viruses
. . **human immunodeficiency virus**
RT acquired immunodeficiency syndrome
antibodies
immune systems
immunology
interferon
vaccines
viral diseases
virulence

human pathology

GS medical science
. pathology
. . **human pathology**
RT cholera
convulsions
epilepsy
patients

human performance

GS **human performance**
. astronaut performance
. . blackout prevention
. . operator performance
. . pilot performance
. . blackout prevention
RT abilities
competition
∞ endurance
human resources
information processing (biology)
intelligence tests
intravehicular activity
mental health
mental performance
∞ performance
pilot error
psychomotor performance
race factors
sensorimotor performance
visual tasks
workloads (psychophysiology)

human reactions

RT biological effects
boredom
competition
emotional factors
laughing
noise pollution
physiological effects
psychological effects
psychomotor performance
∞ reaction
reaction time
reward (psychology)
sensorimotor performance
shock (physiology)
vacillation

human relations

UF *interpersonal relations*
RT employee relations
personnel management
sociology

human resources

DEF Those elements of support and capability that are provided by persons using their mental and physical capabilities.

RT education
human factors engineering
human performance
management planning
manpower

personnel
personnel development
personnel management

human tolerances

GS tolerances (physiology)
. **human tolerances**
RT ∞ acceleration
acceleration tolerance
diving (underwater)
∞ endurance
heat acclimatization
heat tolerance
noise pollution
noise tolerance
orthostatic tolerance
radiation tolerance
shock (physiology)

human wastes

GS wastes
. metabolic wastes
. . **human wastes**
. . . feces
. . . urine
RT activated sludge
air pollution
environment pollution
environmental surveys
excretion
liquid wastes
organic wastes (fuel conversion)
pollution
sewage
sewers
solid wastes
toilets
waste disposal

human-computer interface

UF *man-computer interface*
user-computer interface
GS interfaces
. **human-computer interface**
man machine systems
. **human-computer interface**
RT command languages
computer aided design
data processing terminals
display devices
document markup languages
graphical user interface
human factors engineering
hypertext
natural language processing
pilot support systems
query languages
user requirements
virtual reality

Humason comet

GS celestial bodies
. comets
. . **Humason comet**
RT solar system

humerus

RT arm (anatomy)
elbow (anatomy)

humidity

DEF The amount of water vapor in the air. Specifically, relative humidity.

RT air conditioning
atmospheric density
atmospheric moisture
body temperature
climatology
comfort
corrosion
dehumidification
drop size
dry heat
environments
hygral properties
hygrometers
lapse rate
meteorological parameters
meteorology
mixing ratios

moisture
 moisture content
 moisture meters
 perspiration
 precipitation (meteorology)
 psychological effects
 psychrometers
 refrigerating
 temperature
 vapor pressure
 water
 water vapor
 weather forecasting

humidity measurement

RT hygrometers
 ∞ measurement
 meteorological instruments
 moisture meters
 psychrometers

Hummingbird aircraft
 USE **XV-4 aircraft**

Hungarian space program

(added June 1989)
 GS programs
 . space programs
 . . European space programs
 . . . **Hungarian space program**
 RT Hungary

Hungary

GS nations
 . **Hungary**
 RT Central Europe
 Europe
 Hungarian space program

Hunter F-2 aircraft
 USE **F-2 aircraft**

Hunting H-126 aircraft
 USE **H-126 aircraft**

Hunting P-84 aircraft
 USE **jet provost aircraft**

hurricanes

DEF Tropical cyclones, especially in the West Indies, in which the wind velocity equals or exceeds 64 knots (73 mph).
 GS storms
 . storms (meteorology)
 . . cyclones
 . . . **hurricanes**
 Anna hurricane
 . . tropical storms
 . . . **hurricanes**
 Anna hurricane
 RT climatology
 cyclogenesis
 meteorology
 storm damage
 storm surges
 tornadoes
 typhoons

HUS-1 helicopter
 USE **UH-34 helicopter**

Huskie helicopter
 USE **HH-43 helicopter**

Hustler aircraft
 USE **B-58 aircraft**

HUT (physiology)
 (added March 1998)
 USE **head up tilt**

Huygens principle

DEF A very general principle applying to all forms of wave motion which states that every point on the instantaneous position of an advancing phase front (wave front) may be regarded as a source of secondary spherical wavelets. The position of the phase front a moment later is then determined as the envelope of all the secondary wavelets (ad infinitum).
 RT diffraction

∞ optics
 point sources
 refraction
 scattering
 Schellkunoff principle
 spherical waves
 wave fronts
 wave propagation

Huygens probe

(added May 1997)
 GS ESA spacecraft
 . **Huygens probe**
 unmanned spacecraft
 . space probes
 . . **Huygens probe**
 RT Cassini mission
 satellite atmospheres
 Titan
 Titan atmosphere

Hvittis chondrite

GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . chondrites
 **Hvittis chondrite**

HVOF thermal spraying

(added July 2001)
 DEF Thermal spray process where the spray powder particles are injected into a high-velocity jet formed by the combustion of oxygen and fuel. Used to deposit strong, high-density coatings with low residual stress.
 UF *high velocity oxy-fuel spraying*
high velocity oxygen fuel thermal spraying
 GS spraying
 . flame spraying
 . . **HVOF thermal spraying**
 RT coating
 metal spraying
 plasma spraying
 protective coatings
 sprayed coatings

hybrid circuits

GS circuits
 . **hybrid circuits**
 RT electronic packaging
 printed circuits
 semiconductor devices
 transistor circuits

hybrid combustion

USE **hybrid propellant rocket engines**

hybrid composites

(added April 1992)
 GS composite materials
 . **hybrid composites**
 RT fiber composites
 hybrid structures
 laminates
 metal matrix composites
 polymer matrix composites
 reinforced plastics
 reinforcing fibers
 resin matrix composites
 superhybrid materials

hybrid computers

GS data processing equipment
 . computers
 . . **hybrid computers**
 RT analog computers
 digital computers

hybrid navigation systems

GS navigation
 . **hybrid navigation systems**
 RT navigation aids
 navigation instruments
 ∞ systems

hybrid propellant rocket engines

UF *hybrid combustion*
 GS engines
 . rocket engines

. . **hybrid propellant rocket engines**

. . . lithergol rocket engines
 RT booster rocket engines
 ∞ hybrid rocket engines
 internal combustion engines
 jet engines
 liquid propellant rocket engines
 restartable rocket engines
 solid propellant rocket engines
 sustainer rocket engines
 Vernier engines

hybrid propellants

UF *lithergolic propellants*
 GS propellants
 . **hybrid propellants**
 RT case bonded propellants
 chemical fuels
 cryogenic rocket propellants
 gaseous rocket propellants
 gelled rocket propellants
 high energy fuels
 high energy propellants
 hypergolic rocket propellants
 liquid rocket propellants
 metal fuels
 metal propellants
 solid propellant ignition
 solid propellants
 solid rocket propellants

hybrid propulsion

UF *dual mode propulsion*
 GS propulsion
 . chemical propulsion
 . . **hybrid propulsion**
 RT jet engines
 laser propulsion
 rocket engines
 rocket-based combined-cycle engines

∞ **hybrid rocket engines**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT ducted rocket engines
 hybrid propellant rocket engines
 liquid propellant rocket engines
 lithergol rocket engines
 solid propellant rocket engines
 turboramjet engines

hybrid structures

DEF An assembly constructed of interconnected rigid and flexible structural shapes; designed to sustain dynamic, static, and other loads.
 RT composite structures
 elastic properties
 flexible bodies
 hybrid composites
 rigid structures
 structural stability
 ∞ structures

hybrids (biology)

USE **genetic engineering**

hybrid-Trefftz finite element method

(added July 1998)
 USE **finite element method**
Trefftz method

Hydra

(added September 2006)
 DEF Natural satellite of Pluto discovered May 2005.
 GS celestial bodies
 . natural satellites
 . . Pluto satellites
 . . . **Hydra**
 RT Nix
 Pluto (planet)

hydrates

RT aqueous solutions
 water

hydration

DEF The formation of a compound by the combining of water with some other substance.

hydraulic analogies

RT chemical reactions
dehydration
hydrolysis
hydrophobicity

hydraulic actuators

USE **actuators**
hydraulic equipment

hydraulic analogies

GS analogies
. **hydraulic analogies**
RT computerized simulation
flow visualization
fluorics
fluidics
gas flow
numerical flow visualization
wave propagation

hydraulic control

UF *electrohydraulic control*
RT automatic control
∞ control
electronic control
engine control
fluid power
fluidics
∞ hydraulics
pneumatic control
remote control
solenoid valves

hydraulic equipment

UF *hydraulic actuators*
hydraulic heating sources
hydraulic pumps
hydraulic systems
hydraulic valves
GS **hydraulic equipment**
. aircraft hydraulic systems
RT airborne equipment
automatic control valves
cocks
cushions
∞ equipment
fluid amplifiers
fluid power
fluid switching elements
fly by tube control
gates (openings)
∞ hydraulics
motors
network analysis
network synthesis
pumps
relief valves
servocontrol
servomechanisms
shock absorbers
∞ systems
turbine wheels
valves
water hammer
wheel brakes

hydraulic fluids

DEF Liquids used in hydraulic systems for transmitting power.

GS liquids
. **hydraulic fluids**
. . . Skydrol (trademark)
RT fluid pressure
fluid transmission lines
∞ fluids
high temperature fluids
∞ hydraulics
oils
patch tests
transmission fluids
working fluids

hydraulic heating sources

USE **heat sources**
hydraulic equipment

hydraulic jets

UF *water jets*
GS fluid jets
. **hydraulic jets**

RT jet flow

hydraulic pumps

USE **hydraulic equipment**
pumps

hydraulic shock

GS mechanical shock
. **hydraulic shock**

hydraulic systems

USE **hydraulic equipment**

hydraulic test tunnels

UF *water tunnels*
GS test facilities
. **hydraulic test tunnels**
RT ∞ tunnels

hydraulic valves

USE **hydraulic equipment**
valves

∞ hydraulics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT fluid dynamics
fluid flow
fluid mechanics
fluid power
hydraulic control
hydraulic equipment
hydraulic fluids
hydrodynamic ram effect
hydrodynamics
hydrology
hydromechanics
hydrostatics
impedance
influence coefficient
limnology
mechanics (physics)
pipes (tubes)
pneumatics
pressure heads
thermo hydraulics
water
water flow
water pressure

hydrazides

RT hydrazines

hydrazine borane

GS boron compounds
. boron hydrides
. . boranes
. . . **hydrazine borane**
hydrazines
. **hydrazine borane**
hydrogen compounds
. hydrides
. . boron hydrides
. . . boranes
. . . . **hydrazine borane**

hydrazine engines

UF *NIMPHE (engine)*
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **hydrazine engines**
RT monomethylhydrazines
turbo rocket engines

hydrazine nitrate

GS nitrogen compounds
. nitrates
. . inorganic nitrates
. . . **hydrazine nitrate**

hydrazine nitroform

GS esters
. organic nitrates
. . nitroforms
. . . **hydrazine nitroform**
explosives
. **hydrazine nitroform**
nitrogen compounds
. nitrates

. . organic nitrates
. . . nitroforms
. . . . **hydrazine nitroform**
propellants
. **hydrazine nitroform**

hydrazine perchlorates

GS halogen compounds
. chlorine compounds
. perchlorates
. . . **hydrazine perchlorates**
hydrazines
. **hydrazine perchlorates**

hydrazines

GS **hydrazines**
. chlorpromazine
. dihydrazine
. dimethylhydrazines
. ethylene dihydrazine
. hydrazine borane
. hydrazine perchlorates
. methylhydrazine
. . monomethylhydrazines
. tetrafluorohydrazine
RT aroazine
amines
hydrazides
hydrazones
liquid rocket propellants
rocket propellants

hydrazinium compounds

GS nitrogen compounds
. **hydrazinium compounds**
RT ∞ chemical compounds

hydrazoic acid

GS acids
. **hydrazoic acid**
nitrogen compounds
. **hydrazoic acid**
RT nitrogen hydrides

hydrazones

GS nitrogen compounds
. **hydrazones**
RT hydrazines

hydrazonium compounds

RT ∞ chemical compounds

hydrides

GS hydrogen compounds
. **hydrides**
. borohydrides
. . aluminum borohydrides
. . . beryllium borohydrides
. boron hydrides
. . aluminum borohydrides
. . . beryllium borohydrides
. . boranes
. . . carborane
. . . . hydrazine borane
. . . . pentaboranes
. diborane
. dihydrides
. metal hydrides
. . aluminum hydrides
. . . aluminum borohydrides
. . . beryllium hydrides
. . . cesium hydrides
. . . lithium hydrides
. . . . lithium aluminum hydrides
. . . potassium hydrides
. . . sodium hydrides
. . . nitrogen hydrides
. . . amino radical
. phosphines
. silanes
. . chlorosilanes
. . . methyl chlorosilanes
. . zirconium hydrides
RT deuterides

hydrogen production

*hydroacoustics*USE **underwater acoustics***hydroaeromechanics*USE **aerodynamics****hydroballistics**GS ballistics
. **hydroballistics**RT ballistic ranges
hydrodynamics
torpedoes
underwater explosions
underwater trajectories*hydrobarophones*USE **hydrophones****hydroboration**GS chemical reactions
. **hydroboration****hydrobromic acid**GS acids
. **hydrobromic acid**
halogen compounds
. bromine compounds
. bromides
. . . **hydrobromic acid**
. halides
. bromides
. . . **hydrobromic acid****hydrobromides**GS halogen compounds
. bromine compounds
. bromides
. . . **hydrobromides**
. halides
. bromides
. . . **hydrobromides**
hydrogen compounds
. **hydrobromides****hydrocarbon combustion**GS combustion
. **hydrocarbon combustion**
RT explosions
fuel combustion
oxidation
propellant combustion
smog**hydrocarbon fuel production**GS fuel production
. **hydrocarbon fuel production**
RT agriculture
bioconversion
biomass energy production
energy technology
hydrogen fuels
lignite
solvent refined coal
waste utilization**hydrocarbon fuels**GS fuels
. chemical fuels
. . . **hydrocarbon fuels**
. . . diesel fuels
. . . fossil fuels
. . . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . . crude oil
. . . natural gas
. . . . liquefied natural gas
. . . peat
. . . shale oil
. . . gasoline
. . . jet engine fuels
. . . . JP-4 jet fuel
. . . . JP-5 jet fuel
. . . . JP-6 jet fuel
. . . . JP-7 jet fuel
. . . . JP-8 jet fuel
. . . synthaneRT acetylene
aircraft fuels
alkanes
amines
automobile fuels
butadiene
clean fuels
coal gasification
coal liquefaction
coal utilization
endothermic fuels
energy policy
environmental chemistry
ethane
ethylene
fuel production
heptanes
hexenes
high energy fuels
hydrogen fuels
hydrogen-based energy
hypergolic rocket propellants
kerogen
kerosene
methanation
methane
paraffins
propane
retort processing
rocket propellants
shale oil
storable propellants
synthetic fuels**hydrocarbon poisoning**GS diseases
. toxic diseases
. . . **hydrocarbon poisoning**
toxicity
. **hydrocarbon poisoning**
RT benzene poisoning
industrial safety
 ∞ poisoning
smog
toxicity and safety hazard
toxicology**hydrocarbons**GS organic compounds
. **hydrocarbons**
. . . aliphatic hydrocarbons
. . . . alkanes
. . . . butanes
. . . . cetane
. . . . ethane
. . . . heptanes
. . . . methane
. . . . nitropropane
. . . . nonanes
. . . . octanes
. . . . paraffins
. ceresin
. . . . pentanes
. neopentane
. . . . propane
. . . alkenes
. . . . butenes
. . . . ethylene
. vinylidene
. . . . hexenes
. . . . propylene
. . . . trienes
. . . alkynes
. . . . acetylene
. . . . oxyacetylene
. . . dienes
. . . . butadiene
. . . . heptadiene
. . . . hexadiene
. . . . polybutadiene
. . . carotenoids
. . . carotene
. . . cubane
. . . cyanoacetylene
. . . cyclic hydrocarbons
. . . anthracene
. . . benzene
. . . chlorobenzenes
. . . colchicine. . . cyclobutane
. . . cyclohexane
. . . cyclopropane
. . . durene
. . . indene
. . . menthol
. . . naphthalene
. . . naphthenes
. . . polycyclic aromatic hydrocarbons
. . . diphenyl compounds
. . . diphenyl hydantoin
. . . fluorohydrocarbons
. . . carbon tetrafluoride
. . . chlorofluoromethane
. . . polytetrafluoroethylene
. . . teflon (trademark)
. . . mesitylene
. . . methylene
. . . methylidyne
. . . natural gas
. . . liquefied natural gas
. . . phenanthrene
. . . pyrenes
. . . quinoxalines
. . . stilbene
. . . toluene
. . . triphenyls
. . . xylene
RT ∞ aromatic compounds
carbon compounds
cracking (chemical engineering)
organic peroxides**hydrochloric acid**GS acids
. **hydrochloric acid**
halogen compounds
. chlorine compounds
. . . chlorides
. . . . hydrogen chlorides
. . . . **hydrochloric acid**
. halides
. . . chlorides
. . . . hydrogen chlorides
. . . . **hydrochloric acid****hydrochlorides**GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **hydrochlorides**
. . . halides
. . . . chlorides
. . . . **hydrochlorides**
RT hydrogen chlorides**hydroclimatology**

DEF The study of the physical and often the chemical factors that characterize a particular environment.

GS climatology
. **hydroclimatology**
RT agroclimatology
hydrography
hydrology
meteorology
oceanography**hydrocracking**

DEF Technique for the catalytic conversion of coal into liquid fuels.

GS chemical reactions
. cracking (chemical engineering)
. . . **hydrocracking**
. . . hydrogenolysis
. . . **hydrocracking**
decomposition
. cracking (chemical engineering)
. . . **hydrocracking**
. . . hydrogenolysis
. . . **hydrocracking**
fractionation
. **hydrocracking**
RT coal gasification
coal liquefaction**hydrocyanic acid**UF *hydrogen cyanides*
prussic acid
GS acids

hydrodynamic coefficients

- . **hydrocyanic acid**
- hydrogen compounds
- . **hydrocyanic acid**
- nitrogen compounds
- . **hydrocyanic acid**

RT CN emission
HCN lasers

hydrodynamic coefficients

DEF The factors producing motions in floating objects in liquids.

GS coefficients

- . **hydrodynamic coefficients**

RT computational fluid dynamics

- ∞ drag coefficients
- flow distribution
- flow velocity
- liquid flow
- sea roughness
- ship hulls
- steady flow
- unsteady flow
- water waves

hydrodynamic equations

GS equations of motion

- . kinetic equations
- . . **hydrodynamic equations**
- . . . Burnett equations
- . . . Helmholtz vorticity equation

RT Boltzmann transport equation

- ∞ equations
- flow stability
- flow theory
- fluid mechanics
- gas dynamics
- hydrodynamics
- meteorology
- plasma dynamics

hydrodynamic ram effect

DEF The physical effect (force) transmitted to the walls of a liquid filled container by the action of a projectile penetrating the container and transferring its energy to the liquid as kinetic energy. The fluid, in turn, transfers this kinetic energy to the walls of the container, causing excessive structural damage.

UF *ram effect (hydrodynamics)*

RT ∞ effects

- fluid filled shells
- ∞ hydraulics
- hypervelocity impact
- impact
- kinetic energy
- liquid filled shells
- momentum transfer
- penetration

hydrodynamic stability

USE **flow stability**

hydrodynamic tunnels

USE **plasma jet wind tunnels**

hydrodynamics

GS mechanics (physics)

- . fluid mechanics
- . . fluid dynamics
- . . . **hydrodynamics**
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- . . hydromechanics
- . . . **hydrodynamics**
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics

RT ballast (mass)

- ∞ dynamics
- Earth sciences
- Euler equations of motion
- flow theory
- fluid flow
- fluid power
- gas dynamics
- ∞ hydraulics
- hydroballistics
- hydrodynamic equations
- hydrostatics

- internal flow
- Krook equation
- Lagrange coordinates
- ocean dynamics
- pressure gradients
- pressure heads
- seepage
- ship hulls
- thermohydraulics
- water
- water flow
- water hammer
- water pressure

hydroelasticity

GS mechanical properties

- . elastic properties
- . . **hydroelasticity**

RT compressibility

- compressible fluids
- modulus of elasticity
- thermoelasticity
- viscoelasticity

hydroelectric power stations

UF *hydropower stations*

GS stations

- . **hydroelectric power stations**

RT electric power plants

- electric power transmission
- hydroelectricity
- ∞ power plants
- ∞ power transmission
- turbogenerators
- water wheels

hydroelectricity

DEF Electric power produced by water power using water wheels, turbogenerators, or other conversion equipment.

GS electricity

- . **hydroelectricity**
- renewable energy
- . **hydroelectricity**

RT dams

- electric current
- ∞ electric power
- hydroelectric power stations
- ∞ power plants
- turbogenerators

hydrofluoric acid

UF *hydrogen fluorides*

GS acids

- . **hydrofluoric acid**
- halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **hydrofluoric acid**
- . . halides
- . . fluorides
- . . . **hydrofluoric acid**

hydrofoil boats

USE **hydrofoil craft**

hydrofoil craft

UF *hydrofoil boats*

RT captured air bubble vehicles

- hydrofoils
- hydroplanes (vehicles)
- ships

hydrofoil oscillations

GS oscillations

- . **hydrofoil oscillations**

RT flow stability

- flutter
- hydrofoils
- supercavitating flow

hydrofoils

GS **hydrofoils**

- . keels

RT airfoils

- ∞ blades
- elevators (control surfaces)
- fins
- ∞ foils
- foils (materials)

- guide vanes
- hulls (structures)
- hydrofoil craft
- hydrofoil oscillations
- hydroplanes (surfaces)
- hydroplaning
- landing gear
- marine rudders
- ships
- skis
- streamlining
- tail assemblies

hydroforming

GS metal working

- . **hydroforming**

RT dehydrogenation

hydrogen

GS chemical elements

- . **hydrogen**
- . . hydrogen isotopes
- . . . deuterium
- . . . hydrogen 4
- . . . metallic hydrogen
- . . . tritium
- . liquid hydrogen gases
- . **hydrogen**
- . . hydrogen isotopes
- . . . deuterium
- . . . hydrogen 4
- . . . metallic hydrogen
- . . . tritium
- . liquid hydrogen

RT Balmer series

- deuterium plasma
- fuels
- hydrogen atoms
- hydrogen ions
- hydrogen plasma
- hydrogenation
- hydrogenolysis
- hydronium ions
- metallicity
- Neptune atmosphere
- ortho hydrogen
- para hydrogen
- Paschen series
- Rydberg series
- synthane
- Uranus atmosphere

hydrogen 2

USE **deuterium**

hydrogen 3

USE **tritium**

hydrogen 4

GS chemical elements

- . hydrogen
- . . hydrogen isotopes
- . . . **hydrogen 4**
- . nuclides
- . isotopes
- . . . hydrogen isotopes
- **hydrogen 4**
- gases
- . hydrogen
- . . hydrogen isotopes
- . . . **hydrogen 4**

hydrogen air fuel cells

USE **hydrogen oxygen fuel cells**

hydrogen atoms

GS atoms

- . **hydrogen atoms**

RT H I regions

- hydrogen

hydrogen azides

GS explosives

- . **hydrogen azides**
- nitrogen compounds
- . azides (inorganic)
- . . **hydrogen azides**
- propellants

- . **hydrogen azides**
- hydrogen bombs*
- USE **fusion weapons**
- hydrogen bonds**
 - GS chemical bonds
 - . **hydrogen bonds**
 - RT molecular structure
 - water
- hydrogen chloride lasers*
- USE **HCL lasers**
- hydrogen chlorides**
 - GS halogen compounds
 - . chlorine compounds
 - . chlorides
 - . . . **hydrogen chlorides**
 - hydrochloric acid
 - . halides
 - . . chlorides
 - . . . **hydrogen chlorides**
 - hydrochloric acid
 - RT hydrochlorides
- hydrogen clouds**
 - GS **hydrogen clouds**
 - . H I regions
 - . H II regions
 - . Orion nebula
 - RT ∞ clouds
 - drop size
 - galactic rotation
 - gases
 - molecular clouds
 - neutral gases
 - plasma clouds
 - spin temperature
 - star formation
 - vapor phases
 - vapors
- hydrogen compounds**
 - GS **hydrogen compounds**
 - . deuterium compounds
 - . . deuterides
 - . . deuterium fluorides
 - . . heavy water
 - . hydrides
 - . . borohydrides
 - . . . aluminum borohydrides
 - . . . beryllium borohydrides
 - . . boron hydrides
 - . . . aluminum borohydrides
 - . . . beryllium borohydrides
 - . . . boranes
 - carborane
 - hydrazine borane
 - pentaboranes
 - . . diborane
 - . . dihydrides
 - . . metal hydrides
 - . . . aluminum hydrides
 - aluminum borohydrides
 - . . . beryllium hydrides
 - . . . cesium hydrides
 - . . . lithium hydrides
 - lithium aluminum hydrides
 - . . . potassium hydrides
 - . . . sodium hydrides
 - . . nitrogen hydrides
 - . . . amino radical
 - . . phosphines
 - . . silanes
 - . . . chlorosilanes
 - . . . methyl chlorosilanes
 - . . zirconium hydrides
 - . hydrobromides
 - . hydrocyanic acid
 - . hydrogen peroxide
 - . hydrogen sulfide
 - . hydrosulfites
 - . light water
 - RT acids
 - ∞ chemical compounds
- water
- hydrogen cyanide lasers*
- USE **HCN lasers**
- hydrogen cyanides*
- USE **hydrocyanic acid**
- hydrogen deuterium oxide*
- USE **heavy water**
- hydrogen embrittlement**
 - DEF A decrease in fracture strength of metals due to the incorporation of hydrogen in the metal lattice.
 - GS embrittlement
 - . **hydrogen embrittlement**
 - RT chemisorption
 - gas-metal interactions
 - iron
 - steels
- hydrogen engines**
 - DEF Internal combustion engines utilizing gaseous hydrogen as the fuel.
 - GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . **hydrogen engines**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . **hydrogen engines**
 - . turbine engines
 - . . gas turbine engines
 - . . . **hydrogen engines**
 - RT aircraft engines
 - automobiles
- hydrogen fluoride lasers*
- USE **HF lasers**
- hydrogen fluorides*
- USE **hydrofluoric acid**
- hydrogen fuels**
 - GS fuels
 - . chemical fuels
 - . . liquid fuels
 - . . . **hydrogen fuels**
 - RT cryogenic rocket propellants
 - deuterium
 - fuel cells
 - fuel production
 - gaseous rocket propellants
 - gelled propellants
 - hydrocarbon fuel production
 - hydrocarbon fuels
 - hydrogen-based energy
 - liquid hydrogen
 - liquid rocket propellants
 - ramjet engines
 - slush hydrogen
 - water splitting
- hydrogen ions**
 - GS ions
 - . **hydrogen ions**
 - RT acidity
 - H II regions
 - hydrogen
 - hydronium ions
 - pH
 - pH factor
 - positive ions
 - protons
- hydrogen isotopes**
 - GS chemical elements
 - . hydrogen
 - . . **hydrogen isotopes**
 - . . . deuterium
 - . . . hydrogen 4
 - . . . metallic hydrogen
 - . . . tritium
 - . nuclides
 - . . isotopes
 - . . . **hydrogen isotopes**
 - deuterium
 - hydrogen 4
 - metallic hydrogen
 - tritium
- . . . tritium
- gases
- . hydrogen
- . . **hydrogen isotopes**
- . . . deuterium
- . . . hydrogen 4
- . . . metallic hydrogen
- . . . tritium
- hydrogen masers**
 - DEF A stimulated emission device in which hydrogen gas provides an output signal with a high degree of stability and spectral purity.
 - GS stimulated emission devices
 - . masers
 - . . gas masers
 - . . . **hydrogen masers**
- hydrogen metabolism**
 - DEF The physical and chemical processes by which an organism transforms the complex hydrogen components of foodstuffs into simple hydrogen compounds by disassimilation and catabolism in the production of energy.
 - GS metabolism
 - . **hydrogen metabolism**
 - RT carbohydrate metabolism
 - nitrogen metabolism
 - oxygen metabolism
 - respiration
 - secretions
- hydrogen oxygen engines**
 - DEF Engines using liquid hydrogen as fuel and liquid oxygen as oxidizer. Used for hydrox engines and lox-hydrogen engines.
 - UF *hydrox engines*
 - LOX-hydrogen engines*
 - GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **hydrogen oxygen engines**
 - J-2 engine
 - M-1 engine
 - RL-10-A-1 engine
 - RL-10-A-3 engine
 - RT auxiliary propulsion
 - liquid air cycle engines
 - space station propulsion
 - turborocket engines
- hydrogen oxygen fuel cells**
 - UF *hydrogen air fuel cells*
 - GS electric generators
 - . direct power generators
 - . fuel cells
 - . . **hydrogen oxygen fuel cells**
 - electrochemical cells
 - . fuel cells
 - . . **hydrogen oxygen fuel cells**
 - RT phosphoric acid fuel cells
- hydrogen perchlorate**
 - GS halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **hydrogen perchlorate**
- hydrogen peroxide**
 - GS chalcogenides
 - . oxides
 - . . anhydrides
 - . . . peroxides
 - inorganic peroxides
 - **hydrogen peroxide**
 - . . dioxides
 - . . . **hydrogen peroxide**
 - hydrogen compounds
 - . **hydrogen peroxide**
 - RT rocket oxidizers
- hydrogen plasma**
 - GS particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **hydrogen plasma**
 - deuterium plasma
 - corpuscular radiation
 - energetic particles

hydrogen production

. . . plasmas (physics)
. . . . **hydrogen plasma**
. deuterium plasma
RT argon plasma
deuterium
helium plasma
hydrogen
oxygen plasma
solar wind
Stark effect

hydrogen production

DEF Production of hydrogen for fuel purposes by photosynthetic, chemical, electrical, thermal, electrochemical, or other means.

RT electrolysis
energy conversion
fuels
hydrides
hydrogen-based energy
hydrolysis
lignite
solar energy conversion
thermal dissociation
water splitting

hydrogen recombinations

GS recombination reactions
. **hydrogen recombinations**

hydrogen sulfide

GS chalcogenides
. sulfides
. . inorganic sulfides
. . . **hydrogen sulfide**
hydrogen compounds
. **hydrogen sulfide**
sulfur compounds
. sulfides
. . inorganic sulfides
. . . **hydrogen sulfide**

hydrogenation

GS chemical reactions
. reduction (chemistry)
. . **hydrogenation**
RT asphaltenes
cyclohexane
dehydrogenation
hydrogen
refining

hydrogen-based energy

RT ∞ energy
energy technology
fuel cells
gas mixtures
hydrocarbon fuels
hydrogen fuels
hydrogen production
liquid hydrogen
nickel hydrogen batteries
renewable energy

hydrogenolysis

GS chemical reactions
. **hydrogenolysis**
. . hydrocracking
decomposition
. **hydrogenolysis**
. . hydrocracking
RT cracking (chemical engineering)
dehydrogenation
hydrogen
∞ reduction

hydrogenomonas

GS autotrophs
. **hydrogenomonas**
microorganisms
. bacteria
. . **hydrogenomonas**

hydrogeology

DEF The science that deals with subsurface waters and with related geologic aspects of surface waters. The term is also used in the more restrictive sense of ground water geology.

GS geology
. **hydrogeology**

hydrology
. **hydrogeology**
RT aquifers
core sampling
erosion
flood plains
flood predictions
geysers
glaciology
hydrology models
hydrostatics
∞ science
soil erosion
stratigraphy
watersheds

hydrography

DEF The science that deals with the physical aspects of all waters on the Earth's surface, especially the compilation of navigational charts.

RT geophysics
hydroclimatology
hydrology
hydrometeorology
ice mapping
limnology
meteorology
ocean currents
ocean surface
oceanography

hydrokinetics

USE **hydromechanics**

hydrological cycle

UF *water cycle (hydrology)*
GS cycles
. **hydrological cycle**
RT air water interactions
Earth hydrosphere
evaporation
hydrology
hydrology models
hydrometeorology
precipitation (meteorology)

hydrology

(added February 1991)

DEF The science that deals with global water (both liquid and solid), its properties, circulation, and distribution, on and under the Earth's surface and in the atmosphere through evapo-transpiration or is discharged into oceans. In recent years, the scope of hydrology has been expanded to include environmental and economic aspects.

UF *hydroscience*

GS **hydrology**

. hydrogeology
RT alluvium
aquifers
climatology
drainage
drainage patterns
drought
Earth hydrosphere
Earth planetary structure
Earth sciences
flood control
flood damage
flood plains
flood predictions
floods
geochemistry
geophysics
Great Salt Lake (UT)

∞ hydraulics

hydroclimatology
hydrography
hydrological cycle
hydrometeorology
hydrometeors
ice mapping
International Hydrological Decade
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
limnology

marine chemistry
meteorology
oceanography
polar meteorology
precipitation (meteorology)
rain
streams
structural properties (geology)
water
water management
water resources
watersheds

hydrology models

DEF Mathematical or physical representations by which the circulation, distribution, and properties of the waters of the Earth can be studied.

GS models
. **hydrology models**
RT climate models
drainage
floods
hydrogeology
hydrological cycle
precipitation (meteorology)
rain
streams
water flow

hydrolysis

GS chemical reactions
. **hydrolysis**
RT ammonolysis
cracking (chemical engineering)
extraction
hydration
hydrogen production
phosphatases

hydromagnetic flow

USE **magnetohydrodynamic flow**

hydromagnetic stability

USE **magnetohydrodynamic stability**

hydromagnetic waves

USE **magnetohydrodynamic waves**

hydromagnetics

USE **magnetohydrodynamics**

hydromagnetism

USE **magnetohydrodynamics**

hydromechanics

UF *hydrokinetics*
GS mechanics (physics)
. fluid mechanics
. . **hydromechanics**
. . . hydrodynamics
. . . . elasto-hydrodynamics
. . . . electrohydrodynamics
. . . . magnetohydrodynamics
. . . hydrostatics
. . . magnetohydrostatics
RT fluid dynamics
fluid flow
∞ hydraulics
kinetics
∞ science
water

hydrometallurgy

RT chlorination
electrodialysis
filtration
ion exchanging
leaching
∞ metallurgy
∞ precipitation
precipitation (chemistry)
refining
sulfation

hydrometeorology

GS meteorology
. **hydrometeorology**
. . marine meteorology
RT agrometeorology

hydrography
hydrological cycle
hydrology
precipitation (meteorology)
water balance

hydrometeors

(added March 1995)

DEF A minute droplet of water or crystal of ice falling through or suspended in the atmosphere.

GS condensates
. hydrometeors
RT atmospheric moisture
dew
drops (liquids)
fog
hydrology
ice nuclei
precipitation (meteorology)

hydrometers

DEF Instruments used for measuring the specific gravity of a liquid.

GS measuring instruments
. hydrometers
RT chemical analysis
density (mass/volume)
density measurement
weight measurement

hydronium ions

GS ions
. molecular ions
. . hydronium ions
. positive ions
. . hydronium ions
RT hydrogen
hydrogen ions

hydrophobicity

(added June 2000)

DEF The degree to which a substance is insoluble in water, or resists wetting or hydration.

GS hygral properties
. hydrophobicity
RT adsorption
chemical properties
hydration
hygroscopicity
moisture resistance
∞ properties
solubility
sorption
surface properties
surfactants
waterproofing
wettability
wetting

hydrophones

DEF Microphones suitable for use in water or other liquid. Used for hydrobarophones.

UF hydrobarophones
GS transducers
. sound transducers
. . electroacoustic transducers
. . . hydrophones
RT microphones
sonar
sonobuoys

hydroplanes (surfaces)

UF hydroskis
RT hydrofoils
hydroplaning
skis
∞ systems

hydroplanes (vehicles)

RT hydrofoil craft
hydroplaning
∞ vehicles

hydroplaning

RT hydrofoils
hydroplanes (surfaces)
hydroplanes (vehicles)
skid landings
skidding

water landing

hydroponics

DEF Growing of plants in a nutrient with the mechanical support of an inert medium such as sand.

RT agriculture
aquatic plants
aquaculture
plants (botany)
vegetation growth

hydropower stations

USE hydroelectric power stations

hydropyrolysis

DEF A coal-to-liquid process in which bituminous coal, lignite, tars, sand and related materials are rapidly heated to 1000-1100 degrees K in pressurized hydrogen gasification reactors to generate pure methane.

GS gasification
. coal gasification
. . hydropyrolysis
RT coal
coal liquefaction
lignite
methanation
methane

hydrosience

USE hydrology

hydroskis

USE hydroplanes (surfaces)

hydrosphere (Earth)

USE Earth hydrosphere

hydrospinning

GS forming techniques
. metal spinning
. . hydrospinning
metal working
. metal spinning
. . hydrospinning
spin
. metal spinning
. . hydrospinning

hydrostatic pressure

DEF A state of stress in which all the principal stresses are equal (and there is no shear stress).

GS pressure
. static pressure
. . hydrostatic pressure
RT center of pressure
elevation
head (fluid mechanics)
hydrostatics
isostatic pressure
pressure dependence
pressure heads
transition pressure
water pressure

hydrostatics

GS mechanics (physics)
. fluid mechanics
. . hydromechanics
. . . hydrostatics
. . . . magnetohydrostatics
statics
. hydrostatics
. . magnetohydrostatics

RT aerostatics
elevation
head (fluid mechanics)
∞ hydraulics
hydrodynamics
hydrogeology
hydrostatic pressure
isostasy
pressure gradients
pressure heads
water

water pressure

hydrosulfites

GS hydrogen compounds
. hydrosulfites
sulfur compounds
. sulfites
. . hydrosulfites

hydrothermal crystal growth

GS growth
. crystal growth
. . hydrothermal crystal growth
RT electroepitaxy

hydrothermal stress analysis

DEF The evaluation of the combined effects of temperature-humidity cycling.

RT hydrothermal systems
hygral properties
hygroscopicity
moisture content
moisture resistance

hydrothermal systems

DEF Energy systems utilizing hot water from geysers, hot springs, solar heating, and other sources.

RT aquifers
energy conversion
geothermal resources
geysers
heating
hydrothermal stress analysis
solar heating
submarine hydrothermal vents
∞ systems

hydrox engines

USE hydrogen oxygen engines

hydroxides

GS hydroxides
. lithium hydroxides
. potassium hydroxides
. sodium hydroxides
RT alkalis

hydroxycorticosteroid

GS organic compounds
. lipids
. . steroids
. . . corticosteroids
. . . . hydroxycorticosteroid
. cortisone
secretions
. endocrine secretions
. hormones
. . corticosteroids
. . . hydroxycorticosteroid
. cortisone
RT adrenal metabolism

hydroxyl compounds

GS hydroxyl compounds
. alcohols
. . ethyl alcohol
. glycols
. . isopropyl alcohol
. methyl alcohol
. phenols
. . bisphenols
. . cresols
. . phloroglucinol
. thymol
. polyvinyl alcohol
. triols
. . cyanuric acid
RT ∞ chemical compounds
organic compounds

hydroxyl emission

GS electromagnetic radiation
. radio waves
. . radio emission
. . . hydroxyl emission
emission
. radio emission
. . hydroxyl emission
RT emission spectra

hydroxyl radicals

radio sources (astronomy)

hydroxyl radicals

- GS radicals
 - . free radicals
 - . . **hydroxyl radicals**
- RT alcohols
 - ∞ chemistry
 - formyl ions
 - glycols
 - ions

hydroxylamine sulfate

- GS organic compounds
 - . amines
 - . . **hydroxylamine sulfate**
- sulfur compounds
 - . sulfates
 - . . **hydroxylamine sulfate**

hydroxylammonium perchlorates

- GS ammonium compounds
 - . **hydroxylammonium perchlorates**
- halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **hydroxylammonium perchlorates**

hygiene

- GS **hygiene**
 - . oral hygiene
- RT bathing
 - cleanliness
 - consumables (spacecrew supplies)
 - health
 - housekeeping (spacecraft)
 - public health
 - sanitation

hygral properties

- DEF The affinity of something for moisture.
- GS **hygral properties**
 - . hydrophobicity
- RT humidity
 - hydrothermal stress analysis
 - moisture
 - porosity
 - ∞ properties

hygrometers

- DEF Instruments for measuring the humidity of the atmosphere.
- GS measuring instruments
 - . moisture meters
 - . . **hygrometers**
 - . . . psychrometers
- RT chemical analysis
 - dew point
 - humidity
 - humidity measurement
 - meteorological instruments

hygroscopicity

- RT chemical properties
 - hydrophobicity
 - hydrothermal stress analysis
 - material absorption
 - moisture content
 - moisture resistance
- ∞ physical properties
 - solubility
 - wettability

Hyla-Star rocket vehicle

- GS launch vehicles
 - . **Hyla-Star rocket vehicle**
- rocket vehicles
 - . single stage rocket vehicles
 - . . **Hyla-Star rocket vehicle**
- RT liquid propellant rocket engines
 - Titan 2 ICBM

Hylleraas coordinates

- GS coordinates
 - . **Hylleraas coordinates**
- RT quantum mechanics

two body problem

hyoscine

- UF *scopolamine*
- GS bases (chemical)
 - . alkaloids
 - . . **hyoscine**
- epoxy compounds
 - . **hyoscine**
- nitrogen compounds
 - . alkaloids
 - . . **hyoscine**
- organic compounds
 - . amines
 - . . **hyoscine**
- cyclic compounds
 - . . heterocyclic compounds
 - . . . alkaloids
 - **hyoscine**

hyperbaric chambers

DEF Chambers used to induce a decrease in ambient pressure as would occur in ascending to altitude. This type of chamber is primarily used for training and experimental purposes. It is also called an altitude chamber or a decompression chamber.

- GS compartments
 - . test chambers
 - . . pressure chambers
 - . . . **hyperbaric chambers**
- RT ∞ chambers
 - high pressure
 - vacuum chambers

hyperbolas

DEF Open curves with two branches, all points of which have a constant difference in distance from two fixed points called foci.

- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . conics
 - **hyperbolas**
- RT hyperbolic trajectories

hyperbolic coordinates

- UF *hyperbolic space*
- GS coordinates
 - . **hyperbolic coordinates**

hyperbolic differential equations

- GS analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **hyperbolic differential equations**
- RT Dirichlet problem
 - ∞ equations
 - essentially non-oscillatory schemes
 - wave equations

hyperbolic functions

- GS analysis (mathematics)
 - . complex variables
 - . . **hyperbolic functions**
 - . real variables
 - . . **hyperbolic functions**
- functions (mathematics)
 - . **hyperbolic functions**
- RT exponential functions
 - ∞ hyperbolic systems
 - method of characteristics
 - orthogonal functions
 - Riemann waves
 - Riesz theorem

hyperbolic navigation

DEF Radio navigation in which a hyperbolic line of position is established by signals received from two stations at a constant time difference.

- GS navigation
 - . radio navigation
 - . . **hyperbolic navigation**
 - . . . Decca navigation
 - . . . LORAC navigation system
 - . . . loran
 - loran C
 - loran D
 - . . . Shoran

- RT air navigation
 - ∞ hyperbolic systems
 - inertial navigation
 - surface navigation

hyperbolic reentry

- GS atmospheric entry
 - . reentry
 - . . **hyperbolic reentry**
- RT reentry trajectories

hyperbolic space

USE **hyperbolic coordinates**

∞ hyperbolic systems

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT hyperbolic functions
 - hyperbolic navigation
- ∞ systems

hyperbolic trajectories

- GS trajectories
 - . **hyperbolic trajectories**
- RT celestial mechanics
 - escape velocity
 - hyperbolas
 - spacecraft trajectories

hyperbranched polymers

(added October 2000)

USE **dendrimers**

hypercapnia

- GS carbon dioxide tension
 - . **hypercapnia**
- RT blood
 - ∞ breathing
 - respiratory rate
 - respiratory system

hypercube multiprocessors

DEF Distributed-memory, message-passing multiprocessors designed to reduce the number of interconnections compared to the number of processors. Other simple geometries such as rings, meshes, or trees of processors can be embedded in hypercubes.

- GS data processing equipment
 - . computers
 - . . **hypercube multiprocessors**
- RT architecture (computers)
 - interprocessor communication
 - multiprocessing (computers)
 - parallel computers
 - parallel processing (computers)
 - sorting algorithms
 - supercomputers

hyperfine structure

- RT atomic structure
 - fine structure
 - line spectra
 - muon spin rotation
 - spectrum analysis
- ∞ structures

hypergeometric functions

- UF *Jacobi polynomials*
- GS analysis (mathematics)
 - . complex variables
 - . . **hypergeometric functions**
 - functions (mathematics)
 - . **hypergeometric functions**
- RT Bessel functions
 - geometry
 - hyperspaces

hypergeometry

USE **hyperspaces**

hyperglycemia

- GS metabolism
 - . carbohydrate metabolism
 - . . **hyperglycemia**

hypergolic rocket propellants

- GS propellants
 - . rocket propellants
 - . . liquid rocket propellants

... **hypergolic rocket propellants**
 RT cryogenic rocket propellants
 gelled rocket propellants
 hybrid propellants
 hydrocarbon fuels
 monomethylhydrazines
 pyrophoric materials
 solid propellant ignition
 spontaneous combustion
 storable propellants

hypergravity

(added June 2001)

USE **high gravity environments****Hyperion**

DEF One of the natural satellites of Saturn orbiting at a mean distance of 1,481,000 kilometers.

GS celestial bodies
 . natural satellites
 . . icy satellites
 . . . **Hyperion**
 . . Saturn satellites
 . . . **Hyperion**
 RT Saturn (planet)

hyperkinesia

DEF Excessive exercise, that is often accompanied by uncontrollable muscular movement.

GS physical exercise
 . **hyperkinesia**
 RT exhaustion
 fatigue (biology)
 hypokinesia
 stress (physiology)
 work capacity

*hypermedia*USE **multimedia****hypernea**

RT mental performance

hypernuclei

GS particles
 . charged particles
 . . energetic particles
 . . . nuclei (nuclear physics)
 **hypernuclei**
 . corpuscular radiation
 . . energetic particles
 . . . nuclei (nuclear physics)
 **hypernuclei**
 RT elementary particles
 radioactive decay

hyperons

DEF In the classification of subatomic particles according to mass, the heaviest of such particles. Some large and highly unstable components of cosmic rays are hyperons.

GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **hyperons**
 xi hyperons
 . . fermions
 . . . baryons
 **hyperons**
 xi hyperons
 . . hadrons
 . . . baryons
 **hyperons**
 xi hyperons
 . . mesons
 **hyperons**
 xi hyperons
 . nuclear particles
 . . bosons
 . . . mesons
 **hyperons**
 xi hyperons
 RT antiparticles
 baryon resonance
 charged particles
 meson resonance
 nucleons

strangeness

hyperopia

GS acuity
 . visual acuity
 . . **hyperopia**
 defects
 . **hyperopia**
 RT eye diseases
 vision

hyperoxia

DEF A condition in which the total oxygen content of the body is increased above that normally existing at sea level. Used for oxygen toxicity.

UF *oxygen toxicity*
 RT hyperventilation
 oximetry
 oxygen consumption
 toxic diseases
 toxicity

hyperplanes

GS analysis (mathematics)
 . real variables
 . . **hyperplanes**
 RT hyperspaces
 polytopes
 set theory

hyperpneaRT ∞ breathing
 respiratory rate**hypersomnia**

GS sleep
 . **hypersomnia**

hypersonic aircraft

GS hypersonic vehicles
 . **hypersonic aircraft**
 . . hypersonic gliders
 . . . X-20 aircraft
 RT aerospace planes
 ∞ aircraft
 boostglide vehicles
 hypersonics
 jet aircraft
 ∞ low wing aircraft
 research aircraft
 supersonic aircraft
 sweptback tail surfaces
 sweptback wings
 trapezoidal tail surfaces

hypersonic boundary layer

GS boundary layers
 . **hypersonic boundary layer**
 RT laminar boundary layer
 thermal boundary layer
 turbulent boundary layer

hypersonic combustion

GS combustion
 . **hypersonic combustion**
 RT erosive burning
 fuel combustion

hypersonic flight

RT aerodynamics
 ∞ flight
 hypersonics
 missiles
 rocket flight
 supersonic flight
 waveriders
 X-43 vehicle

hypersonic flow

DEF In aerodynamics, flow of a fluid over a body at speeds much greater than the speed of sound and in which the shock waves start at a finite distance from the surface of the body.

GS fluid flow
 . **hypersonic flow**
 RT aerodynamics
 Burnett equations
 cascade wind tunnels
 compressible flow

flow velocity
 gas flow
 hypersonics
 hypervelocity wind tunnels
 Lighthill gas model
 shock tubes
 shock tunnels
 shock waves
 supersonic flow
 wind tunnels

hypersonic forces

GS aerodynamic forces
 . **hypersonic forces**
 RT aerodynamic drag
 hypersonics
 lift

hypersonic gliders

DEF Unpowered vehicles, specifically reentry vehicles, designed to flow at hypersonic speeds.

GS gliders
 . **hypersonic gliders**
 . . X-20 aircraft
 hypersonic vehicles
 . hypersonic aircraft
 . . **hypersonic gliders**
 . . . X-20 aircraft
 RT aerospace planes
 ∞ aircraft
 ASSET gliders
 boostglide vehicles
 HL-10 reentry vehicle
 HLD-35 reentry vehicle
 lifting reentry vehicles
 paragliders

hypersonic heat transfer

GS transmission
 . heat transmission
 . . heat transfer
 . . . aerodynamic heat transfer
 **hypersonic heat transfer**
 RT aerothermodynamics
 hypersonics
 supersonic heat transfer

hypersonic inlets

GS intake systems
 . air intakes
 . . **hypersonic inlets**
 RT bypass ratio
 ∞ diffusers
 engine inlets
 inlet airframe configurations
 nose inlets
 side inlets
 supersonic inlets

hypersonic nozzles

RT conical nozzles
 ∞ nozzles
 rocket nozzles
 supersonic nozzles
 transonic nozzles
 wind tunnel nozzles

hypersonic reentry

GS atmospheric entry
 . reentry
 . . **hypersonic reentry**
 . . . uncontrolled reentry (spacecraft)
 RT aerodynamic heating
 aerothermodynamics
 Berenice rocket vehicle
 boundary layer plasmas
 entry guidance (STS)
 reentry effects
 reentry physics
 spacecraft reentry

hypersonic shock

RT hypersonics
 Mach cones
 noise (sound)
 shock waves

hypersonic speed

SN (MACH 5 OR GREATER)

hypersonic test apparatus

- GS rates (per time)
 - . **hypersonic speed** velocity
 - . **hypersonic speed**
- RT high speed
- hypersonics
- ∞ hypervelocity
- supersonic speed

hypersonic test apparatus

- RT hypersonics
- hypervelocity wind tunnels
- missile ranges
- supersonic test apparatus
- ∞ test equipment

hypersonic vehicles

- GS **hypersonic vehicles**
 - . hypersonic aircraft
 - . . hypersonic gliders
 - . . . X-20 aircraft
 - . X-30 vehicle
 - . X-37 vehicle
 - . X-43 vehicle
- RT ∞ flight vehicles
- HOPE aerospace plane
- hypersonics
- ∞ insulated structures
- National Aerospace Plane Program
- recoverable spacecraft
- reentry vehicles
- ∞ spacecraft
- test vehicles
- ∞ vehicles
- waveriders
- ∞ winged vehicles

hypersonic wakes

- GS wakes
 - . **hypersonic wakes**
- RT aircraft wakes
- bow waves
- hypersonics
- shock waves
- supersonic wakes

hypersonic wind tunnels

- GS test facilities
 - . wind tunnels
 - . . **hypersonic wind tunnels**
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
- RT blowdown wind tunnels
- combustion wind tunnels
- hypervelocity wind tunnels
- low density wind tunnels
- magnetic pistons
- shock tubes
- subsonic wind tunnels
- supersonic wind tunnels
- transonic wind tunnels

hypersonics

DEF That branch of aerodynamics that deals with hypersonic flow.

- GS mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . gas dynamics
 - aerodynamics
 - **hypersonics**
- RT aerothermodynamics
- hypersonic aircraft
- hypersonic flight
- hypersonic flow
- hypersonic forces
- hypersonic heat transfer
- hypersonic shock
- hypersonic speed
- hypersonic test apparatus
- hypersonic vehicles
- hypersonic wakes
- supersonic speed
- supersonics

hyperspaces

- UF *hypergeometry*
- RT hypergeometric functions

- hyperplanes
- hyperspheres
- phase-space integral
- ∞ space

hyperspheres

- RT geometry
- hyperspaces
- real variables

hypertension

- GS drugs
 - . vasoconstrictor drugs
 - . . **hypertension**
 - . . . organic compounds
 - peptides
 - polypeptides
 - **hypertension**
 - secretions
 - endocrine secretions
 - hormones
 - **hypertension**

hypertension

- GS pressure
 - . blood pressure
 - . . **hypertension**
- RT myocardial infarction
- tranquilizers

hypertext

- (added July 1995)
- RT artificial intelligence
- document markup languages
- electronic publishing
- human-computer interface
- information retrieval
- knowledge representation

hyperthermia

- RT body temperature
- fever
- heat stroke
- skin temperature (biology)
- thermoregulation

hypertonia

- USE **osmosis**

hypertrophy

- USE **growth**

∞ hypervelocity

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF Extremely high velocity. Applied by physicists to speeds approaching the speed of light, but generally implies speeds of the order of satellite speed and greater.
- RT escape velocity
- hypersonic speed
- orbital velocity
- relativistic velocity

hypervelocity accelerators

- USE **hypervelocity guns**

hypervelocity cratering

- USE **hypervelocity projectiles**
- projectile cratering**

hypervelocity flow

- GS fluid flow
 - . **hypervelocity flow**
- RT flow velocity
- supersonic flow

hypervelocity guns

- UF *hypervelocity accelerators*
- RT ∞ accelerators
 - ballistics
 - gas guns
- ∞ guns
 - guns (ordnance)
 - railgun accelerators
 - ram accelerators

hypervelocity impact

- GS impact
 - . **hypervelocity impact**

- RT asteroid collisions
- cometary collisions
- Deep Impact Mission
- hydrodynamic ram effect
- impact melts
- impact velocity
- mechanical shock
- meteorite collisions
- meteoritic damage
- point impact
- projectile cratering
- Tempel 1 comet

hypervelocity launchers

- GS launchers
 - . **hypervelocity launchers**
- RT gun launchers
- railgun accelerators
- ram accelerators

hypervelocity projectiles

- UF *hypervelocity cratering*
- GS projectiles
 - . **hypervelocity projectiles**
- RT ∞ bombardment
- Deep Impact Mission
- light gas guns
- meteoroids
- micrometeorites
- projectile cratering
- simulation
- Tempel 1 comet

hypervelocity wind tunnels

- SN (ABOVE MACH 10)
- GS test facilities
 - . wind tunnels
 - . . **hypervelocity wind tunnels**
 - . . . cascade wind tunnels
 - . . . hotshot wind tunnels
 - . . . plasma jet wind tunnels
 - . . . shock tunnels
- RT blowdown wind tunnels
- combustion wind tunnels
- hypersonic flow
- hypersonic test apparatus
- hypersonic wind tunnels
- low density wind tunnels
- magnetic pistons
- shock tubes
- supersonic wind tunnels

hyperventilation

- DEF Overbreathing. A respiratory minute volume, or pulmonary ventilation that is greater than normal.
- RT acidosis
- alkalosis
- hyperoxia

hypervolemia

- RT blood circulation
- blood volume
- circulatory system

hypnosis

- GS sleep
 - . **hypnosis**
- RT anesthesia
- suggestion

hypobaric atmospheres

- RT altitude simulation
- altitude tolerance
- ∞ atmospheres
 - high altitude breathing
 - high altitude environments
 - high altitude pressure
 - low pressure
 - vacuum tests

hypocapnia

- DEF Deficiency of carbon dioxide in the blood and body tissues, which may result in dizziness, confusion, and muscular cramps.
- GS carbon dioxide tension
 - . **hypocapnia**

- RT blood
- hypodermis**
GS tissues (biology)
. **hypodermis**
- hypodynamia**
RT hindlimb suspension
muscles
muscular function
- hypoelasticity**
GS mechanical properties
. elastic properties
. . **hypoelasticity**
- hypoglycemia**
GS metabolism
. carbohydrate metabolism
. . **hypoglycemia**
- hypogravity*
(added June 2001)
USE **microgravity**
- hypokinesia**
RT glucocorticoids
head down tilt
hindlimb suspension
hyperkinesia
muscular function
musculoskeletal system
physical exercise
- hypometabolism**
GS metabolism
. **hypometabolism**
RT thyroid gland
- hypophysis*
USE **pituitary gland**
- hypotension**
GS pressure
. blood pressure
. . **hypotension**
RT hemorrhages
- hypothalamus**
GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **hypothalamus**
. nervous system
. . central nervous system
. . . brain
. . . . diencephalon
. **hypothalamus**
RT pituitary gland
- hypothermia**
RT body temperature
skin temperature (biology)
thermoregulation
- hypotheses**
GS **hypotheses**
- . expectancy hypothesis
. intermittency hypothesis
. Lagrange similarity hypothesis
. null hypothesis
. vorticity transport hypothesis
- RT assumptions
inference
mathematical logic
quality control
theorems
∞ theories
theses
- hypothetical particles**
(added November 1999)
GS particles
. elementary particles
. . **hypothetical particles**
. . . gluons
. . . gravitinos
. . . gravitons
. . . partons
. . . quarks
. . . tachyons
. . . weakly interacting massive particles
- hypothetical planets**
(added June 1998)
UF *Phaethon* (*hypothetical planet*)
planet X
rogue planets
transplutonic planets
GS celestial bodies
. planets
. . **hypothetical planets**
RT comets
extrasolar planets
planetary orbits
- hypotonia**
GS muscular tonus
. **hypotonia**
RT muscular function
- hypoventilation**
DEF A respiratory minute volume, or pulmonary ventilation that is less than normal. Also called underbreathing.
GS rates (per time)
. respiratory rate
. . **hypoventilation**
- hypovolemia**
RT blood circulation
blood volume
- hypoxemia**
DEF The condition of reduction of the normal oxygen tension in the blood.
GS pressure
. partial pressure
. . oxygen tension
. . . **hypoxemia**
- RT hypoxia
- hypoxia**
DEF Oxygen want or deficiency; any state wherein a physiologically inadequate amount of oxygen is available to, or utilized by, tissue without respect to cause or degree. Used for oxygen deficiency.
UF *oxygen deficiency*
RT anoxia
fasting
hypoxemia
necrosis
oximetry
oxygen consumption
stress (physiology)
- hypsoigraphy**
GS geography
. **hypsoigraphy**
RT contours
datum (elevation)
elevation
mapping
maps
relief maps
topography
- hypsoimeters**
GS measuring instruments
. **hypsoimeters**
RT altimeters
barometers
meteorological instruments
pressure gages
- hysteresis**
DEF Any of several effects resembling a kind of internal friction, accompanied by the generation of heat within the substance affected. The delay of an indicator in registering a change in a parameter being measured.
RT accuracy
antiferroelectricity
antiferromagnetism
damping
dynamic characteristics
eddy currents
electrical properties
errors
internal friction
magnetic permeability
magnetic properties
mechanical properties
optical bistability
∞ physical properties
precision
retarding
shear properties
tensile strength
time lag
tolerances (mechanics)
viscoelasticity
viscoplasticity
- HYTIME*
USE **document markup languages**

I beams

- GS structural members
 - . beams (supports)
 - . . **I beams**
- RT cantilever beams
 - . curved beams
 - . trusses

I2S cameras

- GS optical equipment
 - . cameras
 - . . **I2S cameras**
 - . photographic equipment
 - . cameras
 - . . **I2S cameras**
- RT aircraft instruments
 - . multispectral photography
 - . spacecraft instruments

Iapetus

- DEF A satellite of Saturn orbiting at a mean distance of 3,562,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . icy satellites
 - . . . **Iapetus**
 - . . Saturn satellites
 - . . . **Iapetus**
- RT Charon
 - . Saturn (planet)

IBM 360 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 360 computer**
 - . . IBM computers
 - . . . **IBM 360 computer**

IBM 370 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 370 computer**
 - . . IBM computers
 - . . . **IBM 370 computer**

IBM 650 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 650 computer**
 - . . IBM computers
 - . . . **IBM 650 computer**

IBM 704 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 704 computer**
 - . . IBM computers
 - . . . **IBM 704 computer**

IBM 709 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 709 computer**
 - . . IBM computers
 - . . . **IBM 709 computer**

IBM 1130 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 1130 computer**
 - . . IBM computers
 - . . . **IBM 1130 computer**

IBM 1401 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 1401 computer**
 - . . IBM computers
 - . . . **IBM 1401 computer**

IBM 1410 computer

- GS data processing equipment

- . computers
 - . . digital computers
 - . . . **IBM 1410 computer**
 - . . IBM computers
 - . . . **IBM 1410 computer**

IBM 1620 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 1620 computer**
 - . . IBM computers
 - . . . **IBM 1620 computer**

IBM 2250 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 2250 computer**
 - . . IBM computers
 - . . . **IBM 2250 computer**

IBM 7030 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7030 computer**
 - . . IBM computers
 - . . . **IBM 7030 computer**

IBM 7040 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7040 computer**
 - . . IBM computers
 - . . . **IBM 7040 computer**

IBM 7044 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7044 computer**
 - . . IBM computers
 - . . . **IBM 7044 computer**

IBM 7070 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7070 computer**
 - . . IBM computers
 - . . . **IBM 7070 computer**

IBM 7074 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7074 computer**
 - . . IBM computers
 - . . . **IBM 7074 computer**

IBM 7090 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7090 computer**
 - . . IBM computers
 - . . . **IBM 7090 computer**

IBM 7094 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **IBM 7094 computer**
 - . . IBM computers
 - . . . **IBM 7094 computer**

IBM computers

- GS data processing equipment
 - . computers
 - . . **IBM computers**
 - . . . IBM 360 computer
 - . . . IBM 370 computer
 - . . . IBM 650 computer
 - . . . IBM 704 computer
 - . . . IBM 709 computer
 - . . . IBM 1130 computer
 - . . . IBM 1401 computer

- . . . IBM 1410 computer
 - . . . IBM 1620 computer
 - . . . IBM 2250 computer
 - . . . IBM 7030 computer
 - . . . IBM 7040 computer
 - . . . IBM 7044 computer
 - . . . IBM 7070 computer
 - . . . IBM 7074 computer
 - . . . IBM 7090 computer
 - . . . IBM 7094 computer
 - . . . IBM personal computers
- RT digital computers

IBM PC

- USE **IBM personal computers**

IBM personal computers

(added September 1992)

SN (INCLUDES IBM COMPATIBLE PERSONAL COMPUTERS)

UF **IBM PC**

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . microcomputers
 - . . . personal computers
 - **IBM personal computers**
 - . . . IBM computers
 - **IBM personal computers**

- RT computer graphics
 - . computer programs

Icarus asteroid

- GS celestial bodies
 - . asteroids
 - . . **Icarus asteroid**
- RT asteroid belts

ICBM (missiles)

- USE **intercontinental ballistic missiles**

ice

DEF Water in the solid state; specifically, the dense substance formed in nature by the freezing of liquid water, by the condensation of water vapor directly into ice crystals, or by the recrystallization or compaction of fallen snow. It is colorless to pale blue or greenish blue, usually white from included gas bubbles. At standard atmospheric pressure, it is formed at and has a melting point of 0 deg. C; in freezing it expands about one eleventh in volume. Ice commonly occurs as hexagonal crystals, and in large masses is classed as a rock. The term is often substituted for glacier; as in "continental ice."

GS ice

- . bay ice
- . glaciers
- . lake ice
- . . ice floes
- . land ice
- . sea ice
 - . . ice floes
 - . . icebergs
 - . . pressure ice

RT

- . auefis (ice)
- . cirques (landforms)
- . frost
- . ice clouds
- . polar caps
- . refrigerants
- . runway conditions
- . slush
- . storms (meteorology)
- . water

ice clearings

(added July 2001)

- USE **polynyas**

ice clouds

(added March 1989)

GS clouds (meteorology)

- . **ice clouds**

RT cloud glaciation

- ∞ clouds
- ice

stratosphere

ice environments
 UF *Antarctic environment*
Arctic environments
 GS environments
 . **ice environments**
 RT Earth cryosphere
 environment effects
 marine environments
 planetary cryospheres
 sea ice

ice floes
 DEF Large fragments or extensive sheets of ice, detached and floating freely in open water.
 GS ice
 . lake ice
 . . **ice floes**
 . sea ice
 . . **ice floes**
 RT oceanography

ice formation
 UF *icing*
 GS **ice formation**
 . aircraft icing
 . cloud glaciation
 RT bay ice
 fouling
 freezing
 graupel
 hail
 lake ice
 low temperature
 pressure ice
 sea ice
 snow

ice mapping
 GS mapping
 . **ice mapping**
 RT aerial photography
 bay ice
 Earth resources
 hydrography
 hydrology
 infrared photography
 oceanography
 photogeology
 photography
 photomapping
 sea ice
 space surveillance (spaceborne)
 surveillance

ice nuclei
 RT Aitken nuclei
 cloud glaciation
 condensation nuclei
 freezing
 graupel
 hydrometeors
 nucleation
 ∞ nuclei

ice observation
 USE **ice reporting**

ice packs
 USE **sea ice**

ice prevention
 GS prevention
 . **ice prevention**
 RT aircraft icing
 antiicing additives
 defrosting
 deicers
 deicing
 heat tapes
 heating
 melting
 storm suppression

ice reporting
 UF *ice observation*
 RT bay ice
 icebergs
 meteorological flight

polar meteorology
 space surveillance (spaceborne)
 surveillance

ice shelves
 USE **land ice**

Ice, Cloud and Land Elevation Satellite
(added December 2002)
 DEF Earth Observing System satellite and mission designed to measure Earth's ice sheet mass balance, cloud and aerosol heights, as well as land topography and vegetation characteristics.
 UF *ICESat*
 GS artificial satellites
 . scientific satellites
 . . **Ice, Cloud and Land Elevation Satellite**
 RT Earth Observing System (EOS)
 laser altimeters
 satellite altimetry

icebergs
 DEF Large, massive pieces of floating or stranded glacier ice of any shape, detached (calved) from the front of glaciers into a body of water. Icebergs extend more than 5 m above sea level and have the greater part of their masses (4/5 to 8/9) below sea level. They may reach a length of more than 80 km.
 GS ice
 . sea ice
 . . **icebergs**
 resources
 . Earth resources
 . . **icebergs**
 RT ice reporting
 land ice

Iceland
 GS landforms
 . islands
 . . **Iceland**
 nations
 . **Iceland**
 RT Europe
 Icelandic space program

Icelandic space program
(added August 1990)
 GS programs
 . space programs
 . . European space programs
 . . . **Icelandic space program**
 RT Iceland

ICESat
(added December 2002)
 USE **Ice, Cloud and Land Elevation Satellite**

ichthyology
 RT fishes
 schools (fish)

icing
 USE **ice formation**

ICL computers
 DEF Family of British digital computers produced by International Computers, Ltd. Used for International Computers Limited.
 UF *International Computers Limited*
 GS data processing equipment
 . computers
 . . digital computers
 . . . **ICL computers**
 RT European Space Agency

icosahedrons
 GS geometry
 . Euclidean geometry
 . . polyhedrons

. . . **icosahedrons**

ICP-MS (spectrometry)
(added March 2001)
 USE **inductively coupled plasma mass spectrometry**

icy satellites
 GS celestial bodies
 . natural satellites
 . . **icy satellites**
 . . . Ariel
 . . . Callisto
 . . . Dione
 . . . Enceladus
 . . . Europa
 . . . Ganymede
 . . . Hyperion
 . . . Iapetus
 . . . Mimas
 . . . Rhea (astronomy)
 . . . Tethys
 . . . Titania
 RT extraterrestrial water
 Galilean satellites
 Jupiter satellites
 satellite surfaces
 Saturn satellites

Ida asteroid
(added December 1995)
 GS celestial bodies
 . asteroids
 . . **Ida asteroid**
 RT asteroid belts
 Galileo spacecraft
 meteoroids

Idaho
 GS nations
 . United States
 . . **Idaho**
 RT Columbia River Basin (ID-OR-WA)
 Yellowstone National Park
 (ID-MT-WY)

ideal fluids
 RT compressible fluids
 equations of state
 ∞ fluids
 incompressible fluids
 Mollier diagram

ideal gas
 DEF A gas which conforms to Boyle's law and has zero heat of free expansion (or also obeys Charles' law). Used for perfect gas.
 UF *perfect gas*
 GS gases
 . **ideal gas**
 RT Bose-Einstein condensates
 Dalton law
 equations of state
 gas density
 kinetic theory
 kinetics
 real gases

identify friend or foe
 USE **IFF systems (identification)**

identifying
 GS **identifying**
 . crop identification
 . IFF systems (identification)
 . parameter identification
 . rapid ballistics identification
 . system identification
 . timber identification
 RT chemical analysis
 coding
 cognition
 detection
 gas detectors
 inspection
 marking
 ∞ measurement
 missile detection
 particulate sampling
 perception

identities

recognition
spectral signatures
tracking (position)
ultrasonic flaw detection
Wiswesser notations

identities

RT congruences
∞ equations

IDEF (data exchange)

USE **interservice data exchange program**

idlers

RT bearings
gears
pulleys
rollers
vehicular tracks

IFF systems (identification)

UF *identify friend or foe*

GS identifying

. **IFF systems (identification)**

RT aircraft detection
cognition
interrogation
recognition
∞ systems

IFR (rules)

USE **instrument flight rules**

IGFET

USE **field effect transistors**

igneous rocks

DEF Rocks or minerals that solidify from molten or partly molten material, i.e., from magma. The term is also applied to processes leading to, related to, or resulting from the formation of such rocks. Igneous rocks constitute one of the three main classes into which rocks are divided, the others being metamorphic rocks and sedimentary rocks.

UF *ignimbrite*

GS rocks

. **igneous rocks**

. . anorthosite
. . basalt
. . diorite
. . dunite
. . eclogite
. . feldspar
. . gabbro
. . granite
. . obsidian
. . . moldavite
. . peridotite
. . pumice
. . rhyolite
. . syenite
. . trachyte

RT andesite
batholiths
breccia
effusives
enstatite
feldspars
ilmenite
lava
magma
mica
minerals
olivine
petrogenesis
pyroxenes
quartz
regolith
rock intrusions
sedimentary rocks
soils
spinel

tourmaline

ignimbrite

USE **igneous rocks**

igniters

DEF Devices used to begin combustion, such as a spark plug in a combustion chamber of a jet engine, or a squib used to ignite the fuel in a rocket.

GS **igniters**

. initiators (explosives)
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
. squibs

RT

ammunition
electric ignition
explosive devices
ignition
ignition systems
incendiary ammunition
pyrophoric materials
solid propellant ignition
spark plugs

ignition

DEF The initiation of combustion. Used for reignition.

UF *reignition*

GS **ignition**

. electric ignition
. solid propellant ignition
. spark ignition

RT

combustion
combustion physics
firing (igniting)
flame propagation
flammability
flash point
fuel combustion
igniters
premixing
propellant combustion
roasting
sparks
spontaneous combustion
starting

ignition limits

RT combustion
flame retardants
flammability
fuel-air ratio
gas mixtures
∞ limits

ignition systems

RT automobiles
distributors
dwell
electric coils
electric ignition
engines
igniters
internal combustion engines
rocket engines
spark plugs
squibs
starters
∞ systems

ignition temperature

GS temperature
. **ignition temperature**
. . flash point

RT

combustion temperature
flammability
propellant sensitivity
pyrophoric materials
solid propellant ignition
spontaneous combustion
thermites

ignitrons

GS electron tubes
. gas discharge tubes
. . **ignitrons**

rectifiers
. **ignitrons**

IGOSS

USE **integrated global ocean station systems**

IGY (geophysical year)

USE **International Geophysical Year**

IHD (hydrological decade)

USE **International Hydrological Decade**

IIR filters

(added December 2002)

DEF Digital filters that use previous output values in the calculation of current output values, providing an impulse response that is theoretically infinite.

UF *infinite impulse response filters*

recursive filters

GS electromagnetic wave filters

. electric filters

. . digital filters

. . . **IIR filters**

RT

adaptive filters
autoregressive moving average
FIR filters
recursive functions

IL-14 aircraft

UF *Ilyushin IL-14 aircraft*

GS Ilyushin aircraft

. **IL-14 aircraft**

monoplanes

. **IL-14 aircraft**

transport aircraft

. **IL-14 aircraft**

RT ∞ aircraft

IL-62 aircraft

UF *Classic aircraft*

Ilyushin IL-62 aircraft

GS commercial aircraft

. **IL-62 aircraft**

Ilyushin aircraft

. **IL-62 aircraft**

jet aircraft

. turbofan aircraft

. . **IL-62 aircraft**

monoplanes

. **IL-62 aircraft**

passenger aircraft

. **IL-62 aircraft**

RT ∞ aircraft

IL-76 aircraft

(added September 1994)

GS Ilyushin aircraft

. **IL-76 aircraft**

jet aircraft

. **IL-76 aircraft**

passenger aircraft

. **IL-76 aircraft**

transport aircraft

. **IL-76 aircraft**

RT ∞ aircraft

IL-86 aircraft

(added September 1994)

GS Ilyushin aircraft

. **IL-86 aircraft**

jet aircraft

. **IL-86 aircraft**

passenger aircraft

. **IL-86 aircraft**

transport aircraft

. **IL-86 aircraft**

RT ∞ aircraft

IL-96 aircraft

(added September 1994)

GS Ilyushin aircraft

. **IL-96 aircraft**

jet aircraft

. **IL-96 aircraft**

passenger aircraft

. **IL-96 aircraft**

transport aircraft

. **IL-96 aircraft**

RT ∞ aircraft

ill-conditioned problems (mathematics)

(added March 1994)

DEF In numerical analysis, problems (algorithms) in which a small error in the data or small errors introduced by rounding, truncation, or other computational procedures result in much larger errors in the solution. (See also ILL-POSED PROBLEMS)

RT computation
differential equations
error analysis
ill-posed problems (mathematics)
integral equations
numerical analysis
numerical stability
problem solving
truncation errors
uniqueness

Illiac 3 computer

GS data processing equipment
. computers
. . . digital computers
. . . . Iliac computers
. . . . **Iliac 3 computer**
RT analog to digital converters
parallel processing (computers)

Illiac 4 computer

GS data processing equipment
. computers
. . . digital computers
. . . . Iliac computers
. . . . **Iliac 4 computer**
RT analog to digital converters
parallel processing (computers)

Iliac computers

GS data processing equipment
. computers
. . . digital computers
. . . . **Iliac computers**
. . . . Iliac 3 computer
. . . . Iliac 4 computer

Illinois

GS nations
. United States
. . **Illinois**
RT Ohio River (US)
Wabash River Basin (IL-IN-OH)

illite

GS clays
. **illite**
minerals
. **illite**
RT soils

ill-posed problems (mathematics)

(added March 1994)

DEF Problems corresponding to physical system models whose solutions do not satisfy Hadamard's criteria for 'well posedness,' i.e., existence, uniqueness, and continuous dependence on initial data. Most commonly, such problems stem fundamental physical limitations on the accessibility of information about the object or process being studied. (See also ILL-CONDITIONED PROBLEMS)

UF *improperly-posed problems (mathematics)*

RT boundary value problems
differential equations
Fredholm equations
ill-conditioned problems (mathematics)
integral equations
iterative solution
numerical analysis
numerical stability
problem solving
uniqueness

illumination

SN (LIMITED TO DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION--EQUALS LIGHT PRESSURE TIMES SPEED OF LIGHT)

DEF The total luminous flux received on a unit area of a given real or imaginary surface, expressed in such units as the footcandle, lux, or phot. Illuminance is analogous to irradiance, but is to be distinguished from the latter in that illuminance refers only to light and contains the luminous efficiency weighting factor necessitated by the nonlinear wavelength response of the human eye. Used for light pressure.

UF *light pressure*

GS pressure
. radiation pressure
. . luminous intensity
. . . **illumination**
rates (per time)
. flux density
. . radiant flux density
. . . irradiance
. . . . **illumination**
. . . luminous intensity
. . . . **illumination**

RT brightness
illuminating
∞ illumination
light (visible radiation)
luminance
luminosity
radiancy
solar constant
solar flux density
visibility

illuminating

UF *lighting*
RT architecture
brightness
comfort
darkness
environmental engineering
∞ flares
glare
human factors engineering
illumination
∞ illumination
light sources
light transmission
lighting equipment
luminaires
luminance
photometry
∞ projection
projectors
pyrotechnics
shadows

∞ illumination

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT brightness discrimination
darkening
darkness
∞ diffusers
illumination
illuminating
illuminators
isophotes
light transmission
luminescence
photometry

illuminators

GS light sources
. **illuminators**
lighting equipment
. **illuminators**
RT ∞ illumination
incandescence
luminescence

illusions

GS psychological effects
. **illusions**
. . hallucinations
. . moon illusion
. . oculogravic illusions
. . optical illusion
. . . elevator illusion
RT afterimages
images

perception
vision

ilmenite

DEF A mineral having the theoretical composition FeO.TiO₂ used principally in the production of titanium oxide.

GS chalcogenides
. oxides
. . metal oxides
. . . iron oxides
. . . . **ilmenite**
. . . titanium oxides
. . . . **ilmenite**
iron compounds
. iron oxides
. **ilmenite**
minerals
. **ilmenite**
titanium compounds
. titanates
. . **ilmenite**
. titanium oxides
. . **ilmenite**
RT igneous rocks
sands

ILS (*landing systems*)

USE **instrument landing systems**

Ilyushin aircraft

GS **Ilyushin aircraft**
. IL-14 aircraft
. IL-62 aircraft
. IL-76 aircraft
. IL-86 aircraft
. IL-96 aircraft
RT ∞ aircraft

Ilyushin IL-14 aircraft

USE **IL-14 aircraft**

Ilyushin IL-62 aircraft

USE **IL-62 aircraft**

image analysis

DEF Technique for understanding or quantification of digital data as presented in a two dimensional format.

GS **image analysis**
. image classification
. spectral mixture analysis
RT cluster analysis
edge detection
Gabor filters
image enhancement
image processing
image resolution
optical flow (image analysis)
pattern recognition
radar imagery
remote sensing
satellite imagery
scene analysis
Voronoi diagrams

image classification

(added July 1993)

DEF The sorting of remotely sensed image data by any one or more of a variety of means.

GS image analysis
. **image classification**
RT atmospheric correction
change detection
classifications
∞ classifying
image correlators
image enhancement
image processing
imaging techniques
normalized difference vegetation index
optical data processing
pattern recognition
remote sensing
remote sensors

image contrast

GS contrast
. **image contrast**

image converters

RT focusing
gray scale
pattern registration
resolution
self focusing
signal to noise ratios
smear
visibility

image converters

DEF Optoelectronic devices capable of changing the spectral characteristics of a radiant image. Examples of such changes are infrared to visible and x ray to visible.

GS optical equipment
. **image converters**
. . . telescopes
. . . image tubes
. . . thermicons

RT camera tubes
 ∞ converters
Lallemand cameras
light amplifiers
microchannels
photocathodes

image correlators

UF *SIMICOR (image correlator)*
simultaneous image correlator

GS correlators
. **image correlators**
RT holography
image classification
imaging techniques
map matching guidance
optical correlators
pattern registration
speckle holography
video landmark acquisition and tracking

image dissector tubes

GS electron tubes
. camera tubes
. . **image dissector tubes**
television equipment
. **image dissector tubes**
RT guidance sensors
satellite orientation

image enhancement

RT band ratioing
focusing
geometric rectification (imagery)
gray scale
image analysis
image classification
images
imaging techniques
light amplifiers
radiometric correction
resolution
signal to noise ratios
tomography
vegetative index

image filters

GS **image filters**
. Gabor filters
RT ∞ filters
imaging techniques

image furnaces

GS heating equipment
. furnaces
. . **image furnaces**
laboratory equipment
. **image furnaces**
RT arc heating
carbon arcs

image intensifiers

UF *intensifier tubes*
GS intensifiers
. **image intensifiers**
. . image orthicons
RT amplifiers
imaging techniques
Lallemand cameras
light amplifiers

night vision
orthicons
phosphors
photocathodes

image motion compensation

RT aerial photography
 ∞ compensation
imaging techniques
pattern registration
video compression

image orthicons

GS electron tubes
. camera tubes
. . orthicons
. . . **image orthicons**
intensifiers
. image intensifiers
. . **image orthicons**
RT photocathodes

image processing

DEF Conversion of optical images into digital data form for storage and reconstruction by computer techniques.

GS **image processing**
. band ratioing
. geometric rectification (imagery)
RT atmospheric correction
change detection
cluster analysis
computer aided tomography
data processing
data products
discrete cosine transform
edge detection
Feature Identification and Location
Exper
frames (data processing)
Gabor filters
Gabor transformation
geometric accuracy
gray scale
image analysis
image classification
imagery
imaging techniques
laser guide stars
multisensor applications
nap-of-the-earth navigation
onboard data processing
optical data processing
optical flow (image analysis)
point spread functions
preprocessing
principal components analysis
 ∞ processing
pushbroom sensor modes
raster scanning
scientific visualization
spatial resolution
spectral mixture analysis
vector quantization
video compression
wavelet analysis

image reconstruction

DEF The reproduction of the original scene from data stored or transmitted after scanning by an electron beam. In reprography, the re-creation of graphic images from digital data stored in a computer.

GS reconstruction
. **image reconstruction**
RT display devices
holography
imaging techniques
pattern registration
scene generation

image resolution

DEF In optics, a measure of the ability of an optical instrument to produce separable images of different points on an object.

GS resolution
. **image resolution**
RT anisoplanatism
electro-optical photography
geometric accuracy

high definition television
image analysis
imagery
matching
multispectral photography
pattern registration
spatial resolution

image rotation

DEF Mechanized or digital rotation of an image.
GS gyration
. rotation
. . **image rotation**
RT imaging techniques

IMAGE satellite

(added November 2000)

DEF A medium class Explorer (MIDEX) mission to study the global response of the Earth's magnetosphere to changes in the solar wind. IMAGE (Imager for Magnetopause-to-Aurora Global Exploration) will use neutral atom, ultraviolet, and radio imaging techniques to: (a) identify the dominant mechanisms for injecting plasma into the magnetosphere on substorm and magnetic storm time scales; (b) determine the directly driven response of the magnetosphere to solar wind changes; and, (c) discover how and where magnetospheric plasmas are energized, transported, and subsequently lost during substorms and magnetic storms.

UF *Explorer 78 satellite*
Imager for Magnetopause-to-Aurora Global Explorer

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **IMAGE satellite**
RT auroral zones
Earth magnetosphere
magnetic storms
magnetopause
plasmaphere
space plasmas

image transducers

GS transducers
. **image transducers**
RT camera tubes
imaging techniques
Lallemand cameras

image tubes

DEF Electron tubes that reproduce on their fluorescent screens images of irradiation patterns incident on their photosensitive surfaces.

GS electron tubes
. **image tubes**
. . thermicons
optical equipment
. image converters
. . **image tubes**
. . . thermicons
RT cathode ray tubes
display devices
flying spot scanners
head-up displays
monoscopes

image velocity sensors

RT images
imaging techniques
 ∞ sensors

Imager for Magnetopause-to-Aurora Global Explorer

(added December 2000)

USE **IMAGE satellite**

imagery

GS **imagery**
. kinoform
. microwave imagery
. photography
. . aerial photography
. . all sky photography
. . astronomical photography
. . autoradiography
. . black and white photography

- . . chronophotography
 - . . cinematography
 - . . cloud photography
 - . . color photography
 - . . electron photography
 - . . electro-optical photography
 - . . fractography
 - . . frame photography
 - . . high speed photography
 - . . holography
 - . . . acoustical holography
 - . . . microwave holography
 - . . . speckle holography
 - . . . white light holography
 - . . infrared imagery
 - . . lunar photography
 - . . metric photography
 - . . microwave photography
 - . . multispectral photography
 - . . . infrared photography
 - color infrared photography
 - . . . radar photography
 - . . . orthophotography
 - . . . photomicrography
 - . . . rocket-borne photography
 - . . . shadowgraph photography
 - . . . Schlieren photography
 - . . . spaceborne photography
 - . . . satellite-borne photography
 - . . . spectrophotography
 - . . . stereoscopy
 - . . . stereophotography
 - . . . streak photography
 - . . . ultraviolet photography
 - . . . ultraviolet photometry
 - . . . underwater photography
 - . . . urography
 - . . . radar imagery
 - . . . radiography
 - . . . angiography
 - . . . autoradiography
 - . . . neutron radiography
 - . . . tomography
 - computer aided tomography
 - . . . urography
 - . . . reproduction (copying)
 - . . . xerography
 - . . . satellite imagery
 - . . . spectroheliographs
 - . . . ultraviolet imagery
 - . . . x ray imagery
 - . . . ultraviolet photography
 - RT acousto-optics
 - appearance
 - Atmospheric & Oceanographic Inform Sys
 - change detection
 - contour sensors
 - display devices
 - Earth resources
 - geographic information systems
 - geometric rectification (imagery)
 - graphic arts
 - ground truth
 - holographic optical elements
 - image processing
 - image resolution
 - microwave sounding
 - multispectral radar
 - radar signatures
 - scene analysis
 - sea truth
 - signature analysis
- images**
- UF *optical images*
 - GS **images**
 - . afterimages
 - . retinal images
 - RT contour sensors
 - display devices
 - evaporography
 - halos
 - helmet mounted displays
 - illusions
 - image enhancement
 - image velocity sensors
 - ∞ optics
 - perception
- photographs
 - raster scanning
 - representations
 - spatial filtering
 - vision
- imaging radar**
- GS radar
 - . **imaging radar**
 - . . Shuttle Imaging Radar
 - RT radar imagery
 - remote sensors
 - side-looking radar
 - synthetic aperture radar
- imaging spectrometers**
- GS measuring instruments
 - . spectrometers
 - . . **imaging spectrometers**
 - RT Envisat-1 satellite
 - imaging techniques
 - remote sensing
 - spectral reflectance
 - spectrophotometry
- imaging techniques**
- GS **imaging techniques**
 - . acoustic imaging
 - . . acoustical holography
 - . raster scanning
 - . scene generation
 - . speckle holography
 - RT acoustic microscopes
 - acoustical holography
 - adaptive optics
 - apodization
 - charge injection devices
 - crop identification
 - flat panel displays
 - gray scale
 - high definition television
 - hologrammetry
 - image classification
 - image correlators
 - image enhancement
 - image filters
 - image intensifiers
 - image motion compensation
 - image processing
 - image reconstruction
 - image rotation
 - image transducers
 - image velocity sensors
 - imaging spectrometers
 - magnetic force microscopy
 - ∞ methodology
 - microwave holography
 - modulation transfer function
 - multimedia
 - multisensor applications
 - multisensor fusion
 - multispectral band scanners
 - multispectral photography
 - multispectral radar
 - optical relay systems
 - optical transfer function
 - ∞ optics
 - . particle image velocimetry
 - . pattern registration
 - . photography
 - . pixels
 - . principal components analysis
 - . radar imagery
 - . rapid ballistics identification
 - . resolution cell
 - . satellite imagery
 - . scene analysis
 - . spatial resolution
 - . streak photography
 - . synthetic apertures
 - . television systems
 - . ultrasonic scanners
 - . vegetative index
 - . x ray imagery
- ∞ **imbeddings**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT encapsulating
- imbeddings (mathematics)
 - invariant imbeddings
 - ∞ matrices
- imbeddings (mathematics)**
- GS geometry
 - . topology
 - . . **imbeddings (mathematics)**
 - . . . invariant imbeddings
 - RT ∞ imbeddings
 - strange attractors
- IMBLMS**
- SN (INTEGRATED MEDICAL AND BEHAVIORAL LABORATORY MEASUREMENT SYSTEM)
 - UF *Integ Med and Behavioral Lab Measur System*
 - RT bioinstrumentation
 - biomedical data
 - measuring instruments
 - medical equipment
- IMCC (control center)*
- USE **integrated mission control center**
- IME satellite*
- USE **International Magnetospheric Explorer**
- imidazoles**
- (added August 2004)
- DEF Part of a group of heterocyclic compounds with a 5-membered diunsaturated ring, containing 2 nitrogen atoms.
 - GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **imidazoles**
- imides**
- GS nitrogen compounds
 - . **imides**
 - . . bismaleimide
 - . . phthalimides
 - . . succinimides
 - RT amides
- imines**
- UF *Schiff bases*
 - GS nitrogen compounds
 - . **imines**
 - RT amines
- IMLSS**
- SN (INTEGRATED MANEUVERING AND LIFE SUPPORT SYSTEM)
 - UF *Integrated Maneuvering Life Support Sys*
 - GS self maneuvering units
 - . **IMLSS**
 - . support systems
 - . life support systems
 - . . portable life support systems
 - . . . **IMLSS**
 - RT astronaut maneuvering equipment
 - extravehicular activity
 - extravehicular mobility units
 - ∞ systems
- immersion*
- USE **submerging**
- immiscibility*
- USE **solubility**
- immittance*
- USE **electrical impedance**
- immobilization**
- GS **immobilization**
 - . hindlimb suspension
 - RT damage
 - impairment
 - ∞ motion
- immune systems**
- GS anatomy
 - . **immune systems**
 - . . lymphatic system
 - . . . spleen
 - . . . thymus gland

immunity

RT acquired immunodeficiency syndrome
antibodies
antigens
human immunodeficiency virus
immunity
immunoassay
immunology
immunosuppression
interleukins
leukocytes
lymphocytes
monocytes
neutrophils
physiological defenses

immunity

GS physiological defenses
. **immunity**
RT immune systems
immunosuppression
infectious diseases
inoculation
∞ resistance
toxins and antitoxins

immunoassay

DEF An assay that utilizes antigen-antibody reactions for the determination of biochemical substances. Used for plasma renin activity.
UF *plasma renin activity*
GS **immunoassay**
. radioimmunoassay
RT antigens
assaying
biochemistry
immune systems
immunology
radiobiology

immunology

GS medical science
. **immunology**
RT acquired immunodeficiency syndrome
allergic diseases
anaphylaxis
antibodies
antigens
antiserums
biocompatibility
∞ biology
human immunodeficiency virus
immune systems
immunoassay
immunosuppression
interleukins
lymphatic system
prophylaxis
radioimmunoassay
veterinary medicine

immunosuppression

(added February 2009)
DEF Deliberate prevention or diminution of immune responses through the use of drugs, radiation, lymphocyte depletion, desensitization, or the simultaneous use of these methods.
RT aerospace medicine
antibodies
cancer
diseases
immune systems
immunity
immunology
transplantation

IMP

UF *Interplanetary Monitoring Platform*
GS artificial satellites
. lunar satellites
. . **IMP**
. scientific satellites
. . Explorer satellites
. . . **IMP**
lunar spacecraft
. lunar satellites
. . **IMP**

IMP-1
USE **Explorer 18 satellite**

IMP-2
USE **Explorer 21 satellite**

IMP-3
USE **Explorer 28 satellite**

IMP-4
USE **Explorer 34 satellite**

IMP-5
USE **Explorer 41 satellite**

IMP-6
USE **Explorer 43 satellite**

IMP-7
USE **Explorer 47 satellite**

IMP-8
USE **Explorer 50 satellite**

IMP-A
USE **Explorer 18 satellite**

impact

GS **impact**
. economic impact
. electron impact
. hypervelocity impact
. ion impact
. point impact
. proton impact
RT deceleration
hydrodynamic ram effect
impingement
mechanical shock
penetration
percussion
pressure
shock absorbers
shock resistance
shock waves
stresses

impact acceleration

DEF The acceleration generated by very sudden starts or stops of a vehicle. The term is usually applied in the context of physiological acceleration. Used for impact deceleration.
UF *impact deceleration*
GS rates (per time)
. acceleration (physics)
. . **impact acceleration**
RT ∞ acceleration
deceleration
impact velocity
mechanical shock
physiological acceleration
railroad humping tests
shock absorbers

impact damage

GS damage
. **impact damage**
. . meteoritic damage
. . rain impact damage
RT cratering
craters
ejecta
impact tolerances
Mars craters
meteoroid protection
planetary craters
Tempel 1 comet

impact deceleration

USE **impact acceleration**

impact fusion

DEF The conversion of the kinetic energy of a fast moving, initially stationary, macroparticle projectile into the internal energy of fusile material using a particle accelerator. Impact fusion is generally an inertial confinement fusion concept.
GS inertial confinement fusion
. **impact fusion**

RT fusion reactors

impact loads

UF *impact pressures*
GS loads (forces)
. compression loads
. . **impact loads**
. contact loads
. . **impact loads**
. dynamic loads
. . transient loads
. . . **impact loads**
RT blast loads
dynamic pressure
fiber orientation
impact velocity
landing loads
loading rate
random loads
shock loads
structural design criteria

impact melts

DEF Molten material resulting from hypervelocity impact.
GS melts (crystal growth)
. **impact melts**
RT celestial bodies
hypervelocity impact
lunar rocks
melting
meteorites
minerals
petrology

impact prediction

UF *ARIP (impact prediction)*
automatic rocket impact predictors
GS predictions
. **impact prediction**
RT ballistic trajectories
downrange
guidance (motion)
laser guidance
missile trajectories
range safety
reentry
trajectory analysis

impact pressures

USE **impact loads**

impact resistance

UF *impact sensitivity*
GS sensitivity
. **impact resistance**
shock resistance
. **impact resistance**
RT crashworthiness
propellant sensitivity
∞ resistance
tolerances (physiology)

impact sensitivity

USE **impact resistance**

impact strength

DEF The amount of energy required to fracture a material. The type of specimen and the testing conditions affect the values and therefore should be specified.
GS mechanical properties
. **impact strength**
RT brittle materials
brittleness
ductility
earthquake resistance
hardness
notch sensitivity
∞ resistance
shear properties
∞ strength
stress concentration
wave resistance

impact testing machines

RT drop tests
fatigue tests
∞ machinery

∞ test equipment

impact tests

- GS **impact tests**
 . Charpy impact test
- RT brittleness
 compression tests
 destructive tests
 drop tests
 fatigue tests
 hardness tests
 impactors
 load tests
- ∞ materials tests
 notch sensitivity
 notch strength
 notch tests
 shock tests
 strain rate
 stress concentration
- ∞ tests
 toughness

impact tolerances

- GS tolerances (mechanics)
 . **impact tolerances**
- RT impact damage

impact velocity

- (added April 1997)
- GS velocity
 . **impact velocity**
- RT collisions
 hypervelocity impact
 impact acceleration
 impact loads
 terminal ballistics
 terminal velocity

impactors

- RT crushers
 grinding mills
 hammers
 impact tests

impairment

- RT damage
 immobilization
 injuries
 losses

IMPATT diodes

USE **avalanche diodes**

IMP-B

USE **Explorer 21 satellite**

IMP-C

USE **Explorer 28 satellite**

IMP-D

USE **Explorer 33 satellite**

IMP-E

USE **Explorer 35 satellite**

impedance

DEF The total opposition that a circuit presents to the flow of an alternating current, specifically the complex quotient of voltage divided by current. Used for dummy loads.

- UF *dummy loads*
- GS **impedance**
 . acoustic impedance
 . electrical impedance
 . . . electrical resistance
 contact resistance
 Hall resistance
 skin resistance
 transconductance
 . . reactance
 . mechanical impedance
 . respiratory impedance
- RT attenuation coefficients
 bandwidth
 chokes (restrictions)
- ∞ conductivity
 constrictions
 damping
 diffusivity
 dynamic characteristics

- dynamic response
 electric coils
 electrical properties
- ∞ hydraulics
 mechanical properties
- ∞ physical properties
- ∞ resistance
 resonant frequencies
 Smith chart
 time constant
 transient response

impedance matching

- RT antenna couplers
 couplers
 coupling circuits
 directional couplers
 electric networks
 electrical impedance
 iterative networks
 matching
 mode transformers
 transfer functions
 transmission lines
 waveguide tuners
 waveguide windows

impedance measurement

- RT electrical impedance
 electrical measurement
 mechanical impedance
 mismatch (electrical)
 radio frequency impedance probes

impedance probes

- GS measuring instruments
 . **impedance probes**
 . . radio frequency impedance probes
- RT resonance probes

impeller blades

USE **rotor blades (turbomachinery)**

impellers

DEF Devices that impart motion to a fluid; specifically in centrifugal compressors, rotary disks which, faced on one or both sides with radial vanes, accelerate the incoming fluid outward into diffusers.

- GS rotating bodies
 . rotors
 . . **impellers**
 . . . pump impellers
- RT blowers
 centrifugal compressors
 centrifugal pumps
 compressor rotors
 pumps
 rotor blades (turbomachinery)
 stators
 turbine wheels
 turbines
 turbomachine blades
 vanes

imperfections

USE **defects**

Imperial Valley (CA)

- GS valleys
 . **Imperial Valley (CA)**
- RT California
 deserts
 Mexico

IMP-F

USE **Explorer 34 satellite**

IMP-G

USE **Explorer 41 satellite**

IMP-H

USE **Explorer 47 satellite**

IMP-I

USE **Explorer 43 satellite**

impingement

DEF A process resulting in a continuing succession of impacts between (liquid or solid)

particles and a solid phase.

- GS **impingement**
 . jet impingement
- RT ablation
 attenuation
 cavitation flow
 corrosion
 erosion
 gas-solid interactions
 impact
 incidence
 reflection
 scattering

IMP-J

USE **Explorer 50 satellite**

implantation

- GS **implantation**
 . heart implantation
 . ion implantation
- RT grafting
 injection
 insertion

implanted electrodes (biology)

- GS bioengineering
 . bioinstrumentation
 . . **implanted electrodes (biology)**
 electrodes
 . **implanted electrodes (biology)**
- RT ∞ biology

implication

RT inference

implosions

DEF The rapid inward collapsing of the walls of vacuum systems or devices as the result of failure of the walls to sustain the ambient pressure.

- RT bursts
 explosions
 explosive decompression
 propellant explosions
 shock waves

impregnating

- RT chemical attack
 coatings
 finishes
 insertion
 lubrication
 permeating
 porosity
 preserving
 self lubricating materials
 self lubrication

improperly-posed problems (mathematics)

USE **ill-posed problems (mathematics)**

Improved TIROS Operational Satellites

USE **ITOS satellites**

improvement

- RT correction
 public relations
 upgrading

impulse generators

DEF Standard reference sources of broadband impulse energy.

RT ∞ generators
 impulses
 pulse generators
 turbines

impulses

DEF The products of the forces and the times during which the forces are applied.

- GS **impulses**
 . high impulse
 . specific impulse
 . total impulse
- RT impulse generators

impurities

- RT contaminants
 crystal defects
 dirt

in situ measurement

heterogeneity
inclusions
point defects
pseudopotentials
quality
trace contaminants
ultrapure metals
wastes

IMS

USE **International Magnetospheric Study**

in situ measurement

(added September 1992)

DEF In situ is Latin for "in original place". It refers to measurements made at the actual location of the object or material measured.

RT atmospheric composition
atmospheric sounding
balloon sounding
ground truth
∞ measurement
optical measurement
pollution monitoring
remote sensing
rocket sounding
temperature measurement

in situ resource utilization

(added August 2001)

DEF The use of indigenous materials at a planetary or other extraterrestrial landing site for the production of propellants, life support consumables, or other needed materials.

UF *indigenous space materials utilization*
ISMU (resource utilization)
ISRU (resource utilization)

GS utilization

. **in situ resource utilization**

RT consumables (spacecraft)
extraterrestrial resources
fuel production
lunar resources
manned Mars missions
materials recovery
oxygen production
planetary bases

in vitro methods and tests

(added May 1999)

DEF Tests of, or methods related to, biological or biochemical processes occurring in an artificial environment or outside of a living cell or organism.

GS **in vitro methods and tests**

. polymerase chain reaction

RT bioassay
biotechnology
conditions
culture techniques
cultured cells
cytology
fertilization
histology
∞ methodology
∞ tests
tissue engineering

in vivo methods and tests

(added May 1999)

DEF Tests of, or methods related to, biological or biochemical processes occurring within a living cell or organism.

RT animal models
bioassay
biotechnology
conditions
culture techniques
cytology
histology
intravenous procedures
∞ methodology
∞ tests

inactivation

USE **deactivation**

incandescence

DEF Emission of light due to high tempera-

ture of the emitting material. Any other emission of light is called luminescence.

GS emission
. light emission
. . **incandescence**

RT brightness
color
emissivity
illuminators
light (visible radiation)
luminescence
luminosity
luminous intensity
radiance
spectral emission
thermal emission

incendiary ammunition

GS ammunition
. **incendiary ammunition**

RT bombs (ordnance)
combustion
exothermic reactions
grenades
guns (ordnance)
igniters
missiles
projectiles
propellants
pyrotechnics
∞ rockets

incentive techniques

RT cost incentives
cost reduction
efficiency
management
value engineering

incentives

GS **incentives**
. contract incentives
RT income
management
management methods
motivation
personnel

incidence

DEF Partial coincidence, as a circle and a tangent line. The impingement of a ray on a surface.

GS **incidence**
. grazing incidence
RT angles (geometry)
impingement

incident radiation

RT bistatic reflectivity
corpuscular radiation
electromagnetic radiation
obliqueness
optical reflection
photon beams
∞ radiation
reflected waves
refracted waves
retroreflection
scattering
Stokes law of radiation
wave incidence control

incineration

USE **incinerators**

incinerators

UF *incineration*
RT burners
furnaces
waste disposal
waste energy utilization

∞ **inclination**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The angle between the plane of an orbit and the reference plane. The equator is the reference plane for geocentric orbits and the ecliptic is the reference plane for heliocentric orbits. Also the magnetic dip.

RT geomagnetism
magnetic equator
orbits
slopes
tendencies

inclusions

GS defects
. **inclusions**
RT casting
castings
clathrates
heterogeneity
impurities
metallography
veins (petrology)
voids

incoherence

RT discontinuity
nonsynchronization

incoherent scatter radar

DEF Radar used in the study of the ionosphere, thermosphere, etc.

GS radar
. **incoherent scatter radar**
. . EISCAT radar system (Europe)
RT incoherent scattering
radar scattering

incoherent scattering

DEF The phenomena of generating waves with random variations in phase, amplitude, polarization, and direction of propagation when an incident wave encounters matter.

GS scattering
. **incoherent scattering**
RT coherent scattering
EISCAT radar system (Europe)
electromagnetic radiation
electromagnetic wave transmission
incoherent scatter radar
nuclear scattering
radar scattering

income

RT budgeting
economics
incentives

incompatibility

RT corrosion
hazards
∞ interference
solubility

incompressibility

RT compressibility
fluid mechanics

incompressible boundary layer

GS boundary layers
. **incompressible boundary layer**
RT laminar boundary layer
turbulent boundary layer

incompressible flow

GS fluid flow
. **incompressible flow**
. . Stokes flow
RT aerodynamics
Beltrami flow
compressible flow
gas flow
Milne-Thomson method
Navier-Stokes equation
Reynolds stress
stream functions (fluids)
subsonic flow

incompressible fluids

GS **incompressible fluids**
. micropolar fluids
RT Boussinesq approximation
channel flow
compressible fluids
fluid power
∞ fluids
ideal fluids

- Navier-Stokes equation
Oseen approximation
superfluidity
- Inconel (trademark)**
GS alloys
. nickel alloys
. . **Inconel (trademark)**
RT chromium alloys
iron alloys
- increasing**
RT accumulations
augmentation
growth
magnification
promotion
swelling
- indene**
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **indene**
. hydrocarbons
. . cyclic hydrocarbons
. . . **indene**
- indentation**
GS **indentation**
. nanoindentation
RT deformation
hardness
- independent variables**
DEF Any of those variables of a problem, chosen according to convenience, which may arbitrarily be specified, and which then determine the other or dependent variables of the problem. The independent variables are often called the coordinates, particularly in problems involving motion in space. Dependent and independent variables can be interchanged, e.g., height and pressure. Used for arguments (mathematics) and parameters.
UF *arguments (mathematics)*
parameters
GS **independent variables**
. lattice parameters
RT dependent variables
distributed parameter systems
observability (systems)
parameter identification
∞ variable
- ∞ **indexes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT indexes (documentation)
indexes (ratios)
KP index
KWIC indexes
- indexes (documentation)**
DEF Ordered reference lists of contents of a file or document, together with keys or reference notations for identification or location of those contents.
GS classifications
. **indexes (documentation)**
. . KWIC indexes
. . Wiswesser notations
RT abstracts
bibliographies
∞ catalogs
documentation
documents
handbooks
∞ indexes
indexing (information science)
information dissemination
information retrieval
lists
literature
∞ reference systems
selective dissemination of information
sky surveys (astronomy)
space glossaries
summaries
supplements
- thesauri
- indexes (ratios)**
GS ratios
. **indexes (ratios)**
. . KP index
. . morphological indexes
. . vegetative index
. . . leaf area index
. . . normalized difference vegetation index
RT efficiency
∞ indexes
mass to light ratios
- indexing (information science)**
(added April 2000)
DEF The representation of document content in a systematic, organized form to support information location, retrieval, or analysis.
UF *automatic indexing*
document indexing
machine aided indexing
GS information analysis
. **indexing (information science)**
RT indexes (documentation)
information management
information retrieval
metadata
terminology
terms
thesauri
- India**
GS nations
. **India**
RT Asia
Bangladesh
Bhutan
Himalayas
Indian spacecraft
ISRO
Sikkim
- Indian Ocean**
GS oceans
. **Indian Ocean**
RT Arabian Sea
Indonesia
Madagascar
Mauritius
mid-ocean ridges
Seychelles
- Indian space program**
GS programs
. space programs
. . **Indian space program**
RT communication satellites
manned space flight
∞ research projects
satellite design
space missions
∞ spacecraft
spacecraft design
technology utilization
- Indian Space Research Organization*
USE **ISRO**
- Indian spacecraft**
UF *Aryabhata*
INSAT satellites
IRS (Indian spacecraft)
SEO (Indian spacecraft)
RT India
∞ spacecraft
- Indiana**
GS nations
. United States
. . **Indiana**
RT Ohio River (US)
Wabash River Basin (IL-IN-OH)
- indicating instruments**
UF *temperature indicators*
GS measuring instruments
. **indicating instruments**
. . approach indicators
- . . astrolabes
. . attitude indicators
. . . gyro horizons
. . cloud height indicators
. . compasses
. . . gyrocompasses
. . . magnetic compasses
. . . solar compasses
. . flow direction indicators
. . . wind vanes
. . position indicators
. . . plan position indicators
. . radio direction finders
. . . spacecraft position indicators
. . smoke detectors
. . speed indicators
. . . tachometers
. . weight indicators
. . . microbalances
. . . strain gage balances
. . . thermobalances
RT aircraft instruments
control moment gyroscopes
∞ detectors
dials
display devices
flat panel displays
gas detectors
head-up displays
helmet mounted displays
∞ indication
∞ indicators
instrument receivers
∞ instruments
radarscopes
recording instruments
thermocouples
thermopiles
- ∞ **indication**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT evaluation
indicating instruments
probability theory
signs and symptoms
- ∞ **indicators**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aircraft guidance
chemical indicators
indicating instruments
methylene blue
rate of climb indicators
- indigenous space materials utilization*
(added August 2001)
USE **in situ resource utilization**
- indium**
GS chemical elements
. **indium**
metals
. **indium**
- indium alloys**
GS alloys
. **indium alloys**
RT aluminum alloys
gallium alloys
lead alloys
tin alloys
- indium aluminum arsenides**
(added November 1994)
GS aluminum compounds
. aluminum arsenides
. . **indium aluminum arsenides**
arsenic compounds
. arsenides
. . aluminum arsenides
. . . **indium aluminum arsenides**
. . indium arsenides
. . . **indium aluminum arsenides**
indium compounds
. indium arsenides
. . **indium aluminum arsenides**
RT ∞ chemical compounds

indium antimonides

field effect transistors
high electron mobility transistors
molecular beam epitaxy
p-type semiconductors

indium antimonides

GS antimony compounds
. antimonides
. . . **indium antimonides**
indium compounds
. **indium antimonides**
RT semiconductors (materials)

indium arsenides

GS arsenic compounds
. arsenides
. . . **indium arsenides**
. . . . indium aluminum arsenides
. . . . indium gallium arsenides
indium compounds
. **indium arsenides**
. . . indium aluminum arsenides
. . . indium gallium arsenides
RT MODFETS

indium compounds

GS **indium compounds**
. indium antimonides
. indium arsenides
. . . indium aluminum arsenides
. . . indium gallium arsenides
. indium oxides
. indium phosphates
. indium phosphides
. indium selenides
. . . copper indium selenides
. indium sulfides
. indium tellurides
RT ∞ chemical compounds
∞ Group 3A compounds
∞ metal compounds

indium gallium arsenides

(added May 1991)
GS arsenic compounds
. arsenides
. . . gallium arsenides
. . . **indium gallium arsenides**
. . . indium arsenides
. . . . **indium gallium arsenides**
gallium compounds
. gallium arsenides
. . . **indium gallium arsenides**
indium compounds
. indium arsenides
. . . **indium gallium arsenides**
RT intermetallics
quantum well lasers
semiconductors (materials)

indium isotopes

GS chemical elements
. nuclides
. . . isotopes
. . . . radioactive isotopes
. **indium isotopes**
metals
. **indium isotopes**

indium oxides

(added July 1995)
GS chalcogenides
. oxides
. . . **indium oxides**
indium compounds
. **indium oxides**
RT ∞ chemical compounds

indium phosphates

GS indium compounds
. **indium phosphates**
phosphorus compounds
. phosphates
. . . **indium phosphates**

indium phosphides

GS indium compounds
. **indium phosphides**
phosphorus compounds
. phosphides

. . . **indium phosphides**
RT quantum well lasers
transferred electron devices

indium selenides

(added June 1995)
GS chalcogenides
. selenides
. . . **indium selenides**
. . . . copper indium selenides
indium compounds
. **indium selenides**
. . . copper indium selenides
selenium compounds
. selenides
. . . **indium selenides**
. . . . copper indium selenides
RT semiconductors (materials)
solar cells
thin films

indium sulfides

GS chalcogenides
. sulfides
. . . inorganic sulfides
. . . . **indium sulfides**
indium compounds
. **indium sulfides**
sulfur compounds
. sulfides
. . . inorganic sulfides
. . . . **indium sulfides**

indium tellurides

GS chalcogenides
. tellurides
. . . **indium tellurides**
indium compounds
. **indium tellurides**
tellurium compounds
. tellurides
. . . **indium tellurides**
RT semiconductors (materials)

indium-tin-oxide semiconductors

USE **ITO (semiconductors)**

indoleacetic acids

(added August 2004)
DEF Acetic acid derivatives of the heterocyclic compound indole.
GS acids
. **indoleacetic acids**
RT biochemistry
indoles
plant growth regulators

indoles

GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . **indoles**
. tryptamines
. tryptophan
. melatonin
. serotonin
RT indoleacetic acids
methoxy systems
pyrroles

Indonesia

GS landforms
. islands
. . . **Indonesia**
nations
. **Indonesia**
RT Indian Ocean
Indonesian space program
Pacific Ocean

Indonesian space program

GS programs
. space programs
. . . **Indonesian space program**
RT Indonesia
Palapa 2 satellite
Palapa satellites

indoor air pollution

DEF Pollution found in enclosed spaces of-

ten compounded by insufficient air mixing which intensifies the concentration of pollutants caused by outdoor and/or indoor sources.

GS pollution
. environment pollution
. . . air pollution
. . . . **indoor air pollution**
RT air quality
air sampling
buildings
volatile organic compounds

induced drag

(added July 1992)
GS dynamic characteristics
. drag
. . . **induced drag**
RT aerodynamic characteristics
aerodynamic drag
aircraft design
drag reduction

induced fluid flow

USE **fluid flow**

inductance

GS electrical properties
. **inductance**
. . . proximity effect (electricity)
electromagnetic properties
. **inductance**
. . . proximity effect (electricity)
RT capacitance
electrical impedance
LC circuits
magnetic induction
magnetic properties
reactance
RL circuits
transformers

∞ induction

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT arc generators
derivation
induction (mathematics)
inference
initiation
magnetic induction
number theory

induction (mathematics)

GS number theory
. **induction (mathematics)**
RT ∞ induction
mathematical logic

induction heating

DEF The generation of heat in any conducting material by means of magnetic flux-induced currents.

GS heating
. **induction heating**
RT furnaces
magnetic induction
magnetic pumping
melting
plasma heating
radio frequency heating
vacuum melting

induction motors

DEF Ac motors in which the primary winding on one member (usually the stator) is connected to the power source and a polyphase secondary winding or a squirrel-cage secondary winding on the other member (usually the rotor) carries induced current.

GS electromechanical devices
. electric motors
. . . **induction motors**
motors
. electric motors
. . . **induction motors**
RT alternating current
armatures
asynchronous motors
∞ electric power
electric power supplies

- power factor controllers
- ∞ rotating electrical machines
- synchronous motors

induction systems

- USE **intake systems**

inductively coupled plasma mass spectrometry

(added March 2001)

DEF Multi-element analytical technique that uses high temperature plasma, commonly argon, to dissociate molecules and ionize atoms, which are passed into a vacuum, and sorted based on their atomic mass-to-charge ratios.

- UF *ICP-MS (spectrometry)*
- LA-ICP-MS (spectrometry)*

- GS spectroscopy
 - . mass spectroscopy
 - . . **inductively coupled plasma mass spectrometry**

- RT chemical analysis
- microanalysis
- qualitative analysis
- spectroscopic analysis
- vacuum spectroscopy

inductors

- RT arc generators
- ballasts (impedances)
- circuits
- ∞ coils
- electric energy storage
- energy storage
- magnet coils
- toroids

industrial areas

- RT cities
- commerce
- construction industry
- ∞ facilities
- industries
- land use
- marketing
- megalopolises
- regional planning
- shipyards
- site selection
- urban development
- urban transportation

industrial energy

- RT allocations
- commercial energy
- distributing
- domestic energy
- economic factors
- ∞ energy
- energy consumption
- energy conversion
- transportation energy

industrial management

- UF *business management*
- GS management
 - . **industrial management**
 - . . engineering management
 - . . inventory management
 - . . . inventory controls
 - . . . personnel management
- RT concurrent engineering
- group technology (manufacturing)
- production management
- research management
- systems management
- total quality management

industrial plants

- UF *factories*
- plants (industries)*
- GS **industrial plants**
 - . foundries
- RT construction industry
- ∞ facilities
- pilot plants

industrial safety

- GS safety
 - . **industrial safety**

- RT accidents
- benzene poisoning
- beryllium poisoning
- carbon tetrachloride poisoning
- health physics
- hydrocarbon poisoning
- industries
- occupation
- reactor safety

industrial wastes

- GS wastes
 - . **industrial wastes**
- RT heavy metals
- industries
- landfills
- liquid wastes
- soil pollution
- solid wastes
- waste disposal
- waste utilization
- waste water

industries

- GS **industries**
 - . aerospace industry
 - . . aircraft industry
 - . construction industry
 - . defense industry
 - . . weapons industry
- RT aircraft production costs
- commerce
- commercial spacecraft
- contract negotiation
- contractors
- economic development
- economic impact
- fishing
- gross national product
- industrial areas
- industrial safety
- industrial wastes
- manufacturing
- personnel subsystems
- retirement
- shipyards
- space industrialization
- space manufacturing
- technologies
- technology assessment
- technology utilization
- tourism
- utilities

inelastic bodies

- USE **rigid structures**

inelastic collisions

DEF Collisions between two particles in which changes occur both in the internal energy of one or both of the particles and in the sums, before and after collisions, of their kinetic energies.

- GS collisions
 - . **inelastic collisions**
- RT scattering

inelastic scattering

- GS scattering
 - . **inelastic scattering**
- RT coherent scattering
- Compton effect
- elastic scattering
- electron scattering
- Mandelstam representation
- nuclear scattering
- quark parton model

inelastic stress

DEF A force acting on a solid and producing a deformation such that the original shape and size of the solid are not restored after the force is removed.

- RT cyclic loads
- mathematical models
- metal fatigue
- stress analysis

- stress-strain diagrams

inequalities

- GS **inequalities**
 - . Schwartz inequality
- RT ∞ mathematics

inert atmosphere

DEF A gaseous medium that because of its lack of chemical reaction is used to enclose tests or equipment.

- GS controlled atmospheres
 - . **inert atmosphere**

inert gases

- USE **rare gases**

inertia

DEF Resistance to acceleration. Used for inertial forces.

- UF *inertial forces*
- GS **inertia**
 - . inertia principle
 - . . Mach inertia principle
- RT ∞ force
- Froude number
- mass
- moments of inertia
- ∞ motion
- similitude law

inertia bonding

DEF The joining of materials with friction and pressure.

- GS bonding
 - . **inertia bonding**
- RT ∞ joining
- metal-metal bonding

inertia moments

- USE **moments of inertia**

inertia principle

- GS inertia
 - . **inertia principle**
 - . . Mach inertia principle
- RT equations of motion
- moments of inertia

inertia wheels

- USE **counter-rotating wheels**
- reaction wheels**

inertial confinement fusion

DEF The process of using intense beams of heavy ions to convey the energy needed to compress and heat small pellets containing deuterium-tritium fuels to achieve ignition of the pellets.

- GS **inertial confinement fusion**
 - . impact fusion
- RT fusion propulsion
- strongly coupled plasmas

inertial coordinates

- GS coordinates
 - . **inertial coordinates**
- RT Astroguide Navigation System
- geocentric coordinates
- inertialess steerable antennas

inertial forces

- USE **inertia**

inertial fusion (reactor)

DEF Reactors in which pellet fusion is initiated by high energy sources including lasers.

- RT ∞ fusion
- fusion reactors
- ion beams
- laser fusion
- laser plasmas
- nuclear fuels
- plasma compression
- pulsed lasers
- relativistic electron beams

inertial guidance

DEF Guidance by means of the measurement and integration of acceleration from within the craft.

inertial navigation

GS guidance (motion)
 . **inertial guidance**
 . . strapdown inertial guidance
RT injection guidance
 midcourse guidance
 reentry guidance
 satellite guidance
 spacecraft guidance
 stabilized platforms
 terminal guidance

inertial measuring units
USE **inertial platforms**

inertial navigation

DEF Dead reckoning performed automatically by a device which gives a continuous indication of position by integration of accelerations since leaving a starting point.

GS navigation
 . **inertial navigation**
 . . Astroguide Navigation System
 . . gimballess inertial navigation

RT acceleration measurement
 air navigation
 all-weather air navigation
 celestial navigation
 dead reckoning
 digital navigation
 hyperbolic navigation
 navigation aids
 polar navigation
 radar navigation
 radio navigation
 Schuler tuning
 space navigation
 star trackers
 strapdown inertial guidance
 surface navigation

inertial platforms

UF *inertial measuring units*
RT gimballess inertial navigation
 gyroscopic stability
 Kalman-Schmidt filtering
 navigation instruments
∞ platforms
 three axis stabilization

inertial reference systems

RT celestial reference systems
∞ reference systems
 relativity
∞ systems

Inertial Upper Stage

DEF A solid propulsive upper stage designed to place spacecraft on high Earth orbits or on escape trajectories for planetary missions.

UF *interim upper stage (STS)*
 IUS

GS interim stages (spacecraft)

 . **Inertial Upper Stage**
RT orbit transfer vehicles
 recoverable spacecraft
 reusable spacecraft
 Space Shuttle orbiters
 space shuttles
 space transportation
 space transportation system
 space tugs
 Ulysses mission
 upper stage rocket engines

inertialess steerable antennas

GS antennas
 . directional antennas
 . . steerable antennas
 . . . **inertialess steerable antennas**
 arrays
 . antenna arrays
 . . steerable antennas
 . . . **inertialess steerable antennas**
RT communication equipment
 inertial coordinates

infarction

GS diseases
 . heart diseases
 . . **infarction**

 . . . myocardial infarction
RT embolisms
 thrombosis
 issues (biology)

infections

USE **infectious diseases**

infectious diseases

UF *infections*
GS diseases
 . **infectious diseases**
 . . airborne infection
 . . bacterial diseases
 . . . cholera
 . . . diphtheria
 . . . keratitis
 . . . syphilis
 . . . tuberculosis
 . . . typhoid
 . . . typhus
 . . conjunctivitis
 . . dermatitis
 . . . contact dermatitis
 . . fungal diseases
 . . hepatitis
 . . meningitis
 . . parasitic diseases
 . . viral diseases
 . . . acquired immunodeficiency
 syndrome
 . . . influenza
 . . . poliomyelitis
 . . . smallpox
RT antiseptics
 Aspergillus
 biological weapons
∞ blisters
 epidemiology
 immunity
 leukopenia

inference

RT assumptions
 deduction
 hypotheses
 implication
∞ induction

infestation

UF *insect damage*
RT beetles
 boll weevils
 bollworms
 chironomus flies
 flatworms
 insects
 larvae
 locusts
 moths
 parasites
 plants (botany)
 silkworms
 worms

infiltration

GS **infiltration**
 . chemical vapor infiltration
RT air conditioning
 permeability
 porosity
 resin film infusion
 voids
 warfare

infinite impulse response filters

(added December 2002)

USE **IIR filters**

infinite span wings

GS airfoils
 . thin airfoils
 . . thin wings
 . . . **infinite span wings**
 . wings
 . . slender wings
 . . . **infinite span wings**
 . . thin wings
 . . . **infinite span wings**
 . . unswept wings

 . . . **infinite span wings**
 planforms
 . wing planforms
 . . **infinite span wings**
RT flexible wings

infinity

DEF A point, line, or region, beyond measurable limits.

RT functions (mathematics)
 geometry
 number theory
 probability theory
 real variables
 series (mathematics)

inflatable devices

USE **inflatable structures**

inflatable gliders

GS expandable structures
 . inflatable structures
 . . **inflatable gliders**
 gliders
 . paragliders
 . . **inflatable gliders**
RT ∞ aircraft

inflatable space structures

(added August 1996)

GS **inflatable space structures**
 . inflatable spacecraft
 . . Beacon satellites
 . . . Beacon Explorer A
 . . . Explorer 22 satellite
RT antennas
 folding structures
 space erectable structures

inflatable spacecraft

GS expandable structures
 . inflatable structures
 . . **inflatable spacecraft**
 . . . Beacon satellites
 Beacon Explorer A
 Explorer 22 satellite
 inflatable space structures
 . **inflatable spacecraft**
 . . Beacon satellites
 . . . Beacon Explorer A
 Explorer 22 satellite
 space erectable structures
 . **inflatable spacecraft**
 . . Beacon satellites
 . . . Beacon Explorer A
 Explorer 22 satellite
RT artificial satellites
 orbital assembly
 self erecting devices
∞ spacecraft
 unmanned spacecraft

inflatable structures

UF *deflating*
 inflatable devices
GS expandable structures
 . **inflatable structures**
 . . air bag restraint devices
 . . balloons
 . . . high altitude balloons
 jimsphere balloons
 skyhook balloons
 superpressure balloons
 meteorological balloons
 jimsphere balloons
 ROBIN balloons
 . . . microballoons
 . . . tethered balloons
 . . ballutes
 . . gas bags
 . . inflatable gliders
 . . inflatable spacecraft
 . . . Beacon satellites
 Beacon Explorer A
 Explorer 22 satellite
RT airships
 boats
 buildings
 flexible bodies
 flexible wings

floats
 folding structures
 inflating
 life rafts
 lunar shelters
 pneumatic equipment
 pressure suits
 radomes
 self erecting devices
 space erectable structures
 space stations
 ∞ structures
 tires
 variable geometry structures

inflating

SN (EXCLUDES ECONOMIC INFLATION)
 RT expansion
 gas injection
 growth
 inflatable structures
 pressure reduction
 pressurizing
 swelling

inflection points

GS geometry
 . Euclidean geometry
 . . points (mathematics)
 . . . **inflection points**
 RT curves (geometry)
 functions (mathematics)
 line shape
 real variables

in-flight monitoring

RT crew procedures (inflight)
 crew procedures (preflight)
 flight control
 flight tests
 monitors
 telemetry

inflight simulation

(added November 1998)
 USE **in-flight simulation**

in-flight simulation

(added October 1998)
 DEF The use of a specialized test aircraft to simulate the flight characteristics of another vehicle. The test aircraft is typically capable of duplicating the computed responses of the simulated vehicle through special aerodynamic and control system features.
 UF *inflight simulation*
 GS simulation
 . flight simulation
 . . **in-flight simulation**
 RT aircraft control
 flight characteristics
 flight control
 flight simulators
 flight tests
 training simulators

in-flight starting

USE **air start**

influence coefficient

GS coefficients
 . **influence coefficient**
 . . structural influence coefficients
 RT aeroelasticity
 discharge coefficient
 elastic properties
 flutter
 force distribution
 ∞ hydraulics
 moment distribution
 nozzle thrust coefficients
 plastic properties
 pressure distribution
 stress analysis
 structural analysis

influenza

GS diseases
 . infectious diseases
 . . viral diseases

. . . **influenza**
 . respiratory diseases
 . . **influenza**

information

DEF Any facts or data which can be used, transferred, or communicated.

GS **information**
 . metadata
 RT annotations
 audio tapes
 communicating
 communication
 ∞ data
 documentation
 mathematical tables
 news media
 presentation
 privacy
 reports
 video tapes

information adaptive system

DEF The spaceborne portion of the NASA End-to-End Data System.

GS information systems
 . **information adaptive system**
 RT communication equipment
 ∞ systems

information analysis

(added April 2000)

GS **information analysis**
 . data mining
 . indexing (information science)
 . scientific visualization
 . . numerical flow visualization
 . trend analysis
 RT information resources management
 information retrieval
 natural language processing

information dissemination

GS communicating
 . **information dissemination**
 . . messages
 . . selective dissemination of information
 RT bibliographies
 catalogs (publications)
 documentation
 electronic publishing
 extraterrestrial communication
 indexes (documentation)
 information transfer
 integrated library systems
 Internet resources
 libraries
 privacy
 reports
 summaries
 websites

information flow

RT aerospace technology transfer
 communicating
 communication
 ∞ flow
 information transfer
 management
 message processing
 selective dissemination of information
 technology transfer

information management

GS management
 . **information management**
 . . information resources management
 . . records management
 RT communicating
 communication
 data base management systems
 data retrieval
 data storage
 indexing (information science)
 information transfer
 integrated library systems

technology transfer

Information Power Grid

(added December 2003)

USE **grid computing (computer networks)**

information processing (biology)

DEF An approach to the study of perception, memory, language and/or thought that considers organisms to be complex systems that receive, transform, store and transmit information.

RT artificial intelligence
 bioelectricity
 brain
 cognition
 cognitive psychology
 electrophysiology
 human performance
 neurophysiology
 perception
 psychophysiology

information resources management

(added September 1995)

DEF A comprehensive strategy for managing an organization's information resources throughout the information life cycle, including creation, collection, use, processing, and dissemination.

UF *IRM*
 GS management
 . information management
 . . **information resources management**
 . resources management
 . . **information resources management**
 RT computer information security
 data management
 data processing
 documentation
 information analysis
 information transfer
 Internet resources
 libraries
 records management
 websites

information retrieval

GS retrieval
 . **information retrieval**
 RT abstracts
 bibliographies
 CD-ROM
 command languages
 computers
 data processing
 data retrieval
 documentation
 documents
 hypertext
 indexes (documentation)
 indexing (information science)
 information analysis
 information transfer
 integrated library systems
 interservice data exchange program
 libraries
 management information systems
 metadata
 numerical data bases
 on-line systems
 query languages
 search profiles
 selective dissemination of information
 space glossaries
 Starsite program
 subjects
 thesauri

information systems

GS **information systems**
 . Atmospheric & Oceanographic Inform Sys
 . Earth Resources Information System
 . EOS data and information system
 . geographic information systems
 . information adaptive system

information theory

- . integrated library systems
- . knowledge based systems
- . . . expert systems
- . cockpit weather information systems
- . decision support systems
- . management information systems
- . pilot support systems

RT

- CD-ROM
- Earth Observing System (EOS)
- grid computing (computer networks)
- information transfer
- Internet resources
- libraries
- management systems
- multimedia
- networks
- on-line systems
- records management
- selective dissemination of information
- ∞ systems
- systems management
- websites

information theory

UF *Shannon information theory*

RT ∞

- applications of mathematics
- automata theory
- ∞ automation
- BCH codes
- coding
- combinatorial analysis
- communication theory
- computers
- correction
- correlation
- cryptography
- cybernetics
- data processing
- data transmission
- decision theory
- ergodic process
- error detection codes
- Fisher information
- Fourier analysis
- game theory
- ∞ logic
- machine translation
- management information systems
- ∞ mathematics
- maximum entropy method
- messages
- ∞ noise
- operations research
- parity
- Petri nets
- phase shift keying
- probability theory
- random processes
- redundancy
- Shannon-Wiener measure
- statistical analysis
- ∞ statistics
- stochastic processes
- systems engineering
- telecommunication
- terms
- ∞ theories

information transfer

RT

- document markup languages
- information dissemination
- information flow
- information management
- information resources management
- information retrieval
- information systems
- international cooperation
- interoperability
- technology transfer
- technology utilization
- World Wide Web

information transmission

USE **data transmission**

infrared absorption

DEF The taking up of energy from infrared radiation by a medium through which the radiation is passing.

GS energy absorption

- . radiation absorption
- . . . electromagnetic absorption
- **infrared absorption**

RT ∞

- absorption
- atmospheric attenuation
- atmospheric optics
- infrared radiation
- light scattering
- optical properties
- thermal emission
- transmittance
- wave attenuation

infrared astronomy

GS

astronomy

RT

- infrared astronomy**
- astronomical photography
- blazars
- Infrared Astronomy Satellite
- infrared cirrus (astronomy)
- infrared photometry
- infrared sources (astronomy)
- Infrared Space Observatory (ISO)
- James Webb Space Telescope
- Kuiper Airborne Observatory
- Large Deployable Reflector
- SOFIA (airborne observatory)
- Space Infrared Telescope Facility
- Wide-field Infrared Survey Explorer

Infrared Astronomy Satellite

DEF A joint NASA-Netherlands-Great Britain spacecraft designed to perform astronomical observations in the infrared spectral region. It was launched on January 25, 1983. Used for IRAS.

UF

IRAS

GS

- artificial satellites
- . scientific satellites
- . . . astronomical satellites
- **Infrared Astronomy Satellite**
- observatories
- . astronomical observatories
- . . . astronomical satellites
- **Infrared Astronomy Satellite**
- RT geosynchronous orbits
- infrared astronomy
- infrared sources (astronomy)
- IRAS-Araki-Alcock comet
- Netherlands space program
- UK satellites
- Wide-field Infrared Survey Explorer

infrared cirrus (astronomy)

(added September 1989)

RT ∞

- clouds
- cosmic dust
- galactic radiation
- infrared astronomy
- infrared radiation
- infrared sources (astronomy)
- interstellar matter
- molecular clouds

infrared detectors

UF

signal-processing-in-the-element detectors

GS

- SPRITE detectors*
- measuring instruments
- . radiation measuring instruments
- . . . actinometers
- radiometers
- **infrared detectors**
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- . . . infrared instruments
- **infrared detectors**
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners

- visible infrared spin scan radiometer
- quantum well infrared photodetectors

RT

- bolometers
- ∞ detectors
- electromagnetic measurement
- focal plane devices
- forest fire detection
- infrared signatures
- mercury cadmium tellurides
- x ray detectors

infrared filters

GS

- electromagnetic wave filters
- . optical filters
- . . . **infrared filters**
- RT electric filters
- ultraviolet filters

infrared horizon scanners

USE

horizon scanners
infrared scanners

infrared imagery

GS

- imagery
- . photography
- . . . **infrared imagery**
- RT color infrared photography
- lunar equator
- thermography
- x ray imagery

infrared inspection

GS

- inspection
- . **infrared inspection**
- RT nondestructive tests
- quality control

infrared instruments

GS

- measuring instruments
- . radiation measuring instruments
- . . . **infrared instruments**
- infrared detectors
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- infrared interferometers
- infrared spectrometers
- filter wheel infrared spectrometers
- infrared spectrophotometers
- RT Advanced Very High Resolution Radiometer
- forest fire detection

infrared interferometers

GS

- measuring instruments
- . interferometers
- . . . **infrared interferometers**
- . . . radiation measuring instruments
- infrared instruments
- **infrared interferometers**
- RT astronomical interferometry
- interferometry
- optical equipment
- optical measurement
- optical measuring instruments
- speckle interferometry

infrared lasers

UF

infrared masers
IR lasers
irasers

GS

stimulated emission devices

. lasers

. . . **infrared lasers**

RT

- argon lasers
- carbon dioxide lasers
- carbon lasers
- carbon monoxide lasers
- chemical lasers
- dye lasers
- gas lasers

HF lasers
liquid lasers
organic lasers
quantum cascade lasers
solid state lasers
waveguide lasers
YLF lasers

infrared masers

USE **infrared lasers**

infrared photography

GS imagery
. photography
. . multispectral photography
. . . **infrared photography**
. . . . color infrared photography
RT aerial photography
astronomical photography
black and white photography
cinematography
faint object camera
forest fire detection
geographic information systems
ice mapping
lunar photography
meteorological satellites
METEOSAT satellite
multispectral band cameras
Nimbus satellites
radiometers
satellite-borne photography
timber inventory
ultraviolet photography

infrared photometry

DEF Photometry in the infrared region.
GS optical measurement
. photometry
. . **infrared photometry**
RT astronomical photometry
infrared astronomy
infrared spectra
near infrared radiation
stellar spectrophotometry

infrared radar

DEF Radar covering a range from the limit of the visible spectrum to the shortest microwaves.
GS radar
. **infrared radar**
RT CALIPSO (Pathfinder satellite)
FLIR detectors
optical radar
radar imagery

infrared radiation

DEF Electromagnetic radiation lying in the wavelength interval from 75 microns to an indefinite upper boundary sometimes arbitrarily set at 1000 microns (0. 01 centimeter).
GS electromagnetic radiation
. **infrared radiation**
. . far infrared radiation
. . near infrared radiation
RT beams (radiation)
black body radiation
coherent electromagnetic radiation
energy absorption
evaporography
exhaust emission
heat
infrared absorption
infrared cirrus (astronomy)
infrared signatures
infrared sources (astronomy)
light (visible radiation)
microwaves
monochromatic radiation
planetary radiation
polarized electromagnetic radiation
∞ radiation
Seyfert galaxies
solar radiation
sunlight
terrestrial radiation
thermal radiation
wavelengths

xenon lamps

infrared radiometers

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. **infrared radiometers**
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
. . infrared instruments
. . . infrared detectors
. . . . **infrared radiometers**
. Advanced Very High Resolution Radiometer
. infrared scanners
. visible infrared spin scan radiometer
RT aerial reconnaissance
atmospheric correction
data acquisition
Earth Resources Program
environmental monitoring
forest fire detection
pressure modulator radiometers
radiometric correction
satellite-borne instruments
thermal mapping

infrared reflection

GS reflection
. **infrared reflection**
RT optical reflection
radiative heat transfer
radio echoes
spread reflection
ultraviolet reflection

infrared scanners

UF *infrared horizon scanners*
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. infrared radiometers
. **infrared scanners**
. infrared detectors
. infrared radiometers
. **infrared scanners**
scanners
. **infrared scanners**
RT forest fire detection
horizon scanners
multispectral band scanners
optical equipment
Scanner project
thermal mapping

infrared signatures

DEF The infrared spectral characteristics of an object or uniform land surface which uniquely defines it.
GS signatures
. **infrared signatures**
RT infrared detectors
infrared radiation
infrared spectra
signature analysis

infrared sources (astronomy)

DEF Celestial bodies or astronomical regions emitting a large amount of radiation in the infrared portion of the electromagnetic spectrum.
GS celestial bodies
. **infrared sources (astronomy)**
. . infrared stars
RT astronomy
Herbig-Haro objects
infrared astronomy
Infrared Astronomy Satellite
infrared cirrus (astronomy)

infrared radiation

Infrared Space Observatory (ISO)

DEF An astronomical satellite observatory funded by ESA operating at wavelengths from 3 to 200 microns. The observatory is comprised of a 60 cm Cassegrain telescope, a CCD infrared camera, two Michelson interferometers, and a photopolarimeter.
GS artificial satellites
. ESA satellites
. . **Infrared Space Observatory (ISO)**
. . scientific satellites
. . . astronomical satellites
. . . . **Infrared Space Observatory (ISO)**
ESA spacecraft
ESA satellites
. . **Infrared Space Observatory (ISO)**
observatories
. astronomical observatories
. . astronomical satellites
. . . **Infrared Space Observatory (ISO)**
telescopes
. spaceborne telescopes
. . **Infrared Space Observatory (ISO)**
RT European space programs
infrared astronomy
spaceborne astronomy

infrared spectra

GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **infrared spectra**
RT ∞ absorption
emission spectra
infrared photometry
infrared signatures
line spectra
microwave spectra
molecular spectra
solar spectra
stellar spectra

infrared spectrometers

GS measuring instruments
. optical measuring instruments
. . **infrared spectrometers**
. . . filter wheel infrared spectrometers
. . radiation measuring instruments
. . . actinometers
. . . . **infrared spectrometers**
. filter wheel infrared spectrometers
. infrared instruments
. **infrared spectrometers**
. filter wheel infrared spectrometers
. . spectrometers
. . . **infrared spectrometers**
. . . . filter wheel infrared spectrometers
optical equipment
. optical measuring instruments
. . **infrared spectrometers**
. . . filter wheel infrared spectrometers
RT Ebert spectrometers
solar spectrometers

infrared spectrophotometers

GS measuring instruments
. optical measuring instruments
. . spectrophotometers
. . . **infrared spectrophotometers**
. . . radiation measuring instruments
. . . . actinometers
. spectrophotometers
. **infrared spectrophotometers**
. infrared instruments
. **infrared spectrophotometers**
optical equipment
. optical measuring instruments
. . spectrophotometers
. . . **infrared spectrophotometers**
RT chemical analysis
filter wheel infrared spectrometers

infrared spectroscopy

photometers

infrared spectroscopy

GS spectroscopy
. **infrared spectroscopy**
RT absorption spectroscopy
astronomical spectroscopy
chemical analysis
electron spectroscopy
laser spectrometers
molecular spectroscopy
molecular structure
optogalvanic spectroscopy
Raman spectroscopy
spectrometers
spectroscopic analysis
sulfur hexafluoride
vacuum spectroscopy

infrared stars

GS celestial bodies
. infrared sources (astronomy)
. . **infrared stars**
. stars
. . **infrared stars**
RT Herbig-Haro objects

infrared suppression

DEF The shielding and/or protection of aircraft engines and exhausts from heat-seeking missiles and/or detecting devices.
RT afterburning
aircraft detection
aircraft engines
cooling systems
exhaust gases
exhaust nozzles
heat shielding
jet engines
jet exhaust
reaction products
suppressors
temperature control

infrared telescopes

DEF Special optical instruments for astronomical observations in the range from one micron to one millimeter.
GS telescopes
. **infrared telescopes**
. . Large Deployable Reflector
. . Space Infrared Telescope Facility
RT astronomy
Astroplane
James Webb Space Telescope
Next Generation Space Telescope
project

infrared tracking

GS tracking (position)
. **infrared tracking**
RT antimissile missiles
compensatory tracking
homing devices
missile tracking
optical tracking
pursuit tracking
radiometers

infrared windows

DEF A frequency region in the infrared where there is good transmission of electromagnetic radiation through the atmosphere.
RT apertures
lasers
optical materials
∞ windows

infrasonic frequencies

DEF Frequencies below the audiofrequency range.
GS frequencies
. **infrasonic frequencies**
RT acoustics

∞ ingestion

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW.)
RT ingestion (biology)

ingestion (engines)

ingestion (biology)

GS **ingestion (biology)**
. drinking
. eating
. grazing
RT ∞ ingestion
swallowing

ingestion (engines)

RT bird-aircraft collisions
engine failure
∞ ingestion

ingots

DEF Cast metals in forms intended for subsequent fabrication.
GS castings
. **ingots**
RT billets
casting
molds
solidification

ingredients

RT admixtures
∞ components
∞ composition
content
formulations
mixtures

ingress (spacecraft passageway)

RT air locks
doors
egress
hatches
openings

inhabitants

GS communities
. **inhabitants**
. . mountain inhabitants
RT aborigines
cities
demography
personnel
residential areas

inhalation

USE **respiration**

∞ inhibition

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW))
RT attenuation
corrosion prevention
detachment
disabilities
dithers
frustration
inhibition (psychology)
inhibitors
introversion
lethargy
passivity
prevention
∞ reduction
stopping

inhibition (psychology)

RT conditioning (learning)
∞ inhibition

inhibitors

DEF Things that inhibit, specifically, substances bonded, taped, or dip dried onto a solid propellant to restrict the burning surface and to give direction to the burning process.

GS **inhibitors**
. enzyme inhibitors
. wear inhibitors
RT additives
antidotes
antifouling
anticicing additives
antioxidants
case bonded propellants
catalysts

coatings
corrosion prevention
∞ inhibition
neutralizers
packaging
passivity
propellant additives
propellant decomposition
propellant storability
retardants
silencers
solid propellant ignition
solid propellants
suppressors

inhomogeneity

UF *nonhomogeneity*
RT defects
heterogeneity
nonuniformity

inhour equation

RT ∞ equations
nuclear reactions
nuclear reactors
reactivity
reactor physics

initial value problems

USE **boundary value problems**

initialisms

USE **abbreviations**

initiation

RT activation
actuation
detonation
∞ generation
∞ induction
inoculation
nucleation
∞ priming
reactor startup tests
starting
stimulation

∞ initiators

SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW))
RT catalysts
initiators (explosives)
stypnates

initiators (explosives)

UF *electroexplosive devices*
GS explosive devices
. **initiators (explosives)**
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
igniters
. **initiators (explosives)**
. . boosters (explosives)
. . caps (explosives)
. . detonators
. . exploding wires
. . primers (explosives)
RT fuses (ordnance)
∞ initiators
pyrotechnics
stypnates

injection

GS **injection**
. carrier injection
. fluid injection
. gas injection
. liquid injection
. . deep well injection (wastes)
. . water injection
. fuel injection
. ion injection
. secondary injection
. transearth injection
. translunar injection
RT Barritt diodes
blowing

- boundary layer separation
- ∞ charging
- feeding (supplying)
- filling
- fluid flow
- implantation
- injectors
- input
- perforating
- supplying
- injection carburetors*
- USE **carburetors**
- fuel injection**
- injection guidance**
 - GS guidance (motion)
 - . **injection guidance**
 - RT ascent trajectories
 - celestial navigation
 - command guidance
 - inertial guidance
 - midcourse guidance
 - rendezvous guidance
 - satellite guidance
 - spacecraft guidance
 - transearth injection
 - translunar injection
- injection lasers**
 - DEF Lasers that use a forward biased semiconductor junction as the active lasing medium.
 - GS stimulated emission devices
 - . lasers
 - . . **injection lasers**
 - . . . quantum cascade lasers
 - RT aluminum gallium arsenide lasers
 - gallium arsenide lasers
 - gallium arsenides
 - injection locking
 - semiconductor lasers
- injection locking**
 - RT carrier injection
 - injection lasers
 - laser mode locking
- injection molding**
 - DEF A forming process in which a heat softened or plasticized material is forced from a cylinder into a relatively cool cavity which gives the product a desired shape. A similar process is used for forming solid propellants from quick cure ingredients.
 - GS forming techniques
 - . **injection molding**
 - RT ceramics
 - dies
 - extruding
 - melting
 - molding materials
 - molds
 - plastics
 - resin transfer molding
- injectors**
 - DEF Devices that propel fuel or propellant into a combustion chamber under pressure other than atmospheric.
 - GS **injectors**
 - . vortex injectors
 - RT blowers
 - carburetors
 - ejectors
 - feeders
 - fuel injection
 - fuel systems
 - injection
 - jet flow
 - jet mixing flow
 - ∞ jet nozzles
 - ∞ jets
 - nozzle flow
 - ∞ nozzles
 - orifices
 - pumps
 - spray nozzles
- Injun 1 satellite**
 - GS artificial satellites
- . Injun satellites
- . . **Injun 1 satellite**
- Injun 3 satellite**
 - GS artificial satellites
 - . Injun satellites
 - . . **Injun 3 satellite**
- Injun 4 satellite**
 - GS artificial satellites
 - . Injun satellites
 - . . **Injun 4 satellite**
- Injun 5 satellite*
- USE **Explorer 40 satellite**
- Injun Explorer*
- USE **Explorer 25 satellite**
- Injun satellites**
 - GS artificial satellites
 - . **Injun satellites**
 - . . Explorer 25 satellite
 - . . Injun 1 satellite
 - . . Injun 3 satellite
 - . . Injun 4 satellite
- injuries**
 - GS **injuries**
 - . back injuries
 - . barotrauma
 - . brain damage
 - . burns (injuries)
 - . crash injuries
 - . ejection injuries
 - . frostbite
 - . lesions
 - . . pulmonary lesions
 - . noise injuries
 - . parachuting injury
 - . paralysis
 - . radiation injuries
 - . spinal cord injuries
 - . whiplash injuries
 - RT accidents
 - ∞ blisters
 - chemical defense
 - damage
 - death
 - diagnosis
 - foreign bodies
 - hazards
 - hemorrhages
 - impairment
 - necrosis
 - sabotage
 - veterinary medicine
 - wound healing
- inks**
 - RT drawings
 - graphic arts
 - pigments
 - printing
- inland waters**
 - GS water
 - . **inland waters**
 - . . ground water
 - RT Great Lakes (North America)
 - Great Salt Lake (UT)
 - lakes
 - rivers
 - springs (water)
 - water pollution
 - water resources
 - water runoff
- inlet airframe configurations**
 - DEF Optimum locations of engine inlets for various purposes.
 - GS intake systems
 - . air intakes
 - . . **inlet airframe configurations**
 - RT bypass ratio
 - engine inlets
 - flow geometry
 - hypersonic inlets
 - inlet flow
 - inlet nozzles
- nose inlets
- side inlets
- supersonic inlets
- inlet flow**
 - GS fluid flow
 - . internal flow
 - . . **inlet flow**
 - RT bypass ratio
 - choked flow
 - ∞ diffusers
 - dump combustors
 - flow geometry
 - fluid injection
 - head flow
 - inlet airframe configurations
 - intake systems
 - ∞ pressure drop
 - supersonic inlets
 - vortex generators
- inlet nozzles**
 - RT air intakes
 - annular nozzles
 - bypass ratio
 - conical nozzles
 - ∞ diffusers
 - engine inlets
 - exhaust nozzles
 - inlet airframe configurations
 - intake systems
 - internal compression inlets
 - ∞ nozzles
 - openings
 - pipe nozzles
- inlet pressure**
 - DEF In connection with performance data on pumps, when not otherwise specified, the total static pressure measured in a standard testing chamber by a vacuum gage located near the inlet port.
 - GS pressure
 - . **inlet pressure**
 - RT pressure gradients
 - pressure recovery
 - stagnation pressure
 - water pressure
- inlet temperature**
 - DEF A location for measuring the temperature of fluids, particles, etc., entering a heat system, an engine, or other machine.
 - GS temperature
 - . **inlet temperature**
 - RT air intakes
 - engine inlets
 - fuel systems
 - gas temperature
 - intake systems
- inlets (devices)*
- USE **intake systems**
- inlets (topography)**
 - DEF Small narrow openings, recesses, indentations, or other entrances into coastlines or shores of lakes or rivers, through which water penetrates into land.
 - GS landforms
 - . **inlets (topography)**
 - . . bayous
 - . . Cook Inlet (AK)
 - RT bays (topographic features)
 - Delaware Bay (US)
 - fiords
 - gulfs
 - lagoons
 - Persian Gulf
 - Saginaw Bay (MI)
 - sounds (topographic features)
- inliers (landforms)**
 - DEF Areas or groups of rocks surrounded by rocks of younger age.
 - GS landforms
 - . **inliers (landforms)**
 - RT erosion
 - geological faults
 - geology

INMARSAT satellites

petrography
petrology
rock intrusions
rocks
structural properties (geology)

INMARSAT satellites

(added September 1994)

GS artificial satellites
 . **INMARSAT satellites**
RT communication satellites
international cooperation
Marisat satellites
NAVSTAR satellites
telecommunication

inner radiation belt

GS environments
 . **inner radiation belt**
 particles
 . charged particles
 . . magnetically trapped particles
 . . . radiation belts
 **inner radiation belt**
 corpuscular radiation
 radiation belts
 **inner radiation belt**
 trapped particles
 magnetically trapped particles
 radiation belts
 **inner radiation belt**
RT artificial radiation belts
outer radiation belt
proton belts
∞ radiation
single event upsets

inoculation

UF *seeding (inoculation)*
RT crystal growth
crystallization
immunity
initiation
nucleation
vaccines

inoculum

GS serums
 . **inoculum**
 vaccines
 . **inoculum**
RT antibodies
antigens
physiological defenses

inorganic chemistry

DEF The study of the composition, properties, structure, and reactions of the chemical elements and all their compounds with the exception of hydrocarbons and their derivatives.
RT analytical chemistry
∞ chemistry

inorganic coatings

GS coatings
 . **inorganic coatings**
 . . anodic coatings
 . . ceramic coatings
RT antiradar coatings
protective coatings

inorganic compounds

GS **inorganic compounds**
 . ammonia
 . . liquid ammonia
RT acids
∞ bases
∞ chemical compounds
flame retardants
intermetallics
molten salts
∞ salts

∞ inorganic materials

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED CONSULT THE TERMS LISTED BELOW)
RT ∞ materials
nonflammable materials
refractory materials
thermochromatic materials

vitreous materials

inorganic nitrates

GS nitrogen compounds
 . nitrates
 . . **inorganic nitrates**
 . . . ammonium nitrates
 . . . hydrazine nitrate
 . . . potassium nitrates
 . . . silver nitrates
 . . . sodium nitrates

inorganic peroxides

UF *superoxides*
GS chalcogenides
 . oxides
 . . anhydrides
 . . . peroxides
 **inorganic peroxides**
 hydrogen peroxide
RT organic peroxides

inorganic sulfides

GS chalcogenides
 . sulfides
 . . **inorganic sulfides**
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zincblende
 sulfur compounds
 . sulfides
 . . **inorganic sulfides**
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zincblende

inositols

GS organic compounds
 . carbohydrates
 . . sugars
 . . . **inositols**

input

RT accumulations
collection
feeding (supplying)
filling
injection
∞ loading
output
reading
replenishment
supplying

input/output routines

GS computer programs
 . computer systems programs
 . . **input/output routines**
RT data transfer (computers)
disk operating system (DOS)
operating systems (computers)
random access

∞ routines

INSAT satellites

USE **Indian spacecraft**

insect damage

USE **infestation**

insecticides

GS poisons
 . pesticides
 . . **insecticides**
 . . . Carbamates (tradename)
 urethanes
 . . . DDT
 . . . dieldrin
 . . . phenothiazines
RT endrin
entomology
toxicology

insects

GS animals
 . invertebrates
 . . arthropods
 . . . **insects**
 bees
 bollworms
 chironomus flies
 cockroaches
 Coleoptera
 beetles
 tribolia
 boll weevils
 crickets
 Drosophila
 fireflies
 grasshoppers
 locusts
 moths
 silkworms
RT entomology
infestation
larvae
pupa

insensitivity

USE **sensitivity**

insertion

GS **insertion**
 . orbit insertion
RT collating
embedding
grafting
implantation
impregnating
inserts
network analysis
transmission loss

insertion loss

RT energy dissipation
losses
transmission loss

inserts

GS **inserts**
 . nozzle inserts
RT accessories
bushings
fasteners
fittings
insertion
linings
spacers
spools
washers (spacers)

inshore zones

USE **beaches**

insolation

DEF In general, solar radiation received at the Earth's surface. The rate at which direct solar radiation is incident upon a unit horizontal surface at any point on or above the surface of Earth. (Contracted from INcoming SOLar radiATION).
GS solar energy

. **insolation**
 RT greenhouse effect
 meteorology
 photosynthetically active radiation
 solar heating
 solar radiation
 sunlight
 Surface Meteorology and Solar Energy project

insomnia
 GS sleep
 . **insomnia**
 RT sleep deprivation

inspection
 DEF The process of measuring, examining, testing, gaging, or making other determinations with respect to materials, products, services, systems, or environments.
 GS **inspection**
 . infrared inspection
 . x ray inspection
 RT acceptability
 checkout
 chemical tests
 construction
 detection
 endoscopes
 evaluation
 examination
 identifying
 nondestructive tests
 performance tests
 preventive maintenance
 quality control
 sampling
 specifications
 standards
 static tests
 statistical analysis
 surveillance
 tolerances (mechanics)
 ultrasonic flaw detection

Inspector satellite
 GS artificial satellites
 . **Inspector satellite**
 military spacecraft
 . reconnaissance spacecraft
 . . **Inspector satellite**

inspiration
 RT intellect
 mental performance
 psychology

instability
 USE **stability**

installation
 USE **installing**

installation manuals
 GS documents
 . manuals
 . . **installation manuals**

installing
 UF *installation*
 RT assembling
 construction
 look angles (electronics)
 maintenance
 relocation
 replacing
 retrofitting

instantons
 DEF Field configurations of Yang-Mills theory which are localized in space and time. These configurations are solutions of the Yang-Mills field equations in Euclidean space time which allow the transitions (tunneling) from one vacuum state to another.
 RT elementary particles
 plasma physics
 quantum chromodynamics

quarks

institutions
 GS **institutions**
 . bureaus (organizations)
 RT federations
 teams

instruction sets (computers)
 RT alphanumeric characters
 Boolean algebra
 computer programs
 mathematical logic

instructions
 USE **education**

instructors
 UF *teachers*
 GS personnel
 . **instructors**
 RT education
 learning
 schools
 students
 training evaluation
 universities

instrument approach
 DEF A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

GS approach
 . **instrument approach**
 RT aircraft approach spacing
 aircraft instruments
 approach control
 approach indicators
 blind landing
 flight control
 flight instruments
 glide paths
 landing aids
 landing radar
 night flights (aircraft)

instrument compensation
 GS **instrument compensation**
 . temperature compensation
 RT adaptive optics
 calibrating
 ∞ compensation
 error correcting devices
 laser guide stars
 systematic errors

instrument drift
 USE **drift (instrumentation)**

instrument errors
 GS errors
 . **instrument errors**
 RT bias
 boresight error
 calibrating
 drift (instrumentation)
 linearity
 optical correction procedure
 spectral sensitivity
 systematic errors

instrument flight rules
 UF *IFR (rules)*
 GS rules
 . flight rules
 . . **instrument flight rules**
 RT air navigation
 air traffic control
 approach control
 beacons
 blind landing
 flight conditions
 flight instruments
 flight plans
 landing

low visibility

instrument landing systems
 DEF A system which provides, in the aircraft, a display of the lateral, longitudinal, and vertical references necessary for a landing. Used for ILS (landing systems).

UF *ILS (landing systems)*
 GS landing aids
 . **instrument landing systems**
 . . all-weather landing systems
 RT air traffic control
 aircraft guidance
 aircraft instruments
 aircraft landing
 airports
 approach control
 approach indicators
 automatic landing control
 blind landing
 display devices
 flight control
 flight instruments
 glide paths
 ground based control
 ∞ instruments
 landing
 landing instruments
 night flights (aircraft)
 radar
 radar approach control
 radio altimeters
 radio beacons
 ∞ systems
 tracking (position)

instrument orientation
 RT alignment
 attitude (inclination)
 bearing (direction)
 directivity
 look angles (electronics)
 ∞ orientation
 positioning

instrument packages
 GS packages
 . **instrument packages**
 . . Apollo Lunar Surface Experiments Package
 . . EASEP
 . . EREP
 RT AMPS (satellite payload)
 automatic weather stations
 data collection platforms
 local scientific survey module
 modules
 molecular shields
 ocean data acquisitions systems
 Orbiting Frog Otolith
 payload assist module
 payloads
 satellite-borne instruments
 SIM
 spacecraft instruments
 weather stations

instrument receivers
 RT controllers
 ∞ detectors
 display devices
 indicating instruments
 ∞ instruments
 isotropic turbulence
 measuring instruments
 receivers
 recording instruments
 transducers

instrument transformers
 GS transformers
 . **instrument transformers**
 RT ∞ converters
 resolvers

instrument transmitters
 GS transmitters
 . **instrument transmitters**
 RT controllers
 ∞ instruments

instruments

measuring instruments
recording instruments
transducers

instrumental analysis

USE **analyzing automation**

instrumentation

USE **instruments**

∞ instruments

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *instrumentation*
RT actuators
Advanced Range Instrumentation Ship
aircraft instruments
Apollo Lunar Surface Experiments Package
automatic control
bioinstrumentation
bubble technique
controllers
densimeters
display devices
drag force anemometers
EASEP
EREP
flight instruments
force vector recorders
haploscopes
heliostats
helmet mounted displays
indicating instruments
instrument landing systems
instrument receivers
instrument transmitters
laser altimeters
measuring instruments
meteorological instruments
microwave sensors
monitors
navigation instruments
oculometers
packages
propellant actuated instruments
recording instruments
remote control
rocket-borne instruments
satellite instruments
satellite-borne instruments
scatterometers
SIM
sound detecting and ranging
spacecraft instruments
surgical instruments
transducers
transmitters
tribometers
turbine instruments
ultrasonic densimeters

∞ insulated structures

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT dielectrics
electrical insulation
heat radiators
heat shielding
hypersonic vehicles
insulation
radiation shielding
reentry shielding
reentry vehicles
spacecraft shielding

insulating materials

USE **insulation**

insulation

SN (MATERIAL)
UF *insulating materials*
GS **insulation**
. electrical insulation
. multilayer insulation
. thermal insulation
RT absorbers (materials)

asbestos
ceilings (architecture)
composite materials
concretes
∞ construction materials
damping
honeycomb structures
∞ insulated structures
insulators
interlayers
isolation
isolators
jackets
lining processes
linings
∞ materials
micarta
oxides
potting compounds
protection
suppressors
vermiculite
waterproofing

insulators

SN (EXCLUDES THERMAL INSULATION--LIMITED TO DEVICES COMPOSED OF ELECTRICALLY INSULATIVE MATERIALS)
RT attenuators
dielectrics
electric conductors
electrical insulation
insulation
transmission lines

insulin

GS drugs
. **insulin**
secretions
. endocrine secretions
. **insulin**
RT diabetes mellitus

insurance (contracts)

DEF Coverage by contract whereby one party undertakes to indemnify or guarantee another against loss by a specified contingency or peril.
GS contracts
. **insurance (contracts)**
RT agreements
air law
aircraft accident investigation
aircraft accidents
assurance
economic factors
extensions
grants
legal liability
public law
space commercialization
space law

intake systems

UF *induction systems inlets (devices)*
GS **intake systems**
. air intakes
. engine inlets
. hypersonic inlets
. inlet airframe configurations
. supersonic inlets
. conical inlets
. helical inducers
. internal compression inlets
. nose inlets
. side inlets
RT aerodynamic configurations
annular ducts
bypass ratio
cooling systems
duct geometry
ducted bodies
ducts
entrances
exhaust systems
feed systems
feeders
fuel systems
inlet flow

inlet nozzles
inlet temperature
manifolds
openings
pipe nozzles
plenum chambers
ramps (structures)
scoops
∞ systems
∞ water intakes

Intasat satellite

GS artificial satellites
. scientific satellites
. . Environmental Research Satellites
. . . **Intasat satellite**
RT Earth ionosphere
lower atmosphere
magnetic fields
troposphere

Integ Med and Behavioral Lab Measur System

USE **IMBLMS**

Integ Program for Aerospace Veh Design

USE **IPAD**

integers

DEF Whole numbers; numbers that are not a fraction.
GS number theory
. **integers**
real numbers
. **integers**
RT arithmetic
complex numbers
congruences
digits
∞ numbers

integral calculus

GS analysis (mathematics)
. calculus
. . **integral calculus**
. real variables
. . measure and integration
. . . **integral calculus**
RT area
differential calculus
integrals
J integral
numerical integration
operational calculus

integral equations

UF *integrodifferential equations*
GS analysis (mathematics)
. functional analysis
. . **integral equations**
. . . Fredholm equations
. . . J integral
. . . singular integral equations
. . . Volterra equations
. . . Wiener Hopf equations
RT asymptotic properties
calculus of variations
differential equations
distributed parameter systems
∞ equations
ill-conditioned problems (mathematics)
ill-posed problems (mathematics)
Mellin transforms
meshfree methods
method of moments
nonlinear equations
Percus method
range (extremes)
Schmidt method
transport theory

integral functions

USE **entire functions**

integral rocket ramjets

DEF A combination of a solid propellant rocket and a ramjet which uses the empty booster case as a ramjet combustor.
GS engines
. air breathing engines

. . . gas turbine engines
 . . . jet engines
 ramjet engines
 **integral rocket ramjets**
 . internal combustion engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **integral rocket ramjets**
 . turbine engines
 . . gas turbine engines
 . . . jet engines
 ramjet engines
 **integral rocket ramjets**
 RT rocket-based combined-cycle engines
 solid propellant rocket engines
 turbine engines

integral transformations

UF *transform integrals*
 GS analysis (mathematics)
 . functional analysis
 . . **integral transformations**
 . . . Fourier transformation
 fast Fourier transformations
 . . . Fourier-Bessel transformations
 . . . Hilbert transformation
 . . . Laplace transformation
 transformations (mathematics)
 . **integral transformations**
 . . Fourier transformation
 . . . fast Fourier transformations
 . . Fourier-Bessel transformations
 . . Hilbert transformation
 . . Laplace transformation
 RT convolution integrals
 Lighthill method
 operators (mathematics)

integrals

DEF Of or pertaining to an integer.
 GS **integrals**
 . convolution integrals
 RT differential equations
 functionals
 integral calculus
 ∞ mathematics

integrated circuits

DEF Combinations of interconnected circuit elements inseparably associated on or within continuous substrates. To further define the nature of integrated circuits, additional modifiers may be prefixed.
 UF *monolithic circuits*
 GS circuits
 . **integrated circuits**
 . . application specific integrated circuits
 . . DTL integrated circuits
 . . encapsulated microcircuits
 . . field-programmable gate arrays
 . . large scale integration
 . . linear integrated circuits
 . . medium scale integration
 . . TTL integrated circuits
 . . very large scale integration
 . . VHSIC (circuits)
 RT burn-in
 charge flow devices
 chips (electronics)
 chips (memory devices)
 electronic packaging
 evolvable hardware
 hardware description languages
 integrated optics
 ion implantation
 latch-up
 microchannel plates
 microminiaturization
 microprocessors
 microstrip devices
 molecular electronics
 optoelectronic devices
 photomasks
 photoresists
 printed circuits
 reconfigurable hardware
 resonant tunneling diodes
 thick films

thin films
 transistor circuits

integrated energy systems

DEF Community systems for energy generation and distribution.
 RT communities
 electric power plants
 energy conversion
 energy distribution
 heating
 ∞ systems
 total energy systems
 utilities

integrated global ocean station systems

UF *IGOSS*
 RT data collection platforms
 Global Atmospheric Research Program
 ground stations
 international cooperation
 oceanographic parameters
 ∞ systems
 weather stations

integrated library systems

GS information systems
 . **integrated library systems**
 RT information dissemination
 information management
 information retrieval
 libraries
 on-line systems

Integrated Maneuvering Life Support Sys

USE **IMLSS**

integrated mission control center

UF *IMCC (control center)*
 GS stations
 . ground stations
 . . **integrated mission control center**
 RT ∞ control
 Gemini project
 ground based control
 real time operation

integrated optics

DEF Thin film devices containing tiny lenses, prisms, and switches to transmit very thin laser beams, which serve the same purposes as the manipulation of electrons in thin film devices of integrated electronics.
 RT electro-optics
 free-space optical interconnects
 integrated circuits
 Langmuir-Blodgett films
 lenses
 light transmission
 monomolecular films
 optical bistability
 optical interconnects
 optical switching
 optical waveguides
 ∞ optics
 optoelectronic devices
 thin films

Integrated Truss Structure P1

(added November 2002)

DEF A structural component of the International Space Station incorporating elements of the External Active Thermal Control Subsystem, the UHF-band communications subsystem, and portions of the rail system for the Mobile Servicing System.

GS space station structures
 . **Integrated Truss Structure P1**
 RT International Space Station
 large space structures
 trusses

Integrated Truss Structure S1

(added October 2002)

DEF A structural component of the International Space Station incorporating elements of the External Active Thermal Control Subsystem, the S-band communications subsystem, and

portions of the rail system for the Mobile Servicing System.

GS space station structures
 . **Integrated Truss Structure S1**
 RT International Space Station
 large space structures
 trusses

Integrated Truss Structure Z1

(added June 2000)

DEF An early exterior framework for the International Space Station to allow the first U.S. solar arrays to be temporarily installed on the Unity module for early power.

UF *Z1 truss structure*
 GS space station structures
 . **Integrated Truss Structure Z1**
 RT International Space Station
 trusses
 Unity connecting module

integration (real variables)

USE **measure and integration**

integrators

DEF In digital computers, devices for accomplishing a numeric approximation of the mathematical process of integration. Devices whose output is proportional to the integral of an input signal.

GS **integrators**
 . digital integrators
 RT circuits
 differentiators
 solions

integrity

GS **integrity**
 . computer program integrity
 RT completeness
 privacy
 security
 vulnerability

integrodifferential equations

USE **differential equations**
integral equations

Intel 8080 microprocessor

GS computer components
 . microprocessors
 . . **Intel 8080 microprocessor**
 data processing equipment
 . microprocessors
 . . **Intel 8080 microprocessor**
 RT computers

intellect

GS intelligence
 . **intellect**
 RT artificial intelligence
 inspiration
 mental performance
 psychology

intellectual property

(added October 1995)

GS **intellectual property**
 . copyrights
 . patents
 RT computer programs
 inventions
 law (jurisprudence)
 legal liability
 licensing
 open source licensing (computers)
 patent policy
 procurement policy

intelligence

GS **intelligence**
 . artificial intelligence
 . extraterrestrial intelligence
 . intellect
 RT abilities
 cognitive psychology
 intelligence tests
 mental health

intelligence tests

mental performance

intelligence tests

(added September 1992)

RT abilities
human performance
intelligence
mental performance
personality tests
personnel selection
psychological tests
∞ tests

intelligent materials

(added March 1998)

USE **smart materials**

intelligent structures

USE **smart structures**

intelligibility

GS **intelligibility**
. speech recognition
RT ambiguity
∞ coherence
∞ communication theory
∞ interpretation
messages
orthography
phonemics
phonetics
psycholinguistics
scrambling (communication)

Intelsat satellites

GS artificial satellites
. communication satellites
. . **Intelsat satellites**

intensification

USE **amplification**

intensifier tubes

USE **image intensifiers**

intensifiers

GS **intensifiers**
. image intensifiers
. . image orthicons
RT amplifiers

∞ intensity

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF In general, the degree or amount, usually expressed by the elemental time rate or spatial distribution of some condition or physical quantity, such as electric field, sound, magnetism, etc. With respect to electromagnetic radiation, a measure of the radiant flux per unit solid angle emanating from some source. Frequently, it is desirable to specify this as radiant intensity in order to distinguish it clearly from luminous intensity.

RT amplitudes
brightness
flux (rate)
flux density
level (quantity)
loudness
luminance
luminous intensity
magnitude
noise intensity
radiance
stellar magnitude

interacting galaxies

(added November 1988)

UF *galaxy interaction*
GS celestial bodies
. galaxies
. . **interacting galaxies**
RT galactic structure
∞ interactions
retrograde orbits
ring galaxies
shell galaxies

stellar systems

interactional aerodynamics

GS mechanics (physics)
. fluid mechanics
. . fluid dynamics
. . . gas dynamics
. . . . **interactional aerodynamics**
RT airfoils
blade-vortex interaction
computational fluid dynamics
∞ flow
laminar boundary layer
rotor stator interactions
shock wave interaction

∞ interactions

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air land interactions
air sea ice interactions
air water interactions
atomic collisions
atomic interactions
beam interactions
blade-vortex interaction
configuration interaction
electromagnetic interactions
electron phonon interactions
electroweak interactions (field theory)
elementary particle interactions
fluid-solid interactions
gas-gas interactions
gas-ion interactions
gas-liquid interactions
gas-metal interactions
gas-solid interactions
high energy interactions
interacting galaxies
ion atom interactions
laser plasma interactions
laser target interactions
man environment interactions
meson-meson interactions
meson-nucleon interactions
molecular collisions
molecular interactions
nuclear capture
nuclear interactions
nuclear reactions
nucleon-nucleon interactions
particle interactions
particle theory
photon-electron interaction
plasma interaction experiment
plasma interactions
plasma-electromagnetic interaction
plasma-particle interactions
proton-proton reactions
shock wave interaction
solar terrestrial interactions
sound-sound interactions
spin-orbit interactions
strong interactions (field theory)
wave interaction
weak energy interactions
weak interactions (field theory)

interactive control

DEF The sending of multiple commands that are selected on the basis of data received from an experiment in real time.

RT active control
∞ control
control theory
numerical control

interactive graphics

USE **computer graphics**

interactive multimedia

USE **multimedia**

interannual variations

(added September 2000)

USE **annual variations**

interatomic forces

RT atomic force microscopy
atomic structure

embedded atom method

lattice energy
Van der Waals forces

intercalation

DEF Production of layer type semiconducting as well as other conducting materials (also called synthetic metals).

GS stratification
. **intercalation**
RT ∞ chemical compounds
graphite
interlayers
∞ layers

intercalibration

(added January 1999)

DEF Calibration between two or more data sources, including (1) the comparison of data sets acquired by different types of measurement systems for the purpose of deducing the calibration values for one of the measurement systems; (2) the mutual calibration of data from different measurement systems through the comparison of the data with model calculations; and (3) the calibration of multiple detectors on a single instrument through the comparison of data from each detector.

GS calibrating
. **intercalibration**
RT comparison
correction
multisensor applications
standardization

interception

RT autonomous docking
docking
proportional navigation
pursuit-evasion games
rendezvous
spacecraft docking

Interceptor aircraft

USE **fighter aircraft**

∞ interceptors

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT fighter aircraft
satellite interceptors
YF-12 aircraft

interconnection

USE **joining**

intercontinental ballistic missiles

UF *ICBM (missiles)*
GS missiles
. ballistic missiles
. . **intercontinental ballistic missiles**
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
. surface to surface missiles
. . **intercontinental ballistic missiles**
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . . Minuteman ICBM
. . . MX missile
. . . Titan ICBM
. . . . Titan 1 ICBM
. . . . Titan 2 ICBM
RT fleet ballistic missiles
intermediate range ballistic missiles
Mark 1 reentry body
Mark 2 reentry body
Mark 3 reentry body
Mark 4 reentry body
Mark 5 reentry body
Mark 6 reentry body
Mark 11 reentry body

Mark 12 reentry body
Mark 17 reentry body
transoceanic systems

Intercosmos satellites

GS artificial satellites
. geophysical satellites
. . . Cosmos satellites
. . . **Intercosmos satellites**
. Soviet satellites
. . . Cosmos satellites
. . . **Intercosmos satellites**

intercranial circulation

GS circulation
. blood circulation
. . . **intercranial circulation**

RT cranium
skull

interdigital transducers

GS transducers
. **interdigital transducers**

RT digital transducers
electroacoustic transducers
piezoelectric transducers
surface acoustic wave devices

interface stability

GS stability
. **interface stability**

RT fluid boundaries
gas-solid interfaces
interfaces
liquid sloshing
liquid-liquid interfaces
liquid-solid interfaces
liquid-vapor interfaces
Taylor instability
ullage

interfaces

DEF A common boundary between two parts of a system, whether material or non material. Specifically, in a rocket vehicle or other mechanical assembly, a common boundary between two components. Specifically, in fluid dynamics, a surface separating two fluids across which there is a discontinuity of some fluid property such as density or velocity or of some derivative of these properties in a direction normal to the interface. The equations of motion do not apply at the interface but are replaced by the boundary conditions.

GS **interfaces**
. fiber-matrix interfaces
. fluid boundaries
. . gas-solid interfaces
. . jet boundaries
. . liquid-liquid interfaces
. . liquid-solid interfaces
. . liquid-vapor interfaces
. graphical user interface
. . windows (computer programs)
. human-computer interface
. solid-solid interfaces

RT boundaries
coordination
data processing equipment
free boundaries
interface stability
management planning
project management
surface properties
surface reactions

∞ surfaces
telecommunication

interfacial energy

RT adhesion
antiphase boundaries
electron energy

∞ energy
fiber pullout
fiber pushout
fiber-matrix interfaces
liquid-liquid interfaces
shear strength
stiction

surface energy

interfacial strain

USE **interfacial tension**

interfacial tension

DEF That property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent the liquid from spreading. Used for interfacial strain and surface tension.

UF *interfacial strain*
surface tension

GS surface properties
. **interfacial tension**

RT Bond number
capillary waves
gas-liquid interactions
Gibbs adsorption equation
globules
liquid bridges
liquid surfaces
liquid-liquid interfaces
Marangoni convection
mechanical properties
ripples
sliding
spreading
surface energy
surface stability
surface tension driven convection

∞ surfaces
tensile stress

∞ tension
thermocapillary migration
tribology
vapor pressure
wetting

∞ **interference**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT aerodynamic interference
coherence coefficient
crosstalk
disrupting
electromagnetic compatibility
electromagnetic interference
hum
incompatibility
interference factor table
interference grating
intersymbolic interference
jamming
nonsynchronization
radio frequency interference
Ramsauer effect
support interference
wave diffraction
wave front deformation

interference drag

GS aerodynamic characteristics
. **interference drag**
dynamic characteristics
. drag
. . pressure drag
. . . wave drag
. . . . **interference drag**

RT propeller slipstreams
supersonic drag
upwash

interference factor table

GS tables (data)
. **interference factor table**

RT ∞ interference
modulation
multichannel communication

interference fit

DEF The condition where the diameter of the fastener is larger than the hole that it is to fit in.

GS joints (junctions)
. **interference fit**

RT aircraft structures
fasteners
fatigue life
fitting
mechanical properties

stress analysis

interference grating

RT fringe multiplication
∞ gratings
∞ interference
Moire effects
Moire fringes
radio filters
radio frequency interference

interference immunity

RT electromagnetic interference
noise reduction
radio frequency interference
signal processing
signal to noise ratios
space-time adaptive processing

interference lift

GS aerodynamic characteristics
. lift
. . **interference lift**
aerodynamic forces
. lift
. . **interference lift**
distribution (property)
. **interference lift**
dynamic characteristics
. lift
. . **interference lift**

RT upwash

interference monochromatization

USE **diffraction monochromatization**

interferograms

USE **interferometry**

interferometers

DEF Apparatus used to produce and measure interference from two or more coherent wave trains from the same source. Interferometers are used to measure wavelengths, to measure angular width of sources, to determine the angular position of sources (as in satellite tracking), and for many other purposes.

GS measuring instruments
. **interferometers**
. . etalons
. . Fabry-Perot interferometers
. . infrared interferometers
. . Mach-Zehnder interferometers
. . Michelson interferometers
. . microwave interferometers
. . phase switching interferometers
. . radio interferometers

RT astronomical interferometry
Bragg gratings
diffractometers
flatness
goniometers
optical equipment
optical measurement
optical measuring instruments
photogoniometers
Ronchi test
Sagnac effect
very long base interferometry

interferometry

UF *interferograms*

GS **interferometry**
. astronomical interferometry
. differential interferometry
. holographic interferometry
. laser interferometry
. Moire interferometry
. Ronchi test
. shearography
. speckle interferometry
. very long base interferometry

RT diffraction patterns
Fresnel diffraction
Fresnel reflectors
infrared interferometers
isochromatics
null zones
plasma flux measurement

interferon

Sagnac effect
scatter plates (optics)

interferon

DEF A protein (lymphokine) released by cells in response to virus infection. When taken up by other cells, interferon inhibits the replication of viruses within them.

RT acquired immunodeficiency syndrome
bacteriophages
biochemistry
∞ biology
human immunodeficiency virus
physiological defenses
viruses

intergalactic media

UF *extragalactic media*
GS media
. **intergalactic media**
RT cooling flows (astrophysics)
cosmic dust
cosmic gases
cosmic plasma
dark matter
galactic halos
mass distribution
stellar winds
Sunyaev-Zeldovich effect

intergranular corrosion

DEF Corrosion that occurs preferentially at grain boundaries.

GS chemical attack
. **intergranular corrosion**
corrosion
. **intergranular corrosion**
RT grain boundaries
stress corrosion
transgranular corrosion

interim stages (spacecraft)

GS **interim stages (spacecraft)**
. Inertial Upper Stage
RT multistage rocket vehicles
recoverable spacecraft
reusable spacecraft
space shuttles
stage separation

interim upper stage (STS)

USE **Inertial Upper Stage**

interior ballistics

DEF That branch of ballistics that deals with the propulsion of projectiles, i.e., the motion and behavior of projectiles in a gun barrel, the temperatures and pressures developed inside a gun barrel or rocket.

GS ballistics
. **interior ballistics**
RT propellant tests

interlacing drainage

USE **drainage patterns**

interlaminar stress

(added July 1992)

GS stresses
. **interlaminar stress**
RT composite materials
delaminating
interlayers
laminates
shear stress
stress distribution
stress-strain relationships

interlayers

GS **interlayers**
. multilayer insulation
RT barrier layers
fabrics
insulation
intercalation
interlaminar stress
laminates
∞ layers
ply orientation
sandwich structures

∞ transition layers

interleukins

(added August 2004)

DEF Soluble factors which stimulate growth-related activities of leukocytes as well as other cell types. They enhance cell proliferation and differentiation, DNA synthesis, secretion of other biologically active molecules and responses to immune and inflammatory stimuli.

RT cells (biology)
differentiation (biology)
immune systems
immunology
leukocytes

interlocking

USE **locking**

intermedia

USE **multimedia**

intermediate frequencies

DEF The beat frequencies used in heterodyne receivers, usually the difference between the received radiofrequency signal and a locally generated signal.

GS frequencies
. radio frequencies
. . **intermediate frequencies**
RT high frequencies
low frequencies

intermediate frequency amplifiers

GS amplifiers
. **intermediate frequency amplifiers**
RT beat frequencies
crystal filters
heterodyning
logarithmic receivers
preamplifiers
radio receivers
transistor amplifiers

intermediate range ballistic missiles

UF *IRBM (missiles)*
GS missiles
. ballistic missiles
. . **intermediate range ballistic missiles**
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
. surface to surface missiles
. . **intermediate range ballistic missiles**
. . . Blue Streak missile
. . . Jupiter missile
. . . polaris missiles
. . . . Polaris A1 missile
. . . . Polaris A2 missile
. . . . Polaris A3 missile
RT field army ballistic missiles
fleet ballistic missiles
intercontinental ballistic missiles
Mark 1 reentry body
Mark 2 reentry body
Mark 3 reentry body
short range ballistic missiles

intermetallics

SN (COMPOUNDS CONSISTING OF ONLY METALLIC ELEMENTS)
UF *electron compounds*
GS **intermetallics**
. heavy fermion systems
. . heavy fermion superconductors
RT alloying
alloys
aluminides
amines
antiphase boundaries
arsenides
borides
cluster variation method
indium gallium arsenides
inorganic compounds

iron aluminides
metalloids
metals
mischmetal
nickel aluminides
phase diagrams
photoelectromagnetic effects
semiconductors (materials)
silicides
tellurides
titanium aluminides

intermittency

RT cycles
pulses
random processes

intermittency hypothesis

GS hypotheses
. **intermittency hypothesis**
RT photographic recording

intermodulation

DEF The modulation of the components of a complex wave by each other in a nonlinear system.

GS modulation
. **intermodulation**
RT demodulation
discriminators
frequency analyzers
frequency modulation
remodulation
sound-sound interactions
wave interaction

intermolecular forces

GS level (quantity)
. energy levels
. . molecular energy levels
. . . **intermolecular forces**
molecular properties
. molecular energy levels
. . **intermolecular forces**
RT configuration interaction
excimers
Lennard-Jones potential
molecular interactions
molecular structure
Van der Waals forces
virial coefficients

intermontane floors

USE **valleys**

internal combustion engines

SN (EXCLUDES ROCKET ENGINES)
GS engines
. **internal combustion engines**
. . diesel engines
. . gas turbine engines
. . . hydrogen engines
. . . jet engines
. . . T-58 engine
. . . . ramjet engines
. integral rocket ramjets
. low volume ramjet engines
. pulsejet engines
. supersonic combustion ramjet engines
. turbo ramjet engines
. turbojet engines
. Bristol-Siddeley Olympus 593 engine
. Bristol-Siddeley Viper engine
. ducted fan engines
. J-33 engine
. J-34 engine
. J-47 engine
. J-52 engine
. J-57 engine
. J-58 engine
. J-65 engine
. J-69-T-25 engine
. J-71 engine
. J-73 engine
. J-75 engine
. J-79 engine
. J-85 engine
. J-93 engine

- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- .. helicopter engines
- .. rotary engines
- .. Wankel engines
- RT afterburning
- aircraft engines
- automobile engines
- automobile fuels
- ∞ bearing
- bearings
- booster rocket engines
- cams
- carburetors
- combustion
- combustion chambers
- diesel fuels
- distributors
- ducted rocket engines
- electric hybrid vehicles
- engine parts
- engine primers
- engine starters
- exhaust systems
- external combustion engines
- fuel consumption
- fuel injection
- fuel pumps
- fuel systems
- gas turbines
- hybrid propellant rocket engines
- ignition systems
- liquid propellant rocket engines
- lubrication systems
- piston engines
- pistons
- retrorocket engines
- rocket engines
- solid propellant rocket engines
- spark plugs
- superchargers
- sustainer rocket engines
- thermodynamic cycles
- thermodynamic efficiency
- torpedo engines
- Vernier engines

internal compression inlets

- GS intake systems
- .. **internal compression inlets**
- RT air intakes
- compressing
- engine inlets
- inlet nozzles
- supersonic inlets

internal conversion

- RT ∞ conversion
- nuclear reactions

internal energy

- DEF A mathematically defined thermodynamic function of state, interpretable through statistical mechanics as a measure of the molecular activity of the system.
- RT chemical energy
- ∞ energy
- free energy
- Gibbs-Helmholtz equations
- kinetic energy
- ∞ level

- molecular energy levels
- particle energy
- potential energy
- thermal energy
- thermodynamics

internal flow

- (added January 1995)
- GS fluid flow
- .. **internal flow**
- .. cavity flow
- .. channel flow
- .. open channel flow
- .. ducted flow
- .. Knudsen flow
- .. inlet flow
- .. nozzle flow
- .. pipe flow
- RT Couette flow
- fluidics
- hydrodynamics
- pipes (tubes)

internal friction

- GS friction
- .. **internal friction**
- RT anelasticity
- attenuation
- cohesion
- damping
- density (mass/volume)
- eddy viscosity
- hysteresis
- mechanical properties
- ∞ physical properties
- plastic flow
- viscosity

internal pressure

- SN (LIMITED TO PRESSURE INSIDE A PORTION OF MATTER DUE TO ATTRACTION BETWEEN MOLECULES)
- DEF The pressure inside a portion of matter due to the attraction between molecules.
- GS pressure
- .. **internal pressure**
- RT adhesion
- cohesion
- gas pressure
- partial pressure
- pressure distribution
- spreading
- temperature inversions

internal stress

- USE **residual stress**

internal waves

- DEF In fluid mechanics, wave motions of stably stratified fluids in which the maximal vertical motions occur below the surface of the fluids.
- GS **internal waves**
- .. planetary waves
- RT evanescent waves
- surface waves
- ∞ waves

International Cometary Explorer

- USE **International Sun Earth Explorer 3**

International Computers Limited

- USE **ICL computers**

international cooperation

- GS policies
- .. foreign policy
- .. international relations
- .. **international cooperation**
- .. outer space treaty
- RT A-300 aircraft
- A-310 aircraft
- A-320 aircraft
- A-330 aircraft
- A-340 aircraft
- A-380 aircraft
- Anik 1
- Anik 2
- Anik 3
- Anik satellites
- Apollo Soyuz test project

- Arabsat
- Arcosnat
- Azur satellite
- Cassini mission
- Cluster Mission
- Committee on Space Research
- Communications Technology Satellite conventions
- ∞ cooperation
- Cosmos 782 satellite
- Cosmos 936 satellite
- Cosmos 1129 satellite
- disarmament
- EISCAT radar system (Europe)
- Energiya launch vehicle
- ESA satellites
- European Airbus
- European Southern Observatory
- European Union
- federations
- French space program
- GLONASS
- Granat satellite
- information transfer
- INMARSAT satellites
- integrated global ocean station systems
- International Hydrological Decade
- International Satellite Geodesy Experiment
- International Space Station
- North Atlantic Treaty Organization (NATO)
- Orbiting Frog Otolith
- Palapa 2 satellite
- Palapa satellites
- peacetime
- politics
- Proton launch vehicle
- ROSAT mission
- Russian Space Program
- sea law
- SOHO Mission
- sovereignty
- Symphonie satellites
- U.S.S.R. space program
- United Nations
- user requirements
- Vega project
- World Meteorological Organization

International Field Year for Great Lakes

- RT Canada
- Great Lakes (North America)
- United States

International Geophysical Year

- DEF By international agreement, a period during which greatly increased observation of worldwide geophysical phenomena is undertaken through the cooperative effort of participating nations. July 1957 to December 1958 was the first such year; however, precedent was set by the International Polar Years of 1882 and 1932. Used for IGY (geophysical year).
- UF *IGY (geophysical year)*
- RT geophysics
- Vanguard satellites
- world data centers

International Geosphere-Biosphere program

- GS programs
- .. **International Geosphere-Biosphere program**
- RT biogeochemistry
- biosphere
- Earth observations (from space)
- geophysics
- man environment interactions
- solar terrestrial interactions

International Hydrological Decade

- DEF A ten-year program, 1965-74, patterned after the International Geophysical Year, aimed at training hydrologists and technicians, and at the establishment of networks for measuring hydrologic data. The idea originated in the United States, but the program was spon-

international law

sored by UNESCO, and a large proportion of membership of the United Nations participated. Used for IHD (hydrological decade).

UF *IHD (hydrological decade)*
RT Canada
foreign policy
hydrology
international cooperation
international relations
precipitation (meteorology)
river basins
streams
United States
water resources
watersheds

international law

GS law (jurisprudence)
. **international law**
. . air law
. . sea law
. . space law
RT conventions
European Union
legal liability
nations
outer space treaty
peacetime
politics
sovereignty
United Nations
warfare

International Magnetospheric Explorer

UF *IME satellite*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **International Magnetospheric Explorer**
RT Delta launch vehicle
Earth magnetosphere

International Magnetospheric Study

DEF Joint US, ESA, Japanese, and Canadian effort (1976-1979) for observation and measurement of magnetospheric and ionospheric phenomena and involving spacecraft, aircraft, balloons, and rockets, as well as ground based equipment. Used for IMS.

UF *IMS*
GS investigation
. **International Magnetospheric Study**
RT atmospheric physics
Earth magnetosphere
European space programs
geomagnetism
interplanetary magnetic fields

international practical temperature

USE **temperature scales**

International Quiet Sun Year

DEF An international cooperative program during 1964-65 of studying solar-terrestrial phenomena during a quiet sun, i.e., sunspot minimum, period. It is related to the International Geophysical Year and to the International Active Sun Years. Used for IQSY (international year)

UF *IQSY (international year)*
RT solar activity
solar cycles
solar physics

international relations

GS policies
. foreign policy
. . **international relations**
. . . international cooperation
. . . . outer space treaty
RT Apollo Soyuz test project
International Hydrological Decade
International Space Year

U.S.S.R. space program

International Satellite Cloud Climatology

USE **ISCCP Project**

International Satellite Geodesy Experiment

UF *ISAGEX*
RT celestial geodesy
European space programs
geodetic coordinates
international cooperation
satellite tracking
U.S.S.R. space program

International Sats for Ionospheric Study

USE **ISIS satellites**

International Solar Polar Mission

USE **Ulysses mission**

International Space Station

(added December 1994)

UF *ISS (space station)*

GS artificial satellites
. space stations
. . **International Space Station**
stations
. space stations
. . **International Space Station**
RT Alpha Magnetic Spectrometer
Assured Crew Return Vehicle
Columbus module
Columbus space station
Crew Equipment Translation Aid (ISS)
Cupola Module
Destiny Laboratory Module
Integrated Truss Structure P1
Integrated Truss Structure S1
Integrated Truss Structure Z1
international cooperation
Kibo Japanese Experiment Module
large space structures
manned orbital laboratories
Mir space station
Multi-Purpose Logistics Modules
Service Module (ISS)
space shuttles
Space Station Freedom
Space Station Mobile Servicing System
space station modules
spaceborne experiments
Unity connecting module
Zarya control module

International Space Year

(added April 1993)

UF *ISY*

RT ∞ aerospace sciences
international relations
NASA space programs
space exploration
space programs

International Sun Earth Explorer 1

DEF First joint NASA-ESA satellite launched to investigate sun-Earth relationships and solar phenomena.

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 1**

International Sun Earth Explorer 2

DEF Second joint NASA-ESA satellite launched to investigate sun-Earth relationships and solar phenomena.

GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 2**

International Sun Earth Explorer 3

DEF The last in a series of three spacecraft developed by NASA and ESA for the study of the magnetosphere. ISEE C was launched into a

heliocentric orbit and will make observations in the solar wind up stream of the Earth. Used for International Cometary Explorer.

UF *International Cometary Explorer*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . International Sun Earth Explorers
. . . . **International Sun Earth Explorer 3**

International Sun Earth Explorers

UF *ISEE*
GS artificial satellites
. scientific satellites
. . Explorer satellites
. . . **International Sun Earth Explorers**
. . . . International Sun Earth Explorer 1
. . . . International Sun Earth Explorer 2
. . . . International Sun Earth Explorer 3

International System of Units

DEF The metric system of units based on the meter, kilogram, second, ampere, kelvin degree, and candela. Other SI units are hertz, radian, newton, joule, watt, coulomb, volt, ohm, farad, weber and tesla. Used for metric system and SI.

UF *metric system*
SI
GS units of measurement
. **International System of Units**
RT conversion tables
∞ measurement
measuring instruments
metrication
metrology
∞ systems

international trade

UF *exports*
foreign trade
RT economics
revenue

International Ultraviolet Explorer

USE **IUE**

Internet resources

(added January 1997)

SN (USE FOR SOURCES OF INFORMATION, DATA, OR COMPUTER SOFTWARE ACCESSIBLE VIA THE INTERNET; FOR DESIGN OR FUNCTIONAL ASPECTS OF COMPUTER INTERNETWORKS USE "INTERNETS")
DEF Sources of information, data, or computer software accessible via the Internet.

GS resources
. **Internet resources**
. . websites
RT electronic bulletin boards
electronic commerce
electronic mail
information dissemination
information resources management
information systems
internets
news media
services

internets

(added January 1994)

SN (REFERS TO ANY INTERLINKED SYSTEM OF SEPARATE COMPUTER NETWORKS)
GS networks
. communication networks
. . **internets**
. . . ARPA computer network
. . . World Wide Web
. . . computer networks
. . . **internets**
. . . ARPA computer network
. . . World Wide Web
RT client server systems
computer security
electronic bulletin boards
electronic mail

Internet resources
Java (programming language)
web services
websites

internuclear properties

RT molecular interactions
∞ molecular physics

interoperability

(added July 2001)

DEF The ability of different systems, devices, or software to exchange information or otherwise operate effectively together.

RT commonality
data transfer (computers)
information transfer
protocol (computers)
standards
systems compatibility
systems integration

interorbital trajectories

GS trajectories
. **interorbital trajectories**
RT interplanetary trajectories
round trip trajectories
spacecraft trajectories

interpersonal relations

USE **human relations**

interphones

GS communication equipment
. **interphones**
RT earphones
microphones
telecommunication

interplanetary communication

GS telecommunication
. space communication
. . **interplanetary communication**
RT circumlunar communication
extraterrestrial communication
facsimile communication
lasers
lunar communication
Mars Reconnaissance Orbiter
optical communication
radio communication
satellite communication
spacecraft communication

interplanetary dust

GS extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . **interplanetary dust**
. . . . meteoroid dust clouds
. zodiacal dust
media
. interplanetary medium
. . **interplanetary dust**
. . . meteoroid dust clouds
. . . . zodiacal dust
particles
. dust
. . cosmic dust
. . . **interplanetary dust**
. . . . meteoroid dust clouds
. zodiacal dust
RT meteoroids
micrometeoroids

Interplanetary Explorer

USE **Explorer 18 satellite**

interplanetary flight

UF *planetary space flight*
space flight
GS . **interplanetary flight**
RT asteroid missions
astrodynamics
Earth-Venus trajectories
flyby missions
interstellar spacecraft
long duration space flight
magnetic sails
manned Mars missions

manned space flight
Mariner Jupiter-Saturn flyby
Mariner Jupiter-Uranus flyby
Mariner Mark 2 Spacecraft
Mars exploration
matter-antimatter propulsion
negative matter propulsion
orbits
outer planets explorers
planetary landing
return to Earth space flight
round trip trajectories
space exploration
space navigation
spacecraft guidance
TOPS (spacecraft)

interplanetary gas

GS extraterrestrial matter
. cosmic gases
. . **interplanetary gas**
gases
. rarefied gases
. . cosmic gases
. . . **interplanetary gas**
media
. interplanetary medium
. . **interplanetary gas**
RT cosmic plasma
interstellar gas
neutral gases
solar wind

interplanetary magnetic fields

GS magnetic fields
. **interplanetary magnetic fields**
RT Chapman-Ferraro problem
flux transfer events
International Magnetospheric Study
magnetic clouds
magnetic field reconnection
solar magnetic field
Wind/GGS spacecraft

interplanetary medium

GS media
. **interplanetary medium**
. . interplanetary dust
. . . meteoroid dust clouds
. . . . zodiacal dust
. interplanetary gas
RT Advanced Composition Explorer
interplanetary shock waves
magnetic clouds
mass distribution
meteoroids
plasma clouds
solar wind

Interplanetary Monitoring Platform

USE **IMP**

interplanetary navigation

GS navigation
. space navigation
. . **interplanetary navigation**
RT astronavigation
celestial navigation
celestial reference systems
radar navigation
radio navigation

interplanetary propulsion

USE **interplanetary spacecraft rocket engines**

interplanetary shock waves

(added April 2007)

DEF Shock waves in the solar corona and interplanetary space caused by the interaction of fast coronal mass ejections, the solar wind, and the interplanetary magnetic field. Interplanetary shock waves occur when the speed of the coronal mass ejection is faster than the local fast magnetosonic speed.

UF *interplanetary shocks*
GS elastic waves
. shock waves
. . **interplanetary shock waves**
RT coronal mass ejection

interplanetary medium
shock wave interaction
shock wave propagation
solar activity
solar activity effects
solar corona
solar flares
solar radio bursts
solar wind
space weather

interplanetary shocks

(added April 2007)

USE **interplanetary shock waves**

interplanetary space

UF *translunar space*
GS environments
. aerospace environments
. . deep space
. . . **interplanetary space**
. . . extraterrestrial environments
. . . . deep space
. **interplanetary space**
RT cislunar space
heliosphere
interstellar space
polar cusps

interplanetary spacecraft

UF *interplanetary propulsion planetary spacecraft*
GS **interplanetary spacecraft**
. Explorer 18 satellite
. Jupiter probes
. . Galileo probe
. . Galileo spacecraft
. . Mariner space probes
. . . Mariner 1 space probe
. . . Mariner 2 space probe
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 5 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . . Mariner 10 space probe
. . . Mariner 11 space probe
. . . Mariner R 2 space probe
. . Mariner spacecraft
. . . Mariner C spacecraft
. . . Mariner Venus 67 spacecraft
. . Mars probes
. . . Advanced Recon Electric Spacecraft
. . . Mariner 3 space probe
. . . Mariner 4 space probe
. . . Mariner 6 space probe
. . . Mariner 7 space probe
. . . Mariner 8 space probe
. . . Mariner 9 space probe
. . Mars 1 spacecraft
. . Mars 2 spacecraft
. . Mars 3 spacecraft
. . Mars 4 Spacecraft
. . Mars 5 spacecraft
. . Mars 6 spacecraft
. . Mars 7 spacecraft
. . Mars Observer
. . Mars Pathfinder
. . Viking 1975 entry vehicle
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . Viking lander 1
. Viking orbiter 1
. Viking orbiter 2
. Viking orbiter 2
. Viking orbiter 2
. Viking orbiter 2
. Viking orbiter 2
. Viking orbiter 2
. Viking orbiter 1975
. . Mars Climate Orbiter
. . Mars Express
. . Mars Global Surveyor
. . Mars Polar Lander

interplanetary trajectories

- . . Mars Reconnaissance Orbiter
- . . Nozomi Mars Orbiter
- . . Phobos spacecraft
- . . Phoenix Mars Lander
- . . Zond 2 space probe
- . Pioneer space probes
 - . . Pioneer 1 space probe
 - . . Pioneer 2 space probe
 - . . Pioneer 3 space probe
 - . . Pioneer 4 space probe
 - . . Pioneer 5 space probe
 - . . Pioneer 6 space probe
 - . . Pioneer 7 space probe
 - . . Pioneer 8 space probe
 - . . Pioneer 9 space probe
 - . . Pioneer 10 space probe
 - . . Pioneer 11 space probe
 - . . Pioneer Venus 2 entry probes
 - . . . Pioneer Venus 2 night probe
 - . . . Pioneer Venus 2 sounder probe
 - . Pioneer Venus spacecraft
 - . . Pioneer Venus 1 spacecraft
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . TOPS (spacecraft)
 - . Venus probes
 - . . Magellan spacecraft (NASA)
 - . . Mariner 1 space probe
 - . . Mariner 2 space probe
 - . . Mariner 5 space probe
 - . . Mariner 10 space probe
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . . Pioneer Venus 2 transporter bus
 - . Venera satellites
 - . . Venera 2 satellite
 - . . Venera 3 satellite
 - . . Venera 4 satellite
 - . . Venera 5 satellite
 - . . Venera 6 satellite
 - . . Venera 7 satellite
 - . . Venera 8 satellite
 - . . Venera 9 satellite
 - . . Venera 10 satellite
 - . . Venera 11 satellite
 - . . Venera 12 satellite
 - . Zond 1 space probe
 - . Zond 3 space probe
 - . Zond 4 space probe
 - . Zond 5 space probe
 - . Zond 6 space probe
 - . Zond 7 space probe
 - . Zond 8 space probe
 - . MESSENGER (spacecraft)
 - RT artificial satellites
 - . Deep Space 1 Mission
 - . interstellar spacecraft
 - . landing modules
 - . maneuverable spacecraft
 - . manned Mars missions
 - . manned spacecraft
 - . matter-antimatter propulsion
 - . rendezvous spacecraft
 - . reusable spacecraft
 - . space capsules
 - . space exploration
 - . space probes
 - ∞ spacecraft
 - . unmanned spacecraft
 - . Voyager 1977 mission

- . spacecraft trajectories
 - . . **interplanetary trajectories**
 - . . . Earth-Mars trajectories
 - . . . Earth-Mercury trajectories
 - . . . Earth-Venus trajectories
 - RT Earth-Moon trajectories
 - . Goddard Trajectory Determination System
 - . interorbital trajectories
 - . orbital launching
 - . orbital mechanics
 - . parking orbits
 - . planetary orbits
 - . rendezvous trajectories
 - . round trip trajectories
 - . solar orbits
 - . space navigation
 - . spacecraft guidance
 - . transfer orbits
 - . Viking 1 spacecraft
 - . Viking 2 spacecraft
 - . Viking lander 1
 - . Viking lander 2
 - . Viking lander spacecraft
 - . Viking orbiter 1
 - . Viking orbiter 2
 - . Viking orbiter spacecraft

interplanetary transfer orbits

- GS orbits
 - . elliptical orbits
 - . . transfer orbits
 - . . . **interplanetary transfer orbits**
 - . . spacecraft orbits
 - . . . transfer orbits
 - **interplanetary transfer orbits**
- RT aeroassist
 - . aerobraking
 - . aerocapture
 - . aeromaneuvering
 - . low Earth orbits
 - . orbital mechanics
 - . swingby technique

interpolation

- GS analysis (mathematics)
 - . numerical analysis
 - . . **interpolation**
- RT commutation
 - . computation
 - . extrapolation
 - . finite difference theory
 - . statistical analysis

interpolators

USE **repeaters**

∞ interpretation

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT decoding
 - . intelligibility
 - . perception
 - . photointerpretation
 - . reading
 - . recognition
 - . syntax
 - . translating

interprocessor communication

- DEF Communication between two or more processors in a computer system.
- RT computer networks
 - . computer systems design
 - . Connection Machine
 - . Dining Philosophers Problem
 - . distributed memory
 - . free-space optical interconnects
 - . hypercube multiprocessors
 - . local area networks
 - . MIMD (computers)
 - . multiprocessing (computers)
 - . parallel processing (computers)
 - . SIMD (computers)
 - . transmission rate (communications)
 - . transputers

VSAT (network)

interrelationships

USE **relationships**

interrogation

- RT data processing
 - . IFF systems (identification)
 - . secondary radar
 - . transmitter receivers
 - . transponders

interruption

- RT electric relays
 - . packet switching
 - . sequencing
 - . switches
 - . switching

intersections

- SN (EXCLUDES BOOLEAN LOGICAL PRODUCTS)
- DEF In Boolean algebra, the operation in which concepts are described by stating that they have all the characteristics of the classes involved. Intersection is expressed as AND.
- RT crossings
 - . crossovers
 - . highways
 - ∞ junctions
 - . ramps (structures)
 - . roads
 - . streets
 - . transportation networks

interservice data exchange program

- UF *IDEF (data exchange)*
- RT ∞ data
 - . data retrieval
 - . data storage
 - . information retrieval
 - . libraries
 - . military technology
 - . research

interstellar chemistry

- DEF Molecular formation/dissociation in interstellar space due to radiation, collision, and other forces.
- RT association reactions
 - . chemical reactions
 - ∞ chemistry
 - . cosmochemistry
 - . diffuse interstellar bands
 - . formyl ions
 - . interstellar matter
 - . isotope ratios
 - . laboratory astrophysics
 - . molecular clouds
 - . molecular interactions
 - . reaction kinetics
 - . Submillimeter Wave Astronomy Satellite

interstellar communication

- GS communicating
 - . **interstellar communication**
- RT extraterrestrial intelligence
 - . radio communication
 - . space communication

interstellar extinction

- UF *interstellar reddening*
- GS extinction
 - . **interstellar extinction**
- RT astrophysics
 - . diffuse interstellar bands
 - . evolution (development)
 - . interstellar gas
 - . radiation absorption
 - . stellar evolution
 - . stellar radiation

interstellar gas

- GS extraterrestrial matter
 - . cosmic gases
 - . . **interstellar gas**
 - . interstellar matter
 - . . **interstellar gas**
 - . gases
 - . . rarefied gases

interplanetary trajectories

GS trajectories

- . . cosmic gases
- . . . **interstellar gas**
- RT cooling flows (astrophysics)
- galactic halos
- H I regions
- H II regions
- heliosphere
- interplanetary gas
- interstellar extinction
- magnetic clouds
- methylidyne
- molecular clouds
- neutral gases
- Ophiuchi clouds
- Orion nebula
- spin temperature
- star formation
- stellar mass accretion
- stellar winds
- interstellar magnetic fields**
- UF *galactic magnetic fields*
- GS magnetic fields
- . **interstellar magnetic fields**
- RT magnetic clouds
- stellar magnetic fields
- interstellar masers**
- GS stimulated emission devices
- . masers
- . . **interstellar masers**
- RT coherent electromagnetic radiation
- gas masers
- lasers
- microwave amplifiers
- molecular clouds
- radiation sources
- stimulated emission
- water masers
- interstellar matter**
- GS extraterrestrial matter
- . **interstellar matter**
- . . cosmic dust
- . . . interplanetary dust
- meteoroid dust clouds
- zodiacal dust
- . . dark matter
- . . interstellar gas
- RT Alpha Magnetic Spectrometer
- celestial bodies
- diffuse interstellar bands
- formyl ions
- gravitational instability
- H I regions
- H II regions
- infrared cirrus (astronomy)
- interstellar chemistry
- laboratory astrophysics
- mass distribution
- metallicity
- methylidyne
- molecular clouds
- nebulae
- Ophiuchi clouds
- Orion nebula
- polycyclic aromatic hydrocarbons
- Population I stars
- reflection nebulae
- spin temperature
- star formation
- Stardust Mission
- stellar envelopes
- stellar mass accretion
- Submillimeter Wave Astronomy Satellite
- interstellar microwave spectra*
- USE **interstellar radiation microwave spectra**
- interstellar radiation**
- UF *interstellar microwave spectra*
- GS extraterrestrial radiation
- . **interstellar radiation**
- RT corpuscular radiation
- cosmic noise
- cosmic rays
- electromagnetic radiation
- galactic radiation
- gamma ray bursts
- ∞ radiation
- radiative transfer
- stellar radiation
- interstellar reddening*
- USE **interstellar extinction**
- interstellar space**
- GS environments
- . aerospace environments
- . . deep space
- . . . **interstellar space**
- . extraterrestrial environments
- . . deep space
- . . . **interstellar space**
- RT interplanetary space
- interstellar spacecraft**
- RT interplanetary flight
- interplanetary spacecraft
- interstellar travel
- space exploration
- interstellar travel**
- GS space flight
- . **interstellar travel**
- RT astronavigation
- celestial reference systems
- extraterrestrial intelligence
- interstellar spacecraft
- long duration space flight
- magnetic sails
- manned space flight
- matter-antimatter propulsion
- negative matter propulsion
- interstices**
- RT cavities
- cracks
- grain boundaries
- percolation
- permeability
- pinholes
- porosity
- porous materials
- voids
- interstitials**
- RT additives
- antisite defects
- crystal defects
- crystal structure
- grain boundaries
- Laves phases
- intersymbolic interference**
- RT cochannel interference
- data transmission
- ∞ interference
- signal distortion
- transmission efficiency
- intertropical convergent zones**
- GS regions
- . tropical regions
- . . **intertropical convergent zones**
- RT atmospheric circulation
- fronts (meteorology)
- GARP Atlantic Tropical Experiment
- tropical meteorology
- zonal flow (meteorology)
- intervals**
- RT alternations
- consecutive events
- spacing
- step functions
- time
- topology
- intervehicle spacecrew transfer*
- USE **spacecrew transfer**
- intervertebral disks**
- GS disks (shapes)
- . **intervertebral disks**
- RT ∞ disks
- musculoskeletal system
- vertebrae
- intestines**
- GS anatomy
- . digestive system
- . . gastrointestinal system
- . . . **intestines**
- rectum
- RT abdomen
- appendix (anatomy)
- colic
- intoxication**
- RT ∞ poisoning
- toxicity and safety hazard
- toxicology
- intracloud discharges**
- (added August 1999)
- GS electric current
- . electric discharges
- . . lightning
- . . . **intracloud discharges**
- intracranial cavity**
- GS anatomy
- . head (anatomy)
- . . skull
- . . . cranium
- **intracranial cavity**
- . musculoskeletal system
- . . bones
- . . . skull
- cranium
- **intracranial cavity**
- intracranial pressure**
- GS pressure
- . **intracranial pressure**
- RT brain
- intramolecular structures**
- RT molecular structure
- ∞ structures
- intraocular pressure**
- UF *tonometry*
- GS pressure
- . **intraocular pressure**
- RT glaucoma
- intraorbit transfer vehicles**
- DEF Small scooter type tugs that would move men and materials within an orbit.
- RT Columbus space station
- large space structures
- space platforms
- space shuttles
- ∞ vehicles
- intraseasonal oscillations*
- (added September 2000)
- USE **intraseasonal variations**
- intraseasonal variations**
- (added September 2000)
- UF *intraseasonal oscillations*
- GS variations
- . periodic variations
- . . **intraseasonal variations**
- . . . Madden-Julian Oscillation
- RT annual variations
- atmospheric circulation
- atmospheric models
- climatology
- tropical meteorology
- intravascular system**
- RT blood circulation
- ∞ systems
- intravehicular activity**
- RT ∞ activity
- astronaut locomotion
- astronaut maneuvering equipment
- astronaut performance
- extravehicular activity
- human performance
- manned space flight
- pilot performance
- spacecraft environments

intravenous procedures

weightlessness

intravenous procedures

- RT bioavailability
- catheterization
- in vivo methods and tests
- medical services

introversion

- RT ∞ depression
- detachment
- human behavior
- ∞ inhibition
- psychology

Intruder aircraft

USE **A-6 aircraft**

intrusion

- RT contamination
- extruding
- leakage
- seepage

intrusion detection (computers)

(added January 2003)

DEF Manual or software-based detection of unauthorized entries or attempted break-ins into a computer system or network. The detection analysis is typically conducted using logs or other internal system information.

- GS security
 - . computer security
 - . . **intrusion detection (computers)**
- RT access control
- computer networks
- computer viruses
- firewalls (computers)

Invader aircraft

USE **B-26 aircraft**

invalidity

USE **errors**

invariance

- GS **invariance**
 - . gauge invariance
- RT ∞ constant
- Lorentz transformations

invariant imbeddings

- GS geometry
 - . topology
 - . . imbeddings (mathematics)
 - . . . **invariant imbeddings**
- RT anisotropic fluids
- calculus of variations
- conformal mapping
- coordinate transformations
- differential geometry
- ∞ imbeddings
- isotropic turbulence

inventions

- RT intellectual property
- patent applications
- patent policy
- patents
- product development

inventories

- GS **inventories**
 - . crop inventories
 - . timber inventory
- RT Large Area Crop Inventory
- Experiment
- reserves
- ∞ storage

inventory controls

- GS management
 - . industrial management
 - . . inventory management
 - . . . **inventory controls**
 - . logistics management
 - . . inventory management
 - . . . **inventory controls**
- RT ∞ control
- distributing
- mathematical models

optimal control

reserves

risk

∞ storage

time lag

inventory management

- GS management
 - . industrial management
 - . . **inventory management**
 - . . . inventory controls
 - . logistics management
 - . . **inventory management**
 - . . . inventory controls
- RT downtime
- logistics
- procurement management
- resources
- retirement for cause
- services
- spare parts
- stockpiling
- ∞ storage

inverse kinematics

(added December 1990)

- GS kinematics
 - . **inverse kinematics**
- RT dynamic control
- feedback control
- manipulators
- robot control
- robot dynamics
- robotics

inverse scattering

DEF Method for analyzing some classic

wave scattering.

- GS scattering
 - . **inverse scattering**
- RT forward scattering
- resonance scattering

inversions

- GS **inversions**
 - . magnetic field inversions
 - . population inversion
 - . temperature inversions

invertebrates

- GS animals
 - . **invertebrates**
 - . . arthropods
 - . . . artemia
 - . . . crabs
 - . . . insects
 - bees
 - bollworms
 - chironomus flies
 - cockroaches
 - Coleoptera
 - beetles
 - tribolia
 - boll weevils
 - crickets
 - Drosophila
 - fireflies
 - grasshoppers
 - locusts
 - moths
 - silkworms
 - spiders
 - mollusks
 - cephalopods
 - octopuses
 - snails
 - Rotifera
 - sea urchins
 - worms
 - flatworms
 - . . bacteria
 - . . hemocytes
 - . . larvae
 - . . microorganisms
 - . . poikilothermia

inverted converters (DC to AC)

- RT alternating current
- ∞ converters
- current converters (AC to DC)

direct current

electric current

inverters

- SN (EXCLUDES AC TO DC INVERTERS)
- GS **inverters**
 - . static inverters
- RT attenuators
- oscillators

investigation

- UF *studies*
- GS **investigation**
 - . accident investigation
 - . . aircraft accident investigation
 - . International Magnetospheric Study
- RT examination
- experimentation
- exploration
- geophysical fluid flow cells
- OSS-1 payload
- programs
- research
- research and development
- sampling
- university program

∞ investment

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT commerce
- investment casting
- investments

investment casting

- UF *lost wax process*
- GS forming techniques
 - . casting
 - . . **investment casting**
- RT centrifugal casting
- ∞ investment

investments

- RT depreciation
- economic impact
- economics
- finance
- ∞ investment

inviscid flow

- UF *nonviscous flow*
- GS fluid flow
 - . **inviscid flow**
 - . . stagnation flow
- RT aerodynamics
- Crocco method
- Crocco-Lee theory
- ∞ flow
- flow characteristics
- gas flow
- laminar flow
- potential flow
- Prandtl number
- Reynolds number
- stagnation temperature
- turbulent flow
- viscous flow

invisibility

USE **visibility**

involutariness

USE **involuntary actions**

involuntary actions

- UF *involutariness*
- RT autonomic nervous system
- sneezing
- spasms
- twitching

involuntary muscle

(added December 2004)

USE **smooth muscle**

Io

- DEF A satellite of Jupiter orbiting at a mean distance of 421,800 kilometers. Also called Jupiter I.
- GS celestial bodies

- . natural satellites
- . . . Jupiter satellites
- Galilean satellites
- **Io**
- RT Callisto
- Charon
- Ganymede
- Jupiter (planet)
- iodates**
- GS halogen compounds
- . iodine compounds
- . . **iodates**
- . . . lithium iodates
- iodides**
- GS halogen compounds
- . iodine compounds
- . . **iodides**
- . . . cesium iodides
- . . . gallamine triethiodide
- . . . hafnium iodides
- . . . niobium iodides
- . . . potassium iodides
- . . . silver iodides
- . . . sodium iodides
- . . . zirconium iodides
- iodimetry**
- GS chemical tests
- . chemical analysis
- . . **iodimetry**
- RT quantitative analysis
- ∞ reduction
- titration
- iodine**
- GS chemical elements
- . halogens
- . . **iodine**
- . . . iodine isotopes
- iodine 125
- iodine 131
- iodine 132
- iodine 125**
- GS chemical elements
- . halogens
- . . iodine
- . . . iodine isotopes
- **iodine 125**
- nuclides
- isotopes
- iodine isotopes
- **iodine 125**
- radioactive isotopes
- **iodine 125**
- iodine 131**
- GS chemical elements
- . halogens
- . . iodine
- . . . iodine isotopes
- **iodine 131**
- nuclides
- isotopes
- iodine isotopes
- **iodine 131**
- radioactive isotopes
- **iodine 131**
- iodine 132**
- GS chemical elements
- . halogens
- . . iodine
- . . . iodine isotopes
- **iodine 132**
- nuclides
- isotopes
- iodine isotopes
- **iodine 132**
- radioactive isotopes
- **iodine 132**
- iodine compounds**
- GS halogen compounds
- . **iodine compounds**
- . . iodates
- . . . lithium iodates
- . . iodides
- . . . cesium iodides
- . . . gallamine triethiodide
- . . . hafnium iodides
- . . . niobium iodides
- . . . potassium iodides
- . . . silver iodides
- . . . sodium iodides
- . . . zirconium iodides
- . . . cesium iodides
- . . . gallamine triethiodide
- . . . hafnium iodides
- . . . niobium iodides
- . . . potassium iodides
- . . . silver iodides
- . . . sodium iodides
- . . . zirconium iodides
- RT ∞ chemical compounds
- halocarbons
- iodine isotopes**
- GS chemical elements
- . halogens
- . . iodine
- . . . **iodine isotopes**
- iodine 125
- iodine 131
- iodine 132
- nuclides
- isotopes
- **iodine isotopes**
- iodine 125
- iodine 131
- iodine 132
- iodine lasers**
- GS stimulated emission devices
- . lasers
- . . **iodine lasers**
- . . . chemical oxygen-iodine lasers
- iodoacetic acid**
- GS acids
- . carboxylic acids
- . . fatty acids
- . . . acetic acid
- **iodoacetic acid**
- halogen compounds
- . iodine compounds
- . . **iodoacetic acid**
- organic compounds
- . carboxylic acids
- . . fatty acids
- . . . acetic acid
- **iodoacetic acid**
- ion accelerators**
- GS particle accelerators
- . **ion accelerators**
- RT ∞ accelerators
- synchrotrons
- ion acoustic waves**
- GS elastic waves
- . sound waves
- . . **ion acoustic waves**
- RT plasma oscillations
- plasma waves
- wave propagation
- ion atom interactions**
- GS particle interactions
- . **ion atom interactions**
- RT atomic interactions
- charge exchange
- elementary particle interactions
- ∞ interactions
- ion beams**
- DEF Directed fluxes of charged atoms or molecules.
- GS beams (radiation)
- . particle beams
- . . **ion beams**
- ion currents
- . **ion beams**
- RT atomic beams
- beam injection
- beam neutralization
- inertial fusion (reactor)
- ion optics
- molecular beams
- ion chambers*
- USE **ionization chambers**
- ion channels (biology)**
- (added August 2002)
- DEF Glycoprotein components of biomembranes that control the passage of hydrophilic solutes such as inorganic ions.
- UF *potassium channels (biology)*
- sodium channels (biology)*
- RT bioelectric potential
- bioelectricity
- cell membranes (biology)
- electrophysiology
- neurophysiology
- ion charge**
- GS electric charge
- . **ion charge**
- RT charge exchange
- charged particles
- ionization
- valence
- ion concentration**
- RT acidity
- ∞ bases
- Earth ionosphere
- pH factor
- titration
- ion currents**
- UF *ionic conductivity*
- GS **ion currents**
- . ion beams
- . Pedersen currents
- RT solions
- ion cyclotron radiation**
- GS electromagnetic radiation
- . nonthermal radiation
- . . cyclotron radiation
- . . . **ion cyclotron radiation**
- RT cyclotron resonance
- ionic waves
- magnetic pumping
- plasma radiation
- plasma waves
- ∞ radiation
- ion density (concentration)**
- DEF In atmospheric electricity, the number of ions per unit volume of a given sample of air; more particularly, the number of ions of a given type (positive small ion, negative small ion, positive large ion, or negative large ion) per unit volume of air.
- GS density (number/volume)
- . particle density (concentration)
- . . **ion density (concentration)**
- . . . ionospheric ion density
- . . . magnetospheric ion density
- magnetospheric proton density
- proton density (concentration)
- magnetospheric proton density
- RT atmospheric density
- atom concentration
- cosmic rays
- Earth ionosphere
- electron density (concentration)
- Gerdien condensers
- ionization
- ionograms
- plasma density
- positive ions
- Saha equations
- space density
- ion distribution**
- GS distribution (property)
- . **ion distribution**
- RT charge distribution
- current distribution
- electrohydrodynamics
- ionic mobility
- spatial distribution
- vertical distribution
- ion emission**
- GS emission
- . particle emission
- . . **ion emission**
- RT ionization
- thermionic emission

ion engines

thermionics

ion engines

DEF Reaction engines in which ions, accelerated in an electrostatic field, are used as propellants. Used for ionic propellants and thermionic reactors. Also called electrostatic engines. Used for ionic propellants and thermionic reactors.

UF *ionic propellants*
thermionic reactors

GS engines
. rocket engines
. . electric rocket engines
. . . electrostatic engines

. . . . **ion engines**
. cesium engines
. Hall thrusters
. mercury ion engines
. RIT engines

RT beam switching
electrothermal engines
ion optics
ionizers
nuclear rocket engines
plasma engines
restartable rocket engines
space station propulsion
sustainer rocket engines
∞ thrusters

ion exchange membrane electrolytes

GS conductors
. electrolytes
. . **ion exchange membrane electrolytes**
membranes
. **ion exchange membrane electrolytes**

RT fuel cells
separators

ion exchange resins

GS resins
. **ion exchange resins**

RT plastics
zeolites

ion exchanging

GS exchanging
. **ion exchanging**

RT beds (process engineering)
charge transfer
demineralizing
glass electrodes
hydrometallurgy
isotope separation
kaolinite
metathesis
∞ separation
softening
water treatment

ion extraction

GS extraction
. **ion extraction**

RT isotope separation
∞ separation
solvent extraction

ion gages

USE **ionization gages**

ion impact

GS impact
. **ion impact**

RT electron impact
point impact
recoil ions
toroids
Townsend avalanche
Townsend discharge

ion implantation

GS implantation
. **ion implantation**

RT avalanche diodes
carrier mobility
diodes
doping (materials)

field effect transistors
integrated circuits
ions
ITO (semiconductors)
junction transistors
metal ions
metal oxide semiconductors
microelectronics
MODFETS
modulation doping
MOM (semiconductors)
photodiodes
semiconductor devices
transistors

ion injection

GS injection
. **ion injection**

RT carrier injection
ionic mobility
plasma accelerators
plasma generators
plasma jets

ion irradiation

GS irradiation
. **ion irradiation**
. . deuteron irradiation
. . proton irradiation

RT auroral irradiation
electron irradiation
ionic collisions
neutron irradiation

ion microscopes

GS microscopes
. **ion microscopes**

RT electron microscopes
electron microscopy
scanning electron microscopy
transmission electron microscopy

ion mobility spectroscopy

(added September 1995)

UF *plasma chromatography*

GS spectroscopy
. **ion mobility spectroscopy**

RT airport security
explosives detection
mass spectrometers

ion motion

RT ionic waves
∞ motion
Penning discharge
plasma composition
plasma diffusion

ion optics

(added June 1998)

RT atom optics
beam waveguides
beamforming
electron optics
ion beams
ion engines
ion propulsion
mass spectrometers
∞ optics

ion oscillation

USE **plasma oscillations**

ion plating

GS plating
. **ion plating**

RT ions
metal coatings
metal ions
sputtering
thin films
vacuum deposition

ion probes

GS measuring instruments
. **ion probes**

RT ionosondes

radio frequency impedance probes

ion production rates

GS ionization
. **ion production rates**
rates (per time)
. **ion production rates**

RT avalanches
charge exchange
recoil ions
thermionic converters

ion propulsion

GS propulsion
. electric propulsion
. . electrostatic propulsion
. . . **ion propulsion**
. low thrust propulsion
. . electrostatic propulsion
. . . **ion propulsion**
. spacecraft propulsion
. . electrostatic propulsion
. . . **ion propulsion**

RT Deep Space 1 Mission
duoplasmatrons
electromagnetic propulsion
high temperature propellants
ion optics
magnetic sails
nuclear electric propulsion
plasma propulsion

ion pumps

GS pumps
. vacuum pumps
. . **ion pumps**
vacuum apparatus
. vacuum pumps
. . **ion pumps**

RT getters

ion recombination

GS chemical reactions
. **ion recombination**
recombination reactions
. **ion recombination**

RT atomic recombination
deionization
electron recombination
electron-ion recombination
recombination coefficient

ion scattering

GS scattering
. **ion scattering**

RT electron scattering
ionic collisions
ionic diffusion
(proton scattering
recoil ions

ion selective electrodes

GS electrodes
. **ion selective electrodes**

RT chemical analysis

ion sheaths

GS sheaths
. **ion sheaths**

RT plasma clouds
plasma probes
plasma sheaths

ion sources

GS **ion sources**
. plasmatrons
. . duoplasmatrons

RT electron sources
ionization
ionizing radiation
linear accelerators
particle accelerators
plasma generators
radiation sources
∞ sources

- sputtering
- ion spectrometers*
USE **mass spectrometers**
- ion storage**
DEF Ions within an electromagnetic trap and cooled to sub-Kelvin temperatures with lasers. Potential uses are for frequency standards.
RT frequency standards
∞ storage trapping
- ion stripping**
DEF A procedure following the focusing of ion beams in the target chamber of a reactor to be used for particle beam pellet fusion.
RT heavy ions
particle beams
particle density (concentration)
particles
∞ separation
∞ stripping
- ion temperature**
GS temperature
. **ion temperature**
RT auroral temperature
ionospheric temperature
plasma temperature
space temperature
specific heat
- ion traps (instrumentation)**
GS measuring instruments
. **ion traps (instrumentation)** traps
. **ion traps (instrumentation)**
RT radiation counters
vapor traps
- ion-gas interactions*
USE **gas-ion interactions**
- ionic collisions**
UF *heavy ion collisions*
GS collisions
. **ionic collisions**
RT atomic collisions
ion irradiation
ion scattering
particle collisions
recoil ions
- ionic conductivity*
USE **ion currents**
- ionic crystals**
GS crystals
. **ionic crystals**
RT chemical bonds
crystal lattices
excitons
lattice energy
polarons
- ionic diffusion**
GS diffusion
. particle diffusion
. **ionic diffusion**
RT ambipolar diffusion
diffusion waves
electron diffusion
ion scattering
plasma diffusion
self diffusion (solid state)
- ionic mobility**
DEF In gaseous electric conduction, the average velocity with which a given ion drifts through a specified gas under the influence of an electric field of unit strength. Mobilities are commonly expressed in units of centimeters per second per volt per centimeter.
GS mobility
. **ionic mobility** transport properties
. **ionic mobility**
RT ambipolar diffusion
anions
- atomic mobilities
cations
electrohydrodynamics
electrolysis
electrolytic cells
electromigration
ion distribution
ion injection
ions
∞ motion
NDM semiconductor devices
negative ions
positive ions
- ionic propellants*
USE **ion engines**
- ionic reactions**
RT charge transfer
molecular interactions
- ionic waves**
GS elastic waves
. **ionic waves**
RT collisionless plasmas
electrostatic waves
ion cyclotron radiation
ion motion
ionospheric conductivity
ionospheric propagation
plasma waves
∞ waves
- ionization**
DEF The process by which electrons are lost from or transferred to neutral molecules or atoms to form positively or negatively charged particles. Used for electron ionization.
UF *electron ionization*
GS **ionization**
. autoionization
. gas ionization
. atmospheric ionization
. auroral ionization
. flame ionization
. ion production rates
. nonequilibrium ionization
. photoionization
. surface ionization
RT atomic collisions
atomic excitations
coronas
disintegration
dissociation
electric arcs
electric corona
electric discharges
electric sparks
electron attachment
excitation
ion charge
ion density (concentration)
ion emission
ion sources
ionospheric composition
magnetohydrodynamics
molecular excitation
oxygen recombination
Schwarzschild metric
single event upsets
stellar coronas
thermal dissociation
- ionization chambers**
DEF Apparatus used to study the production of small ions in the atmosphere by cosmic rays and radioactive bombardment of air molecules.
UF *ion chambers*
GS **ionization chambers**
. bubble chambers
. cloud chambers
. Geiger counters
. proportional counters
. spark chambers
RT ∞ chambers
counters
dosimeters
electron counters
ionizers
- neutron counters
radiation counters
radiation measuring instruments
threshold detectors (dosimeters)
- ionization coefficients**
GS coefficients
. **ionization coefficients**
- ionization counters*
USE **radiation counters**
- ionization cross sections**
RT absorption cross sections
∞ cross sections
nonadiabatic theory
scattering cross sections
- ionization frequencies**
GS frequencies
. **ionization frequencies**
- ionization gages**
DEF Vacuum gages with a means of ionizing the gas molecules and a means of correlating the number and type of ions produced with the pressure of the gas. Various types of ionization gages are distinguished according to the method of producing the ionization. Used for ion gages.
UF *ion gages*
GS measuring instruments
. pressure gages
. vacuum gages
. . . **ionization gages**
. . . . alphatrons
. . . . Bayard-Alpert ionization gages
. . . . Penning gages
. . . . Philips ionization gages
vacuum apparatus
. vacuum gages
. **ionization gages**
. . . alphatrons
. . . Bayard-Alpert ionization gages
. . . Penning gages
. . . Philips ionization gages
RT hot cathodes
Knudsen gages
McLeod gages
orbitrons
Pirani gages
pressure measurement
- ionization potentials**
DEF The energy required to ionize an atom or molecule. The energy is usually given in terms of electron volts.
GS potential energy
. **ionization potentials**
RT activation
electric potential
nuclear binding energy
∞ potential
Saha equations
work functions
- ionized gases**
SN (LIMITED TO PARTIALLY IONIZED GASES; SEE PLASMAS (PHYSICS) FOR COMPLETELY IONIZED MATTER)
GS gases
. **ionized gases**
. . Lorentz gas particles
. charged particles
. **ionized gases**
. . . Lorentz gas
RT cosmic gases
electron gas
Fokker-Planck equation
gas ionization
gas temperature
H II regions
high temperature gases
neutral gases
. . . plasmas (physics)

ionizers

recombination coefficient

ionized plasmas

USE **plasmas (physics)**

ionizers

DEF Filaments, grids, or porous bodies in ion engines or other devices which strip electrons from the outer shells of neutral atoms to form positively charged ions.

RT ∞ filaments
gas ionization
∞ grids
ion engines
ionization chambers
surface ionization
tube grids

ionizing radiation

DEF Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly, in its passage through matter.

GS **ionizing radiation**
. alpha particles
. beta particles
. cosmic rays
. . cosmic ray showers
. . galactic cosmic rays
. . gamma ray bursts
. . primary cosmic rays
. . . solar cosmic rays
. . secondary cosmic rays
. gamma ray beams
. gamma rays
. . gamma ray bursts
. x rays
. . cosmic x rays
. . solar x-rays

RT absorption spectra
avalanches
beams (radiation)
coherent electromagnetic radiation
corpuscular radiation
electromagnetic radiation
electron beams
elementary particles
emission
extreme ultraviolet radiation
fluence
gamma ray absorption
gamma ray spectra
ion sources
irradiation
linear energy transfer (LET)
monochromatic radiation
nuclear radiation
particle trajectories
∞ radiation
radiation belts
radiation counters
radiation damage
radiation hazards
radioactive materials
radioactivity
radiochemistry
relativistic electron beams
solar radiation
sterilization
system generated electromagnetic pulses

ionograms

RT ion density (concentration)
ionosondes
riometers

ionopause

SN (EXCLUDES PLASMAPAUSE)
DEF The upper boundary of the ionosphere of certain planets (excluding the Earth) and comets where electrons decline sharply. The Earth's ionopause is referred to as the plasmopause. (Excludes plasmopause.)

RT cometary atmospheres
planetary atmospheres
plasmopause
space plasmas

Venus atmosphere

ionosondes

DEF An HF radar that sweeps or steps through all or part of the frequency range from 0.3 to 30 MHz (medium and high frequency band). Transmitting pulse modulated or continuous frequency variation signals with a vertical looking antenna, it measures the delay time of echos from the ionosphere as a function of frequency. Modern digital pulse ionosondes measure not only the amplitude, but also phase or Doppler frequency, polarization, and arrival angle of the echos.

GS measuring instruments
. meteorological instruments
. . radiosondes
. . . **ionosondes**
. sondes
. . radiosondes
. . . **ionosondes**
radio equipment
. radio transmitters
. . radiosondes
. . . **ionosondes**
transmitters
. radio transmitters
. . radiosondes
. . . **ionosondes**
RT ion probes
ionograms
ionospheric sounding
riometers
satellite sounding
sounding rockets

Ionosphere Explorer A

USE **Explorer 20 satellite**

ionosphere-magnetosphere coupling

USE **magnetosphere-ionosphere coupling**

∞ ionospheres

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT THE TERMS LISTED BELOW)
RT Earth ionosphere
magnetosphere-ionosphere coupling
planetary ionospheres

ionospheric absorption

USE **electromagnetic absorption ionospheric propagation**

ionospheric blackout

USE **blackout (propagation)**

ionospheric composition

GS composition (property)
. atmospheric composition
. . **ionospheric composition**
RT atom concentration
chemical composition
gas composition
ionization
particle density (concentration)
plasma composition
satellite atmospheres

ionospheric conductivity

GS electrical properties
. electrical resistivity
. . **ionospheric conductivity**
transport properties
. atmospheric conductivity
. . **ionospheric conductivity**
. electrical resistivity
. . **ionospheric conductivity**
RT ∞ conductivity
electrojets
ionic waves
plasma conductivity

ionospheric cross modulation

GS electromagnetic interference
. crosstalk
. . **ionospheric cross modulation**
. radio frequency interference
. . **ionospheric cross modulation**
modulation

. **ionospheric cross modulation**

RT Luxembourg effect

ionospheric currents

GS electric current
. **ionospheric currents**
. . Birkeland currents
. . electrojets
. . . auroral electrojets
. . . equatorial electrojet
. . Pedersen currents
electricity
. atmospheric electricity
. . **ionospheric currents**
. . . Birkeland currents
. . . electrojets
. . . . auroral electrojets
. . . . equatorial electrojet
. . . Pedersen currents
RT field aligned currents
plasma currents
traveling ionospheric disturbances

ionospheric disturbances

GS **ionospheric disturbances**
. ionospheric storms
. . sudden ionospheric disturbances
. . traveling ionospheric disturbances
RT Birkeland currents
blackout (propagation)
∞ disturbances
ionospheric noise
magnetic variations
space weather

ionospheric drift

RT ∞ drift
drift rate
electrojets
magnetic rigidity
polarization (charge separation)
radiation belts

ionospheric electron density

GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . **ionospheric electron density**
RT Ariel 4 satellite
magnetospheric electron density

ionospheric F-scatter propagation

GS scattering
. wave scattering
. . electromagnetic scattering
. . . **ionospheric F-scatter propagation**
transmission
. electromagnetic wave transmission
. . radio transmission
. . . ionospheric propagation
. . . . **ionospheric F-scatter propagation**
. . scatter propagation
. . . **ionospheric F-scatter propagation**
. signal transmission
. . radio transmission
. . . ionospheric propagation
. . . . **ionospheric F-scatter propagation**
. wave propagation
. . ionospheric propagation
. . . **ionospheric F-scatter propagation**
. scatter propagation
. . . **ionospheric F-scatter propagation**

ionospheric heating

GS heating
. **ionospheric heating**
RT atmospheric radiation
plasma heating

ionospheric ion density

GS density (number/volume)
. particle density (concentration)
. . ion density (concentration)
. . . **ionospheric ion density**

RT magnetospheric ion density
positive ions

ionospheric noise
GS atmospheric radiation
. **ionospheric noise**
. . whistlers
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . **ionospheric noise**
. . . . whistlers
RT background noise
background radiation
ionospheric disturbances
riometers
sky waves

ionospheric propagation
UF *ionospheric absorption*
ionospheric reflection
GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **ionospheric propagation**
. . . . ionospheric F-scatter
propagation
. signal transmission
. . radio transmission
. . . **ionospheric propagation**
. . . . ionospheric F-scatter
propagation
. wave propagation
. . **ionospheric propagation**
. . . ionospheric F-scatter propagation
RT antipodes
Earth ionosphere
Earth-ionosphere waveguide
EISCAT radar system (Europe)
ionic waves
lossy media
Luxembourg effect
magnetotronics
ORBIS
ORBIS CAL satellite
polar radio blackout
riometers
scatter propagation
signal measurement
traveling ionospheric disturbances

ionospheric reflection
USE **ionospheric propagation**

ionospheric sounding
GS sounding
. **ionospheric sounding**
RT Alouette 1 satellite
Alouette 2 satellite
Alouette project
Ariel 4 satellite
atmospheric sounding
ionosondes
ORBIS
ORBIS CAL satellite
rocket sounding
satellite sounding

ionospheric storms
DEF Disturbances of the ionosphere, resulting in anomalous variations in its characteristics and effects on radio communication.
GS ionospheric disturbances
. **ionospheric storms**
. . sudden ionospheric disturbances storms
. **ionospheric storms**
. . sudden ionospheric disturbances
RT ∞ disturbances
Earth ionosphere
ionospheric
noise storms
solar storms
spread F
traveling ionospheric disturbances

ionospheric temperature
GS temperature
. atmospheric temperature
. . **ionospheric temperature**

RT auroral temperature
electron energy
ion temperature

ionospheric tilts
DEF Ionospheric conditions where the variability of the number of the electrons as a function of altitude is present. Ionospheric tilts are sometimes created by traveling ionospheric disturbances (TID's) and ionospheric tilts deflect radio waves in unexpected directions adversely affecting radio reception.
RT traveling ionospheric disturbances

ionospherics
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . atmospherics
. . . . **ionospherics**
. dawn chorus
. hiss
RT ionospheric storms
radio auroras

ions
DEF Charged atoms or molecularly bound groups of atoms; sometimes also free electrons or other charged subatomic particles. In atmospheric electricity, any of several types of electrically charged submicroscopic particles normally found in the atmosphere. Atmospheric ions are of two principal types, small ions and large ions, although a class of intermediate ions has occasionally been reported. In chemistry, atoms or specific groupings of atoms which have gained or lost one or more electrons, as the chloride ion or ammonium ion. Such ions exist in aqueous solutions and in certain crystal structures.
UF *multicharged ions*
GS **ions**
. cesium ions
. deuterons
. heavy ions
. helium ions
. hydrogen ions
. light ions
. metal ions
. . ferric ions
. . manganese ions
. molecular ions
. . formyl ions
. . hydronium ions
. . vanadyl radical
. negative ions
. . anions
. nitrogen ions
. oxygen ions
. positive ions
. . cations
. . . formyl ions
. . . vanadyl radical
. . hydronium ions
. recoil ions
. tritons
. trivalent ions
RT alpha particles
atoms
chemical elements
corpuscular radiation
electrolytes
free radicals
hydroxyl radicals
ion implantation
ion plating
ionic mobility
molecules
monatomic molecules
nuclei (nuclear physics)
particles
plasmas (physics)
polyatomic molecules
protons
valence

Iowa
GS nations
. United States
. . **Iowa**

RT Cedar Rapids (IA)
Missouri River (US)

IP (impact prediction)
USE **computerized simulation**

IPAD
SN (INTEGRATED PROGRAM FOR AEROSPACE VEHICLE DESIGN)
UF *Integ Program for Aerospace Veh Design*
GS computer techniques
. computer aided design
. . **IPAD**
spacecraft design
. **IPAD**
RT ∞ design

IPG (NASA Information Power Grid)
(added December 2003)
USE **grid computing (computer networks)**

IQSY (international year)
USE **International Quiet Sun Year**

IR lasers
USE **infrared lasers**

Iran
GS nations
. **Iran**
RT Asia

Iraq
GS nations
. **Iraq**
RT Asia

IRAS
USE **Infrared Astronomy Satellite**

IRAS-Araki-Alcock comet
DEF The closest known approaching comet to the Earth since 1770, it was the fourth comet discovered in 1983 and is named after its first three discoverers: The infrared astronomy satellite, Genichi Araki (a Japanese school teacher) and George Alcock (a veteran English amateur observer).
GS celestial bodies
. comets
. . **IRAS-Araki-Alcock comet**
RT Infrared Astronomy Satellite
solar system

irasers
USE **infrared lasers**

IRBM (missiles)
USE **intermediate range ballistic missiles**

Ireland
GS landforms
. islands
. . **Ireland**
nations
. **Ireland**

iridescence
GS electromagnetic properties
. optical properties
. . color
. . . **iridescence**
RT opalescence

iridium
GS chemical elements
. **iridium**
. . iridium isotopes
metals
. refractory metals
. . **iridium**
. . . iridium isotopes
. transition metals
. . **iridium**
. . . iridium isotopes
refractory materials
. refractory metals
. . **iridium**

iridium alloys

. . . iridium isotopes

iridium alloys

(added July 1991)

GS alloys

. **iridium alloys**

RT platinum alloys

iridium compounds

(added July 1991)

RT ∞ chemical compounds

∞ Group 8 compounds

∞ metal compounds

iridium isotopes

GS chemical elements

. iridium

. . **iridium isotopes**

. nuclides

. . isotopes

. . . **iridium isotopes**

metals

. refractory metals

. . iridium

. . . **iridium isotopes**

. transition metals

. . iridium

. . . **iridium isotopes**

refractory materials

. refractory metals

. . iridium

. . . **iridium isotopes**

Iridium network

(added December 1998)

DEF A 66-satellite wireless personal telecommunications network designed to provide worldwide telephone, paging, facsimile and data services to handheld or mobile equipment.

UF *Iridium satellites*

GS networks

. communication networks

. . **Iridium network**

. satellite networks

. . satellite constellations

. . . **Iridium network**

RT communication satellites

facsimile communication

mobile communication systems

satellite communication

telephony

wireless communication

Iridium satellites

(added December 1998)

USE **communication satellites**

Iridium network

IRIS satellites

GS artificial satellites

. **IRIS satellites**

RT European space programs

satellite observation

solar activity

solar cycles

solar energy

solar flares

solar radiation

solar sensors

irises (mechanical apertures)

GS openings

. apertures

. . **irises (mechanical apertures)**

RT camera shutters

waveguide windows

waveguides

IRM

USE **information resources management**

iron

GS chemical elements

. **iron**

. . iron isotopes

. . . iron 57

. . . iron 58

. . . iron 59

metals

. transition metals

. . **iron**

. . . iron isotopes

. . . . iron 57

. . . . iron 58

. . . . iron 59

RT ferric ions

ferrous metals

hydrogen embrittlement

low carbon steels

siderophile elements

iron 57

GS chemical elements

. iron

. . iron isotopes

. . . **iron 57**

. nuclides

. . isotopes

. . . iron isotopes

. . . . **iron 57**

metals

. transition metals

. . iron

. . . iron isotopes

. . . . **iron 57**

iron 58

DEF A radioactive isotope of iron.

GS chemical elements

. iron

. . iron isotopes

. . . **iron 58**

. nuclides

. . isotopes

. . . iron isotopes

. . . . **iron 58**

metals

. transition metals

. . iron

. . . iron isotopes

. . . . **iron 58**

iron 59

GS chemical elements

. iron

. . iron isotopes

. . . **iron 59**

. nuclides

. . isotopes

. . . iron isotopes

. . . . **iron 59**

. . . radioactive isotopes

. . . . **iron 59**

metals

. transition metals

. . iron

. . . iron isotopes

. . . . **iron 59**

iron alloys

UF *ferroalloys*

GS alloys

. **iron alloys**

. . steels

. . . bainitic steel

. . . carbon steels

. . . . low carbon steels

. . . chromium steels

. . . Croloy

. . . high strength steels

. . . maraging steels

. . . nickel steels

. . . stainless steels

. . . . austenitic stainless steels

. . . . ferritic stainless steels

. . . . martensitic stainless steels

RT

austenite

bainite

bearing alloys

cementite

ferrites

Hastelloy (trademark)

Inconel (trademark)

iron aluminides

kamacite

martensite

nimonic alloys

pearlite

Permalloys (trademark)

silicon alloys

Zircalloys (trademark)

iron aluminides

(added December 2000)

GS aluminum compounds

. aluminides

. . **iron aluminides**

iron compounds

. **iron aluminides**

RT aluminum alloys

intermetallics

iron alloys

iron chlorides

GS halogen compounds

. chlorine compounds

. . chlorides

. . . **iron chlorides**

. halides

. . chlorides

. . . **iron chlorides**

. . metal halides

. . . **iron chlorides**

iron compounds

. **iron chlorides**

iron compounds

GS **iron compounds**

. cohenite

. cordierite

. fayalite

. ferrates

. . barium ferrates

. ferrites

. ferrocenes

. . alkylferrocene

. iron chlorides

. iron cyanides

. iron oxides

. . hematite

. . ilmenite

. . magnetite

. limonite

. pyrites

. pyrrhotite

. . troilite

. iron aluminides

. schreibersite

. siderites

RT ∞ chemical compounds

∞ Group 8 compounds

∞ metal compounds

iron cyanides

GS cyanides

. **iron cyanides**

iron compounds

. **iron cyanides**

iron isotopes

GS chemical elements

. iron

. . **iron isotopes**

. . . iron 57

. . . iron 58

. . . iron 59

. nuclides

. . isotopes

. . . **iron isotopes**

. . . . iron 57

. . . . iron 58

. . . . iron 59

metals

. transition metals

. . iron

. . . **iron isotopes**

. . . . iron 57

. . . . iron 58

. . . . iron 59

RT ferrous metals

iron meteorites

UF *siderite meteorites*

GS celestial bodies

. meteorites

. . **iron meteorites**

. . . Aroos meteorite

. . . Lazarev meteorite

. . . Odessa meteorite

- . . . Sikhote-Alin meteorite
 RT achondrites
 Harleton meteorite
 kamacite
 meteoritic composition
 meteoritic microstructures
 Okhansk meteorite
 schreibersite
 stony meteorites
 stony-iron meteorites
 troilite
 Widmanstätten structure
- iron ores**
 GS minerals
 . iron ores
 . . hematite
- iron oxides**
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . iron oxides
 hematite
 ilmenite
 magnetite
 iron compounds
 . iron oxides
 . . hematite
 . . ilmenite
 . . magnetite
- Iroquois helicopter*
 USE **UH-1 helicopter**
- irradiance**
 SN (LIMITED TO DETECTION RATE PER UNIT AREA OF RADIATION)
 DEF The detection rate per unit area of radiation.
 GS rates (per time)
 . flux density
 . . radiant flux density
 . . . irradiance
 illuminance
 solar constant
 RT electron flux density
 luminance
 luminous intensity
 neutron flux density
 photosynthetically active radiation
 proton flux density
 radiance
 Solar Backscatter UV Spectrometer
 solar flux density
- irradiation**
 GS irradiation
 . auroral irradiation
 . electron irradiation
 . ion irradiation
 . . deuteron irradiation
 . . proton irradiation
 . neutron irradiation
 . x ray irradiation
 RT activation
 beams (radiation)
 ∞ bombardment
 dosimeters
 electromagnetic absorption
 electron probes
 emission
 excitation
 exposure
 flux density
 ionizing radiation
 laser induced fluorescence
 nuclear capture
 nuclear fusion
 nuclear radiation
 preserving
 ∞ radiation
 radiation dosage
 radiation effects
 radiation measurement
 radiation tolerance
 radiobiology
 radiography
- targets
- irrationality**
 RT disorientation
 dithers
 mental performance
 prejudices
 psychoses
 schizophrenia
- irregular galaxies**
 DEF Galaxies with amorphous structure and with relatively low mass (10 to the 8th to 10 to the 10th solar masses). Fewer than 10 percent of all galaxies are classified as irregular.
 GS celestial bodies
 . galaxies
 . . irregular galaxies
 RT BL Lacertae objects
 galactic radiation
 galactic rotation
 galactic structure
 Gum nebula
 Hubble constant
 Hubble diagram
 nebulae
 Orion nebula
 Population I stars
 quasars
 radio sources (astronomy)
 red shift
 star clusters
 stars
- irregular variable stars**
 GS celestial bodies
 . stars
 . . variable stars
 . . . irregular variable stars
 R Coronae Borealis stars
 RT carbon stars
 semiregular variable stars
- irregularities**
 RT abnormalities
 defects
 deviation
 nonuniformity
 regularity
- irreversible processes**
 RT nonequilibrium thermodynamics
 Onsager relationship
 reaction kinetics
 thermodynamics
 thermoviscoelasticity
 variational principles
- irrigation**
 RT agriculture
 alfalfa
 barley
 canals
 citrus trees
 corn
 crop vigor
 ditches
 drainage
 drainage patterns
 farm crops
 farmlands
 oats
 orchards
 ponds
 seepage
 sugar beets
 sugar cane
 troughs
 vegetation growth
 vineyards
 water consumption
- irritation**
 GS irritation
 . toxicity and safety hazard
- RT ∞ reaction
- irrotational flow*
 USE **potential flow**
- IRS (Indian spacecraft)*
 USE **Indian spacecraft**
- ISAGEX*
 USE **International Satellite Geodesy Experiment**
- ISCCP Project**
 (added August 1991)
 UF *International Satellite Cloud Climatology*
 GS programs
 . projects
 . . ISCCP Project
 RT climatology
 cloud cover
 clouds (meteorology)
 GOES satellites
 METEOSAT satellite
 remote sensing
 satellite observation
- ischemia**
 RT anemias
 blood circulation
 congestion
 vasoconstriction
- ISEE*
 USE **International Sun Earth Explorers**
- isentrope**
 DEF A line of equal or constant pressure, with respect to either space or time.
 RT adiabatic conditions
 isentropic processes
 Mollier diagram
 Poisson equation
- isentropic processes**
 GS isentropic processes
 . nonisentropicity
 RT Bernoulli theorem
 isentrope
 isoenergetic processes
 isopycnic processes
 ∞ processes
 thermodynamic equilibrium
- Ising model**
 RT antiferromagnetism
 cluster variation method
 crystal lattices
 ferromagnetism
 particle spin
 phase transformations
 statistical mechanics
- ISIS satellites**
 SN (INTERNATIONAL SATELLITES FOR IONOSPHERIC STUDY)
 UF *International Sats for Ionospheric Study*
 GS artificial satellites
 . **ISIS satellites**
 . . Alouette 2 satellite
 . . ISIS-A
 . . ISIS-B
 . . ISIS-X
 RT Alouette satellites
- ISIS-A**
 GS artificial satellites
 . ISIS satellites
 . . **ISIS-A**
 RT Alouette project
- ISIS-B**
 GS artificial satellites
 . ISIS satellites
 . . **ISIS-B**
- ISIS-X**
 GS artificial satellites
 . ISIS satellites
 . . **ISIS-X**

island arcs

RT Alouette B satellite

Iskra aircraft

USE **TS-11 aircraft**

island arcs

GS landforms

. island arcs

RT Aleutian Islands (US)

∞ arcs

barriers (landforms)

islands

keys (islands)

lagoons

reefs

islands

DEF Tracts of land smaller than a continent, surrounded by the water of oceans, seas, lakes, or streams. The term has been loosely applied to land-tied and submerged areas, and to land cut off on two or more sides by water, such as peninsulas.

GS landforms

. islands

.. Aleutian Islands (US)

.. Assateague Island (MD-VA)

.. atolls

.. Azores

.. Bahrain

.. Bermuda

.. Canary Islands

.. Cyprus

.. Greenland

.. Hawaii

.. Iceland

.. Indonesia

.. Ireland

.. keys (islands)

.. Long Island (NY)

.. Madagascar

.. Maldiv Islands

.. Malta

.. Mauritius

.. Merritt Island (FL)

.. Newfoundland

.. nunataks

.. Pacific islands

... Guam

... Japan

... Johnston Island

... Kurile Islands

... New Guinea (island)

... New Zealand

... Philippines

... Samoa

... Prince Edward Island

... Seychelles

... Sicily

... Tasmania

... Wallops Island

... West Indies

... Antigua and Barbuda

... Bahamas

... Barbados

... Cuba

... Dominica

... Grenada

... Guadeloupe

... Haiti

... Jamaica

... Lesser Antilles

... Martinique

... Puerto Rico

... Trinidad and Tobago

... Virgin Islands

RT archipelagoes

Cape Verde

coral reefs

island arcs

lagoons

Outer Banks (NC)

reefs

seamounts

ISMU (resource utilization)

(added August 2001)

USE **in situ resource utilization**

∞ **isobars**

SN (USE OF A MORE SPECIFIC TERM IS

RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT baroclinity

barotropism

isobars (pressure)

nuclear isobars

polytropic processes

isobars (pressure)

DEF Lines of equal or constant pressure, specifically, such lines on a weather map.

RT atmospheric pressure

geostrophic wind

gradients

∞ isobars

isochoric processes

isopycnic processes

isothermal processes

meteorological charts

pressure

pressure distribution

pressure gradients

isobutane

(added March 1996)

USE **butanes**

isobutylene

USE **butenes**

isochoric processes

RT isobars (pressure)

isopycnic processes

thermodynamic equilibrium

volume

isochromatics

RT color

dichroism

diffraction

interferometry

refraction

speckle interferometry

isocyanates

GS esters

. **isocyanates**

.. diisocyanates

.. fulminates

nitrogen compounds

. cyano compounds

.. **isocyanates**

... diisocyanates

... fulminates

isoelectronic sequence

RT atomic structure

spectra

spectroscopy

isoenergetic processes

RT adiabatic conditions

isentropic processes

thermodynamic equilibrium

isolation

GS **isolation**

. social isolation

RT confinement

confining

deprivation

disposal

exclusion

gnotobiotics

insulation

isolators

∞ separation

spacing

isolators

GS **isolators**

. vibration isolators

RT attenuators

insulation

isolation

noise reduction

shock absorbers

spacers

suppressors

vibration

isomerization

DEF Process for converting hydrocarbon or other organic compound to an isomer.

GS **isomerization**

. ortho para conversion

RT ∞ conversion

refining

isomers

DEF Nuclides having the same mass number A and atomic number Z, but existing for measurable times in different quantum states with different energies and radioactive properties. Molecules having the same atomic composition and molecular weight, but differing in geometrical configuration.

GS **isomers**

. enantiomers

RT atoms

congeners

isopropyl alcohol

nuclear chemistry

phenanthrene

stereochemistry

tautomers

isomorphism

UF *morphotropism*

GS morphology

. **isomorphism**

RT

crystal lattices

crystal structure

duality theorem

enantiomers

homomorphisms

isoparametric finite elements

DEF The basis for the calculation of physical properties of structural shapes including stress analyses.

RT conformal mapping

coordinate transformations

∞ elements

finite element method

fracture mechanics

numerical analysis

stress analysis

isoperimetric problem

RT analytic functions

continuity (mathematics)

Lagrange multipliers

matrices (mathematics)

∞ problems

topology

isophotes

RT ∞ illumination

isopleths

USE **nomographs**

isopropyl alcohol

GS hydroxyl compounds

. alcohols

.. **isopropyl alcohol**

isopropyl compounds

. **isopropyl alcohol**

RT isomers

isopropyl compounds

GS **isopropyl compounds**

. isopropyl alcohol

RT ∞ chemical compounds

isopropyl nitrate

GS alkyl compounds

. **isopropyl nitrate**

esters

. nitrate esters

.. **isopropyl nitrate**

nitrogen compounds

. nitrate esters

.. **isopropyl nitrate**

isopycnic processes

UF *isosteric processes*

RT density (mass/volume)

isentropic processes

- isobars (pressure)
isochoric processes
- isostasy**
DEF A supposed equality existing in vertical sections of the Earth, whereby the weight of any column from the surface of the Earth to a constant depth is approximately the same as that of any other column of equal area, the equilibrium being maintained by plastic flow from one part of the Earth to another.
RT ∞ equilibrium
geomorphology
geophysics
glaciology
gravitation
hydrostatics
orography
seismology
subsidence
- isostatic pressure**
GS pressure
. **isostatic pressure**
RT atmospheric pressure
hot isostatic pressing
hydrostatic pressure
static pressure
- isosteric processes*
USE **isopycnic processes**
- isotensoid structures**
DEF Filamentary structures in which the filaments are uniformly stressed throughout for the design loading conditions.
RT composite wrapping
filament winding
pressure vessels
prestressing
shells (structural forms)
spiral wrapping
 ∞ structures
tensegrity structures
- isothermal flow**
GS fluid flow
. **isothermal flow**
RT flow distribution
isotherms
temperature distribution
- isothermal layers**
RT isotherms
laminar boundary layer
stratosphere
stratospheric warming
temperature distribution
temperature gradients
thermal mapping
tropopause
- isothermal processes**
DEF Thermodynamic changes of state of a system that take place at constant temperature.
RT adiabatic conditions
isobars (pressure)
isotherms
thermodynamic equilibrium
- isotherms**
DEF Lines connecting points of equal temperature.
RT Atmospheric & Oceanographic Inform Sys
atmospheric temperature
gradients
isothermal flow
isothermal layers
isothermal processes
meteorological parameters
meteorology
temperature
temperature distribution
temperature gradients
thermal mapping
thermodynamics
- isotonicity**
RT body fluids
- osmosis
- isotope abundance ratios*
USE **isotope ratios**
- isotope effect**
UF *isotope shift*
RT ∞ effects
isotopes
radioactive isotopes
- isotope ratios**
(added March 1995)
UF *isotope abundance ratios*
isotopic analysis (quantitative)
GS composition (property)
. **isotope ratios**
ratios
. **isotope ratios**
RT atmospheric composition
cosmochemistry
geochemistry
geochronology
interstellar chemistry
meteoritic composition
stellar composition
- isotope separation**
RT atoms
heavy ions
ion exchanging
ion extraction
isotopes
jet membrane process
- isotope shift*
USE **isotope effect**
- isotopes**
DEF Different forms of the same chemical element that differ only by the number of neutrons in their nucleus. Most elements have more than one naturally occurring isotope.
GS chemical elements
. nuclides
. **isotopes**
. . . aluminum isotopes
. . . . aluminum 26
. . . . aluminum 27
. . . antimony isotopes
. . . argon isotopes
. . . arsenic isotopes
. . . barium isotopes
. . . beryllium isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . bismuth isotopes
. . . boron isotopes
. . . . boron 10
. . . bromine isotopes
. . . cadmium isotopes
. . . calcium isotopes
. . . carbon isotopes
. . . . carbon 12
. . . . carbon 13
. . . . carbon 14
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . . cesium vapor
. . . chromium isotopes
. . . cobalt isotopes
. . . . cobalt 58
. . . . cobalt 60
. . . dysprosium isotopes
. . . erbium isotopes
. . . europium isotopes
. . . fluorine isotopes
. . . gadolinium isotopes
. . . gallium isotopes
. . . germanium isotopes
. . . gold isotopes
. . . . gold 198
. . . hafnium isotopes
. . . helium isotopes
. . . holmium isotopes
. . . hydrogen isotopes
. . . . deuterium
. . . . hydrogen 4
. . . . metallic hydrogen
. . . . tritium
. . . iodine isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. . . iridium isotopes
. . . iron isotopes
. . . . iron 57
. . . . iron 58
. . . . iron 59
. . . krypton isotopes
. . . . krypton 85
. . . lanthanum isotopes
. . . lead isotopes
. . . lithium isotopes
. . . lutetium
. . . . lutetium isotopes
. . . magnesium isotopes
. . . manganese isotopes
. . . mercury isotopes
. . . molybdenum isotopes
. . . neodymium isotopes
. . . neon isotopes
. . . nickel isotopes
. . . niobium isotopes
. . . . niobium 95
. . . nitrogen isotopes
. . . . nitrogen 15
. . . . nitrogen 16
. . . nobelium isotopes
. . . osmium isotopes
. . . oxygen isotopes
. . . . oxygen 17
. . . . oxygen 18
. . . palladium isotopes
. . . phosphorus isotopes
. . . . phosphorus 32
. . . platinum isotopes
. . . polonium isotopes
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . . potassium isotopes
. . . . potassium 38
. . . . potassium 39
. . . . potassium 40
. . . praseodymium isotopes
. . . promethium isotopes
. . . protactinium isotopes
. . . radioactive isotopes
. . . . astatine isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . carbon 14
. . . . cerium 137
. . . . cerium 144
. . . cesium 134
. . . cesium 137
. . . cesium 144
. . . cobalt 58
. . . . cobalt 60
. . . copper isotopes
. . . . gold 198
. . . indium isotopes
. . . . iodine 125
. . . . iodine 131
. . . . iodine 132
. . . . iron 59
. . . . krypton 85
. . . . niobium 95
. . . . nitrogen 16
. . . . phosphorus 32
. . . . polonium 208
. . . . polonium 209
. . . . polonium 210
. . . . potassium 38
. . . . potassium 40
. . . . rubidium 86
. . . . sodium 22
. . . . sodium 24
. . . . strontium 85
. . . . strontium 88

isotopic enrichment

. . . . strontium 89
 strontium 90
 transuranium elements
 americium
 americium isotopes
 americium 241
 berkelium
 californium
 californium isotopes
 curium
 curium isotopes
 curium 242
 curium 244
 einsteinium
 fermium
 lawrencium
 mendelevium
 neptunium
 neptunium isotopes
 nobelium
 plutonium
 plutonium isotopes
 plutonium 238
 plutonium 239
 plutonium 240
 plutonium 241
 plutonium 244
 sergenium
 tritium
 uranium 232
 uranium 233
 uranium 238
 xenon 133
 xenon 135
 zirconium 95
 radium isotopes
 radium 226
 radon isotopes
 rhenium isotopes
 rhodium isotopes
 rubidium isotopes
 rubidium 86
 ruthenium isotopes
 samarium isotopes
 scandium isotopes
 selenium isotopes
 silicon isotopes
 silver isotopes
 sodium isotopes
 sodium 22
 sodium 24
 strontium isotopes
 strontium 85
 strontium 87
 strontium 89
 strontium 90
 sulfur isotopes
 tantalum isotopes
 technetium isotopes
 tellurium
 tellurium isotopes
 terbium isotopes
 thallium isotopes
 thorium isotopes
 thulium isotopes
 tin isotopes
 titanium isotopes
 tungsten isotopes
 uranium isotopes
 uranium 232
 uranium 233
 uranium 234
 uranium 235
 uranium 238
 vanadium isotopes
 xenon isotopes
 xenon 129
 xenon 133
 xenon 135
 ytterbium isotopes
 yttrium isotopes
 zinc isotopes
 zirconium isotopes
 zirconium 95
 RT atoms
 heavy ions
 isotope effect
 isotope separation
 isotopic enrichment

isotopic labeling
 jet membrane process
 metals
 nuclear isobars
 nuclei (nuclear physics)
 radioactive materials

isotopic analysis (quantitative)
 USE **isotope ratios**

isotopic enrichment
 DEF Process by which the relative abundance of the isotopes of a given element are altered in a batch to produce a form of the element enriched in a particular isotope.

GS enrichment
 . **isotopic enrichment**
 . . jet membrane process
 RT beneficiation
 chemical elements
 ∞ concentration
 isotopes
 nuclides

isotopic labeling

GS marking
 . **isotopic labeling**
 RT chemical analysis
 isotopes
 radioactive isotopes
 radiochemistry
 trace elements
 ∞ tracers

isotopic spin

GS spin
 . particle spin
 . . **isotopic spin**

isotopic media

GS isotropy
 . **isotopic media**
 RT anisotropic media

isotropic turbulence

DEF Turbulence in which the products and squares of the velocity components and their derivatives are independent of direction, or, more precisely, invariant with respect to rotation and reflection of the coordinate axes in a coordinate system moving with the mean motion of the fluid.

GS turbulence
 . **isotropic turbulence**
 RT atmospheric turbulence
 coordinate transformations
 homogeneous turbulence
 instrument receivers
 invariant imbeddings
 Kolmogorov theory
 magnetohydrodynamic turbulence
 turbulent flow

isotropism

RT refractivity
 symmetry

isotropy

DEF Having the same properties in all directions. Used for spatial isotropy.

UF *spatial isotropy*
 GS **isotropy**
 . isotropic media
 RT anisotropic fluids
 anisotropy
 Bragg angle
 crystal structure
 crystallography
 crystals
 dendritic crystals
 directivity
 field strength
 mechanical properties
 metallography
 optical properties
 ∞ orientation
 ∞ physical properties

Israel

GS nations

. **Israel**
 RT Asia
 Israeli space program
 Israeli spacecraft

Israeli space program

(added March 1989)
 GS programs
 . space programs
 . . **Israeli space program**
 RT Israel
 Israeli spacecraft

Israeli spacecraft

(added May 1993)
 RT Israel
 Israeli space program
 ∞ spacecraft

ISRO

UF *Indian Space Research Organization*
 GS organizations
 . **ISRO**
 RT India
 space programs

ISRU (resource utilization)

(added August 2001)
 USE **in situ resource utilization**

ISS (space station)

(added June 2000)
 USE **International Space Station**

isthmuses

DEF Narrow strips or necks of land, bordering on both sides by water, connecting two larger land areas, such as peninsulas and the mainland or two continents (Isthmus of Panama).

GS land
 . **isthmuses**
 landforms
 . **isthmuses**
 RT geology
 oceanography
 peninsulas
 topography
 water

ISY

USE **International Space Year**

Italian space program

GS programs
 . space programs
 . . European space programs
 . . . **Italian space program**
 RT Italy
 Orbiting Frog Otolith
 SIRIO satellite

Italy

GS nations
 . **Italy**
 RT Adriatic Sea
 Alps Mountains (Europe)
 Europe
 Italian space program
 San Marino
 Sicily
 SIRIO satellite
 Vatican City

itching

RT contact dermatitis
 dermatitis
 histamines
 sensitivity
 sensory perception

iteration

GS analysis (mathematics)
 . numerical analysis
 . . **iteration**
 . . . conjugate gradient method
 . . . iterative solution
 . . . Newton methods
 . . . Newton-Raphson method
 . . . predictor-corrector methods
 RT multigrid methods
 probability theory

- problem solving
- iterative networks**
- GS circuits
 - . **iterative networks**
 - networks
 - . **iterative networks**
 - RT impedance matching
- iterative solution**
- GS analysis (mathematics)
 - . numerical analysis
 - . . iteration
 - . . . **iterative solution**
 - problem solving
 - . **iterative solution**
 - RT asymptotic methods
 - Cholesky factorization
 - conjugate gradient method
 - finite element method
 - ill-posed problems (mathematics)
 - multigrid methods
 - Newton methods
 - predictor-corrector methods
 - sorting algorithms
 - strange attractors
- ITO (semiconductors)**
- DEF Semiconductor devices consisting of a layer of tin sandwiched between an indium layer and an oxide layer. Used for indium-tin-oxide semiconductors.
 - UF *indium-tin-oxide semiconductors*
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . metal oxide semiconductors
 - **ITO (semiconductors)**
 - semiconductors (materials)
 - . metal oxide semiconductors
 - . . **ITO (semiconductors)**
 - RT charge coupled devices
 - charge transfer devices
 - CMOS
 - heterojunction devices
 - ion implantation
 - rectifiers
- SOS (semiconductors)
- ITOS 1**
- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites
 - **ITOS 1**
 - RT TIROS M
 - TIROS N series satellites
 - TIROS operational satellite system
- ITOS 2**
- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites
 - **ITOS 2**
 - RT TIROS M
 - TIROS N series satellites
 - TIROS operational satellite system
- ITOS 3**
- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites
 - **ITOS 3**
 - RT TIROS M
 - TIROS N series satellites
 - TIROS operational satellite system
- ITOS 4**
- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . ITOS satellites
 - **ITOS 4**
 - RT TIROS M
 - TIROS N series satellites
 - TIROS operational satellite system
- ITOS satellites**
- (added August 1990)
- DEF Second generation, polar orbiting, environmental satellite used to augment NOAA's world-wide weather observation capabilities.
- UF *Improved TIROS Operational Satellites*
- GS artificial satellites
 - . meteorological satellites
 - . . TIROS satellites
 - . . . **ITOS satellites**
 - ITOS 1
 - ITOS 2
 - ITOS 3
 - ITOS 4
- RT TIROS M
 - TIROS N series satellites
- IUE**
- UF *International Ultraviolet Explorer SAS-D*
 - GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **IUE**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **IUE**
 - RT Explorer satellites
 - Extreme Ultraviolet Explorer satellite
 - radio astronomy
 - spaceborne astronomy
 - ultraviolet radiation
- IUS**
- USE **Inertial Upper Stage**
- Ivory Coast*
- USE **Cote d'Ivoire**
- Ivuna meteorite**
- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . carbonaceous meteorites
 - carbonaceous chondrites
 - **Ivuna meteorite**
 - chondrites
 - carbonaceous chondrites
 - **Ivuna meteorite**
- Izsak ellipsoid*
- USE **ellipsoids**
- geodesy**

J

J integral

DEF A contour energy integral formulated by Rice and used for evaluating fracture toughness of elastoplastic materials.

- GS analysis (mathematics)
 - . functional analysis
 - . integral equations
 - . . . **J integral**
 - . real variables
 - . measure and integration
 - . . . **J integral**
- RT crack initiation
 - crack propagation
 - crack propagation
 - cracking (fracturing)
 - creep rupture strength
 - elastoplasticity
 - fracture mechanics
 - fracture strength
 - integral calculus
 - mechanical properties
 - plastic deformation
 - structural analysis
 - toughness
 - yield strength

J-2 engine

- GS engines
 - . rocket engines
 - . liquid propellant rocket engines
 - . . . hydrogen oxygen engines
 - **J-2 engine**
- RT Ares 1 upper stage
 - Ares 5 cargo launch vehicle
 - Nova launch vehicles
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles

J-33 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-33 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-33 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-33 engine**
 - turbomachinery
 - . **J-33 engine**
- RT Mace missiles

J-34 engine

- UF *XJ-34-WE-32 engine*
- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-34 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-34 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-34 engine**

J-47 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-47 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines

- **J-47 engine**
- . turbine engines
- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-47 engine**

J-52 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-52 engine**
 - . aircraft engines
 - . **J-52 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-52 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-52 engine**

J-57 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-57 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-57 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-57 engine**
- RT afterburning

J-58 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-58 engine**
 - . aircraft engines
 - . **J-58 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-58 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-58 engine**

J-65 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-65 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-65 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-65 engine**
- RT A-4 aircraft

J-69-T-25 engine

- UF *Marbore 2 engine*
- GS engines
 - . air breathing engines

- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-69-T-25 engine**
- . internal combustion engines
- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-69-T-25 engine**
- . turbine engines
- . gas turbine engines
- . jet engines
- . . . turbojet engines
- **J-69-T-25 engine**

J-71 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-71 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-71 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-71 engine**

J-73 engine

- UF *YJ-73-GE-3 engine*
- GS engines
 - . *YJ73 turbojet engine*
 - . engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-73 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-73 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-73 engine**

J-75 engine

- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-75 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-75 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-75 engine**

J-79 engine

- UF *XJ-79-GE-1 engine*
- GS engines
 - . *YJ-79 engine*
 - . engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-79 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-79 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - . . . turbojet engines
 - **J-79 engine**

- turbojet engines
- **J-79 engine**
- RT F-4 aircraft
- J-85 engine**
- UF *YJ-85 engine*
- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - **J-85 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - **J-85 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - **J-85 engine**
- RT Blue Goose missile
Osprey missile
- J-93 engine**
- UF *J93-MJ252H engine*
J93-MJ280G engine
YJ-93 engine
YJ-93-GE-3 engine
- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - **J-93 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - **J-93 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - **J-93 engine**
- J93-MJ252H engine*
- USE **J-93 engine**
- J93-MJ280G engine*
- USE **J-93 engine**
- J-97 engine**
- GS engines
 - . air breathing engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - turbofan engines
 - **J-97 engine**
 - . aircraft engines
 - . **J-97 engine**
 - . internal combustion engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - turbofan engines
 - **J-97 engine**
 - . turbine engines
 - . gas turbine engines
 - . jet engines
 - turbojet engines
 - turbofan engines
 - **J-97 engine**
- Jabiru rocket vehicle*
- USE **Jaguar rocket vehicle**
- jackets**
- SN (EXCLUDES CLOTHING)
- DEF Coverings or casings of some kind. Specifically, a shell around the combustion chamber of a liquid fuel rocket, through which the propellant is circulated in regenerative cooling. Coatings of one material over another to prevent damage such as oxidation or micrometeoroid penetration.
- RT absorbers (materials)
- ∞ casing
- cooling
- coverings
- heating
- insulation
- linings
- sheaths
- jacking equipment*
- USE **jacks (lifts)**
- ∞ **jacks**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT electric connectors
elevators (lifts)
jacks (lifts)
- jacks (electrical)*
- USE **electric connectors**
- jacks (lifts)**
- UF *jacking equipment*
- RT ∞ jacks
- ∞ lifts
- positioning devices (machinery)
- tunneling (excavation)
- Jacobi integral**
- GS analysis (mathematics)
 - . real variables
 - . . **Jacobi integral**
- RT conformal mapping
diffusion theory
elliptic functions
Green's functions
potential theory
Weierstrass functions
- Jacobi matrix method**
- GS analysis (mathematics)
 - . real variables
 - . . **Jacobi matrix method**
- RT calculus of variations
eigenvalues
eigenvectors
Hermitian polynomial
- ∞ methodology
- Jacobi polynomials*
- USE **hypergeometric functions**
- Jaguar aircraft**
- GS attack aircraft
 - . fighter aircraft
 - . . **Jaguar aircraft**
 - . single engine aircraft
 - . **Jaguar aircraft**
 - . supersonic aircraft
 - . **Jaguar aircraft**
- RT ∞ aircraft
Breguet aircraft
- ∞ military aircraft
- Jaguar rocket vehicle**
- UF *Jabiru rocket vehicle*
- GS rocket vehicles
 - . multistage rocket vehicles
 - . . **Jaguar rocket vehicle**
 - . sounding rockets
 - . . **Jaguar rocket vehicle**
- RT solid propellant rocket engines
- Jahn-Teller effect**
- DEF The effect whereby, except for linear molecules, degenerate orbital states in molecules are unstable.
- RT ∞ effects
- electron paramagnetic resonance
- electron transitions
- orbitals
- Jamaica**
- GS landforms
 - . islands
 - . . West Indies
 - . . . **Jamaica**
 - . nations
 - . **Jamaica**
- RT Caribbean region
- James Webb Space Telescope**
(added October 2003)
- DEF Orbiting infrared observatory comprised of an optical telescope element, integrated science instrument module, and a space support module. Successor telescope to the Hubble Space Telescope.
- UF *JWST (observatory)*
- GS artificial satellites
 - . scientific satellites
 - . astronomical satellites
 - . . . **James Webb Space Telescope**
 - . observatories
 - . astronomical observatories
 - . astronomical satellites
 - . . . **James Webb Space Telescope**
 - . telescopes
 - . spaceborne telescopes
 - . . **James Webb Space Telescope**
- RT Hubble Space Telescope
infrared astronomy
infrared telescopes
Next Generation Space Telescope project
spaceborne astronomy
- jammers**
- RT air defense
jamming
radar equipment
radio equipment
- jamming**
- DEF Intentional transmission or reradiation of radio signals in such a way as to interfere with reception of desired signals by the intended receiver.
- GS countermeasures
 - . **jamming**
 - . electromagnetic interference
 - . **jamming**
- RT clutter
electronic countermeasures
electronic warfare
frequency hopping
- ∞ interference
jammers
radio frequency interference
space-time adaptive processing
white noise
- Janus**
- DEF One of the natural satellites of Saturn.
- GS celestial bodies
 - . natural satellites
 - . Saturn satellites
 - . . . **Janus**
- RT Saturn (planet)
- Janus Reactor**
- GS nuclear reactors
 - . nuclear research and test reactors
 - . . **Janus Reactor**
- Janus spacecraft**
- GS gliders
 - . **Janus spacecraft**
 - . lifting bodies
 - . lifting reentry vehicles
 - . . **Janus spacecraft**
 - . maneuverable spacecraft
 - . **Janus spacecraft**
 - . manned spacecraft
 - . **Janus spacecraft**
 - . reentry vehicles
 - . maneuverable reentry bodies
 - . lifting reentry vehicles
 - . . **Janus spacecraft**
 - . soft landing spacecraft
 - . **Janus spacecraft**
- Japan**
- GS landforms
 - . islands
 - . . Pacific islands
 - . . . **Japan**
 - . nations
 - . **Japan**

Japanese space program

- RT Asia
 - Japanese space program
 - Japanese spacecraft
- Japanese space program**
 - GS programs
 - . space programs
 - . . **Japanese space program**
 - RT Ginga satellite
 - HOPE aerospace plane
 - Japan
 - Japanese spacecraft
 - Kibo Japanese Experiment Module
 - meteorological satellites
 - ∞ research projects
 - satellite design
 - space missions
 - space transportation
 - ∞ spacecraft
 - spacecraft design
 - Tenma satellite
- Japanese spacecraft**
 - DEF Spacecraft operated by the Japanese government. Used for MOS (Japanese spacecraft).
 - UF *MOS (Japanese spacecraft)*
 - GS **Japanese spacecraft**
 - . EXOS satellites
 - . . EXOS-A satellite
 - . . EXOS-B satellite
 - . . EXOS-C satellite
 - . . EXOS-D satellite
 - . Engineering Test Satellites
 - . Ginga satellite
 - . Nozomi Mars Orbiter
 - . Tenma satellite
 - RT Japan
 - Japanese space program
 - ∞ spacecraft
- jarring*
 - USE **mechanical shock**
- JAS-39 aircraft**
 - (added June 1995)
 - UF *Gripen aircraft*
 - GS attack aircraft
 - . fighter aircraft
 - . . **JAS-39 aircraft**
 - RT ∞ aircraft
 - canard configurations
 - Sweden
- JATO engines**
 - UF *jet assisted takeoff*
 - GS engines
 - . **JATO engines**
 - launchers
 - . aircraft launching devices
 - . . **JATO engines**
 - RT short takeoff aircraft
 - solid propellant rocket engines
 - takeoff
- Java (programming language)**
 - (added December 1998)
 - GS languages
 - . programming languages
 - . . high level languages
 - . . . **Java (programming language)**
 - RT C++ (programming language)
 - client server systems
 - internets
 - object-oriented programming
 - World Wide Web
- Javelin aircraft*
 - USE **GA-5 aircraft**
- Javelin rocket vehicle**
 - GS rocket vehicles
 - . multistage rocket vehicles
 - . . **Javelin rocket vehicle**
 - RT Argo rocket vehicles
 - rocket propelled sleds
 - solid propellant rocket engines
- sounding rockets
- Jayhawk helicopter*
 - USE **H-60 Helicopter**
- JC-130 aircraft*
 - USE **C-130 aircraft**
- Jeans theory**
 - RT gravitational instability
 - ∞ theories
- jeeps*
 - USE **automobiles**
- jerboas**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . rodents
 - mice
 - **jerboas**
- jet aircraft**
 - UF *jet flight*
 - GS **jet aircraft**
 - . *turbojet aircraft*
 - . A-2 aircraft
 - . A-3 aircraft
 - . A-4 aircraft
 - . A-5 aircraft
 - . A-6 aircraft
 - . Alpha jet aircraft
 - . AVRO 707 aircraft
 - . B-1 aircraft
 - . B-2 aircraft
 - . B-47 aircraft
 - . B-52 aircraft
 - . B-57 aircraft
 - . B-58 aircraft
 - . B-66 aircraft
 - . B-70 aircraft
 - . Boeing 747 aircraft
 - . Boeing 777 aircraft
 - . Boeing 2707 aircraft
 - . Buccaneer aircraft
 - . C-5 aircraft
 - . C-8A augmentor wing aircraft
 - . C-9 aircraft
 - . C-135 aircraft
 - . C-140 aircraft
 - . Canberra aircraft
 - . CL-41 aircraft
 - . CL-823 aircraft
 - . Comet 4 aircraft
 - . CV-880 aircraft
 - . D-558 aircraft
 - . DC 9 aircraft
 - . DC 10 aircraft
 - . DH 112 aircraft
 - . DH 115 aircraft
 - . DH 125 aircraft
 - . DHC 2 aircraft
 - . European Airbus
 - . . A-300 aircraft
 - . . A-310 aircraft
 - . . A-320 aircraft
 - . . A-330 aircraft
 - . . A-340 aircraft
 - . . A-380 aircraft
 - . F-2 aircraft
 - . F-4 aircraft
 - . F-8 aircraft
 - . F-9 aircraft
 - . F-14 aircraft
 - . F-15 aircraft
 - . F-16 aircraft
 - . F-17 aircraft
 - . F-18 aircraft
 - . F-20 aircraft
 - . F-22 aircraft
 - . F-84 aircraft
 - . F-86 aircraft
 - . F-89 aircraft
 - . F-94 aircraft
 - . F-100 aircraft
 - . F-101 aircraft
 - . F-102 aircraft
 - . F-104 aircraft
 - . F-105 aircraft
 - . F-106 aircraft
 - . F-117A aircraft
 - . FD 2 aircraft
 - . G-91 aircraft
 - . G-95/4 aircraft
 - . GA-5 aircraft
 - . H-17 helicopter
 - . H-126 aircraft
 - . HFB-320 aircraft
 - . HP-115 aircraft
 - . HS-801 aircraft
 - . IL-76 aircraft
 - . IL-86 aircraft
 - . IL-96 aircraft
 - . jet provost aircraft
 - . Jetstream aircraft
 - . Jindivik target aircraft
 - . L-29 jet trainer
 - . L-1011 aircraft
 - . L-2000 aircraft
 - . Lear jet aircraft
 - . MD 11 aircraft
 - . MD 80 aircraft
 - . Mirage aircraft
 - . . Mirage 3 aircraft
 - . Mystere 50 aircraft
 - . Nord 1500 aircraft
 - . P-308 aircraft
 - . PD-808 aircraft
 - . S-3 aircraft
 - . SC-1 aircraft
 - . Scimitar aircraft
 - . T-2 aircraft
 - . T-33 aircraft
 - . T-37 aircraft
 - . T-38 aircraft
 - . T-39 aircraft
 - . TS-11 aircraft
 - . TSR-2 aircraft
 - . TU-104 aircraft
 - . TU-124 aircraft
 - . TU-154 aircraft
 - . TU-204 aircraft
 - . turbofan aircraft
 - . . A-7 aircraft
 - . . BAC 111 aircraft
 - . . Boeing 707 aircraft
 - . . Boeing 717 aircraft
 - . . Boeing 720 aircraft
 - . . Boeing 727 aircraft
 - . . Boeing 733 aircraft
 - . . Boeing 737 aircraft
 - . . Boeing 757 aircraft
 - . . Boeing 767 aircraft
 - . . C-141 aircraft
 - . . CL-600 challenger aircraft
 - . . Concorde aircraft
 - . . CV-990 aircraft
 - . . DC 8 aircraft
 - . . DH 121 aircraft
 - . . DO-31 aircraft
 - . . F-5 aircraft
 - . . F-28 transport aircraft
 - . . F-111 aircraft
 - . . IL-62 aircraft
 - . . Mystere 20 aircraft
 - . . P-1127 aircraft
 - . . P-1154 aircraft
 - . . Saab 37 aircraft
 - . . Saab 105 aircraft
 - . . SE-210 aircraft
 - . . TU-134 aircraft
 - . . TU-144 aircraft
 - . turboprop aircraft
 - . . AN-22 aircraft
 - . . AN-24 aircraft
 - . . Argosy MK-1 aircraft
 - . . ATR-72 aircraft
 - . . Breguet 941 aircraft
 - . . Breguet 1150 aircraft
 - . . C-2 aircraft
 - . . C-130 aircraft
 - . . C-133 aircraft
 - . . C-160 aircraft
 - . . CL-44 aircraft
 - . . CL-84 aircraft
 - . . DHC 5 aircraft
 - . . DO-328 aircraft
 - . . E-2 aircraft

- . . Electra aircraft
- . . F-27 aircraft
- . . G-222 aircraft
- . . HS-748 aircraft
- . . MH-262 aircraft
- . . OV-1 aircraft
- . . OV-10 aircraft
- . . P-3 aircraft
- . . SC-5 aircraft
- . . Viscount aircraft
- . . YS-11 aircraft
- . U-2 aircraft
- . Valiant aircraft
- . Vampire MK 35 aircraft
- . VC-10 aircraft
- . Victor MK-1 aircraft
- . VJ-101 aircraft
- . Vulcan aircraft
- . X-3 aircraft
- . X-5 aircraft
- . X-13 aircraft
- . X-14 aircraft
- . X-21 aircraft
- . X-21A aircraft
- . X-31 aircraft
- . X-32 aircraft
- . X-35 aircraft
- . XC-142 aircraft
- . XV-4 aircraft
- . XV-5 aircraft
- . XV-9A aircraft
- . Yak 40 aircraft

RT ∞ aircraft

- aircraft noise
- attack aircraft
- bomber aircraft
- cargo aircraft
- commercial aircraft
- fighter aircraft
- flying platforms
- general aviation aircraft
- hypersonic aircraft

∞ jets

∞ low wing aircraft

∞ military aircraft

- passenger aircraft
- reconnaissance aircraft
- research aircraft
- short takeoff aircraft

∞ subsonic aircraft

- supersonic aircraft
- tailless aircraft
- tandem wing aircraft
- training aircraft
- transport aircraft
- turbojet engines
- V/STOL aircraft

∞ winged vehicles

- YF-12 aircraft

jet aircraft noise

UF *jet noise*

GS elastic waves

- . sound waves
- . . noise (sound)
- . . . aircraft noise
- **jet aircraft noise**

RT acoustic retrofitting

- aerodynamic noise

∞ aircraft

- aircraft runup
- engine noise
- mufflers
- noise measurement
- noise reduction
- quiet engine program
- screech tones
- sonic booms

jet airstreams

USE **jet streams (meteorology)**

jet amplifiers

UF *fluid jet amplifiers*

GS amplifiers

- . fluid amplifiers
- . . **jet amplifiers**

RT Coanda effect

- fluid jets

∞ jet nozzles

nozzle walls

jet assisted takeoff

USE **JATO engines**

jet augmented wing flaps

USE **jet flaps**
wing flaps

jet blast effects

RT ∞ blasts

- ∞ effects
- exhaust gases
- ground effect (aerodynamics)
- noise (sound)
- pressure effects
- temperature effects

jet boundaries

GS boundaries

- . fluid boundaries
- . . **jet boundaries**
- interfaces
- . fluid boundaries
- . . **jet boundaries**

RT free jets

- liquid surfaces
- wall jets

jet condensers

GS condensers (liquefiers)

- . **jet condensers**

RT ∞ condensers

- liquefaction
- nucleation
- spray condensers
- working fluids

jet control

RT automatic control

- boundary layer control

∞ control

- directional control
- satellite attitude control
- satellite control
- thrust control
- variable thrust

jet damping

USE **damping**
spin reduction

Jet Dragon aircraft

USE **DH 125 aircraft**

jet drive

USE **jet propulsion**

jet engine fuels

UF *jet fuels*

GS fuels

- . chemical fuels
- . . hydrocarbon fuels
- . . . **jet engine fuels**
- JP-4 jet fuel
- JP-5 jet fuel
- JP-6 jet fuel
- JP-7 jet fuel
- JP-8 jet fuel
- . . liquid fuels
- . . . **jet engine fuels**
- JP-4 jet fuel
- JP-5 jet fuel
- JP-6 jet fuel
- JP-7 jet fuel
- JP-8 jet fuel

RT aircraft fuels

- antimisting fuels
- gasoline
- kerosene
- turbines

jet engines

SN (EXCLUDES HYDROJET ENGINES)

DEF Broadly, engines that eject jets or streams of gas or fluids, obtaining all or most of their thrust by reaction to the ejection. Specifically, aircraft engines that derive all or most of their thrust by reaction to their ejection of combustion products (or heated air) in a jet and that obtains oxygen from the atmosphere for the

combustion of their fuel (or outside air for heating, as in the case of the nuclear jet engine), distinguished in this sense from a rocket engine. Jet engines of this kind may have compressors, commonly turbine driven, to take in and compress air (turbojets), or they may be compressorless, taking in and compressing air by other means (pulsejets, ramjets).

GS engines

- . air breathing engines
- . . gas turbine engines
- . . . **jet engines**
- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turbooramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turbooramjet engines
- internal combustion engines
- gas turbine engines
- **jet engines**
- ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turbooramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine

jet exhaust

- turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - turboramjet engines
 - turbine engines
 - gas turbine engines
 - **jet engines**
 - ramjet engines
 - integral rocket ramjets
 - low volume ramjet engines
 - pulsejet engines
 - supersonic combustion ramjet engines
 - turboramjet engines
 - turbojet engines
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
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 - J-58 engine
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 - RA-28 engine
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 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - turboramjet engines

- RT afterburning
- aircraft engines
- combustion chambers
- ejectors
- engine starters
- exhaust nozzles
- flameout
- flying ejection seats
- fuel injection
- fuel pumps
- helicopter engines
- hybrid propellant rocket engines
- hybrid propulsion
- infrared suppression
- ∞ jet nozzles
- quiet engine program
- reaction products
- rocket engines

thrust

jet exhaust

UF *hot jet exhaust*
 RT base heating
 exhaust emission
 exhaust gases
 infrared suppression
 rocket exhaust

jet flames

USE **flames**
jet flow

jet flaps

UF *jet augmented wing flaps*
 GS airfoils
 . flaps (control surfaces)
 . . **jet flaps**
 control surfaces
 . flaps (control surfaces)
 . . **jet flaps**
 RT externally blown flaps
 H-126 aircraft
 short takeoff aircraft
 split flaps
 tangential blowing
 trailing edge flaps
 vortex flaps
 wing flaps

jet flight

USE **jet aircraft**

jet flow

UF *hot jets*
jet flames
laminar jets
reaction jets
 GS fluid flow
 . **jet flow**
 . . air jets
 . . jet mixing flow
 . . peripheral jet flow
 . . supersonic jet flow
 RT fluid jets
 free boundaries
 free jets
 gas streams
 hydraulic jets
 injectors
 jet membrane process
 ∞ jets
 nozzle flow
 particle laden jets
 spanwise blowing
 two dimensional jets
 vapor jets
 wall jets

jet fuels

USE **jet engine fuels**

jet impingement

GS impingement
 . **jet impingement**
 RT ablation
 base heating

jet lag

DEF Desynchronization of biological rhythms because of transmeridian flight.

GS biological effects
 . **jet lag**
 disorientation
 . **jet lag**
 psychological effects
 . **jet lag**
 RT desynchronization (biology)
 disorders
 flight stress (biology)
 rhythm (biology)
 supersonic flight

jet lift

GS aerodynamic characteristics
 . lift
 . . **jet lift**
 aerodynamic forces
 . lift

. . **jet lift**
 dynamic characteristics
 . lift
 . . **jet lift**
 RT distribution (property)

jet membrane process

DEF Method for separating or enriching isotopes of the same element by using a condensable vapor as the carrier fluid. A process gas containing the isotopes enters a chamber into which a heavy condensable gas (the jet) flows. The lighter of the two isotopes is enriched, relative to the heavier species, and is collected by a probe downstream for further enrichment or analysis.

GS enrichment
 . isotopic enrichment
 . . **jet membrane process**
 RT gas dynamics
 isotope separation
 isotopes
 jet flow
 membranes
 ∞ processes
 uranium

jet mixing flow

GS fluid flow
 . jet flow
 . . **jet mixing flow**
 RT fluid jets
 free boundaries
 fuel injection
 injectors
 ∞ jets
 mixing
 mixing layers (fluids)
 premixing
 screech tones
 two dimensional jets

jet noise

USE **jet aircraft noise**

∞ jet nozzles

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
 RT carburetors
 conical nozzles
 exhaust diffusers
 exhaust nozzles
 fuel injection
 injectors
 jet amplifiers
 jet engines
 skirts

jet pilots

USE **aircraft pilots**

jet propulsion

UF *jet drive*
 GS propulsion
 . **jet propulsion**
 RT aircraft engines
 chemical propulsion
 helicopter propeller drive
 marine propulsion
 rocket engines
 SQUID project
 turbines

jet provost aircraft

UF *Hunting P-84 aircraft*
P-84 aircraft
 GS attack aircraft
 . fighter aircraft
 . . **jet provost aircraft**
 BAC aircraft
 . **jet provost aircraft**
 jet aircraft
 . **jet provost aircraft**
 monoplanes
 . **jet provost aircraft**
 single engine aircraft
 . **jet provost aircraft**
 training aircraft
 . **jet provost aircraft**

RT ∞ aircraft

jet pumps

SN (EXCLUDES DEVICES USING A LIQUID OR GAS TO INDUCE MOVEMENT OF A GAS SUCH AS AIR EJECTORS)
 GS pumps
 . **jet pumps**
 RT ejectors
 fuel pumps
 ∞ jets
 ∞ pumping
 turbine pumps
 vacuum pumps

Jet Star aircraft

USE **C-140 aircraft**

jet streams (meteorology)

DEF Strong bands of wind or winds in the upper troposphere or in the stratosphere, moving in a general direction from west to east and often reaching velocities of hundreds of miles an hour. Used for jet airstreams.

UF *jet airstreams*
 GS fluid flow
 . gas flow
 . . air flow
 . . . air currents
 **jet streams (meteorology)**
 mesoscale phenomena
 . **jet streams (meteorology)**
 wind (meteorology)
 . winds aloft
 . . **jet streams (meteorology)**
 RT air jets
 atmospheric circulation
 circumpolar westerlies
 clear air turbulence
 Coanda effect
 fluid jets
 free boundaries
 turbulent jets
 zonal flow (meteorology)

jet thrust

DEF The thrust of a fluid, especially as distinguished from the thrust of a propeller. Used for reaction jets.

UF *reaction jets*
 GS thrust
 . **jet thrust**
 RT cold gas
 convertible fan-shaft engines
 high thrust
 low thrust
 microthrust
 rocket thrust
 static thrust
 thrust loads
 variable thrust

jet vanes

DEF Vanes either fixed or movable, used in a jetstream, especially in the jetstream of a rocket, for purposes of stability or control under conditions where external aerodynamic controls are ineffective. Also called blast vane.

GS control surfaces
 . guide vanes
 . . **jet vanes**
 vanes
 . guide vanes
 . . **jet vanes**
 RT airfoils
 thrust vector control
 wall jets

jetavators

USE **guide vanes**

∞ **jets**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT air jets
 fluid jets
 free jets
 gas jets
 injectors
 jet aircraft

jet flow
 jet mixing flow
 jet pumps
 plasma jets
 sprayers
 turbulent jets
 two dimensional jets
 wall jets

Jetstream aircraft

GS commercial aircraft
 . **Jetstream aircraft**
 Grumman aircraft
 . **Jetstream aircraft**
 jet aircraft
 . **Jetstream aircraft**
 passenger aircraft
 . **Jetstream aircraft**
 RT ∞ aircraft

jetties

USE **breakwaters**

jettison systems

RT bailout
 ejection
 ejection seats
 escape (abandonment)
 escape systems
 jettisoning
 ∞ systems
 wing tanks

jettisoning

RT bailout
 disposal
 dumping
 ejection
 emptying
 escape (abandonment)
 expulsion
 jettison systems
 spilling

JF 101 aircraft

USE **F-101 aircraft**

JFET

DEF Junction field effect transistors in which semiconductor channels of low conductivity join the source and drain and in which these channels are reduced and cut off by the junction depletion regions, which reduce the conductivity and cause a voltage to be applied between the gate electrodes. Used for junction field effect transistors.

UF *junction field effect transistors*
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . transistors
 field effect transistors
 **JFET**
 junction transistors
 **JFET**
 RT barrier layers
 ∞ junctions

jigs

GS positioning devices (machinery)
 . **jigs**
 RT clamps
 fixtures
 holders
 mechanical devices
 tools

Jikiken satellite

USE **EXOS-B satellite**

jimsphere balloons

GS expandable structures
 . inflatable structures
 . . balloons
 . . . high altitude balloons
 **jimsphere balloons**
 . . . meteorological balloons
 **jimsphere balloons**

RT wind (meteorology)

Jindivik target aircraft

GS drone vehicles
 . drone aircraft
 . . target drone aircraft
 . . . **Jindivik target aircraft**
 jet aircraft
 . **Jindivik target aircraft**
 monoplanes
 . **Jindivik target aircraft**
 pilotless aircraft
 . drone aircraft
 . . target drone aircraft
 . . . **Jindivik target aircraft**
 targets
 . **Jindivik target aircraft**
 RT ∞ aircraft
 remotely piloted vehicles

jitter

USE **vibration**

jobs

USE **tasks**

Jodrell Bank Observatory

DEF A large radio telescope, located near Manchester, England.

GS observatories
 . **Jodrell Bank Observatory**
 RT astronomical observatories
 ground stations
 radio telescopes
 tracking stations

Johnston Island

GS landforms
 . islands
 . . Pacific islands
 . . . **Johnston Island**

joined wings

GS airfoils
 . wings
 . . **joined wings**
 RT aircraft configurations
 dual wing configurations
 research aircraft
 tandem wing aircraft
 wing tips

∞ **joining**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *interconnection linking*
 RT adhesion
 adhesive bonding
 assembling
 beam leads
 binding
 bonding
 brazing
 cold working
 couplings
 crosslinking
 fitting
 fusion (melting)
 inertia bonding
 joints (junctions)
 locking
 mooring
 mounting
 positioning
 retaining
 riveting
 sealing
 sewing
 soldering
 splicing
 ultrasonic soldering
 welding
 yokes

Joint European Torus

GS nuclear reactors
 . tokamak devices
 . . **Joint European Torus**
 plasma generators

joints (anatomy)

. tokamak devices
.. **Joint European Torus**
RT controlled fusion
reactor technology

joints (anatomy)

GS anatomy
. musculoskeletal system
.. **joints (anatomy)**
... elbow (anatomy)
... knee (anatomy)
... wrist
RT arthritis
bones
connective tissue
flexors
ligaments
shoulders

joints (junctions)

UF *connections*
shanks
GS **joints (junctions)**
. bolted joints
. bonded joints
. butt joints
. interference fit
. lap joints
. metal joints
.. soldered joints
.. welded joints
... spot welds
. riveted joints
. scarf joints
. seams (joints)
RT adapters
adhesives
balls
barrier layers
bellows
bonding
clamped structures
closures
connectors
corners
couplings
fasteners
fillets
fittings
∞ joining
∞ junctions
linkages
metal bonding
sleeves
structural members
swivels
unions (connectors)

Jordan

GS nations
. **Jordan**

Jordan form

GS algebra
. vector spaces
.. matrices (mathematics)
... **Jordan form**
RT eigenvalues
linear transformations
tensors

Josephson effect

(added April 1999)
UF *Josephson tunneling*
RT electron tunneling
Josephson junctions
SIS (superconductors)
superconducting devices
superconductors (materials)

Josephson junctions

RT high temperature superconductors
Josephson effect
SIS (superconductors)
squid (detectors)
superconductivity

tunnel junctions

Josephson tunneling
(added April 1999)
USE **Josephson effect**

Joukowski transformation

RT airfoil profiles
complex variables
coordinate transformations
Kutta-Joukowski condition
Theodorsen transformation

Joule heating

USE **ohmic dissipation**
resistance heating

Joule-Thomson effect

DEF A change of temperature in a gas
undergoing Joule-Thomson expansion.

RT cryogenics
∞ effects
enthalpy
gas expansion
gas flow
kinetic theory
ohmic dissipation
thermodynamic properties
thermodynamics
throttling

journal bearings

DEF Bearings that support the cylindrical
journal of a shaft in rotating machinery.

GS bearings
. **journal bearings**
RT antifriction bearings
foil bearings

∞ journals

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT news media
periodicals
shafts (machine elements)

journals (documents)

USE **periodicals**

journals (shafts)

USE **shafts (machine elements)**

JP-4 jet fuel

GS fuels
. chemical fuels
.. hydrocarbon fuels
... jet engine fuels
... **JP-4 jet fuel**
.. liquid fuels
... jet engine fuels
... **JP-4 jet fuel**
RT JP-6 jet fuel
JP-8 jet fuel
RP-1 rocket propellants

JP-5 jet fuel

GS fuels
. chemical fuels
.. hydrocarbon fuels
... jet engine fuels
... **JP-5 jet fuel**
.. liquid fuels
... jet engine fuels
... **JP-5 jet fuel**

JP-6 jet fuel

GS fuels
. chemical fuels
.. hydrocarbon fuels
... jet engine fuels
... **JP-6 jet fuel**
.. liquid fuels
... jet engine fuels
... **JP-6 jet fuel**
RT JP-4 jet fuel
JP-8 jet fuel

JP-7 jet fuel

(added September 1995)
GS fuels

. chemical fuels
.. hydrocarbon fuels
... jet engine fuels
... **JP-7 jet fuel**
.. liquid fuels
... jet engine fuels
... **JP-7 jet fuel**
RT JP-8 jet fuel
kerosene

JP-8 jet fuel

GS fuels
. chemical fuels
.. hydrocarbon fuels
... jet engine fuels
... **JP-8 jet fuel**
.. liquid fuels
... jet engine fuels
... **JP-8 jet fuel**
RT JP-4 jet fuel
JP-6 jet fuel
JP-7 jet fuel
kerosene

judgments

RT decision making
decisions
legal liability
penalties

Judi-Dart rocket

GS measuring instruments
. sondes
.. **Judi-Dart rocket**
rocket vehicles
. sounding rockets
.. **Judi-Dart rocket**
RT rocket sounding

juices

GS liquids
. **juices**
RT createine

jumpers

DEF Short lengths of conductors used to
complete electrical circuits, usually temporary,
between terminals, or bypassing an existing
circuit.

GS conductors
. electrolytes
.. **jumpers**
RT connectors
short circuits
∞ terminals
wire

junction diodes

GS electronic equipment
. diodes
.. semiconductor diodes
... **junction diodes**
... MIM diodes
... step recovery diodes
. solid state devices
.. semiconductor devices
... **junction diodes**
... MIM diodes
... step recovery diodes
RT barrier layers
Barritt diodes
germanium diodes
heterojunction devices
heterojunctions
tunnel diodes
varactor diodes

junction field effect transistors

USE **JFET**

junction transistors

GS electronic equipment
. solid state devices
.. semiconductor devices
... transistors
... **junction transistors**
... JFET
RT barrier layers
epitaxy
ion implantation

∞ junctions
 MBM junctions
 phototransistors
 thyristors

∞ **junctions**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF In semiconductor devices, regions of transition between semiconducting regions of different electrical properties.
 RT connectors
 intersections
 JFET
 joints (junctions)
 junction transistors
 p-i-n junctions
 p-n junctions
 p-n-p junctions
 p-n-p-n junctions
 semiconductor devices
 semiconductor junctions

jungles
 USE **tropical regions**

Juno 1 launch vehicle
 GS launch vehicles
 . Juno launch vehicles
 . . **Juno 1 launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . Juno launch vehicles
 . . . **Juno 1 launch vehicle**
 RT Explorer satellites
 Jupiter C rocket vehicle
 liquid propellant rocket engines
 sergeant missiles
 solid propellant rocket engines

Juno 2 launch vehicle
 GS launch vehicles
 . Juno launch vehicles
 . . **Juno 2 launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . Juno launch vehicles
 . . . **Juno 2 launch vehicle**
 RT Explorer 11 satellite
 Jupiter missile
 liquid propellant rocket engines
 Pioneer 3 space probe
 Pioneer 4 space probe
 Pioneer 6 space probe
 Pioneer 7 space probe
 Pioneer 8 space probe
 Pioneer space probes
 sergeant missiles
 solid propellant rocket engines

Juno launch vehicles
 GS launch vehicles
 . **Juno launch vehicles**
 . . Juno 1 launch vehicle
 . . Juno 2 launch vehicle
 rocket vehicles
 . multistage rocket vehicles
 . . **Juno launch vehicles**
 . . . Juno 1 launch vehicle
 . . . Juno 2 launch vehicle
 RT liquid propellant rocket engines
 solid propellant rocket engines
 ∞ vehicles

Juno mission
(added June 2010)
 DEF A NASA New Frontiers Program mission that will use a polar orbiting spacecraft to study the formation, evolution, and structure of the planet Jupiter. Juno will investigate the existence of a solid planetary core, map Jupiter's intense magnetic field, measure the amount of water and ammonia in the deep atmosphere, and observe the planet's auroras.
 GS space missions

. **Juno mission**
 RT auroras
 Jupiter (planet)
 planetary atmospheres
 planetary composition
 planetary cores
 planetary evolution
 planetary magnetic fields
 planetary structure

Jupiter (planet)
 GS celestial bodies
 . planets
 . . gas giant planets
 . . . **Jupiter (planet)**
 RT Adrastea
 Amalthea
 Amor asteroid
 Apollo asteroids
 Callisto
 Carme
 Elara
 Europa
 Galilean satellites
 Galileo probe
 Galileo spacecraft
 Ganymede
 Himalia
 Io
 Juno mission
 Jupiter atmosphere
 Jupiter probes
 Jupiter red spot
 Jupiter rings
 Jupiter satellites
 Leda
 Lysithea
 Metis
 Pasiphae
 Shoemaker-Levy 9 comet
 Sinope
 Thebe
 Trojan asteroids
 Voyager 1 spacecraft
 Voyager 2 spacecraft
 Voyager 1977 mission

Jupiter atmosphere
 GS environments
 . extraterrestrial environments
 . . planetary environments
 . . . planetary atmospheres
 **Jupiter atmosphere**
 RT aerospace environments
 Galileo project
 geophysical fluid flow cells
 Jupiter (planet)
 Jupiter rings
 planetary ionospheres
 planetary meteorology

Jupiter C rocket vehicle
 GS rocket vehicles
 . multistage rocket vehicles
 . . **Jupiter C rocket vehicle**
 RT Explorer satellites
 Juno 1 launch vehicle
 Jupiter missile
 launch vehicles
 liquid propellant rocket engines
 sergeant missiles
 solid propellant rocket engines

Jupiter missile
 GS missiles
 . ballistic missiles
 . . intermediate range ballistic missiles
 . . . **Jupiter missile**
 . surface to surface missiles
 . . intermediate range ballistic missiles
 . . . **Jupiter missile**
 RT Juno 2 launch vehicle
 Jupiter C rocket vehicle

liquid propellant rocket engines

Jupiter probes
 GS interplanetary spacecraft
 . **Jupiter probes**
 . . Galileo probe
 . . Galileo spacecraft
 unmanned spacecraft
 . space probes
 . . **Jupiter probes**
 . . . Galileo probe
 . . . Galileo spacecraft
 RT Galileo project
 Jupiter (planet)
 Voyager 1 spacecraft
 Voyager 2 spacecraft
 Voyager 1977 mission

Jupiter project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Jupiter project**
 . projects
 . . **Jupiter project**
 . space programs
 . . NASA space programs
 . . . **Jupiter project**
 RT launch vehicles

Jupiter red spot
 RT gas giant planets
 Jupiter (planet)
 planetary surfaces
 planets
 surface properties
 topography

Jupiter rings
 DEF Ring structures around the planet Jupiter discovered on March 4, 1979 by Voyager 1.
 GS celestial bodies
 . planetary rings
 . . **Jupiter rings**
 RT Jupiter (planet)
 Jupiter atmosphere
 Jupiter satellites
 moonlets
 planetary composition
 planetary structure
 planetology
 ∞ rings
 Saturn rings
 space exploration
 Uranus rings
 Voyager 1 spacecraft

Jupiter satellites
 DEF Any or all of the natural satellites surrounding the planet Jupiter.
 GS celestial bodies
 . natural satellites
 . . **Jupiter satellites**
 . . . Adrastea
 . . . Amalthea
 . . . Carme
 . . . Elara
 . . . Galilean satellites
 Callisto
 Europa
 Ganymede
 Io
 . . . Himalia
 . . . Leda
 . . . Lysithea
 . . . Metis
 . . . Pasiphae
 . . . Sinope
 . . . Thebe
 RT icy satellites
 Jupiter (planet)
 Jupiter rings
 solar system

JWST (observatory)
(added October 2003)
 USE **James Webb Space Telescope**

K

K band
USE **extremely high frequencies**

K lines

GS spectra
 . radiation spectra
 . . electromagnetic spectra
 . . . line spectra
 **K lines**
 RT absorption spectra
 emission spectra
 H lines

K stars

GS celestial bodies
 . stars
 . . late stars
 . . . cool stars
 **K stars**
 RT dwarf stars
 giant stars
 main sequence stars
 stellar spectra
 supergiant stars

KA band

USE **extremely high frequencies**

Kakutani theorem

GS theorems
 . **Kakutani theorem**
 RT lattices (mathematics)
 stochastic processes
 vector spaces

Kalahari Basin (Africa)

GS landforms
 . structural basins
 . . **Kalahari Basin (Africa)**
 RT Africa
 deserts
 Republic of South Africa

Kalman filters

GS linear filters
 . **Kalman filters**
 RT electric filters
 ∞ filters
 linear quadratic Gaussian control
 linear quadratic regulator
 navigation aids
 optimization
 reduced order filters
 state estimation

Kalman-Schmidt filtering

RT ∞ applications of mathematics
 feedback control
 inertial platforms
 navigation instruments
 optimal control
 optimization
 remote control
 stochastic processes
 time series analysis

kamacite

GS alloys
 . nickel alloys
 . . **kamacite**
 minerals
 . **kamacite**
 RT iron alloys
 iron meteorites
 meteoritic composition

Kaman aircraft

GS **Kaman aircraft**
 . H-43 helicopter
 . HH-43 helicopter
 . UH-2 helicopter

RT ∞ aircraft

Kaman UH-2A helicopter

USE **UH-2 helicopter**

Kampuchea

USE **Cambodia**

Kansas

GS nations
 . United States
 . . **Kansas**
 RT Missouri River (US)

kaolinite

DEF A hydrous silicate of aluminum. It constitutes the principle mineral in kaolin.

GS aluminum compounds
 . aluminum silicates
 . . **kaolinite**
 clays
 . **kaolinite**
 minerals
 . **kaolinite**
 silicon compounds
 . silicates
 . . aluminum silicates
 . . . **kaolinite**
 RT aluminum oxides
 ion exchanging
 soils

kaon production

GS particle production
 . **kaon production**
 RT kaons
 particle accelerators

kaons

UF *k-mesons*
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **kaons**
 . . hadrons
 . . . mesons
 **kaons**
 . nuclear particles
 . . bosons
 . . . mesons
 **kaons**
 RT baryons
 charged particles
 kaon production
 pions
 Pomeranchuk theorem

Kapitza resistance

RT ∞ resistance

Kapoeta achondrite

GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . achondrites
 **Kapoeta achondrite**

Kappa 8 rocket vehicle

GS rocket vehicles
 . multistage rocket vehicles
 . . Kappa rocket vehicles
 . . . **Kappa 8 rocket vehicle**
 . . sounding rockets
 . . Kappa rocket vehicles
 . . . **Kappa 8 rocket vehicle**
 RT solid propellant rocket engines

Kappa 9 rocket vehicle

GS rocket vehicles
 . multistage rocket vehicles
 . . Kappa rocket vehicles
 . . . **Kappa 9 rocket vehicle**
 . . sounding rockets
 . . Kappa rocket vehicles
 . . . **Kappa 9 rocket vehicle**

RT solid propellant rocket engines

Kappa rocket vehicles

GS rocket vehicles
 . multistage rocket vehicles
 . . **Kappa rocket vehicles**
 . . . Kappa 8 rocket vehicle
 . . . Kappa 9 rocket vehicle
 . sounding rockets
 . . **Kappa rocket vehicles**
 . . . Kappa 8 rocket vehicle
 . . . Kappa 9 rocket vehicle
 RT solid propellant rocket engines
 ∞ vehicles

kappa-epsilon turbulence model

USE **k-epsilon turbulence model**

kappa-omega turbulence model

(added June 1997)
 USE **k-omega turbulence model**

Kapton (trademark)

GS nitrogen compounds
 . amides
 . . polyimides
 . . . **Kapton (trademark)**
 polymeric films
 . **Kapton (trademark)**
 RT ∞ films
 plastics
 ∞ polymers

Karhunen-Loeve expansion

GS data processing
 . **Karhunen-Loeve expansion**
 expansion
 . **Karhunen-Loeve expansion**
 RT principal components analysis

Karl Fischer reagent

GS chemical tests
 . chemical analysis
 . . **Karl Fischer reagent**
 RT dioxides
 methyl alcohol
 pyridines
 quantitative analysis

Karman vortex street

DEF A double trail of vortices formed alternately on both sides of a cylinder of similar body moving at right angles to its axis through a fluid, the vortices in one row rotating in a direction opposite to that of the other row. (After Theodore von Karman, 1881-1963, Hungarian born American scientist).

GS vortex streets
 . **Karman vortex street**
 RT aeolian tones
 subsonic flow
 Von Karman equation
 vorticity equations

Karman-Bodewadt flow

GS fluid flow
 . axisymmetric flow
 . . **Karman-Bodewadt flow**
 . parallel flow
 . . three dimensional flow
 . . . **Karman-Bodewadt flow**
 . viscous flow
 . . **Karman-Bodewadt flow**
 translational motion
 . three dimensional motion
 . . three dimensional flow
 . . . **Karman-Bodewadt flow**
 RT rotating disks
 rotating fluids

karst

GS landforms
 . structural basins
 . . **karst**
 . . sinkholes
 RT caves
 cavities
 kettles (geology)
 ∞ ridges

- rocks
 - . . . space mechanics
 - orbital mechanics
 - **Kepler laws**
- Kawasaki aircraft**
 - RT ∞ aircraft
- Kazakhstan**
 - (added August 1993)
 - GS nations
 - . **Kazakhstan**
 - RT Asia
- KC-130 aircraft**
 - USE **C-130 aircraft**
- KC-135 aircraft**
 - USE **C-135 aircraft**
- keels**
 - GS hydrofoils
 - . **keels**
 - RT boats
 - hulls (structures)
 - longerons
 - ships
 - stabilizers (fluid dynamics)
- KEL-F**
 - GS halogen compounds
 - . fluorine compounds
 - . . . fluoro compounds
 - fluorine organic compounds
 - fluoropolymers
 - **KEL-F**
 - organic compounds
 - . fluorine organic compounds
 - . . fluoropolymers
 - . . . **KEL-F**
 - RT copolymers
 - ∞ polymers
- kelp*
 - USE **seaweeds**
- Kelvin waves**
 - (added July 1994)
 - RT atmospheric circulation
 - Coriolis effect
 - gravity waves
 - ocean currents
 - planetary waves
 - ∞ waves
- Kelvin-Helmholtz instability**
 - RT collisionless plasmas
 - flow stability
 - ∞ Helmholtz equations
 - magnetohydrodynamic flow
 - magnetohydrodynamic stability
 - mass flow
 - nonuniform plasmas
 - plasmas (physics)
 - superfluidity
- Kentucky**
 - GS nations
 - . United States
 - . . **Kentucky**
 - RT Ohio River (US)
 - Tennessee Valley (AL-KY-TN)
- Kenya**
 - GS nations
 - . **Kenya**
 - RT Africa
- Kepler laws**
 - DEF The three empirical laws governing the motions of the planets in their orbits, discovered by Johannes Kepler (1571-1630). These are: (a) the orbits of the planets are ellipses, with the sun at a common focus; (b) as a planet moves in its orbit, the line joining the planet and the sun sweeps over equal areas in equal intervals of time (also called law of equal areas); (c) the squares of the periods of revolution of any two planets are proportional to the cubes of their mean distances from the sun.
 - GS laws
 - . **Kepler laws**
 - mechanics (physics)
 - . classical mechanics
- Kepler mission**
 - (added April 2009)
 - DEF A space mission designed to explore the structure and diversity of planetary systems, with a special emphasis on the detection of Earth-size planets in or near the habitable zone.
 - GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Kepler mission**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Kepler mission**
 - space missions
 - . **Kepler mission**
 - RT astronomical photometry
 - extrasolar planets
 - NASA space programs
 - planet detection
 - planetary systems
- k-epsilon turbulence model**
 - (added September 1988)
 - UF *kappa-epsilon turbulence model*
 - GS models
 - . mathematical models
 - . . turbulence models
 - . . . **k-epsilon turbulence model**
 - RT closure law
 - computational fluid dynamics
 - flow equations
 - k-omega turbulence model
 - turbulent boundary layer
 - turbulent flow
- keratins**
 - GS biopolymers
 - . proteins
 - . . **keratins**
 - organic compounds
 - . proteins
 - . . **keratins**
 - RT hair
 - wool
- keratitis**
 - GS diseases
 - . eye diseases
 - . . **keratitis**
 - . infectious diseases
 - . . bacterial diseases
 - . . . **keratitis**
 - RT conjunctiva
 - cornea
- kernel functions**
 - GS analysis (mathematics)
 - . real variables
 - . . **kernel functions**
 - functions (mathematics)
 - . **kernel functions**
 - RT Mellin transforms
 - meshfree methods
- kerogen**
 - DEF Fossilized insoluble organic material found in sedimentary rocks, usually shales, which can be converted to petroleum products by distillation.
 - GS organic compounds
 - . **kerogen**
 - resources
 - . Earth resources
 - . . **kerogen**
 - RT fuel oils
 - fuels
 - gasoline
 - greases
 - hydrocarbon fuels
 - kerosene
 - lubricants
 - oils
 - petroleum products
- shale oil
- kerosene**
 - GS fuels
 - . chemical fuels
 - . . liquid fuels
 - . . . **kerosene**
 - RT antimisting fuels
 - diesel fuels
 - fuel oils
 - gasoline
 - hydrocarbon fuels
 - jet engine fuels
 - JP-7 jet fuel
 - JP-8 jet fuel
 - kerogen
 - paraffins
 - RP-1 rocket propellants
 - shale oil
- Kerr cells**
 - RT camera shutters
 - ∞ cells
 - ∞ electric cells
 - polarized electromagnetic radiation
 - polarizers
- ∞ **Kerr effects**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT ∞ effects
 - electro-optical effect
 - Kerr electrooptical effect
 - Kerr magnetooptical effect
 - magnetic fields
- Kerr electrooptical effect**
 - GS electromagnetic properties
 - . optical properties
 - . . birefringence
 - . . . **Kerr electrooptical effect**
 - refraction
 - . birefringence
 - . . **Kerr electrooptical effect**
 - RT ∞ effects
 - electromagnetic radiation
 - electro-optics
 - ∞ Kerr effects
 - Kerr magnetooptical effect
 - lasers
 - light modulation
 - polarization (waves)
- Kerr magnetooptical effect**
 - GS electromagnetic properties
 - . **Kerr magnetooptical effect**
 - RT ∞ effects
 - Faraday effect
 - ∞ Kerr effects
 - Kerr electrooptical effect
 - magneto-optics
 - optical properties
 - polarization (waves)
 - polarized light
- Kestrel aircraft*
 - USE **P-1127 aircraft**
- ketenes**
 - RT ketones
- ketones**
 - DEF A class of organic compounds possessing a carbonyl group attached to two hydrocarbon groups.
 - GS **ketones**
 - . acetone
 - . acetylacetone
 - . anthraquinones
 - . camphor
 - . Nembutal (trademark)
 - . pentanone
 - . trimethadione
 - RT ketenes
 - PEEK
 - quinones
- kettles (geology)**
 - DEF Steepsided, usually basin or bowlshaped holes or depressions, commonly

Kevlar (trademark)

without surface drainage, in glacial drift deposits (especially outwash and kame fields). Kettles often contain lakes or swamps; formed by the melting of large detached blocks of stagnant ice (left behind by retreating glaciers) that had been wholly or partly buried by glacial drift. Kettles range in depth from about a meter to as much as 13 km. Thoreau's Walden Pond is an example.

GS geology
. **kettles (geology)**
landforms

. structural basins
. . **kettles (geology)**
RT caves
cavities
Earth resources
glacial drift
karst
lakes
sinkholes

Kevlar (trademark)

DEF A Dupont synthetic textile material, lightweight and nonflammable, and with high impact resistance.

GS fibers
. reinforcing fibers
. . aramid fibers
. . . **Kevlar (trademark)**
. synthetic fibers
. . aramid fibers
. . . **Kevlar (trademark)**
plastics
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. **Kevlar (trademark)**
resins
. synthetic resins
. . thermosetting resins
. . . furan resins
. . . . polyamide resins
. **Kevlar (trademark)**
RT aramid fiber composites
nonflammable materials
synthetic fibers

keying

GS **keying**
. frequency shift keying
. phase shift keying
. . binary phase shift keying
. . quadrature phase shift keying
RT Morse code
radio telegraphy
teleprinters
teletypewriters

keys (islands)

UF cays
GS landforms
. islands
. . **keys (islands)**
RT coral reefs
Earth resources
island arcs
oceans

Kibo Japanese Experiment Module

(added May 2008)

DEF A permanent science module for the International Space Station developed by the Japanese Aerospace Exploration Agency. As Japan's primary contribution to the ISS, Kibo consists of six components, two of which are research facilities used for spaceborne experiments.

GS laboratories
. space laboratories
. . manned orbital laboratories
. . . **Kibo Japanese Experiment Module**
manned spacecraft
. manned orbital laboratories
. . **Kibo Japanese Experiment Module**
modules
. space station modules

. . Kibo Japanese Experiment Module

RT International Space Station
Japanese space program
spaceborne experiments
spacecraft modules

kidney calculi
(added August 2004)
USE **kidney stones**

kidney diseases

GS diseases
. **kidney diseases**
. . kidney stones
. . nephritis
RT cholera

kidney stones

(added August 2004)
DEF Calculi occurring in the kidney. Calculi too large to pass spontaneously range in size from 1 cm to the staghorn stones that occupy the renal pelvis and calyces.
UF *kidney calculi*
renal calculi
GS diseases
. kidney diseases
. . **kidney stones**
signs and symptoms
. **kidney stones**
RT calcium phosphates
genitourinary system
kidneys
renal function

kidneys

GS anatomy
. genitourinary system
. . **kidneys**
. . . glomerulus
RT kidney stones
renal function
renin
urine
urolithiasis
urology

kilometer wave orbiting telescope

GS radio equipment
. radio telescopes
. . **kilometer wave orbiting telescope**
telescopes
. radio telescopes
. . **kilometer wave orbiting telescope**

kilometric waves

DEF Electromagnetic waves with wavelengths between 1,000 and 10,000 meters.
GS electromagnetic radiation
. **kilometric waves**
RT ∞ waves

kimberlite

USE **biotite**
peridotite

kinematic equations

GS equations of motion
. kinetic equations
. . **kinematic equations**
RT ∞ equations

kinematics

DEF The branch of mechanics dealing with the description of the motion of bodies or fluids without reference to the forces producing the motion.

GS **kinematics**
. body kinematics
. inverse kinematics
RT acceleration (physics)
 ∞ dynamics
equations of motion
hodographs
kinetics
mechanics (physics)
microwave reflectometers

∞ motion
notation
velocity

kinescopes

USE **picture tubes**

kinesthesia

GS perception
. sensory perception
. . **kinesthesia**
RT proprioception

kinesthesia

USE **proprioception**

kinetic energy

DEF The energy which a body possesses as a consequence of its motion. Used for momentum energy.
UF *momentum energy*
GS kinetics
. **kinetic energy**
RT chemical energy
electron energy
 ∞ energy
equipartition theorem
Froude number
hydrodynamic ram effect
internal energy
Lagrange similarity hypothesis
Lagrangian function
particle energy
potential energy
proton energy
thermal energy
virial theorem
work
zero point energy

kinetic equations

GS equations of motion
. **kinetic equations**
. . hydrodynamic equations
. . . Burnett equations
. . . Helmholtz vorticity equation
. . kinematic equations
RT BBGKY hierarchy
Bethe-Salpeter equation
BGK model
Einstein equations
 ∞ equations
partial differential equations
virial theorem

kinetic friction

GS friction
. **kinetic friction**
. . sliding friction
RT coefficient of friction
dry friction
friction measurement
static friction

kinetic heating

GS heating
. **kinetic heating**
. . aerodynamic heating
. . . shock heating
RT gas heating
magnetic pumping
plasma heating

kinetic theory

DEF The derivation of the bulk properties of fluids from the properties of their constituent molecules, their motions and interactions.

GS **kinetic theory**
. transport theory
. . Chapman-Enskog theory
. . Eyring theory
. . mixing length flow theory
RT BGK model
binary fluids
Boltzmann distribution
Boltzmann transport equation
diffusion
diffusion theory
diffusion waves
dynamic pressure

equations of state
 free molecular flow
 gas transport
 gaseous self-diffusion
 ideal gas
 Joule-Thomson effect
 Knudsen flow
 Krook equation
 Lorentz gas
 mass flow
 Maxwell-Boltzmann density function
 mobility
 momentum transfer
 Morse potential
 real gases
 ∞ theories
 transport properties

kinetics

GS **kinetics**
 . electrokinetics
 . kinetic energy
 . Newton second law
 . Newton Theory
 . reaction kinetics
 . variable mass systems
 RT acceleration (physics)
 angular momentum
 body kinematics
 ∞ dynamics
 fluid dynamics
 fluid mechanics
 ∞ force
 gas dynamics
 hydromechanics
 ideal gas
 kinematics
 mechanics (physics)
 momentum transfer
 motion aftereffects
 newton
 particle collisions
 ∞ physics
 velocity

kink bands

(added March 1998)
 RT buckling
 compression loads
 edge dislocations
 failure modes
 fiber composites
 microstructure
 plastic deformation
 reinforcing fibers
 single crystals

kinking

(added April 1998)
 RT bending
 buckling
 compression loads
 cracking (fracturing)
 deformation
 displacement
 failure modes
 fiber composites
 folding
 heaving
 twisting
 wrinkling

kinofom

GS display devices
 . **kinofom**
 imagery
 . **kinofom**
 RT computer programming
 holography
 wave front reconstruction

∞ **Kirchhoff law**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Kirchhoff law of networks
 Kirchhoff law of radiation

Kirchhoff law of networks

RT circuits
 electric current

electric potential
 ∞ Kirchhoff law
 ∞ nets
 network analysis
 network synthesis

Kirchhoff law of radiation

DEF The radiation law which states that at a given temperature the ratio of the emissivity to the absorptivity for a given wavelength is the same for all bodies and is equal to the emissivity of an ideal black body at that temperature and wavelength.

GS laws
 . radiation laws
 . . **Kirchhoff law of radiation**
 RT absorptivity
 black body radiation
 ∞ Kirchhoff law
 ∞ radiation
 Stefan-Boltzmann law
 thermodynamics

Kirchhoff-Helmholtz flow

USE **pipe flow**

Kirchhoff-Huygens principle

USE **diffraction**
wave propagation

Kirkendall effect

RT diffusion theory
 diffusion welding
 diffusivity
 ∞ effects
 thermal diffusion

kite balloons

USE **tethered balloons**

kits

RT first aid
 survival
 tools

KIWI B reactors

GS nuclear electric power generation
 . nuclear power reactors
 . . KIWI reactors
 . . . **KIWI B reactors**
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 nuclear reactors
 . gas cooled reactors
 . . KIWI reactors
 . . . **KIWI B reactors**
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 . nuclear power reactors
 . . KIWI reactors
 . . . **KIWI B reactors**
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 . nuclear research and test reactors
 . . KIWI reactors
 . . . **KIWI B reactors**
 KIWI B-1 Reactor
 KIWI B-4 Reactor

KIWI B-1 Reactor

GS nuclear electric power generation
 . nuclear power reactors
 . . KIWI reactors
 . . . KIWI B reactors
 **KIWI B-1 Reactor**
 nuclear reactors
 . gas cooled reactors
 . . KIWI reactors
 . . . KIWI B reactors
 **KIWI B-1 Reactor**
 . nuclear power reactors
 . . KIWI reactors
 . . . KIWI B reactors
 **KIWI B-1 Reactor**
 . nuclear research and test reactors
 . . KIWI reactors
 . . . KIWI B reactors

. . . . **KIWI B-1 Reactor**

KIWI B-4 Reactor

GS nuclear electric power generation
 . nuclear power reactors
 . . KIWI reactors
 . . . KIWI B reactors
 **KIWI B-4 Reactor**
 nuclear reactors
 . gas cooled reactors
 . . KIWI reactors
 . . . KIWI B reactors
 **KIWI B-4 Reactor**
 . nuclear power reactors
 . . KIWI reactors
 . . . KIWI B reactors
 **KIWI B-4 Reactor**
 . nuclear research and test reactors
 . . KIWI reactors
 . . . KIWI B reactors
 **KIWI B-4 Reactor**

KIWI reactors

UF *KIWI rocket reactors*
 GS nuclear electric power generation
 . nuclear power reactors
 . . **KIWI reactors**
 . . . KIWI B reactors
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 nuclear reactors
 . gas cooled reactors
 . . **KIWI reactors**
 . . . KIWI B reactors
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 . nuclear power reactors
 . . **KIWI reactors**
 . . . KIWI B reactors
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 . nuclear research and test reactors
 . . **KIWI reactors**
 . . . KIWI B reactors
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 RT NRX reactors
 nuclear engine for rocket vehicles
 Phoebus nuclear reactor
 Rover project

KIWI rocket reactors

USE **KIWI reactors**

Kjeldahl method

GS chemical tests
 . chemical analysis
 . . quantitative analysis
 . . . **Kjeldahl method**
 RT ammonia
 ∞ methodology
 nitrogen
 titration

Klebsiella

GS microorganisms
 . bacteria
 . . **Klebsiella**

Klein-Dunham potential

RT ∞ potential
 quantum theory

Klein-Gordon equation

GS wave equations
 . **Klein-Gordon equation**
 RT Dirac equation
 ∞ equations

klippen

USE **outliers (landforms)**

klystrons

DEF Electron tubes for converting direct current energy into radio frequency energy by alternately speeding up and slowing down the electrons.
 GS electron tubes
 . vacuum tubes
 . . microwave tubes

knee (anatomy)

. . . **klystrons**
microwave equipment
. microwave tubes
. . **klystrons**
RT amplifiers
catchers
cavity resonators
cyclotron resonance devices
electron bunching
electron cyclotron heating
electrostatic generators
magnetrons
microwave oscillators

k-mesons
USE **kaons**

knee (anatomy)
GS anatomy
. limbs (anatomy)
. . leg (anatomy)
. . . **knee (anatomy)**
. musculoskeletal system
. . joints (anatomy)
. . . **knee (anatomy)**
appendages
. leg (anatomy)
. . **knee (anatomy)**
RT femur

knight shift
USE **nuclear magnetic resonance**

knobs
RT handles
levers
manual control

knockout mice
(added April 2004)
DEF Mice whose genome contains a gene whose function has been disrupted, or "knocked-out". Knockout mice are used as animal models for various diseases, such as cystic fibrosis, and help to clarify the functions of genes studied within the fields of immunology, cancer genetics, and developmental biology.
GS animals
. vertebrates
. . mammals
. . . rodents
. . . . mice
. . . . **knockout mice**
models
. animal models
. . **knockout mice**

Knoop hardness
DEF Relative microhardness as determined by the Knoop diamond-pyramid indentation test.
GS mechanical properties
. hardness
. . microhardness
. . . **Knoop hardness**
RT hardness tests
nanoindentation

knowledge
GS **knowledge**
. lessons learned
RT axioms
documentation
education
learning
literature
paradoxes
perception
philosophy
textbooks
training evaluation

knowledge based systems
(added April 1993)
GS information systems
. **knowledge based systems**
. . expert systems
RT artificial intelligence
computer techniques
data structures
decision support systems

knowledge bases (artificial intelligence)
knowledge representation
natural language processing
pilot support systems

knowledge bases (artificial intelligence)

(added November 1988)
DEF Facts, assumptions, beliefs, and heuristics, used in dealing with a database to achieve desired results such as a diagnosis, an interpretation, or a solution to a problem.
GS data bases
. **knowledge bases (artificial intelligence)**
RT artificial intelligence
expert systems
knowledge based systems
knowledge representation

knowledge discovery

(added April 2000)
USE **data mining**

knowledge extraction

(added April 2000)
USE **data mining**

knowledge representation

DEF The use of symbolic data structures to represent knowledge so that a computer can manipulate them.
RT artificial intelligence
belief networks
cognition
expert systems
hypertext
knowledge based systems
knowledge bases (artificial intelligence)
natural language (computers)

Knudsen cells

USE **Knudsen gages**

Knudsen flow

UF *Knudsen number*
GS fluid flow
. gas flow
. . **Knudsen flow**
. internal flow
. . ducted flow
. . . **Knudsen flow**
RT BGK model
boundary layer transition
free molecular flow
kinetic theory
mean free path
molecular flow
pressure gradients
rarefied gas dynamics
transition points
vacuum
viscous flow

Knudsen gages

DEF Gages which measure pressure in terms of the net rate of transfer of momentum by molecules between two surfaces maintained at different temperatures and separated by a distance smaller than the mean free path of the gas molecules. Used for Knudsen cells.
UF *Knudsen cells*
GS measuring instruments
. pressure gages
. . vacuum gages
. . . **Knudsen gages**
vacuum apparatus
. vacuum gages
. . **Knudsen gages**
RT ionization gages
McLeod gages
Pirani gages
pressure measurement

radiometers

Knudsen number

USE **Knudsen flow**

knurling

RT grooving
machining
metal cutting

Kohoutek comet

GS celestial bodies
. comets
. . **Kohoutek comet**
RT Bessel-Bredichin theory
 ∞ coma
radiation pressure
solar system

Kolmogorov theory

(added July 1993)
RT isotropic turbulence
Lagrange similarity hypothesis
shear flow
 ∞ theories
turbulent flow
vortices

Kolmogorov-Smirnov test

(added July 1993)
GS statistical analysis
. statistical tests
. . **Kolmogorov-Smirnov test**
RT probability theory
statistical distributions

k-omega turbulence model

(added June 1997)
UF *kappa-omega turbulence model*
GS models
. mathematical models
. . turbulence models
. . . **k-omega turbulence model**
RT computational fluid dynamics
k-epsilon turbulence model
turbulent boundary layer
turbulent flow

Kondo effect

DEF Change in superconductivity characteristics resulting from magnetic impurities in the compounds involved.
GS electrical properties
. electrical resistivity
. . superconductivity
. . . **Kondo effect**
transport properties
. electrical resistivity
. . superconductivity
. . . **Kondo effect**
RT alloys
 ∞ effects
low temperature physics
magnetic materials
nuclear spin
transition temperature

∞ **Korea**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT North Korea
South Korea

Korteweg-Devries equation

DEF The mathematical representation describing the propagation of long waves of small but finite amplitude.
GS wave equations
. **Korteweg-Devries equation**
RT ∞ equations

Kossel pattern

GS distribution (property)
. radiation distribution
. . diffraction patterns
. . . **Kossel pattern**
RT crystal lattices

Kovar (trademark)

GS alloys

. **Kovar (trademark)**
 RT cobalt alloys

KP index
 GS ratios
 . indexes (ratios)
 . . **KP index**
 RT Earth magnetosphere
 geomagnetic pulsations
 geomagnetism
 ∞ indexes
 magnetic disturbances
 magnetic properties
 magnetic variations

Kraft process (woodpulp)
 DEF Woodpulping process in which sodium sulfate is used in the caustic soda pulp-digestion liquor. Also known as sulfate pulping or Kraft pulping.
 RT manufacturing
 paper (material)
 ∞ processes

Kramers-Kronig formula
 DEF The relationship between the attenuation coefficient and the dispersion (frequency dependent phase velocity) for viscoelastic waves.
 RT ∞ dispersion
 ∞ formulas
 opacity
 spectrum analysis

Krebs cycle
 RT cells (biology)
 metabolism

kreep
 DEF A yellow-brown glassy lunar mineral enriched in potassium, rare earth elements, and phosphate.
 GS minerals
 . **kreep**
 rocks
 . lunar rocks
 . . **kreep**
 RT geology
 lunar soil
 phosphates
 potassium
 rare earth elements

kriging
 DEF A method of providing unbiased estimates of variables in regions where the available data exhibit spatial autocorrelation, and these estimates are obtained in such a way that they have minimum variance.
 RT variance (statistics)

Kronecker product
 USE **orthogonality**

Krook equation
 RT ∞ equations
 hydrodynamics
 kinetic theory
 shear flow
 shock wave profiles

Krueger flaps
 USE **leading edge flaps**

krypton
 GS chemical elements

. rare gases
 . . **krypton**
 . . . krypton isotopes
 krypton 85
 gases
 . rare gases
 . . **krypton**
 . . . krypton isotopes
 krypton 85

krypton 85
 GS chemical elements
 . nuclides
 . . isotopes
 . . . krypton isotopes
 **krypton 85**
 radioactive isotopes
 **krypton 85**
 . rare gases
 . . krypton
 . . . krypton isotopes
 **krypton 85**
 gases
 . rare gases
 . . krypton
 . . . krypton isotopes
 **krypton 85**

krypton fluoride lasers
 DEF Rare gas halide ultraviolet stimulated emission devices in which krypton fluoride is the active lasing medium.
 GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . rare gas-halide lasers
 **krypton fluoride lasers**
 RT coherent electromagnetic radiation
 lasing
 masers
 optical pumping

krypton isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **krypton isotopes**
 krypton 85
 . rare gases
 . . krypton
 . . . **krypton isotopes**
 krypton 85
 gases
 . rare gases
 . . krypton
 . . . **krypton isotopes**
 krypton 85

KS-3 aircraft
 USE **S-3 aircraft**

K-T boundary
 USE **Cretaceous-Tertiary boundary**

KU band
 USE **superhigh frequencies**

Kuiper Airborne Observatory
 (added June 1990)
 GS observatories
 . **Kuiper Airborne Observatory**
 RT airborne equipment
 astronomical spectroscopy
 C-141 aircraft
 infrared astronomy

SOFIA (airborne observatory)

Kuiper belt
 (added June 1997)
 RT asteroids
 comets
 dwarf planets
 New Horizons mission
 Oort cloud
 Quaoar
 solar system
 solar system evolution
 trans-Neptunian objects

Kurile Islands
 GS landforms
 . islands
 . . Pacific islands
 . . . **Kurile Islands**
 RT U.S.S.R.

kurtosis
 DEF In statistics, the extent to which a frequency distribution is peaked or concentrated about the mean; it is sometimes defined as the ratio of the fourth moment of the distribution to the square of the second moment.
 GS distribution (property)
 . frequency distribution
 . . **kurtosis**
 RT ∞ distribution
 Fourier analysis
 ∞ patterns
 statistical distributions

Kutta-Joukowski condition
 GS conditions
 . **Kutta-Joukowski condition**
 RT airfoil profiles
 boundary layer separation
 Joukowski transformation

Kuwait
 GS nations
 . **Kuwait**
 RT Asia

Kvant modules
 (added April 1995)
 GS modules
 . space station modules
 . . **Kvant modules**
 RT Mir space station
 Russian Space Program
 Soyuz spacecraft
 space station structures
 x ray telescopes

KWIC indexes
 GS classifications
 . indexes (documentation)
 . . **KWIC indexes**
 RT ∞ indexes
 thesauri

Kyokko satellite
 USE **EXOS-A satellite**

Kyrgyzstan
 (added August 1993)
 GS nations
 . **Kyrgyzstan**
 RT Asia

L

L band
USE **ultrahigh frequencies**

L-28 aircraft
USE **U-10 aircraft**

L-29 aircraft
USE **L-29 jet trainer**

L-29 jet trainer
UF *Delfin aircraft*
L-29 aircraft
Omnipol L-29 aircraft
GS jet aircraft
. **L-29 jet trainer**
monoplanes
. **L-29 jet trainer**
single engine aircraft
. **L-29 jet trainer**
tilt wing aircraft
. **L-29 jet trainer**
training aircraft
. **L-29 jet trainer**
V/STOL aircraft
. **L-29 jet trainer**

L-1011 aircraft
GS commercial aircraft
. **L-1011 aircraft**
jet aircraft
. **L-1011 aircraft**
Lockheed aircraft
. **L-1011 aircraft**
passenger aircraft
. **L-1011 aircraft**
transport aircraft
. **L-1011 aircraft**
RT ∞ aircraft
turbofan engines

L-2000 aircraft
UF *Lockheed L-2000 aircraft*
GS jet aircraft
. **L-2000 aircraft**
Lockheed aircraft
. **L-2000 aircraft**
passenger aircraft
. **L-2000 aircraft**
supersonic aircraft
. supersonic transports
. . **L-2000 aircraft**
transport aircraft
. **L-2000 aircraft**
RT ∞ aircraft

labeling (marking)
USE **marking**

lab-on-a-chip devices
(added August 2009)
DEF Integrated microfluidic/semiconductor devices capable of performing one or more laboratory functions on a single chip.
UF *LOC (microelectronics)*
GS chips (electronics)
. **lab-on-a-chip devices**
electromechanical devices
. microelectromechanical systems
. . **lab-on-a-chip devices**
microfluidic devices
. **lab-on-a-chip devices**
RT assaying
bioassay
chemical detection
medical electronics
microanalysis
microminiaturization
nanotechnology
photolithography
spacecraft contamination
systems-on-a-chip

labor
RT manpower
mediation
personnel selection

laboratories
GS **laboratories**

. engine testing laboratories
. environmental laboratories
. human factors laboratories
. lunar laboratories
. . lunar receiving laboratory
. . lunar mobile laboratories
. space laboratories
. . Advanced Technology Laboratory
. . Atmospheric Cloud Physics Lab (Spacelab)
. . Earth Viewing Applications Laboratory
. . Long Duration Exposure Facility
. . manned orbital laboratories
. . . Columbus module
. . . Destiny Laboratory Module
. . . Kibo Japanese Experiment Module
. . . Skylab 1
. . . Skylab 2
. . . Skylab 3
. . . Skylab 4
. . . Spacelab
. . underwater research laboratories
RT experiment design
experimentation
nuclear research
research facilities
SAIL project
test facilities
∞ tests

laboratory astrophysics
(added June 2004)
DEF Investigation of the formation, properties, and interactions of interstellar matter conducted through laboratory experimentation.
GS astrophysics
. **laboratory astrophysics**
RT astronomical spectroscopy
computational astrophysics
cosmochemistry
interstellar chemistry
interstellar matter
molecular clouds

laboratory equipment
GS **laboratory equipment**
. gloveboxes
. image furnaces
. syringes
RT ampoules
∞ equipment
glassware
measuring instruments
pipettes

Labrador
RT Canada

labyrinth
GS anatomy
. sense organs
. . ear
. . . **labyrinth**
. . . . cochlea
. . . . Corti organ
. . . . otolith organs
. . . . semicircular canals
. . . . vestibules

labyrinth seals
DEF Minimum leakage seals that offer resistance to fluid flow while providing radial or axial clearance.
GS seals (stoppers)
. **labyrinth seals**
RT fluid flow
gaskets
glands (seals)
hermetic seals
leakage
O ring seals
packings (seals)
plugs
pump seals

rotor speed

labyrinthectomy
GS medical science
. surgery
. . **labyrinthectomy**
RT ear

LACATE (experiment)
DEF A NASA balloonborne experiment conducted from a balloon platform carried by a balloon over 400 feet in diameter. The acronym stands for the Lower Atmospheric Composition and Temperature Experiment. The experiment was conducted in 1974. Used for Lower Atmospheric Composition Experiment.
UF *Lower Atmospheric Composition Experiment*
RT atmospheric composition
atmospheric temperature
lower atmosphere

LACE (engine)
USE **liquid air cycle engines**

lacquers
GS coatings
. **lacquers**
finishes
. **lacquers**
RT metal coatings
primers (coatings)
protective coatings
sprayed coatings

lactates
GS esters
. **lactates**

lactic acid
GS acids
. carboxylic acids
. . **lactic acid**
organic compounds
. carboxylic acids
. . **lactic acid**

lactose
GS organic compounds
. carbohydrates
. . sugars
. . . **lactose**

lacunas
RT lichens
plants (botany)

ladders
RT escalators
stairways

lag (delay)
USE **time lag**

LAGEOS (satellite)
UF *Laser Geodynamic Satellite*
GS artificial satellites
. passive satellites
. . **LAGEOS (satellite)**
RT laser range finders
retroreflection
satellite laser ranging

lagoons
DEF Shallow stretches of seawater, such as sounds, channels, bays (topographic features), or saltwater lakes, near or communicating with seas and partly or completely separated from them by low, narrow, elongated strips of land, such as reefs, barrier islands, sandbanks, or spits. Lagoons are often used to describe sheets of water between offshore coral reefs and the mainland. They often extend roughly parallel to the coast and are little affected by tides. Lagoons are also considered shallow freshwater ponds or lakes near or communicating with larger lakes or rivers.
GS landforms
. **lagoons**

RT atolls
bars (landforms)
beaches
coasts
dunes
inlets (topography)
island arcs
islands
lakes
ponds
reservoirs
topography

Lagrange coordinates

DEF Systems of coordinates by which fluid parcels are identified for all times by assigning them coordinates which do not vary with time. Examples of such coordinates are: (a) the values of any properties of the fluid conserved in the motion; or (b) more generally, the positions in space of the parcels at some arbitrarily selected moment. Subsequent positions in space of the parcels are then the dependent variables, functions of time and of the Lagrange coordinates. Also called material coordinates.

GS coordinates
. **Lagrange coordinates**

RT classical mechanics
hydrodynamics
Lagrangian function
librational motion

Lagrange equations of motion

USE **Euler-Lagrange equation**

Lagrange multipliers

RT chiral dynamics
differential equations
isoperimetric problem
Lagrangian function
multipliers
operations research
optimization

Lagrange similarity hypothesis

GS hypotheses
. **Lagrange similarity hypothesis**
theorems
. similarity theorem
. . **Lagrange similarity hypothesis**

RT energy dissipation
energy transfer
kinetic energy
Kolmogorov theory
turbulent flow

Lagrangian

USE **Lagrangian function**

Lagrangian equilibrium points

GS gravitational effects
. **Lagrangian equilibrium points**
theorems
. similarity theorem

RT celestial mechanics
gravitational fields
orbital mechanics
Trojan asteroids

Lagrangian function

(added April 1993)
UF *Lagrangian*
GS functions (mathematics)
. **Lagrangian function**

RT Euler-Lagrange equation
kinetic energy
Lagrange coordinates
Lagrange multipliers
potential energy

Laguerre functions

GS analysis (mathematics)
. complex variables
. . **Laguerre functions**
functions (mathematics)
. **Laguerre functions**

RT orthogonal functions

LA-ICP-MS (spectrometry)
(added March 2001)

USE **inductively coupled plasma mass spectrometry**

lake beds

USE **beds (geology)**

Lake Champlain Basin (NY-VT)

GS landforms
. structural basins
. . **Lake Champlain Basin (NY-VT)**

RT Canada
lakes
New York
Vermont

Lake Erie

GS lakes
. Great Lakes (North America)
. . **Lake Erie**

RT hydrology
rivers
streams
water
water management

Lake Huron

GS lakes
. Great Lakes (North America)
. . **Lake Huron**

RT hydrology
rivers
Saginaw Bay (MI)
streams
water
water management

lake ice

DEF Ice formed on lakes, regardless of observed location; it is usually freshwater ice.

GS ice
. **lake ice**
. . ice floes

RT bay ice
ice formation
lakes
land ice
sea ice
water

Lake Michigan

GS lakes
. Great Lakes (North America)
. . **Lake Michigan**

RT hydrology
rivers
streams
water
water management

Lake Ontario

GS lakes
. Great Lakes (North America)
. . **Lake Ontario**

RT hydrology
rivers
streams
water
water management

Lake Pontchartrain (LA)

GS lakes
. **Lake Pontchartrain (LA)**

RT Louisiana

Lake Superior

GS lakes
. Great Lakes (North America)
. . **Lake Superior**

RT hydrology
rivers
streams
water
water management

Lake Tahoe (CA-NV)

GS lakes
. **Lake Tahoe (CA-NV)**

RT California
Nevada

Lake Texoma (OK-TX)

GS lakes
. **Lake Texoma (OK-TX)**

RT limnology
Oklahoma
reservoirs
texas
vadose water

lakes

DEF Inland bodies of standing water occupying depressions in the Earth's surface, generally of appreciable size (larger than a pond) and too deep to permit vegetation (excluding sub-aqueous vegetation) to take root completely across the expanse of water; the water may be fresh or saline. The term includes expanded parts of rivers, reservoirs behind dams, or lake basins intermittently or formerly covered by water.

GS **lakes**
. Great Lakes (North America)
. . Lake Erie
. . Lake Huron
. . Lake Michigan
. . Lake Ontario
. . Lake Superior
. Great Salt Lake (UT)
. Lake Pontchartrain (LA)
. Lake Tahoe (CA-NV)
. Lake Texoma (OK-TX)
. Pyramid Lake (NV)

RT aquifers
bayous
beaches
coasts
Earth hydrosphere
eutrophication
inland waters
kettles (geology)
lagoons
Lake Champlain Basin (NY-VT)
lake ice
limnology
playas
ponds
regional planning
reservoirs
river basins
shoals
shorelines
springs (water)
straits
surface water
thermal pollution
water circulation
water color
water depth
water resources
waterways

Lallemand cameras

GS optical equipment
. cameras
. . **Lallemand cameras**
photographic equipment
. cameras
. . **Lallemand cameras**

RT astronomical photography
electro-optical photography
image converters
image intensifiers
image transducers
light amplifiers
spectroscopy
television cameras

Lamb waves

DEF Waves that propagate within the thickness of a thin plate, and that can only be generated at particular values of angle of incidence, frequency, and plate thickness. The velocity of the wave is dependent on the mode and the product of plate thickness and frequency.

GS elastic waves
. sound waves
. . **Lamb waves**

Lambda rocket vehicles

RT acoustic properties
acoustics
Sturm-Liouville theory
ultrasonic tests

Lambda rocket vehicles
GS rocket vehicles
. multistage rocket vehicles
. . . **Lambda rocket vehicles**
. sounding rockets
. . . **Lambda rocket vehicles**
RT solid propellant rocket engines
∞ vehicles

Lambda Tauri stars
GS celestial bodies
. stars
. . double stars
. . . binary stars
. . . . eclipsing binary stars
. **Lambda Tauri stars**
. . variable stars
. . . **Lambda Tauri stars**

Lambert law
USE **Bouguer law**

Lambert surface
RT reflection
∞ surface geometry
∞ surfaces

Lame functions
GS functions (mathematics)
. **Lame functions**
RT boundary value problems
differential equations

Lame wave equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . **Lame wave equations**
wave equations
. **Lame wave equations**
RT acoustics
elastic waves
∞ equations
Sturm-Liouville theory
wave propagation

lamella
RT bones

lamella (metallurgy)
DEF Crystalline materials whose grains are in the form of thin sheets.
RT aluminum alloys
copper alloys
crystallography
eutectic alloys
microstructure

lamina
USE **layers**

laminar boundary layer
DEF In fluid flow, layer next to the fixed boundary. The fluid velocity is zero at the boundary layer but the molecular viscous stress is large because the velocity gradient normal to the wall is large. Used for laminar boundary layer separation and laminar flow control.
UF *laminar boundary layer separation*
laminar flow control
GS boundary layers
. **laminar boundary layer**
RT boundary layer combustion
boundary layer transition
compressible boundary layer
Goertler instability
hypersonic boundary layer
incompressible boundary layer
interactional aerodynamics
isothermal layers
Pohlhausen method
supersonic boundary layers
thermal boundary layer
three dimensional boundary layer
turbulent boundary layer

two dimensional boundary layer
X-21 aircraft

laminar boundary layer separation
USE **boundary layer separation**
laminar boundary layer

laminar flames
USE **flames**
laminar flow

laminar flow
DEF In fluid flow, a smooth flow in which no crossflow of fluid particles occurs between adjacent stream lines; hence, a flow conceived as made up of layers -- commonly distinguished from turbulent flow. Used for laminar flames, laminar jets, Poiseuille flow, and streamline flow.
UF *laminar flames*
laminar jets
Poiseuille flow
streamline flow
GS fluid flow
. **laminar flow**
. . Blasius flow
. . Hartmann flow
. . stratified flow
RT aerodynamics
atmospheric turbulence
boundary layer transition
capillary flow
critical flow
Falkner-Skan equation
flow characteristics
flow geometry
flow stability
forced convection
free convection
gas flow
gas streams
inviscid flow
liquid flow
low Reynolds number
mass flow
multiphase flow
Newton pressure law
open channel flow
orifice flow
parallel flow
pipe flow
Prandtl-Meyer expansion
Rayleigh-Benard convection
Reynolds number
Roshko prediction
single-phase flow
steady flow
steam flow
Tollmien-Schlichting waves
∞ transition layers
turbulent flow
two phase flow
uniform flow
unsteady flow
viscous drag
viscous flow
wedge flow
X-21A aircraft

laminar flow airfoils
GS airfoils
. **laminar flow airfoils**

laminar flow control
USE **boundary layer control**
laminar boundary layer

laminar heat transfer
GS transmission
. heat transmission
. . heat transfer
. . . **laminar heat transfer**
RT conductive heat transfer
convective heat transfer
thermohydraulics

turbulent heat transfer

laminar jets
USE **jet flow**
laminar flow

laminar mixing
GS mixing
. **laminar mixing**
RT fluid injection
gas mixtures
mixing layers (fluids)
turbulent mixing

laminar wakes
GS wakes
. **laminar wakes**
RT aircraft wakes
turbulent wakes

laminated materials
USE **laminates**

laminates
DEF Products made by bonding together two or more layers of material or materials. Used for laminated materials, laminations, and multi-layer structures.
UF *laminated materials*
laminations
multilayer structures
GS composite structures
. **laminates**
. . Boral
. . plywood
RT bonding
boron-epoxy composites
cladding
clamped structures
coatings
composite materials
debonding (materials)
fabrics
fiber composites
filament winding
∞ films
formica
glass fiber reinforced plastics
honeycomb structures
hybrid composites
interlaminar stress
interlayers
∞ layers
lay-up
magnetic cores
∞ materials
matrix materials
metal bonding
metallizing
multilayer insulation
netting (materials/structures)
papers
plating
ply orientation
polymer matrix composites
prepregs
reinforced plastics
reinforced plates
sandwich structures
∞ sheets
stacking sequence (composite materials)
substrates
thermosetting resins
veneers

laminations
USE **laminates**

lamps
USE **luminaires**

LAMPS program
USE **Light Airborne Multipurpose System**

LAN (computer networks)
USE **local area networks**

Lance missile
GS missiles

- . surface to surface missiles
- . . **Lance missile**
- RT liquid propellant rocket engines
- Trailblazer 1 reentry vehicle
- TX-77 engine

land

DEF In a general sense, that part of the Earth's surface that stands above mean sea level. The inclusion of Antarctica's permanent ice in calculating the land surface of the Earth is controversial.

GS **land**

- . Allegheny Plateau (US)
- . arid lands
- . badlands
- . barren land
- . Cascade Range (CA-OR-WA)
- . Colorado Plateau (US)
- . deserts
 - . . Gobi desert
 - . . Libyan desert
 - . . Mojave Desert (CA)
 - . . Sahara Desert (Africa)
- . farmlands
- . grasslands
- . . Llanos Orientales (Colombia)
- . isthmuses
- . parks
 - . . national parks
 - . . . Yellowstone National Park (ID-MT-WY)
- . plains
 - . . coastal plains
 - . . flood plains
 - . . Llanos Orientales (Colombia)
 - . . pampas
 - . . playas
 - . . tundra
 - . . rangelands
 - . . wetlands
 - . . marshlands

RT

- capes (landforms)
- desertification
- desertline
- peninsulas
- residential areas
- rural areas
- rural land use
- sites
- sod
- soils
- topography

land ice

DEF Any ice masses formed from snow, rain or other freshwater on land, as ice shelves or glaciers, even though they may be floating in seas as icebergs.

- UF *ice shelves*
- GS ice

- . **land ice**
- resources
- . Earth resources
- . . **land ice**

RT

- Antarctic regions
- glacial drift
- glaciers
- icebergs
- lake ice
- sea ice

land management

- GS management
 - . resources management
 - . . **land management**
- RT environment management
- regional planning
- rural land use
- urban planning
- wilderness

land mobile satellite service

DEF A proposed radio relay satellite system for serving thinly populated or large geographical areas.

- GS mobile communication systems
- . **land mobile satellite service**
- RT communication satellites
- ground stations

- MSAT
- radio communication

land surface temperature

(added February 1993)

- GS surface properties
 - . surface temperature
 - . . **land surface temperature**
 - temperature
 - . surface temperature
 - . . **land surface temperature**
- RT air land interactions
- atmospheric temperature
- sea surface temperature

land use

- GS **land use**
 - . rural land use
- RT AgRISTARS project
- airport planning
- barren land
- change detection
- conservation
- desertification
- ∞ development
- Earth resources
- economic development
- energy policy
- environment management
- exploitation
- ∞ facilities
- farmlands
- forest management
- grasslands
- industrial areas
- landfills
- leasing
- residential areas
- site selection
- SPOT (French satellite)
- Starsite program
- suburban areas
- urban development
- urban planning
- urban research

Landau damping

DEF The damping of a space charge wave by electrons which move at the phase velocity of the wave and gain energy transferred from the wave.

- GS damping
- . **Landau damping**
- RT electron plasma
- Landau factor
- magnetic damping
- phase velocity
- plasma waves
- space charge

Landau factor

- RT atomic energy levels
- atomic theory
- Landau damping
- plasmas (physics)
- superconductivity

Landau-Ginzburg equations

- RT ∞ equations
- quantum electrodynamics
- superconductivity

landfills

DEF Disposal sites for solid wastes which are buried in layers of earth.

- RT industrial wastes
- land use
- methane
- solid wastes
- waste disposal
- waste management
- waste utilization
- water pollution

landforms

DEF Any physical recognizable forms or features of the Earth's surface, having characteristic shapes, and produced by natural causes. Landforms include major forms such as plains, plateaus, and mountains and minor forms such

as hills, valleys, slopes, glacial drift, and dunes. Taken together, landforms make up the surface configuration of the Earth.

GS **landforms**

- . arroyos
- . barriers (landforms)
- . . Outer Banks (NC)
- . . reefs
- . bars (landforms)
- . beds (geology)
- . . salt beds
- . bridges (landforms)
- . calderas
- . canals
- . canyons
- . . Grand Canyon (AZ)
- . capes (landforms)
- . . Cape Hatteras (NC)
- . cones (volcanoes)
- . cusps (landforms)
- . Death Valley (CA)
- . deltas
- . . Mississippi Delta (LA)
- . . Rhone Delta (France)
- . divides (landforms)
- . dunes
- . escarpments
- . fans (landforms)
- . fiords
- . flats (landforms)
- . . tidal flats
- . gaps (geology)
- . inlets (topography)
- . . bayous
- . . Cook Inlet (AK)
- . inliers (landforms)
- . island arcs
- . islands
- . . Aleutian Islands (US)
- . . Assateague Island (MD-VA)
- . . atolls
- . . Azores
- . . Bahrain
- . . Bermuda
- . . Canary Islands
- . . Cyprus
- . . Greenland
- . . Hawaii
- . . Iceland
- . . Indonesia
- . . Ireland
- . . keys (islands)
- . . Long Island (NY)
- . . Madagascar
- . . Maldives Islands
- . . Malta
- . . Mauritius
- . . Merritt Island (FL)
- . . Newfoundland
- . . nunataks
- . . Pacific islands
 - . . . Guam
 - . . . Japan
 - . . . Johnston Island
 - . . . Kurile Islands
 - . . . New Guinea (island)
 - . . . New Zealand
 - . . . Philippines
 - . . . Samoa
 - . . . Prince Edward Island
 - . . . Seychelles
 - . . . Sicily
 - . . . Tasmania
 - . . . Wallops Island
- . . West Indies
 - . . . Antigua and Barbuda
 - . . . Bahamas
 - . . . Barbados
 - . . . Cuba
 - . . . Dominica
 - . . . Grenada
 - . . . Guadeloupe
 - . . . Haiti
 - . . . Jamaica
 - . . . Lesser Antilles
 - . . . Martinique
 - . . . Puerto Rico
 - . . . Trinidad and Tobago
 - . . . Virgin Islands

landing

- . isthmuses
- . lagoons
- . Magdalena-Cauca Valley (Colombia)
- . massifs
- . mountains
 - .. Adirondack Mountains (NY)
 - .. Alps Mountains (Europe)
 - .. Andes Mountains (South America)
 - .. Appalachian Mountains (North America)
 - .. Bighorn Mountains (MT-WY)
 - .. Black Hills (SD-WY)
 - .. Carpathian Mountains (Europe)
 - .. Cascade Range (CA-OR-WA)
 - .. Caucasus Mountains (U.S.S.R.)
 - .. coastal ranges (CA)
 - .. Great Smoky Mountains (NC-TN)
 - .. Himalayas
 - .. Peninsular Ranges (CA)
 - .. Pyrenees Mountains (Europe)
 - .. Rocky Mountains (North America)
 - .. San Juan Mountains (CO)
 - .. Sierra Nevada Mountains (CA)
 - .. Wind River Range (WY)
 - .. Wrangell Mountains (AK)
- . muskegs
- . outliers (landforms)
- . peaks (landforms)
 - .. Pike's Peak (CO)
- . peninsulas
 - .. Delmarva Peninsula (DE-MD-VA)
 - .. Phoenix quadrangle (AZ)
- . plains
 - .. coastal plains
 - .. flood plains
 - .. Llanos Orientales (Colombia)
 - .. pampas
 - .. playas
 - .. tundra
 - .. ravines
 - .. St Lawrence Valley (North America)
- . steppes
- . structural basins
 - .. cirques (landforms)
 - .. Great Basin (US)
 - .. Kalahari Basin (Africa)
 - .. karst
 - ... sinkholes
 - ... kettles (geology)
 - .. Lake Champlain Basin (NY-VT)
 - .. river basins
 - ... Atchafalaya River Basin (LA)
 - ... Chena River Basin (AK)
 - ... Columbia River Basin (ID-OR-WA)
 - ... Delaware River Basin (US)
 - ... Feather River Basin (CA)
 - ... Missouri River Basin (US)
 - ... Susquehanna River Basin (MD-NY-PA)
 - ... Wabash River Basin (IL-IN-OH)
 - .. wadis
 - .. watersheds
 - .. Williston Basin (North America)
- . terraces (landforms)
- . plateaus
 - ... Allegheny Plateau (US)
 - ... Colorado Plateau (US)
 - ... Great Basin (US)
 - ... mesas
 - ... buttes
 - ... piedmonts
 - ... Central Piedmont (US)
- . volcanoes
 - .. Mars volcanoes
- RT archipelagoes
- crossbedding (geology)
- ditches
- earthquake resistance
- ∞ faults
 - geological faults
 - glacial drift
 - landmarks
 - landslides
- ∞ platforms
- ∞ ridges
- seamounts
- slopes
- structural properties (geology)

terrain
topography

landing

GS **landing**

- . aircraft landing
- . blind landing
- . glide landings
- .. horizontal spacecraft landing
- . hard landing
- . soft landing
- . spacecraft landing
- .. horizontal spacecraft landing
- .. lunar landing
- .. planetary landing
- ... Mars landing
- . ditching (landing)
- . emergency landing
- . touchdown
- . vertical landing
- . water landing

RT air traffic control approach approach and landing tests (STS) arrivals guidance (motion) instrument flight rules instrument landing systems maneuvers runways takeoff visual flight

landing aids

UF *landing systems*

GS **landing aids**

- . airport beacons
- .. discrete address beacon system
- . airport lights
- .. runway lights
- . arresting gear
- . instrument landing systems
- .. all-weather landing systems
- . landing instruments
- .. approach indicators
- . landing radar
- . microvision landing aid
- . microwave landing systems
- .. microwave scanning beam landing system

RT ∞ aids

- air traffic control
- air traffic controllers (personnel)
- airborne radar approach
- aircraft equipment
- aircraft instruments
- aircraft landing
- aircraft safety
- airport towers
- airports
- antiskid devices
- approach
- approach control
- automatic pilots
- enhanced vision
- ground based control
- ground support equipment
- head-up displays
- heliports
- instrument approach
- military air facilities
- National Aviation System
- navigation aids
- PLAT system
- radar approach control
- radio beacons
- runways
- safety devices
- solar compasses

landing gear

DEF The apparatus comprising those components of an aircraft or spacecraft that support and provide mobility for the craft on land, water, or other surface. The landing gear consists of wheels, floats, skis, bogies, and treads, or other devices, together with all associated struts, bracing, or shock absorbers. Used for retractable landing gear.

UF *retractable landing gear*

RT aircraft parts
aircraft tires
airframes

∞ bicycle
brakes (for arresting motion)
carriages
fairings
floats

∞ gear
hydrofoils
nose wheels
retractable equipment
self alignment
shock absorbers
skidding
skis
spray ingestion
tires
undercarriages
vehicle wheels
wheel brakes
wheels

landing instruments

GS landing aids

- . **landing instruments**
- .. approach indicators

RT air traffic control aircraft equipment aircraft instruments altimeters automatic control blind landing flight instruments instrument landing systems manual control measuring instruments radar approach control speed indicators

landing loads

GS loads (forces)
. dynamic loads
. transient loads
. . . **landing loads**

RT deceleration impact loads shock loads structural design criteria

landing mats

RT aircraft landing airports military air facilities runways

landing modules

GS modules

- . spacecraft modules
- .. **landing modules**
- ... lunar landing modules
- ... Lunar Module
- ... Apollo lunar experiment module
- ... LSSM
- ... Lunar Module 5
- ... Lunar Module 7
- ... Altair Lunar Lander
- ... Mars Excursion Module
- soft landing spacecraft
- . **landing modules**
- .. lunar landing modules
- ... Lunar Module
- ... Apollo lunar experiment module
- ... LSSM
- ... Lunar Module 5
- ... Lunar Module 7
- ... Altair Lunar Lander
- .. Mars Excursion Module
- spacecraft components
- . spacecraft modules
- .. **landing modules**
- ... lunar landing modules
- ... Lunar Module
- ... Apollo lunar experiment module
- ... LSSM
- ... Lunar Module 5
- ... Lunar Module 7
- ... Altair Lunar Lander

... Mars Excursion Module
 RT Apollo spacecraft
 interplanetary spacecraft
 launch vehicles
 maneuverable spacecraft
 manned spacecraft
 reentry vehicles
 reusable spacecraft
 space capsules
 spacecraft docking modules

landing radar

GS landing aids
 . **landing radar**
 radar
 . **landing radar**
 RT air traffic control
 aircraft landing
 aircraft safety
 approach control
 instrument approach
 radar approach control

landing simulation

GS simulation
 . **landing simulation**
 RT altitude simulation
 atmospheric entry simulation
 computerized simulation
 flight simulation
 spacecraft landing
 training simulators

landing sites

GS sites
 . **landing sites**
 . . lunar landing sites
 . . Mars landing sites
 RT heliports
 Mars Pathfinder
 recovery zones
 runways
 trajectory control

landing speed

GS rates (per time)
 . **landing speed**
 velocity
 . **landing speed**
 RT high speed
 low speed

landing systems

USE **landing aids**

landmarks

RT landmarks
 terrain
 topography

Landsat 1

UF *Earth Resources Technology Satellite 1*
ERTS-A
 GS artificial satellites
 . Landsat satellites
 . . **Landsat 1**

Landsat 2

UF *Earth Resources Technology Satellite B*
ERTS-B
 GS artificial satellites
 . Landsat satellites
 . . **Landsat 2**

Landsat 3

DEF The third Landsat satellite (Landsat C) successfully launched and in orbit. Used for Earth Resources Technology Satellite C and ERTS-C.
 UF *Earth Resources Technology Satellite C*
ERTS-C
 GS artificial satellites
 . Landsat satellites
 . . **Landsat 3**

RT plasma interaction experiment

Landsat 4

UF *Earth Resources Technology Satellite D*
ERTS-D
 GS artificial satellites
 . Landsat satellites
 . . **Landsat 4**
 RT thematic mappers (LANDSAT)

Landsat 5

GS artificial satellites
 . Landsat satellites
 . . **Landsat 5**
 RT thematic mappers (LANDSAT)

Landsat 6

(added April 1995)
 GS artificial satellites
 . Landsat satellites
 . . **Landsat 6**
 RT Earth Observing System (EOS)
 remote sensing
 spectral resolution

Landsat 7

(added April 1995)
 GS artificial satellites
 . Landsat satellites
 . . **Landsat 7**
 RT Earth Observing System (EOS)
 remote sensing
 spectral resolution

Landsat E

UF *Earth Resources Technology Satellite E*
EOS-A
ERTS-E
 GS artificial satellites
 . Landsat satellites
 . . **Landsat E**

Landsat F

UF *Earth Resources Technology Satellite F*
EOS-B
ERTS-F
 GS artificial satellites
 . Landsat satellites
 . . **Landsat F**

Landsat follow-on missions

UF *LFO*
 RT ∞ missions
 multimission modular spacecraft

Landsat satellites

UF *Earth Resources Technology Satellites*
ERTS
 GS artificial satellites
 . **Landsat satellites**
 . . Landsat 1
 . . Landsat 2
 . . Landsat 3
 . . Landsat 4
 . . Landsat 5
 . . Landsat 6
 . . Landsat 7
 . . Landsat E
 . . Landsat F
 RT AgRISTARS project
 data products
 Earth observations (from space)
 Earthnet
 Mapsat
 NASA programs
 oceanography
 satellite observation
 SEASAT 1
 SEASAT program
 SEASAT satellites
 SEASAT-B satellite

Synchronous Earth Observatory satellite

landscape

USE **terrain**
topography

landslides

DEF A general term covering a wide variety of mass movement landforms and processes involving the downslope transport, under gravitational influence, of soil and rock material en masse. Usually the displaced material moves over a relatively confined zone or surface of shear.

GS Earth movements

. **landslides**

RT cliffs

flood damage

landforms

rain erosion

rocks

slopes

soil erosion

soils

storm damage

lanes

USE **paths**

Langevin formula

RT dispersing

ferromagnetism

magnetic moments

Langley complex coordinator

GS simulators

. environment simulators

. . space simulators

. . . **Langley complex coordinator**

RT flight simulators

gravitational effects

rotating environments

space environment simulation

weightlessness simulation

Langmuir monolayers

(added March 2001)

USE **monomolecular films**

Langmuir probes

USE **electrostatic probes**

Langmuir turbulence

(added August 1994)

GS turbulence

. magnetohydrodynamic turbulence

. . plasma turbulence

. . . **Langmuir turbulence**

RT Auger effect

magnetohydrodynamic stability

plasma dynamics

plasma heating

plasma oscillations

plasma waves

thin films

Langmuir-Blodgett films

(added March 1993)

GS thin films

. monomolecular films

. . **Langmuir-Blodgett films**

RT coatings

∞ films

integrated optics

molecular electronics

polymeric films

language programming

GS computer programming

. **language programming**

RT computer assisted instruction

data processing

high level languages

languages

machine oriented languages

machine translation

symbolic programming

languages

∞ translators

languages

GS **languages**
. command languages
. . . query languages
. document markup languages
. English language
. hardware description languages
. programming languages
. . . ALGOL
. . . APL (programming language)
. . . Assembly language
. . . . autocoders
. . . . COMPASS (programming language)
. . . . MAP (programming language)
. . . BASIC (programming language)
. . . Cobol
. . . COGO (programming language)
. . . context free languages
. . . Forth (programming language)
. . . FORTRAN
. . . HAL/S (language)
. . . high level languages
. . . . Ada (programming language)
. . . . C (programming language)
. . . . C++ (programming language)
. . . . Java (programming language)
. . . LISP (programming language)
. . . machine oriented languages
. . . natural language (computers)
. . . Pascal (programming language)
. . . PL/1
. . . Prolog (programming language)
RT alphabets
articulation (speech)
coding
communication theory
grammars
language programming
linguistics
machine translation
orthography
phonemes
phonemics
phonetics
semantics
sentences
speech
symbols
syntax
translating
verbal communication
vowels
words (language)

lanthanide series metals

USE **rare earth elements**

lanthanum

GS chemical elements
. rare earth elements
. . . **lanthanum**
. . . lanthanum isotopes
metals
. rare earth elements
. . . **lanthanum**
. . . lanthanum isotopes
RT didymium

lanthanum 140

USE **lanthanum isotopes**

lanthanum alloys

GS alloys
. rare earth alloys
. . . **lanthanum alloys**

lanthanum chlorides

GS halogen compounds
. chlorine compounds
. . . chlorides
. . . . **lanthanum chlorides**
. halides
. . . chlorides
. . . . **lanthanum chlorides**
. . . metal halides
. . . . **lanthanum chlorides**
lanthanum compounds

lanthanum chlorides

lanthanum compounds

GS **lanthanum compounds**
. lanthanum chlorides
. lanthanum fluorides
. lanthanum oxides
. lanthanum tellurides
RT ∞ chemical compounds
∞ metal compounds

lanthanum fluorides

GS halogen compounds
. fluorine compounds
. . . fluorides
. . . . metal fluorides
. **lanthanum fluorides**
. halides
. . . fluorides
. . . . metal fluorides
. **lanthanum fluorides**
. . . metal halides
. . . . metal fluorides
. **lanthanum fluorides**
lanthanum compounds
. **lanthanum fluorides**

lanthanum isotopes

UF *lanthanum 140*
GS chemical elements
. nuclides
. . . isotopes
. . . . **lanthanum isotopes**
. . . rare earth elements
. . . lanthanum
. . . . **lanthanum isotopes**
metals
. rare earth elements
. . . lanthanum
. . . . **lanthanum isotopes**

lanthanum oxides

GS chalcogenides
. oxides
. . . metal oxides
. . . . **lanthanum oxides**
lanthanum compounds
. **lanthanum oxides**

lanthanum tellurides

GS chalcogenides
. tellurides
. . . **lanthanum tellurides**
lanthanum compounds
. **lanthanum tellurides**
rare earth compounds
. **lanthanum tellurides**
tellurium compounds
. tellurides
. . . **lanthanum tellurides**

Laos

GS nations
. **Laos**
RT Asia

lap joints

GS joints (junctions)
. **lap joints**
RT bolted joints
butt joints
metal joints
riveted joints
scarf joints
soldered joints
welded joints

Laplace equation

RT ∞ equations
harmonic functions
partial differential equations
Poisson equation
Stokes-Beltrami equation

Laplace operators

USE **Laplace transformation**

Laplace transformation

UF *Laplace operators*
GS analysis (mathematics)

. functional analysis
. . . integral transformations
. . . . **Laplace transformation**
functions (mathematics)
. **Laplace transformation**
transformations (mathematics)
. integral transformations
. . . **Laplace transformation**
RT differential equations
operators (mathematics)

lapse rate

DEF The decrease of an atmospheric variable with height, the variable being temperature, unless otherwise specified. The term applies ambiguously to the environmental lapse rate and the process lapse rate, and the meaning must often be ascertained from the context.

RT humidity
temperature
temperature inversions
tephigrams

LARA aircraft

USE **COIN aircraft**

large aperture seismic array

GS arrays
. **large aperture seismic array**
RT Earth movements
earthquakes
measuring instruments
seismic waves
seismology

Large Area Crop Inventory Experiment

RT agriculture
agrophysical units
crop growth
crop inventories
∞ crops
Earth resources
Earth Resources Program
farm crops
inventories

Large Deployable Reflector

(added September 1988)
UF *LDR (telescope)*
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . . **Large Deployable Reflector**
observatories
. astronomical observatories
. . . astronomical satellites
. . . . **Large Deployable Reflector**
telescopes
. infrared telescopes
. . . **Large Deployable Reflector**
. reflecting telescopes
. . . **Large Deployable Reflector**
. spaceborne telescopes
. . . **Large Deployable Reflector**
RT infrared astronomy
large space structures
reflectors
space erectable structures
submillimeter waves

large eddy simulation

(added October 1997)
UF *LES (mathematics)*
GS simulation
. **large eddy simulation**
RT atmospheric models
computational fluid dynamics
dynamic models
eddy viscosity
mathematical models
Navier-Stokes equation
Reynolds averaging
turbulence models
turbulent flow

- vortices
- Large Infrared Telescope on Spacelab*
USE **LIRTS (telescope)**
- large scale integration**
UF *LSI*
GS circuits
. integrated circuits
. . **large scale integration**
microelectronics
. **large scale integration**
RT application specific integrated circuits
chips (electronics)
DTL integrated circuits
electronic packaging
linear integrated circuits
medium scale integration
microminiaturization
microprocessors
molecular electronics
printed circuits
systems-on-a-chip
TTL integrated circuits
very large scale integration
VHSIC (circuits)
- large space structures**
RT Columbus space station
continuum modeling
expandable structures
flexible spacecraft
hoop column antennas
Integrated Truss Structure P1
Integrated Truss Structure S1
International Space Station
intraorbit transfer vehicles
Large Deployable Reflector
laser gyroscopes
maypole antennas
megamechanics
orbital servicing
orbital space tests
self shadowing
shape control
smart structures
solar power satellites
space erectable structures
Space Operations Center (NASA)
Space Station Freedom
space station structures
space stations
space technology experiments
spacecraft structures
∞ structures
- Large Space Telescope*
USE **Hubble Space Telescope**
- large-scale structure of the universe**
(*added May 2002*)
DEF Distribution of matter in the universe at the largest scale including the distribution of galactic clusters and superclusters.
UF *LSS (cosmology)*
RT big bang cosmology
cosmology
dark matter
galactic clusters
galactic evolution
missing mass (astrophysics)
relic radiation
string theory
universe
- LARGOS satellite**
GS artificial satellites
. geodetic satellites
. . **LARGOS satellite**
RT Explorer 29 satellite
Explorer 36 satellite
GEOS 1 satellite
GEOS 2 satellite
GEOS 3 satellite
- Larissa**
(*added July 1995*)
DEF A natural satellite of Neptune, orbiting at a mean distance of 73,600 kilometers.
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Larissa**
RT Neptune (planet)
- Larmor precession**
GS gyration
. precession
. . **Larmor precession**
RT cyclotron frequency
cyclotron radiation
- Larmor radius**
DEF For a charged particle moving transversely in a uniform magnetic field, the radius of curvature of the projection of its path on a plane perpendicular to the field. Named after the English mathematician Sir Joseph Larmor (1857-1942).
GS dimensions
. radii
. . **Larmor radius**
geometry
. Euclidean geometry
. . radii
. . . **Larmor radius**
RT cyclotron radiation
gyromagnetism
plasma physics
precession
- larvae**
GS **larvae**
. bollworms
. silkworms
RT animals
arthropods
infestation
insects
invertebrates
pupa
worms
- larynx**
GS anatomy
. respiratory system
. . **larynx**
. . . glottis
. . . vocal cords
RT cartilage
- laser ablation**
(*added February 1992*)
GS ablation
. **laser ablation**
utilization
. laser applications
. . **laser ablation**
RT laser annealing
laser beams
laser damage
laser drilling
laser heating
laser plasmas
laser target interactions
laser welding
nanostructure growth
- laser altimeters**
GS measuring instruments
. distance measuring equipment
. . altimeters
. . . **laser altimeters**
RT aircraft instruments
altitude control
Ice, Cloud and Land Elevation Satellite
∞ instruments
lasers
optical radar
satellite instruments
spacecraft instruments
- laser anemometers**
DEF Measuring instruments in which the wind being measured passes through two perpendicular light beams and the resulting change in velocity of one or both beams is measured.
GS measuring instruments
. anemometers
. . **laser anemometers**
RT flow velocity
velocity measurement
- laser annealing**
DEF Rapid heating of metals and/or alloys with the use of lasers.
GS heat treatment
. annealing
. . **laser annealing**
utilization
. laser applications
. . **laser annealing**
RT heating
laser ablation
laser cutting
lasers
normalizing (heat treatment)
recrystallization
simulated annealing
tempering
- laser applications**
GS utilization
. **laser applications**
. . laser ablation
. . laser annealing
. . laser cooling
. . laser cutting
. . laser deposition
. . . pulsed laser deposition
. . laser drilling
. . laser fusion
. . laser guidance
. . laser guide stars
. . laser heating
. . laser induced fluorescence
. . laser interferometry
. . laser machining
. . laser microscopy
. . laser power beaming
. . laser propulsion
. . laser spectroscopy
. . . optogalvanic spectroscopy
. . laser ranging
. . laser weapons
. . laser welding
. . . satellite laser ranging
RT airborne lasers
data transmission
hole burning
laser-induced breakdown spectroscopy
metal working
optical data storage materials
optical disks
optical radar
optical relay systems
photoacoustic spectroscopy
plasmadynamic lasers
production engineering
quantum electronics
rapid ballistics identification
spaceborne lasers
speckle holography
speckle interferometry
technology utilization
ultrashort pulsed lasers
- laser arrays**
(*added January 1991*)
DEF A group of laser emitters arranged to give a desired combined output.
GS arrays
. **laser arrays**
RT coupled modes
far fields
laser beams
laser modes
laser outputs
lasers
linear arrays
near fields
optical coupling
phased arrays
semiconductor lasers
stimulated emission devices

laser beams

surface emitting lasers

laser beam defocusing

USE **thermal blooming**

laser beams

(added September 1988)

SN (LIMITED TO THE TRANSMISSION AND INTERACTIONS OF LASER RADIATION; FOR THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER USE 'LASER OUTPUTS')

UF *laser radiation*

GS beams (radiation)

. light beams

. . **laser beams**

coherent radiation

. coherent electromagnetic radiation

. . **laser beams**

electromagnetic radiation

. coherent electromagnetic radiation

. . **laser beams**

. light beams

. . **laser beams**

RT beam steering

beamforming

four-wave mixing

free-space optical communication

holographic optical elements

laser ablation

laser arrays

thermal lensing

laser cavities

UF *optical generators*

GS cavities

. **laser cavities**

RT amplifiers

laser stability

lasers

light amplifiers

∞ optics

pulse generators

semiconductor lasers

solid state devices

solid state lasers

stimulated emission devices

laser communication

USE **optical communication**

laser cooling

(added March 1995)

SN ((COOLING OF ATOMIC PARTICLES BY LASERS, NOT COOLING OF LASERS))

GS cooling

. **laser cooling**

utilization

. laser applications

. . **laser cooling**

RT atom optics

atomic energy levels

optical pumping

Penning effect

quenching (atomic physics)

trapped particles

laser cutting

DEF The cutting of material by means of lasers.

GS cutting

. **laser cutting**

utilization

. laser applications

. . **laser cutting**

RT blanking (cutting)

cutters

focusing

forming techniques

laser annealing

laser drilling

laser heating

laser machining

laser outputs

laser target interactions

machining

∞ materials science

metal cutting

micromachining

splitting

thermal blooming

laser damage

GS damage

. radiation damage

. . **laser damage**

radiation effects

. radiation damage

. . **laser damage**

RT

burns (injuries)

laser ablation

pulsed radiation

radiation hazards

laser deposition

(added December 1992)

GS deposition

. **laser deposition**

. . pulsed laser deposition

utilization

. laser applications

. . **laser deposition**

. . . pulsed laser deposition

RT

crystal growth

epitaxy

excimer lasers

laser heating

nanostructure growth

superconducting films

vapor deposition

laser diodes

USE **semiconductor lasers**

laser doppler velocimeters

GS measuring instruments

. **laser doppler velocimeters**

optical equipment

. **laser doppler velocimeters**

RT

flow measurement

nonintrusive measurement

optical measuring instruments

particle image velocimetry

velocity measurement

laser drilling

GS drilling

. **laser drilling**

utilization

. laser applications

. . **laser drilling**

RT

focusing

laser ablation

laser cutting

micromachining

laser fusion

GS utilization

. laser applications

. . **laser fusion**

RT

aspheric optics

∞ fusion

glass lasers

high power lasers

inertial fusion (reactor)

Nova Laser System

plasmas (physics)

Shiva laser system

Laser Geodynamic Satellite

USE **LAGEOS (satellite)**

laser guidance

DEF Guidance system for rockets or projectiles, utilizing a laser beam for a precise trajectory to a designated target.

GS guidance (motion)

. terminal guidance

. . **laser guidance**

utilization

. laser applications

. . **laser guidance**

RT

computer programs

homing devices

impact prediction

laser guide stars

missile control

laser guide stars

(added November 1994)

DEF Use of a laser to excite either Rayleigh backscattering or the mesospheric sodium layer to create artificial references for adaptive optics.

GS utilization

. laser applications

. . **laser guide stars**

RT adaptive optics

celestial reference systems

image processing

instrument compensation

laser guidance

reference stars

star trackers

laser gyroscopes

DEF Ring-laser angular rotation sensors for stabilizing and controlling large space structures, for space vehicle guidance, etc.

GS gyroscopes

. **laser gyroscopes**

RT large space structures

optical gyroscopes

Sagnac effect

∞ sensors

spacecraft guidance

stabilization

Titan 4B launch vehicle

laser heating

GS heating

. **laser heating**

utilization

. laser applications

. . **laser heating**

RT

heat sources

laser ablation

laser cutting

laser deposition

pulse heating

pulsed laser deposition

pulsed lasers

thermal blooming

YAG lasers

laser induced fluorescence

DEF Emission of electromagnetic radiation that is caused by the flow of laser radiation into the emitting body and which ceases abruptly with the excitation. Used for LIF (fluorescence).

UF *LIF (fluorescence)*

GS emission

. light emission

. . luminescence

. . . fluorescence

. . . . **laser induced fluorescence**

utilization

. laser applications

. . **laser induced fluorescence**

RT

electromagnetic absorption

excitation

extinction

irradiation

laser outputs

laser spectroscopy

Mossbauer effect

phosphors

photoionization

photoluminescence

plasma radiation

Laser Interferometer Gravitational-Wave

Observatory

(added December 2000)

USE **LIGO (observatory)**

Laser Interferometer Space Antenna

(added December 2000)

USE **LISA (observatory)**

laser interferometry

DEF The design and use of interferometers in which a laser is the light source. The monochromaticity and brilliance of the laser light enables the differentiation between interfering beams of hundreds of meters, in contrast to a maximum of 20 centimeters for the classical interferometers.

GS interferometry

. **laser interferometry**

utilization

- . laser applications
- .. **laser interferometry**
- RT LIGO (observatory)
- LISA (observatory)
- Sagnac effect
- laser machining**
- (added June 1995)
- UF *laser micromachining*
- GS machining
- . **laser machining**
- utilization
- . laser applications
- .. **laser machining**
- RT laser cutting
- metal working
- laser materials**
- RT alexandrite
- fiber lasers
- gadolinium-gallium garnet
- maser materials
- ∞ materials
- metal vapor lasers
- quantum well lasers
- rhodamine
- sulfur hexafluoride
- xenon chloride lasers
- xenon fluoride lasers
- YAG lasers
- laser micromachining*
- USE **laser machining**
- laser microscopy**
- DEF The application of a laser microscope having a ceramic tube in which a metal vapor is formed at 1600 degrees C. Copper (or other metal atoms) are excited and amplify light so that, when used with a projection microscope, the object to be magnified is illuminated. The power of the emitted beam on the screen remains constant.
- GS microscopy
- . **laser microscopy**
- utilization
- . laser applications
- .. **laser microscopy**
- RT electro-optics
- light amplifiers
- metal vapor lasers
- microelectronics
- laser mode locking**
- GS locking
- . **laser mode locking**
- RT injection locking
- lasers
- optical coupling
- laser modes**
- GS modes
- . **laser modes**
- RT axial modes
- field mode theory
- helium-neon lasers
- laser arrays
- laser stability
- optical resonators
- TEA lasers
- waveguide lasers
- wavelengths
- laser outputs**
- SN (LIMITED TO THE QUANTITATIVE AND QUALITATIVE CHARACTERISTICS OF THE RADIATION PRODUCED BY A LASER; FOR THE TRANSMISSION AND INTERACTIONS OF LASER RADIATION USE 'LASER BEAMS')
- GS output
- . **laser outputs**
- RT atmospheric lasers
- ∞ coherence
- coherent light
- diffraction radiation
- distributed feedback lasers
- dye lasers
- excimer lasers
- frequency pulling
- gasdynamic lasers
- glass lasers
- helium-neon lasers
- high power lasers
- holographic interferometry
- laser arrays
- laser cutting
- laser induced fluorescence
- laser stability
- maser outputs
- Nova Laser System
- optical resonators
- optical waveguides
- phase matching
- photon beams
- picosecond pulses
- pulse duration
- quantum efficiency
- radiant flux density
- Shiva laser system
- speckle patterns
- thermal blooming
- tube lasers
- two-wavelength lasers
- ultraviolet lasers
- volumetric efficiency
- waveguide lasers
- wavelengths
- x ray lasers
- xenon chloride lasers
- xenon fluoride lasers
- YAG lasers
- laser plasma interactions**
- DEF The results of the actions of laser beams on electrically ducting fluids, such as plasmas or ionized gases.
- GS electromagnetic interactions
- . plasma-electromagnetic interaction
- .. **laser plasma interactions**
- plasma interactions
- . plasma-electromagnetic interaction
- .. **laser plasma interactions**
- RT backscattering
- electromagnetic coupling
- glass lasers
- ∞ interactions
- plasmas (physics)
- theta pinch
- laser plasmas**
- SN (EXCLUDES LASER OUTPUTS)
- GS particles
- . charged particles
- .. energetic particles
- ... plasmas (physics)
- **laser plasmas**
- . corpuscular radiation
- . energetic particles
- ... plasmas (physics)
- **laser plasmas**
- RT inertial fusion (reactor)
- laser ablation
- laser-induced breakdown
- spectroscopy
- lasers
- laser power beaming**
- (added November 1989)
- DEF Space-to-Earth power transmission utilizing a laser.
- UF *power transmission (lasers)*
- GS power beaming
- . **laser power beaming**
- utilization
- . laser applications
- .. **laser power beaming**
- RT energy conversion
- laser propulsion
- microwave power beaming
- microwave transmission
- satellite power transmission
- spacecraft power supplies
- laser propulsion**
- DEF The use of high power lasers for aircraft, rocket, or spacecraft propulsion by indirect conversion of laser heated propellants or working fluids to produce thrust; direct thrust generation with laser light pressure on the vehicle;
- direct conversion of laser energy into electricity for propulsion.
- GS propulsion
- . electric propulsion
- .. **laser propulsion**
- . low thrust propulsion
- . photonic propulsion
- ... **laser propulsion**
- . spacecraft propulsion
- . photonic propulsion
- ... **laser propulsion**
- utilization
- . laser applications
- .. **laser propulsion**
- RT aircraft engines
- hybrid propulsion
- laser power beaming
- optical pumping
- power beaming
- propulsion system configurations
- propulsive efficiency
- Rankine cycle
- rocket engines
- spacecraft propulsion
- thermodynamic cycles
- laser pumping**
- DEF The application of a laser beam of appropriate frequency to a laser medium so that absorption of the radiation increases the population of atoms or molecules in higher energy states.
- GS optical pumping
- . **laser pumping**
- RT fiber lasers
- lasers
- maser pumping
- ∞ pumping
- rare gas-halide lasers
- solar-pumped lasers
- stimulated emission devices
- wiggler magnets
- laser radar*
- USE **optical radar**
- laser radiation*
- USE **laser beams**
- laser range finders**
- GS measuring instruments
- . distance measuring equipment
- .. range finders
- ... optical range finders
- **laser range finders**
- . optical measuring instruments
- .. optical range finders
- ... **laser range finders**
- optical equipment
- . optical measuring instruments
- .. optical range finders
- ... **laser range finders**
- RT LAGEOS (satellite)
- laser ranging
- lunar rangefinding
- lunar retroreflectors
- navigation aids
- navigation instruments
- satellite laser ranging
- laser rangefinding*
- (added July 2001)
- USE **laser ranging**
- laser ranger/tracker**
- RT airborne lasers
- range finders
- rangefinding
- tracking (position)
- laser ranging**
- (added July 2001)
- DEF A technique for determining the distance to a target by measuring the absolute time-of-flight of a laser pulse traveling from a transmitter to a reflector on the target and back to a detector at the transmission site.
- UF *laser rangefinding*
- LLR (*ranging*)
- lunar laser ranging*

laser spectrometers

- GS rangefinding
 - . **laser ranging**
 - .. satellite laser ranging
- utilization
 - . laser applications
 - .. **laser ranging**
 - ... satellite laser ranging
- RT laser range finders
 - lunar rangefinding
 - retroreflection
 - retroreflectors

laser spark spectroscopy
(added June 2001)

- USE **laser-induced breakdown spectroscopy**

laser spectrometers

- DEF Spectrometers that use a laser.
- GS measuring instruments
 - . spectrometers
 - .. **laser spectrometers**
- RT absorption spectra
 - infrared spectroscopy
 - laser spectroscopy

laser spectroscopy

- DEF The use of lasers for spectroscopic analysis; particularly in Raman spectroscopy.
- GS spectroscopy
 - . optical emission spectroscopy
 - .. **laser spectroscopy**
 - ... optogalvanic spectroscopy
- utilization
 - . laser applications
 - .. **laser spectroscopy**
 - ... optogalvanic spectroscopy
- RT chemical analysis
 - laser induced fluorescence
 - laser spectrometers
 - laser-induced breakdown spectroscopy
 - photoacoustic spectroscopy
 - spectroscopic analysis
 - spectrum analysis

laser stability

- DEF Characteristic of a laser beam free from oscillations.
- GS stability
 - . **laser stability**
- RT continuous wave lasers
 - frequency pulling
 - frequency stability
 - laser cavities
 - laser modes
 - laser outputs

laser target designators

- DEF Laser equipment aboard spacecraft for identifying satellites, missiles, and objects in space.
- RT ∞ detectors
 - missile tracking
 - satellite tracking
 - target recognition
 - targets

laser target interactions

- DEF Interactions where lasers are used to produce heating, fusion, or damage in targets.
- RT ∞ interactions
 - laser ablation
 - laser cutting
 - lasers
 - pulsed lasers
 - targets

laser targets

- DEF Objects subjected to laser radiation, especially for laser fusion applications.
- GS targets
 - . **laser targets**
- RT glass lasers
 - lasers

laser weapons

- DEF Military applications of high power lasers (mainly gasdynamic and chemical mixing lasers).

- GS utilization
 - . laser applications
 - .. **laser weapons**
 - weapon systems
 - . **laser weapons**
 - weapons
 - . **laser weapons**
- RT fusion weapons
 - lasers
 - military technology
 - space weapons
 - stimulated emission devices

laser welding

- DEF Microspot welding with a laser beam.
- GS utilization
 - . laser applications
 - .. **laser welding**
 - welding
 - . fusion welding
 - .. **laser welding**
- RT bonding
 - heating
 - laser ablation
 - pulsed lasers
 - soldering

laser windows

- GS windows (intervals)
 - . **laser windows**
- RT bandwidth
 - energy bands
 - lasers

laser-induced breakdown spectroscopy

(added June 2001)

DEF A non-intrusive, spectroscopic technique wherein a laser pulse is focused on the target sample to form a laser spark or plasma. The emitted light from the spark is then used to identify elemental constituents and quantify abundances of measured species.

- UF *laser spark spectroscopy*
 - LASS (spectroscopy)*
 - LIBS (spectroscopy)*
- GS spectroscopy
 - . **laser-induced breakdown spectroscopy**
- RT absorption spectroscopy
 - emission spectra
 - laser applications
 - laser plasmas
 - laser spectroscopy
 - plasma diagnostics
 - Raman spectroscopy
 - spectroscopic analysis

lasers

DEF Devices for producing light by emission of energy stored in a molecular or atomic system when stimulated by light or an electric discharge. (From Light Amplification by Stimulated Emission of Radiation.) Used for Fabry-Perot lasers, natural lasers, and optical masers.

- UF *Fabry-Perot lasers*
 - natural lasers*
 - optical masers*
- GS stimulated emission devices

. lasers

- .. airborne lasers
- .. argon lasers
- .. atmospheric lasers
- .. carbon lasers
- .. chemical lasers
- ... HCL lasers
- ... HCL argon lasers
- ... chemical oxygen-iodine lasers
- .. continuous wave lasers
- .. distributed feedback lasers
- .. free electron lasers
- .. gamma ray lasers
- .. gas lasers
- ... carbon dioxide lasers
- ... carbon monoxide lasers
- ... DF lasers
- ... excimer lasers
- ... HCL lasers
- ... HCL argon lasers
- ... HCN lasers
- ... helium-neon lasers

- ... HF lasers
 - ... nitrogen lasers
 - ... rare gas-halide lasers
 - ... krypton fluoride lasers
 - ... xenon chloride lasers
 - ... xenon fluoride lasers
 - ... TEA lasers
 - ... ultraviolet lasers
 - .. gasdynamic lasers
 - .. glass lasers
 - .. high power lasers
 - ... Nova Laser System
 - ... Shiva laser system
 - .. infrared lasers
 - .. injection lasers
 - ... quantum cascade lasers
 - .. iodine lasers
 - ... chemical oxygen-iodine lasers
 - .. liquid lasers
 - .. metal vapor lasers
 - .. neodymium lasers
 - .. nuclear pumped lasers
 - .. organic lasers
 - ... dye lasers
 - .. plasmadynamic lasers
 - .. pulsed lasers
 - ... Q switched lasers
 - ... ultrashort pulsed lasers
 - ... ultraviolet lasers
 - .. Raman lasers
 - .. ring lasers
 - .. semiconductor lasers
 - ... aluminum gallium arsenide lasers
 - ... gallium arsenide lasers
 - ... quantum cascade lasers
 - ... quantum well lasers
 - ... YLF lasers
 - .. solar-pumped lasers
 - .. solid state lasers
 - ... aluminum gallium arsenide lasers
 - ... DBR lasers
 - ... fiber lasers
 - ... gallium arsenide lasers
 - ... quantum cascade lasers
 - ... quantum well lasers
 - ... ruby lasers
 - ... YAG lasers
 - ... YLF lasers
 - .. spaceborne lasers
 - .. surface emitting lasers
 - .. tunable lasers
 - .. two-wavelength lasers
 - .. waveguide lasers
 - ... fiber lasers
 - .. x ray lasers
- RT alkali vapor lamps
- amplifiers
 - beam switching
 - ∞ coherence
 - coherent electromagnetic radiation
 - coherent light
 - electron pumping
 - gadolinium-gallium garnet
 - garnets
 - hole burning
 - holography
 - infrared windows
 - interplanetary communication
 - interstellar masers
 - Kerr electrooptical effect
 - laser altimeters
 - laser annealing
 - laser arrays
 - laser cavities
 - laser mode locking
 - laser plasmas
 - laser pumping
 - laser target interactions
 - laser targets
 - laser weapons
 - laser windows
 - lasing
 - light amplifiers
 - light modulation
 - light sources
 - light transmission
 - lunar communication
 - masers
 - microballoons

- molecular oscillators
- nuclear pumping
- optical communication
- optical data processing
- optical memory (data storage)
- optical pumping
- optical resonators
- ∞ optics
 - phase matching
 - photodiodes
 - photonics
 - pulse generators
 - pulsed radiation
 - quantum amplifiers
 - quantum electronics
 - rapid ballistics identification
 - Senarmont polariscopes
 - solid state devices
 - space communication
 - stimulated emission
 - thermal blooming
 - threshold currents
 - transient oscillations
 - traveling wave modulation
- lasing**
 - DEF Generation of visible or IR light waves having very nearly a single frequency by pumping or exciting electrons into high energy states in a stimulated emission device (laser).
 - RT distributed feedback lasers
 - electron transitions
 - excimer lasers
 - hole burning
 - krypton fluoride lasers
 - lasers
 - nitrogen lasers
 - optical transition
 - rare gas-halide lasers
 - stimulated emission devices
 - surface emitting lasers
- LASS (spectroscopy)*
(added June 2001)
 - USE **laser-induced breakdown spectroscopy**
- LASV*
 - USE **F-111 aircraft**
- latches**
 - DEF Devices that fasten one thing to another, as a rocket to a launcher, but are subject to ready release so that things may be separated.
 - RT fasteners
 - holders
 - linkages
 - pins
- latch-up**
 - DEF A p-n-p-n self-sustaining low impedance state which is a type of electronic malfunction.
 - RT CMOS
 - electrical impedance
 - integrated circuits
 - p-n-p-n junctions
 - switching circuits
- late stars**
 - GS celestial bodies
 - . stars
 - . . **late stars**
 - . . . cool stars
 - carbon stars
 - flare stars
 - K stars
 - M stars
 - Van Biesbroeck star
 - Mira variables
 - Omicron Ceti star
 - S stars
 - RT asymptotic giant branch stars
 - dwarf stars
 - early stars
 - giant stars
 - main sequence stars
 - red dwarf stars
 - red giant stars
- stellar evolution
- subgiant stars
- lateness**
 - RT delay
 - scheduling
- latent heat**
 - DEF The unit quantity of heat required for isothermal change in a state of a unit mass of matter. Latent heat is termed heat of fusion, heat of sublimation, heat of vaporization, depending on the change of state involved.
 - GS chemical properties
 - . thermochemical properties
 - . . **latent heat**
 - . . . heat of fusion
 - . . . heat of vaporization
 - heat
 - . enthalpy
 - . . **latent heat**
 - . . . heat of fusion
 - . . . heat of vaporization
 - thermodynamic properties
 - . enthalpy
 - . . **latent heat**
 - . . . heat of fusion
 - . . . heat of vaporization
 - thermochemical properties
 - . enthalpy
 - . . **latent heat**
 - . . . heat of fusion
 - . . . heat of vaporization
 - thermophysical properties
 - . . **latent heat**
 - . . . heat of fusion
 - . . . heat of vaporization
- latent heat of fusion*
 - USE **heat of fusion**
- lateral control**
 - UF *lateralization*
 - roll control*
 - GS attitude control
 - . **lateral control**
 - RT ailerons
 - aircraft control
 - altitude control
 - automatic control
 - ∞ control
 - directional control
 - elevons
 - helicopter control
 - longitudinal control
 - manual control
 - missile control
 - roll
 - satellite attitude control
 - satellite control
- lateral oscillation**
 - UF *snaking*
 - RT directional stability
 - roll
 - stability augmentation
 - transverse oscillation
 - turning flight
 - wing rock
 - yaw
 - yawing moments
- lateral stability**
 - UF *dihedral effect*
 - lateral*
 - GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . attitude stability
 - **lateral stability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . attitude stability
 - **lateral stability**
 - RT aerodynamic stability
 - aircraft stability
 - dihedral angle
 - directional stability
 - flow stability
 - handedness
- hovering stability
- longitudinal stability
- roll
- rolling moments
- rotary stability
- spacecraft stability
- turning flight
- vertical orientation
- lateral*
 - USE **lateral stability**
- lateralization*
 - USE **lateral control**
- laterites**
 - GS soils
 - . **laterites**
 - RT decomposition
 - rocks
 - tropical regions
 - water
- latex**
 - RT acrylic resins
 - elastomers
 - rubber
 - synthetic rubbers
- lathes**
 - GS tools
 - . machine tools
 - . . **lathes**
 - . . . turret lathes
 - RT ∞ construction materials
 - grinding machines
- Latin square method**
 - DEF In mathematics, the use of an n x n square array of n different symbols, each symbol appearing once in each row and once in each column.
 - RT ∞ mathematics
 - ∞ methodology
 - ∞ variable
- latitude**
 - DEF Angular distance from a primary great circle or plane.
 - GS **latitude**
 - . geomagnetic latitude
 - RT coordinates
 - geodetic coordinates
 - longitude
 - position (location)
- latitude measurement**
 - RT longitude measurement
 - ∞ measurement
 - navigation
 - positioning
- lattice energy**
(added March 2002)
 - DEF A measure of the stability of a crystal lattice, given by the energy that would be released in bringing constituent ions from an infinite distance apart to their locations in a stable lattice.
 - RT binding energy
 - crystal lattices
 - ∞ energy
 - interatomic forces
 - ionic crystals
 - lattice parameters
 - lattice vibrations
- lattice imperfections*
 - USE **crystal defects**
- lattice parameters**
 - GS independent variables
 - . **lattice parameters**
 - RT crystal lattices
 - crystallography
 - lattice energy
 - Patterson map
 - superlattices

lattice vibrations

x ray analysis

lattice vibrations

GS vibration
. **lattice vibrations**
RT crystal defects
crystal lattices
forbidden bands
lattice energy
particle motion
phonons
random vibration
spin-lattice relaxation
thermal energy

∞ lattices

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT crystal lattices
lattices (mathematics)

lattices (mathematics)

UF *sublattices*
GS mathematical logic
. **lattices (mathematics)**
. . Boolean algebra
. . . Boolean functions
RT communication theory
Kakutani theorem
∞ lattices
∞ mathematics
∞ matrices
set theory
vortex lattice method

Latvia

GS nations
. **Latvia**
RT Baltic sea
Europe

Laue method

GS x ray analysis
. **Laue method**
RT crystal lattices
crystallography
diffraction
∞ methodology
x ray diffraction

laughing

RT emotions
human reactions

launch clouds

USE **exhaust clouds**

launch complexes

USE **launching bases**

launch costs

(added December 1995)
GS costs
. **launch costs**
RT cost reduction
financial management
launch vehicles
spacecraft launching

launch dates

RT launching
spacecraft launching
time
turnaround (STS)

launch escape systems

UF *LES (escape systems)*
GS escape systems
. **launch escape systems**
RT escape capsules
escape rockets
∞ systems

launch time

USE **launch windows**

launch vehicle configurations

RT Advanced Launch System (STS)
aerodynamic configurations
∞ configurations

HOTOL launch vehicle
missile configurations
propulsion system configurations
recoverable launch vehicles
spacecraft configurations

launch vehicles

DEF Rockets or other vehicles used to transport satellites, space probes, or other payloads from the Earth (or other terrestrial surfaces) to space.

UF *carrier rockets*

GS launch vehicles

. Ablestar launch vehicle
. Ariane launch vehicle
. . Ariane 4 launch vehicle
. . Ariane 5 launch vehicle
. Atlas launch vehicles
. . Atlas Able 5 launch vehicle
. . Atlas Agena B launch vehicle
. . Atlas Agena launch vehicles
. . Atlas Centaur launch vehicle
. . Atlas SLV-3 launch vehicle
. Blue Scout rocket vehicle
. Blue Streak launch vehicle
. Centaur launch vehicle
. . Atlas Centaur launch vehicle
. Delta launch vehicle
. . Delta 3 launch vehicle
. . Delta 4 Heavy launch vehicle
. . Delta 4 launch vehicle
. Diamant launch vehicle
. Eldo launch vehicle
. Europa launch vehicles
. . Europa 1 launch vehicle
. . Europa 2 launch vehicle
. . Europa 3 launch vehicle
. . Europa 4 launch vehicle
. heavy lift launch vehicles
. . Ares 5 cargo launch vehicle
. . Delta 4 Heavy launch vehicle
. Energiya launch vehicle
. . Proton launch vehicle
. Hyla-Star rocket vehicle
. Juno launch vehicles
. . Juno 1 launch vehicle
. . Juno 2 launch vehicle
. Little Joe 2 launch vehicle
. Nomad launch vehicle
. Nova launch vehicles
. Pegasus air-launched booster
. RAM B launch vehicle
. recoverable launch vehicles
. reusable launch vehicles
. . single stage to orbit vehicles
. . . Delta Clipper
. . . HOTOL launch vehicle
. . X-33 reusable launch vehicle
. . X-34 reusable launch vehicle
. Saturn launch vehicles
. . Saturn 1 launch vehicles
. . . Saturn 1 SA-1 launch vehicle
. . . Saturn 1 SA-10 launch vehicle
. . . Saturn 1 SA-2 launch vehicle
. . . Saturn 1 SA-3 launch vehicle
. . . Saturn 1 SA-4 launch vehicle
. . . Saturn 1 SA-5 launch vehicle
. . . Saturn 1 SA-6 launch vehicle
. . . Saturn 1 SA-7 launch vehicle
. . . Saturn 1 SA-8 launch vehicle
. . . Saturn 1 SA-9 launch vehicle
. . Saturn 1B launch vehicles
. . Saturn 2 launch vehicles
. . Saturn 5 launch vehicles
. . Saturn D launch vehicle
. Scout launch vehicle
. Standard Launch Vehicles
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
. Thor launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
. Thorad launch vehicles
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
. Titan Centaur launch vehicle
. Titan launch vehicles

. . Titan 3 launch vehicle
. . Titan 4 launch vehicle
. . . Titan 4B launch vehicle
. Ares 1 launch vehicle
. Long March launch vehicles
. vanguard 2 launch vehicle
. Vega launch vehicle
. Zenit launch vehicles
. . Ares 1 first stage
. . Ares 1 upper stage
RT Advanced Launch System (STS)
aerospace planes
booster rocket engines
∞ booster rockets
∞ boosters
Centaur project
exhaust clouds
flight test vehicles
Jupiter C rocket vehicle
Jupiter project
landing modules
launch costs
launchers
launching
missile launchers
missiles
multiengine vehicles
multistage rocket vehicles
National Launch Vehicle Program
rocket catapults
rocket engines
rocket launchers
rocket launching
rocket vehicles
∞ rockets
Saturn project
Scout project
Space Processing Applications
Rocket
∞ spacecraft
spacecraft launching
sustainer rocket engines
test vehicles
Titan project
∞ vehicles
Vernier engines
∞ winged vehicles

launch windows

DEF The postulated openings in the continuum of time or of space, through which a spacecraft or missile must be launched in order to achieve a desired encounter, rendezvous, impact or the like. Used for launch time.

UF *launch time*

GS windows (intervals)

. **launch windows**

RT launching
rocket launching
spacecraft launching

launchers

DEF Specifically, structures or devices, often incorporating tubes, a group of tubes, or a set of tracks, from which self-propelled missiles are sent forth and by means of which the missiles usually are aimed or imparted initial guidance -- distinguished in this specific sense the catapult. Broadly, structures, machines, or devices, including catapults, by means of which airplanes, rockets, or the like are directed, hurled, or sent forth. Used for launching devices.

UF *launching devices*

GS launchers

. aircraft launching devices
. . JATO engines
. catapults
. . rocket catapults
. gun launchers
. hypervelocity launchers
. missile launchers
. . mobile missile launchers
. rocket launchers
. . rocket catapults
RT launch vehicles
launching
launching pads
launching sites
mass drivers

National Launch Vehicle Program
 rocket launching
 Titan project

launching

GS **launching**
 . air launching
 . rocket launching
 . . liftoff (launching)
 . . lunar launch
 . . orbital launching
 . sea launching
 . spacecraft launching
 . . liftoff (launching)

RT countdown
 exhaust clouds
 launch dates
 launch vehicles
 launch windows
 launchers
 missile launchers
 National Launch Vehicle Program
 prelaunch tests
 rocket launchers
 ∞ shot
 starting
 Titan project

launching bases
 DEF Areas such as Cape Kennedy or Vandenberg Air Force Base that have several launch sites. Used for launch complexes.

UF *launch complexes*

GS **launching bases**
 . Cape Kennedy launch complex

RT ∞ facilities
 ground support equipment

launching devices
 USE **launchers**

launching pads
 DEF The load-bearing base or platform from which a rocket vehicle is launched.

GS sites
 . launching sites
 . . **launching pads**

RT flame deflectors
 gantry cranes
 ground support equipment
 launchers
 liftoff (launching)

∞ pad
 ∞ platforms
 spacecraft launching
 umbilical towers

launching sites
 DEF Defined areas from which a rocket vehicle is launched, either, operationally or for test purposes; specifically, at Cape Kennedy or Vandenberg, any of the several areas equipped to launch a rocket.

GS sites
 . **launching sites**
 . . launching pads

RT exhaust clouds
 gantry cranes
 ground support equipment
 launchers
 missile launchers
 missile silos
 missiles
 National Launch Vehicle Program
 rocket catapults
 rocket launchers

lava
 DEF A general term for a molten extrusive; also, for the rock that is solidified from it.

GS effusives
 . **lava**
 geophysical fluids
 . **lava**

RT aggregates
 calderas
 cones (volcanoes)
 Earth resources
 igneous rocks
 magma

maria
 Mars volcanoes
 minerals
 regolith
 rhyolite
 rocks
 soils
 volcanic eruptions
 volcanoes
 volcanology

Laval number
 GS dimensionless numbers
 . **Laval number**
 ratios
 . **Laval number**

Laves phases
 (added August 1998)
 GS solid phases
 . **Laves phases**

RT alloys
 crystal lattices
 crystal structure
 cubic lattices
 interstitials
 microstructure
 phase transformations

∞ **law**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT claiming
 law (jurisprudence)
 laws

law (jurisprudence)
 DEF A written rule or collection of rules for action or conduct binding upon the population of a community.

UF *forensic sciences*
statutes

GS **law (jurisprudence)**
 . international law
 . . air law
 . . sea law
 . . space law
 . public law
 . . liabilities
 . . . legal liability
 . . penalties

RT constitution
 crime
 intellectual property

∞ law
 politics
 regulations
 voting

lawrencium
 GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **lawrencium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **lawrencium**
 metals
 . actinide series
 . . transuranium elements
 . . . **lawrencium**

laws
 GS **laws**
 . Child-Langmuir law
 . closure law
 . Coffin-Manson law
 . conservation laws
 . Fourier law
 . Hookes law
 . Kepler laws
 . Newton pressure law
 . Newton second law
 . Newton-Busemann law
 . Ohms law
 . radiation laws
 . . Kirchhoff law of radiation
 . . Stefan-Boltzmann law

. . Stokes law of radiation
 . Biot-Savart law
 . scaling laws
 . similitude law
 . Snells law
 . Tafel law
 . Weber-Fechner law

RT ∞ law
 rules
 ∞ Stokes law

∞ **layers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *lamina*
plies

RT anticlines
 atmospheric boundary layer
 barrier layers
 boundary layers
 coatings
 deep scattering layers
 Earth ionosphere
 Ekman layer
 flat layers
 folds (geology)
 formations
 geosynclines
 intercalation
 interlayers
 laminates
 membranes
 mixing layers (fluids)
 monomolecular films
 multilayer insulation
 plasma layers
 ply orientation
 regions
 sedimentary rocks
 shear layers
 shock layers
 strata
 stratification
 substrates
 surface layers
 synclines
 three dimensional boundary layer
 turbulent boundary layer

layouts

RT blueprints
 circuit diagrams
 construction
 descriptive geometry

∞ design
 ∞ drawing
 drawings
 engineering drawings
 models
 ∞ plans
 surveys

lay-up
 DEF Production of reinforced plastics by positioning the reinforced material (such as glass) in the mold prior to impregnation with resin.

RT aramid fibers
 carbon fiber reinforced plastics
 composite materials
 composite structures
 epoxy resins
 fiber orientation
 laminates
 reinforcing fibers
 stacking sequence (composite materials)

Lazarev meteorite
 GS celestial bodies
 . meteorites
 . . iron meteorites
 . . . **Lazarev meteorite**

RT stony meteorites

LC circuits
 GS circuits
 . **LC circuits**

RT inductance

LCROSS (satellite)

network analysis
network synthesis
parametric amplifiers
RC circuits
RL circuits
RLC circuits
time constant

LCRE Reactor

USE **Lithium Cooled Reactor Experiment**

LCROSS (satellite)

(added December 2009)

DEF Robotic spacecraft and associated mission designed to confirm the presence or absence of water ice in a permanently shadowed crater near a lunar polar region. Launched June 18, 2009.

UF *Lunar Crater Observation and Sensing Satellite*

GS artificial satellites
. lunar satellites

. . **LCROSS (satellite)**

lunar spacecraft

. lunar probes

. . **LCROSS (satellite)**

. lunar satellites

. . **LCROSS (satellite)**

unmanned spacecraft

. space probes

. . lunar probes

. . . **LCROSS (satellite)**

RT lunar craters

lunar exploration

Lunar Reconnaissance Orbiter

lunar resources

lunar surface

LDEF

USE **Long Duration Exposure Facility**

LDR (telescope)

USE **Large Deployable Reflector**

leaching

RT autoclaving
beneficiation
dissolving
elution
extraction
flushing
hydrometallurgy
percolation
permeability
∞ separation

lead (metal)

GS chemical elements

. **lead (metal)**

. . lead isotopes

metals

. **lead (metal)**

. . lead isotopes

RT heavy metals

lead acetates

GS acetates

. **lead acetates**

esters

. **lead acetates**

lead compounds

. **lead acetates**

organic compounds

. lead organic compounds

. . **lead acetates**

lead acid batteries

DEF The common automobile batteries in which the electrodes are grids of metallic lead containing lead oxides that change in composition during charging and discharging. The electrolyte generally is dilute sulfuric acid.

GS electrochemical cells

. electric batteries

. . storage batteries

. . . **lead acid batteries**

RT chemical auxiliary power units

∞ electric cells

electrolytic cells

energy storage
nickel iron batteries
∞ power supplies

lead alloys

GS alloys

. **lead alloys**

RT bearing alloys

indium alloys

solders

lead chlorides

GS halogen compounds

. chlorine compounds

. . chlorides

. . . **lead chlorides**

. halides

. . chlorides

. . . **lead chlorides**

. . metal halides

. . . **lead chlorides**

lead compounds

. **lead chlorides**

lead compounds

UF *plumbane*

GS **lead compounds**

. lead acetates

. lead chlorides

. lead molybdates

. lead oxides

. lead selenides

. lead sulfides

. lead tellurides

. lead titanates

. . lead zirconate titanates

. lead tungstates

RT ∞ chemical compounds

∞ Group 4A compounds

∞ metal compounds

lead isotopes

GS chemical elements

. lead (metal)

. . **lead isotopes**

. nuclides

. . isotopes

. . . **lead isotopes**

metals

. lead (metal)

. . **lead isotopes**

lead molybdates

GS lead compounds

. **lead molybdates**

molybdenum compounds

. molybdates

. . **lead molybdates**

lead organic compounds

GS organic compounds

. **lead organic compounds**

. . lead acetates

RT ∞ chemical compounds

∞ metal compounds

lead oxides

GS chalcogenides

. oxides

. . metal oxides

. . . **lead oxides**

lead compounds

. **lead oxides**

lead poisoning

GS diseases

. toxic diseases

. . **lead poisoning**

toxicity

. **lead poisoning**

RT occupational diseases

∞ poisoning

smog

lead selenides

GS chalcogenides

. selenides

. . **lead selenides**

lead compounds

. **lead selenides**

selenium compounds

. selenides

. . **lead selenides**

lead sulfides

GS chalcogenides

. sulfides

. . inorganic sulfides

. . . **lead sulfides**

lead compounds

. **lead sulfides**

sulfur compounds

. sulfides

. . inorganic sulfides

. . . **lead sulfides**

lead tellurides

GS chalcogenides

. tellurides

. . **lead tellurides**

lead compounds

. **lead tellurides**

tellurium compounds

. tellurides

. . **lead tellurides**

lead titanates

GS lead compounds

. **lead titanates**

. . lead zirconate titanates

titanium compounds

. titanates

. . **lead titanates**

. . . lead zirconate titanates

lead tungstates

GS lead compounds

. **lead tungstates**

tungsten compounds

. tungstates

. . **lead tungstates**

lead zirconate titanates

DEF Dense ceramics with high piezoelectric coefficients and a high relative permittivity.

GS ceramics

. **lead zirconate titanates**

lead compounds

. lead titanates

. . **lead zirconate titanates**

titanium compounds

. titanates

. . lead titanates

. . . **lead zirconate titanates**

. zirconium titanates

. . . **lead zirconate titanates**

zirconium compounds

. zirconium titanates

. . **lead zirconate titanates**

RT ferroelectric materials

piezoelectric ceramics

leaders (meteorology)

(added August 1999)

GS electric current

. electric discharges

. . lightning

. . . **leaders (meteorology)**

. . . stepped leaders

leadership

RT morale

personnel management

leading edge flaps

DEF Control surfaces at the leading edges of airfoils. Hinged panels deflected downward to induce and control separation of the air flow.

UF *Krueger flaps*

GS airfoils

. flaps (control surfaces)

. . wing flaps

. . . **leading edge flaps**

brakes (for arresting motion)

. aerodynamic brakes

. . wing flaps

. . . **leading edge flaps**

. aircraft brakes

. . wing flaps

. . . **leading edge flaps**

- control surfaces
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge flaps**
- drag devices
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge flaps**
- RT aircraft structures
 - vortex flaps
- ∞ winged vehicles
 - wings
- leading edge slats**
 - UF *wing slats*
 - GS airfoils
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge slats**
 - brakes (for arresting motion)
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - . aircraft brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - control surfaces
 - . flaps (control surfaces)
 - . . wing flaps
 - . . . **leading edge slats**
 - drag devices
 - . aerodynamic brakes
 - . . wing flaps
 - . . . **leading edge slats**
 - RT boundary layer control
 - split flaps
 - spoilers
 - trailing edge flaps
 - wing slots
- leading edge sweep**
 - GS geometry
 - . Euclidean geometry
 - . . angles (geometry)
 - . . . sweep angle
 - sweepback
 - **leading edge sweep**
- leading edge thrust**
 - DEF The increase in lift produced by highly swept, low-aspect ratio wings which develop a strong separation vortex; however, an even larger increase in drag is produced.
 - GS thrust
 - . **leading edge thrust**
 - RT aerodynamic forces
 - airfoils
 - leading edges
 - lift
 - wing loading
- leading edges**
 - GS edges
 - . **leading edges**
 - . . blunt leading edges
 - . . sharp leading edges
 - RT airfoils
 - forebodies
 - leading edge thrust
 - thrust distribution
 - trailing edges
 - vortex flaps
 - wing rock
- leaf area index**
 - GS ratios
 - . indexes (ratios)
 - . . vegetative index
 - . . . **leaf area index**
 - RT canopies (vegetation)
 - crop identification
 - crop inventories
 - leaves
 - photosynthetically active radiation
 - remote sensing
 - spectral reflectance
- leakage**
 - RT brush seals
 - cavities
- cracks
 - defects
 - ∞ escape
- fluid flow
 - intrusion
- labyrinth seals
 - loss of coolant
- losses
 - permeability
 - pinholes
 - porosity
 - ∞ reduction
 - seepage
 - wastes
- Lear jet aircraft**
 - GS commercial aircraft
 - . **Lear jet aircraft**
 - jet aircraft
 - . **Lear jet aircraft**
 - RT ∞ aircraft
- learning**
 - GS **learning**
 - . astronaut training
 - . conditioning (learning)
 - . habituation (learning)
 - . maze learning
 - . transfer of training
 - RT achievement
 - aptitude
 - behavior
 - child device
 - deconditioning
 - education
 - educational resources
 - educational television
 - habits
 - instructors
 - knowledge
 - memory
 - motivation
 - reinforcement (psychology)
 - responses
 - retention (psychology)
 - students
 - teaching machines
 - textbooks
 - training analysis
 - training evaluation
 - universities
- learning curves**
 - RT asymptotic methods
 - ∞ curves
- learning machines*
 - USE **machine learning**
- learning theory**
 - RT child device
 - education
 - problem solving
 - ∞ theories
- leasing**
 - DEF Contracting for the use and possession of land, buildings, etc., for a specified time and fixed payments.
 - GS procurement
 - . **leasing**
 - RT contracts
 - land use
 - NASA programs
 - resources management
 - site selection
- least squares method**
 - DEF Any statistical procedure that involves minimizing the sum of squared differences.
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **least squares method**
 - RT backpropagation (artificial intelligence)
 - correlation
 - curve fitting
 - Gauss-Markov theorem
 - mean square values
 - ∞ methodology
- optimization
 - parameter identification
 - quality control
 - regression analysis
 - simultaneous equations
- leather**
 - RT clothing
 - collagens
 - shoes
 - skin (anatomy)
- leaves**
 - RT brown wave effect
 - canopies (vegetation)
 - deciduous trees
 - defoliant
 - defoliation
 - foliage
 - green wave effect
 - herbicides
 - leaf area index
 - plant physiology
 - plants (botany)
- Lebanon**
 - GS nations
 - . **Lebanon**
 - RT Asia
- Lebesgue theorem**
 - GS analysis (mathematics)
 - . real variables
 - . . measure and integration
 - . . . **Lebesgue theorem**
 - theorems
 - . **Lebesgue theorem**
 - RT set theory
- lectures**
 - UF *speeches*
 - RT education
 - public speaking
 - speech
 - verbal communication
- LED (diodes)*
 - USE **light emitting diodes**
- Leda**
 - (added January 1996)
 - DEF A natural satellite of Jupiter orbiting at a mean distance of 11,094,000 kilometers.
 - GS celestial bodies
 - . natural satellites
 - . . Jupiter satellites
 - . . . **Leda**
 - RT Jupiter (planet)
- ledges**
 - RT cliffs
 - rocks
 - topography
- lee waves**
 - DEF Internal waves occurring on the downstream sides of submarine ridges.
 - RT air currents
 - barotropic flow
 - surface waves
 - tropospheric waves
 - vertical air currents
- leg (anatomy)**
 - GS anatomy
 - . limbs (anatomy)
 - . . **leg (anatomy)**
 - . . . feet (anatomy)
 - . . . knee (anatomy)
 - . . . thigh
 - appendages
 - . **leg (anatomy)**
 - . . feet (anatomy)
 - . . knee (anatomy)
 - . . thigh
 - RT femur
 - gait
 - tibia
- legal liability**
 - GS law (jurisprudence)

Legendre functions

- . public law
- . . liabilities
- . . . **legal liability**
- RT air law
- contracts
- insurance (contracts)
- intellectual property
- international law
- judgments
- losses
- penalties
- prohibition

Legendre code

USE **computer programming**
neutron scattering

Legendre functions

UF *Legendre polynomials*
Legendre transformation

GS analysis (mathematics)
. complex variables
. . **Legendre functions**
functions (mathematics)
. **Legendre functions**

RT orthogonal functions
spherical harmonics

Legendre polynomials

USE **Legendre functions**

Legendre transformation

USE **Legendre functions**

legibility

RT character recognition
contrast
perception
printing
reading
resolution
symbols
visibility
vision

leguminous plants

GS farm crops
. **leguminous plants**
. . soybeans
plants (botany)
. **leguminous plants**
. . soybeans

RT agriculture
botany
Earth resources

∞ food
hay
nitrogenation
nodules
vegetables

Leidenfrost phenomenon

GS phase transformations
. vaporizing
. . boiling
. . . nucleate boiling
. . . **Leidenfrost phenomenon**

RT film boiling
heat transfer

LEM (lunar module)

USE **Lunar Module**

lemmas

USE **theorems**

length

DEF The larger of the two dimensions of the open face.

GS dimensions
. **length**
. . diffusion length

RT distance
thickness

Lennard-Jones gas

RT binary fluids
gas viscosity

Lennard-Jones potential

Lennard-Jones potential

RT computerized simulation
intermolecular forces
Lennard-Jones gas
molecular interactions
potential theory

lens antennas

GS antennas
. directional antennas
. . **lens antennas**
. radio antennas
. . microwave antennas
. . . **lens antennas**
microwave equipment
. microwave antennas
. . **lens antennas**
radio equipment
. radio antennas
. . microwave antennas
. . . **lens antennas**

RT antenna design
dipole antennas
horn antennas
lenses
multibeam antennas
radar antennas
waveguide antennas
wire grid lenses

lens design

RT antireflection coatings
aspheric optics
computer aided design

∞ design
gradient index optics
lenses
optical correction procedure

∞ optics
product development
stigmatism
zoom lenses

lenses

DEF Transparent optical elements, so constructed that they serve to change the degree of convergence of the transmitted rays.

GS **lenses**
. aspheric optics
. contact lenses
. Fresnel lenses
. gravitational lenses
. magnetic lenses
. wide angle lenses
. wire grid lenses
. zoom lenses

RT astigmatism
cameras
cataracts
circumsolar telescopes
eye (anatomy)
eyepieces
focusing
gradient index optics
integrated optics
lens antennas
lens design
magnification
numerical aperture
optical coatings
optical equipment
optical filters
optical materials

∞ optics
panoramic cameras
photographic equipment
refracting telescopes
refraction
reticles
stigmatism
streak cameras
telescopes
vignetting

lenticular bodies

GS symmetrical bodies
. **lenticular bodies**

RT axisymmetric bodies

∞ bodies
convexity

LEO

USE **low Earth orbits**

LEO environments

USE **Earth orbital environments**

Leonardo Logistics Module (ISS)

(added April 2005)
USE **Multi-Purpose Logistics Modules**

Leonid meteoroids

GS celestial bodies
. meteoroid showers
. . **Leonid meteoroids**
meteoroids
. . **Leonid meteoroids**

leptons

DEF In the classification of subatomic particles according to mass, the lightest of all particles; examples of leptons are the electron and positron.

GS particles
. elementary particles
. . fermions
. . . **leptons**
. . . . antineutrinos
. . . . electrons
. conduction electrons
. free electrons
. high energy electrons
. relativistic electron beams
. hot electrons
. N electrons
. negatrons
. photoelectrons
. pi-electrons
. polarons
. solar electrons
. muons
. neutrinos
. solar neutrinos
. positrons

RT charged particles
charm (particle physics)
gluons
mesons
partons
quantum chromodynamics
quark parton model

LES (escape systems)

USE **launch escape systems**

LES (mathematics)

(added October 1997)

USE **large eddy simulation**

LES (satellites)

USE **Lincoln Experimental Satellites**

LESA (lunar exploration system)

USE **Lunar Exploration System for Apollo**

lesions

GS injuries
. **lesions**
. . pulmonary lesions

RT abrasion
burns (injuries)

Lesotho

GS nations
. **Lesotho**

RT Africa
Republic of South Africa

Lesser Antilles

GS landforms
. islands
. . West Indies
. . . **Lesser Antilles**

RT Atlantic Ocean

lessons learned

(added March 2008)

DEF Knowledge or understanding gained

by experience. The lesson must be significant in that it has real or assumed impact on operations; valid in that it is factually and technically correct; and applicable in that it identifies a specific design, process, or decision that reduces or eliminates the potential for failures and mishaps, or reinforces a positive result.

- GS knowledge
 - . **lessons learned**
- RT accident investigation
 - accident prevention
 - accidents
 - documentation
 - experience
 - failure analysis
 - mission planning
 - quality control
 - reliability engineering

lethality

- RT carbon monoxide poisoning
 - damage
 - destruction

lethargy

- RT boredom
 - ∞ depression
 - detachment
 - frustration
 - human behavior
- ∞ inhibition
 - monotony

letters (symbols)

USE **symbols**

leucine

- GS acids
 - . amino acids
 - . . . **leucine**
 - . . . norleucine
- organic compounds
 - . amino acids
 - . . **leucine**
 - . . . norleucine

leukemias

- GS diseases
 - . tumors
 - . . neoplasms
 - . . . cancer
 - **leukemias**
- RT bone marrow
 - occupational diseases

leukocytes

- UF *white blood cells*
- GS cells (biology)
 - . blood cells
 - . . **leukocytes**
 - . . . eosinophils
 - . . . lymphocytes
 - . . . monocytes
 - . . . neutrophils
- RT biocompatibility
 - blood cell count
 - bone marrow
 - erythrocytes
 - immune systems
 - interleukins

leukopenia

- GS signs and symptoms
 - . **leukopenia**
- RT infectious diseases

∞ **level**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT chemical energy
 - free energy
 - height
 - internal energy
 - level (horizontal)
 - level (quantity)

level (horizontal)

- GS **level (horizontal)**
 - . liquid levels
- RT ∞ grade

gradients

∞ level

slopes

level (quantity)

- GS **level (quantity)**
 - . effective perceived noise levels
 - . energy levels
 - . . atomic energy levels
 - . . electron states
 - . . ground state
 - . . molecular energy levels
 - . . . intermolecular forces
 - . . . rotational states
 - . . . vibrational states
 - . . yrast state
- RT amplitudes
 - displacement
- ∞ flux
 - flux (rate)
 - flux density
- ∞ intensity
- ∞ level
 - loudness
 - magnitude
 - value

leveling

- SN (EXCLUDES METAL WORKING)
- RT adjusting
 - consistency
 - datum (elevation)
 - flattening
 - metal working
- ∞ rolling
 - smoothing
 - winding

levers

- RT cantilever members
 - handles
 - knobs
- ∞ machinery
 - manual control
 - mechanical devices
 - pedals

levitation

- GS **levitation**
 - . acoustic levitation
- RT buoyancy
 - electrostatic gyroscopes
 - flotation
 - frictionless environments
 - levitation melting
 - magnetic bearings
 - magnetic levitation vehicles
 - suspension systems (vehicles)
 - vacuum melting

levitation melting

DEF A metallurgical process in which a piece of metal placed above a coil carrying a high frequency current can be supported against gravity by the Lorentz force caused by the induced surface currents in the metal. At the same time, the heat produced by Joule dissipation melts the metal.

- GS phase transformations
 - . melting
 - . . **levitation melting**
- RT electric current
 - external surface currents
 - levitation
 - liquid metals
 - low gravity manufacturing
 - magnetic suspension
- ∞ metallurgy
 - ohmic dissipation
 - resistance heating
 - space manufacturing
 - space processing

Lewis base

- RT amines
 - electrons

Lewis numbers

- GS dimensionless numbers
 - . **Lewis numbers**

ratios

- . **Lewis numbers**
- RT density (mass/volume)
 - diffusion coefficient
 - fluid flow
 - heat transfer
 - mass flow
 - mass transfer
 - specific heat
 - thermal conductivity

Lexan (trademark)

- GS carbon compounds
 - . carbonates
 - . . polycarbonates
 - . . . **Lexan (trademark)**
- esters
 - . polycarbonates
 - . . **Lexan (trademark)**
- RT ∞ polymers
 - resins

LFA thrusters

(added April 2001)

USE **magnetoplasmadynamic thrusters**

LFO

USE **Landsat follow-on missions**

liabilities

- GS law (jurisprudence)
 - . public law
 - . . **liabilities**
 - . . . legal liability
- RT air law
 - commerce
 - disciplining
 - losses
 - penalties
 - regulations

Liapunov functions

- UF *Lyapunov functions*
- GS analysis (mathematics)
 - . real variables
 - . . **Liapunov functions**
 - . . . functions (mathematics)
 - . **Liapunov functions**
- RT differential equations

Liberia

- GS nations
 - . **Liberia**
- RT Africa

libraries

- RT bibliographies
 - catalogs (publications)
 - data retrieval
 - documentation
 - documents
 - information dissemination
 - information resources management
 - information retrieval
 - information systems
 - integrated library systems
 - interservice data exchange program
 - literature
 - museums
- ∞ reference systems
 - selective dissemination of information
 - textbooks
 - world data centers

libration

DEF A real or apparent oscillatory motion, particularly the apparent oscillation of the moon. Because of libration more than half of the moon's surface is revealed to an observer on the Earth even though the same side of the moon is always toward the Earth, because the moon's periods of rotation and revolution are the same. Other motions regarded as librations are long period orbital motions and periodic perturbations in orbital elements.

- RT Earth limb
 - Lissajous figures
 - lunar far side
 - lunar limb
- ∞ motion

librational motion

nutaton
orbital resonances (celestial mechanics)
precession
rotation

librational motion

RT Lagrange coordinates
∞ motion
nutaton
orbital resonances (celestial mechanics)

LIFS (spectroscopy)

(added June 2001)

USE **laser-induced breakdown spectroscopy**

Libya

UF *Lybia*
GS nations
. **Libya**
RT Africa

Libyan desert

GS land
. deserts
. . **Libyan desert**
RT Africa

licensing

GS **licensing**
. open source licensing (computers)
RT copyrights
intellectual property
patent applications
policies
regulations

lichens

GS plants (botany)
. **lichens**
RT algae
fungi
lacunas
symbiosis

lidar

USE **optical radar**

lie groups

GS algebra
. **lie groups**
. . spinor groups
geometry
. differential geometry
. . **lie groups**
. . . spinor groups
RT group theory
supergravity
supersymmetry

Liechtenstein

GS nations
. **Liechtenstein**
RT Europe

Lienard potential

GS potential energy
. electric potential
. . **Lienard potential**
RT electric current
electric fields

lies

RT galvanic skin response
mental performance

LIF (fluorescence)

USE **laser induced fluorescence**

life (biology)

USE **life sciences**

life (durability)

UF *lifetime (durability)*
GS **life (durability)**
. carrier lifetime
. fatigue life
. half life
. plasma lifetime

. satellite lifetime
. service life
. storage stability

RT accelerated life tests
aircraft survivability
depletion
depreciation
durability
failure analysis
long term effects
∞ longevity
Mills ratio
MTBF
∞ resistance
retirement for cause
systems health monitoring
vulnerability

life cycle costs

DEF The sum of the acquisition costs and maintenance costs for the life of a system.

GS costs
. **life cycle costs**
RT concurrent engineering
cost analysis
cost effectiveness
design to cost
financial management
management planning
production costs
systems engineering
value engineering

life detectors

RT biomarkers
biosatellites
∞ detectors
extraterrestrial life

life rafts

GS rafts
. **life rafts**
RT floats
inflatable structures
lifeboats

life sciences

DEF A collective discipline encompassing biology, physiology, psychology, medicine, and sometimes sociology and other related areas.

Used for life (biology).

UF *life (biology)*
GS **life sciences**
. extraterrestrial life
. molecular biology
RT abiogenesis
aging (biology)
biological evolution
∞ biology
chemical evolution
environmental engineering
neurology
∞ physical sciences
psychopharmacology
∞ science

life span

SN (LIMITED TO THE LIFE SCIENCES)
RT age factor
aging (biology)
death
existence
gerontology
∞ longevity
mortality
∞ span

life support systems

GS support systems
. **life support systems**
. . biopaks
. . closed ecological systems
. . emergency life sustaining systems
. . . AEPS
. . portable life support systems
. . . AEPS
. . . IMLSS
RT aerospace environments
air conditioning
artificial gravity

astronaut locomotion
∞ atmospheres
biosatellites
breathing apparatus
Chlorella
environmental engineering
environments
exobiology
extravehicular mobility units
human factors engineering
long term effects
lunar environment
lunar logistics
lunar shelters
∞ manned maneuvering units
∞ nutrients
onboard equipment
oxygen masks
oxygen supply equipment
planetary environments
pressure suits
pressurized cabins
provisioning
rebreathing
Service Module (ISS)
space flight feeding
space habitats
spacecraft environments
survival
∞ sustaining
∞ systems
thermal environments
underwater breathing apparatus
vapor barrier clothing
ventilation
waste management
water
weightlessness

lifeboats

GS surface vehicles
. boats
. . **lifeboats**
water vehicles
. boats
. . **lifeboats**
RT Assured Crew Return Vehicle
life rafts
rafts
survival equipment
X-38 crew return vehicle

lifetime (durability)

USE **life (durability)**

lift

DEF That component of the total aerodynamic force acting on a body perpendicular to the undisturbed airflow relative to the body. To lift off, to take off in vertical ascent. Said of rocket vehicles. Used for aerodynamic lift, lift coefficients, lift distribution, lift forces, and variable lift.

UF *aerodynamic lift*
lift coefficients
lift distribution
lift forces
variable lift

GS aerodynamic characteristics
. **lift**
. . interference lift
. . jet lift
. . rotor lift
. . zero lift
aerodynamic forces
. **lift**
. . interference lift
. . jet lift
. . rotor lift
. . zero lift
dynamic characteristics
. **lift**
. . interference lift
. . jet lift
. . rotor lift
. . zero lift
RT aerodynamic coefficients
aerodynamic configurations
aerodynamic drag
aerodynamics
airfoils

- angle of attack
 aspect ratio
 camber
 distribution (property)
 drag
 externally blown flaps
 gliding
 ground effect (aerodynamics)
 hypersonic forces
 leading edge thrust
 pressure distribution
 sweep effect
 under surface blowing
 upper surface blowing
- lift augmentation**
 RT boundary layer control
 circulation control airfoils
 downwash
 peripheral jet flow
 spanwise blowing
 STOVL aircraft
 tangential blowing
 upper surface blown flaps
 vortex flaps
- lift coefficients*
 USE **aerodynamic coefficients**
lift
- lift devices**
 UF *lifting surfaces*
 RT boundary layer control
 ∞ devices
 direct lift controls
 drag devices
 externally blown flaps
 flaps (control surfaces)
 magnetic levitation vehicles
 slots
 upper surface blown flaps
- lift distribution*
 USE **force distribution**
lift
- lift drag ratio**
 DEF The ratio of lift to drag obtained by dividing the lift by the drag or the lift coefficient by the drag coefficient. Used for drag balance.
 UF *drag balance*
 GS ratios
 . **lift drag ratio**
 RT aerodynamic balance
 aerodynamic coefficients
 aerodynamic drag
 aerodynamic stalling
 boundary layer separation
 drag reduction
 force distribution
 pressure ratio
- lift fans**
 UF *fanlift devices*
 RT ducted fans
 fan in wing aircraft
 lifting rotors
 propeller fans
 rotary wings
 short takeoff aircraft
 turbofans
 vertical takeoff aircraft
 XV-11A aircraft
- lift forces*
 USE **lift**
- lifting bodies**
 UF *lifting surfaces*
 GS **lifting bodies**
 . lifting reentry vehicles
 . . FDL-5 reentry vehicle
 . . HL-10 reentry vehicle
 . . HLD-35 reentry vehicle
 . . Janus spacecraft
 . . M-2 lifting body
 . . . M-2F2 lifting body
 . . X-20 aircraft
 . . X-24 aircraft
 . M-2F3 lifting body
- RT aerodynamic configurations
 airfoils
 bluff bodies
 ∞ bodies
 ∞ devices
 lunar flying vehicles
 reentry vehicles
 towed bodies
 waveriders
- lifting reentry vehicles**
 UF *reentry gliders*
space gliders
 GS lifting bodies
 . **lifting reentry vehicles**
 . . FDL-5 reentry vehicle
 . . HL-10 reentry vehicle
 . . HLD-35 reentry vehicle
 . . Janus spacecraft
 . . M-2 lifting body
 . . . M-2F2 lifting body
 . . X-20 aircraft
 . . X-24 aircraft
 reentry vehicles
 . maneuverable reentry bodies
 . . **lifting reentry vehicles**
 . . . FDL-5 reentry vehicle
 . . . HL-10 reentry vehicle
 . . . HLD-35 reentry vehicle
 . . . Janus spacecraft
 . . . M-2 lifting body
 M-2F2 lifting body
 . . . X-20 aircraft
 . . . X-24 aircraft
- RT aerospace planes
 ∞ aircraft
 ASSET gliders
 Astro vehicle
 boostglide vehicles
 gliders
 HOPE aerospace plane
 hypersonic gliders
 manned reentry
 manned spacecraft
 recoverable spacecraft
 reentry
 spacecraft reentry
- lifting rotors**
 GS airfoils
 . wings
 . . rotary wings
 . . . **lifting rotors**
 bearingless rotors
 rotating bodies
 . rotors
 . . rotary wings
 . . . **lifting rotors**
 bearingless rotors
 RT ground effect machines
 lift fans
 rotary wing aircraft
 short takeoff aircraft
 vertical takeoff aircraft
- lifting surfaces*
 USE **lift devices**
lifting bodies
surfaces
- liftoff (launching)**
 GS launching
 . rocket launching
 . . **liftoff (launching)**
 . spacecraft launching
 . . **liftoff (launching)**
 RT booster rocket engines
 countdown
 launching pads
 rocket firing
 rocket thrust
- ∞ **lifts**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT conveyors
 cranes
 elevators (lifts)
 escalators
- jacks (lifts)
 winches
- ligaments**
 RT connective tissue
 joints (anatomy)
- ligands**
 RT chemical bonds
 chemical composition
 coordination number
- light (visible radiation)**
 DEF Visible radiation (about 0.4 to 0.7 microns in wavelength) considered in terms of its luminous efficiency, i.e., evaluated in proportion to its ability to stimulate the sense of sight. Used for optical spectrum and visible radiation.
 UF *optical spectrum*
visible radiation
 GS electromagnetic radiation
 . **light (visible radiation)**
 . . coherent light
 . . gegenschein
 . . polarized light
 . . sky radiation
 . . . airglow
 geocoronal emissions
 nightglow
 twilight glow
 . . . dayglow
 . . . elves
 . . . sprites (atmospheric physics)
 . . sunlight
 . . zodiacal light
 RT atmospheric radiation
 attenuation
 beams (radiation)
 black body radiation
 brightness
 Cerenkov radiation
 coherent electromagnetic radiation
 coherent radiation
 color
 critical frequencies
 darkness
 dichroism
 electromagnetic spectra
 energy absorption
 excitons
 extraterrestrial radiation
 ∞ flash
 geometrical optics
 glare
 illuminance
 incandescence
 infrared radiation
 light curve
 lighting equipment
 line spectra
 lumens
 luminaires
 luminance
 luminescence
 luminosity
 luminous intensity
 monochromatic radiation
 near infrared radiation
 near ultraviolet radiation
 opacity
 optical depolarization
 optical emission spectroscopy
 optical measurement
 optical properties
 ∞ optics
 photics
 photometry
 photons
 photonuclear reactions
 photoperiod
 photophilic plants
 photophoresis
 photosensitivity
 planetary radiation
 polarized electromagnetic radiation
 polarizers
 ∞ radiation
 Raman spectra
 reflection
 refraction

light adaptation

refractivity
shadows
sky brightness
solar radiation
thermal radiation
transmittance
ultraviolet spectra
visibility
visible spectrum

light absorption

USE **electromagnetic absorption**

light adaptation

GS adaptation
. retinal adaptation
. . **light adaptation**
sensitivity
. photosensitivity
. . **light adaptation**
RT flash blindness
night vision
pupillometry
thresholds (perception)
vision

Light Airborne Multipurpose System

UF *LAMPS program*
GS navigation aids
. **Light Airborne Multipurpose System**
onboard equipment
. airborne equipment
. . **Light Airborne Multipurpose System**
RT aircraft equipment
flight instruments
navigation instruments
∞ systems

light aircraft

GS **light aircraft**
. Beech 99 aircraft
. . Beechcraft 18 aircraft
. . C-33 aircraft
. . C-35 aircraft
. Cessna 172 aircraft
. Cessna 205 aircraft
. Cessna 210 aircraft
. Cessna 402B aircraft
. Cessna L-19 aircraft
. DH 125 aircraft
. DO-27 aircraft
. DO-28 aircraft
. F-28 helicopter
. Firebee 2 target drone aircraft
. G-1 aircraft
. light helicopters
. . OH-4 helicopter
. . OH-5 helicopter
. . OH-6 helicopter
. . OH-58 helicopter
. light intratheater transport
. MH-262 aircraft
. Mystere 20 aircraft
. OH-13 helicopter
. OH-23 helicopter
. PD-808 aircraft
. Piper aircraft
. . PA-34 Seneca aircraft
. Saab 105 aircraft
. SC-7 aircraft
. U-10 aircraft
. VZ-8 aircraft
RT agricultural aircraft
∞ aircraft
biplanes
drone aircraft
general aviation aircraft
∞ low wing aircraft
∞ military aircraft
observation aircraft
passenger aircraft
pilotless aircraft
reconnaissance aircraft
submersible aircraft
∞ subsonic aircraft
training aircraft
transport aircraft
ultralight aircraft

utility aircraft
water takeoff and landing aircraft

light alloys

GS alloys
. **light alloys**
. . aluminum alloys
. . . aluminum-lithium alloys
. . beryllium alloys
. . magnesium alloys
RT ∞ metallurgy
metals

light amplifiers

UF *optical amplifiers*
GS amplifiers
. **light amplifiers**
RT fiber lasers
four-wave mixing
HCN lasers
image converters
image enhancement
image intensifiers
Lallemand cameras
laser cavities
laser microscopy
lasers
microchannels
∞ optics
photocathodes
quantum amplifiers
ultrashort pulsed lasers
ultraviolet lasers

light armed reconnaissance aircraft

USE **COIN aircraft**

light beams

UF *light probes*
GS beams (radiation)
. **light beams**
. . laser beams
electromagnetic radiation
. **light beams**
. . laser beams
RT Bragg cells
four-wave mixing
optical waveguides
photon beams
rare gas-halide lasers

light bulbs

USE **luminaires**

light communication

USE **optical communication**

light curve

RT ∞ curves
light (visible radiation)
stellar radiation

light duration

USE **flash pulse duration**

light elements

GS chemical elements
. **light elements**
RT ∞ elements
low density materials

light emission

UF *optical emission*
GS emission
. **light emission**
. . incandescence
. . luminescence
. . . bioluminescence
. . . cathode glow
. . . cathodoluminescence
. . . chemiluminescence
. . . electroluminescence
. . . fluorescence
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
. . . lunar luminescence
. . . optical resonance

. . . photoluminescence
. . . . triboluminescence
. . . . x ray fluorescence
. . . shock wave luminescence
. . . sonoluminescence
. . . spacecraft glow
. . . thermoluminescence

RT airglow
auroral absorption
auroral ionization
auroral spectroscopy
auroras
diffraction radiation
dimming
electromagnetic radiation
linear polarization
∞ optics
self sustained emission
sky brightness
spectral emission
stimulated emission
white holes (astronomy)

light emitting diodes

DEF Pn junction semiconductor devices that emit incoherent optical radiation when biased in the forward direction. Used for LED (diodes).

UF *LED (diodes)*
GS electronic equipment
. diodes
. . semiconductor diodes
. . . **light emitting diodes**
. . solid state devices
. . semiconductor devices
. . . **light emitting diodes**
optoelectronic devices
. **light emitting diodes**
RT aircraft instruments
alphanumeric characters
display devices
electroluminescence
fiber optics
luminescence
photonics
surface emitting lasers

light gas guns

GS gas guns
. **light gas guns**
RT hypervelocity projectiles

light helicopters

(added June 1989)
GS light aircraft
. **light helicopters**
. . OH-4 helicopter
. . OH-5 helicopter
. . OH-6 helicopter
. . OH-58 helicopter
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **light helicopters**
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-58 helicopter
RT ∞ aircraft
military helicopters
observation aircraft

light intensity

USE **luminous intensity**

light intratheater transport

GS light aircraft
. **light intratheater transport**
transport aircraft
. **light intratheater transport**
RT ∞ aircraft
COIN aircraft

light ions

DEF Ions of helium, boron, and other elements used in implantation experiments.
GS ions
. **light ions**
RT chemical elements
heavy ions

- plasmas (physics)
- light modulation**
- UF *optical maser modulation*
 - optical modulation*
 - GS modulation
 - . **light modulation**
 - . . Miros system
 - . . ultrasonic light modulation
 - RT amplitude modulation
 - Bragg cells
 - deformable mirrors
 - electro-optical effect
 - frequency modulation
 - Kerr electrooptical effect
 - lasers
 - light modulators
 - light valves
 - modulators
 - optical heterodyning
 - optical resonators
 - optical switching
 - ∞ optics
 - polarization modulation
 - pulse modulation
 - traveling wave modulation
 - tunable lasers
- light modulators**
(added September 1995)
- GS modulators
 - . **light modulators**
 - RT acousto-optics
 - electro-optics
 - light modulation
 - magneto-optics
 - optical data processing
- light pressure*
USE **illumiance**
- light probes*
USE **light beams**
- light scattering**
- GS scattering
 - . wave scattering
 - . . electromagnetic scattering
 - . . . **light scattering**
 - halos
 - transmission
 - . electromagnetic wave transmission
 - . . light transmission
 - . . . **light scattering**
 - halos
 - . wave propagation
 - . . **light scattering**
 - . . . halos
 - RT afterglows
 - atmospheric scattering
 - bidirectional reflectance
 - Brillouin effect
 - circumsolar radiation
 - diffuse radiation
 - electromagnetic absorption
 - forward scattering
 - gravitational lenses
 - infrared absorption
 - optical coatings
 - Rayleigh scattering
 - reflection nebulae
 - scatter plates (optics)
 - speckle patterns
 - transmissivity
 - tropospheric scattering
 - Umkehr effect
- light scattering meters**
- GS measuring instruments
 - . optical measuring instruments
 - . . **light scattering meters**
 - optical equipment
 - . optical measuring instruments
 - . . **light scattering meters**
 - RT meteorological instruments
- light sources**
- GS **light sources**
 - . illuminators
 - RT arc lamps
- cathodoluminescence
- dayglow
- duochromators
- electric arcs
- electroluminescence
- flash lamps
- glow discharges
- HCN lasers
- heat sources
- illuminating
- lasers
- lighting equipment
- luminaires
- mercury lamps
- monochromators
- moon
- plasma display devices
- point sources
- porous silicon
- radiation sources
- sun
- light speed**
- GS rates (per time)
 - . **light speed**
 - velocity
 - . **light speed**
 - RT high speed
 - relativistic velocity
 - Schwarzschild metric
- light transmission**
- UF *optical absorption*
 - GS transmission
 - . electromagnetic wave transmission
 - . . **light transmission**
 - . . . light scattering
 - halos
 - RT absorptance
 - atmospheric optics
 - atmospheric refraction
 - Fermat principle
 - fiber optics
 - flicker
 - gamma ray lasers
 - geometrical optics
 - haze
 - holographic optical elements
 - illuminating
 - ∞ illumination
 - integrated optics
 - lasers
 - low visibility
 - molecular absorption
 - opacity
 - optical bistability
 - optical coupling
 - optical properties
 - optical reflection
 - optical waveguides
 - rainbows
 - Sagnac effect
 - squeezed states (quantum theory)
 - stimulated emission devices
 - thermochromic coatings
 - translucence
 - transparence
 - turbidity
 - ultraviolet lasers
 - visibility
 - wave dispersion
 - wave propagation
- light transport aircraft**
DEF A classification of multiengine air-planes having a maximum passenger capacity of 30 seats and a gross weight of about 35,000 pounds.
- GS commercial aircraft
 - . **light transport aircraft**
 - transport aircraft
 - . **light transport aircraft**
 - RT ∞ aircraft
 - multiengine vehicles
 - passenger aircraft
- light valves**
DEF Optical shutters which, when activated by light, become either transparent or opaque.
- RT electro-optics
- light modulation
- liquid crystals
- optical data processing
- light water**
- DEF Water in which both hydrogen atoms in each molecule are of the isotope protium. Used for protium.
 - UF *protium*
 - GS hydrogen compounds
 - . **light water**
 - water
 - . **light water**
- light water breeder reactors**
- GS nuclear reactors
 - . breeder reactors
 - . . **light water breeder reactors**
 - RT heavy water reactors
- light water reactors**
- DEF Nuclear reactors using ordinary (rather than heavy) water as moderator.
 - GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . **light water reactors**
 - RT water moderated reactors
- light-cone expansion**
- RT field theory (physics)
 - Minkowski space
 - quantum mechanics
 - relativity
 - space-time functions
- Lighthill gas model**
- GS models
 - . **Lighthill gas model**
 - RT boundary layer flow
 - gas mixtures
 - gas transport
 - hypersonic flow
 - molecular theory
 - transport properties
- Lighthill method**
- RT airfoil profiles
 - airfoils
 - conformal mapping
 - flow theory
 - integral transformations
 - ∞ methodology
- lighting*
USE **illuminating**
- lighting equipment**
- GS **lighting equipment**
 - . illuminators
 - . luminaires
 - . . aircraft lights
 - . . airport lights
 - . . . runway lights
 - . . arc lamps
 - . . flash lamps
 - . . . alkali vapor lamps
 - . . mercury lamps
 - . . quartz lamps
 - . . searchlights
 - . . xenon lamps
 - RT ∞ electric equipment
 - ∞ equipment
 - ∞ flares
 - illuminating
 - light (visible radiation)
 - light sources
 - onboard equipment
 - waste energy utilization
- lightning**
- DEF A discharge of atmospheric electricity accompanied by a vivid flash of light.
 - GS electric current
 - . electric discharges
 - . . **lightning**
 - . . . ball lightning
 - . . . cloud-to-cloud discharges
 - . . . cloud-to-ground discharges
 - . . . intracloud discharges

lightning suppression

. . . leaders (meteorology)

. . . stepped leaders

RT ∞ arresters
atmospheric electricity
electric arcs
electric sparks
electricity
electrodeless discharges
elves
gas discharges
lightning suppression
nitrogenation
radiative recombination
sprites (atmospheric physics)
static electricity
thunderstorms
whistlers

lightning suppression

GS weather modification
. **lightning suppression**
RT atmospheric electricity
climatology
electric discharges
lightning
thunderstorms

lights

USE **luminaires**

lignin

DEF That part of plant material which is not saccharified by the action of 72 percent sulfuric acid or 42 percent hydrochloric acid, after the resins, waxes, and tannins have been removed.

GS biopolymers
. **lignin**
RT cellulose
∞ polymers

lignite

DEF Coal of relatively recent origin, an intermediate between peat and bituminous coal.

GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . coal
. . . . **lignite**
resources
. Earth resources
. fossil fuels
. . coal
. . . **lignite**
rocks
. sedimentary rocks
. . carbonaceous rocks
. . . coal
. . . **lignite**
RT ashes
bitumens
carbonaceous materials
coal gasification
coal liquefaction
coal utilization
coke
energy conversion
energy policy
energy technology
gaseous fuels
hydrocarbon fuel production
hydrogen production
hydropyrolysis
synthane

LIGO (observatory)

(added December 2000)

UF *Laser Interferometer
Gravitational-Wave Observatory*

GS antennas
. gravitational wave antennas
. . **LIGO (observatory)**
observatories
. astronomical observatories
. . **LIGO (observatory)**
RT astronomical interferometry
gravitational waves

laser interferometry

likelihood ratio

DEF The probability of a random drawing of a specified sample from a population, assuring a given hypothesis about the parameters of the population, divided by the probability of a random drawing of the same sample, assuring that the parameters of the population are such that this probability is maximized.

GS ratios
. **likelihood ratio**
statistical analysis
. **likelihood ratio**
RT estimates
Fisher information
mathematical models
maximum likelihood estimates
probability theory
statistical tests

limb brightening

DEF The increase in the intensity of radio or x ray brightness of the sun or other stars from its center to its limb.

RT B stars
brightness
brightness temperature
∞ limbs
solar flux
solar flux density
solar granulation
solar limb
stellar atmospheres
stellar luminosity

limb darkening

DEF A condition, sometimes observed on celestial bodies, in which the brightness of the object decreases as the edges or limbs of the object are approached. The sun and Jupiter exhibit limb darkening.

GS darkening
. **limb darkening**
RT B stars
binary stars
∞ limbs
solar limb
stellar atmospheres
stellar luminosity

∞ limbs

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Earth limb
limb brightening
limb darkening
limbs (anatomy)
lunar limb
planetary limb
solar limb

limbs (anatomy)

GS anatomy
. **limbs (anatomy)**
. . arm (anatomy)
. . . elbow (anatomy)
. . . forearm
. . hand (anatomy)
. . . fingers
. . leg (anatomy)
. . . feet (anatomy)
. . . knee (anatomy)
. . . thigh
RT appendages
hindlimb suspension
human body
∞ limbs

lime

USE **calcium oxides**

limen

DEF Threshold; a psychophysical concept denoting the lowest detectable intensity of any sensory stimulus.

RT psychological tests

thresholds (perception)

limestone

DEF Sedimentary rock composed principally of calcium carbonate (the mineral calcite) or the double carbonate of calcium and magnesium (the mineral dolomite) or mixture of the two.

GS rocks
. sedimentary rocks
. . **limestone**
RT aggregates
calcium carbonates
dolomite (mineral)
Earth resources
fluxes
minerals
schist
soils

limitations

USE **constraints**

limiter amplifiers

GS amplifiers
. **limiter amplifiers**

limiter circuits

GS circuits
. **limiter circuits**
. . clipper circuits
RT circulators (phase shift circuits)
clamping circuits
current regulators
power limiters

limiters (fusion reactors)

DEF Material aperture in fusion power reactors which collect particles from the outer surfaces of the plasmas to control their transport to regions of low density.

RT blankets (fusion reactors)
controlled fusion
divertors (fusion reactors)
fusion reactors
moderation (energy absorption)
moderators
plasma control
plasma loss
reactor design
reactor materials
tokamak devices
toroidal plasmas
walls

∞ limits

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ignition limits
limits (mathematics)
range (extremes)

limits (mathematics)

GS analysis (mathematics)
. calculus
. . **limits (mathematics)**
. . real variables
. . . extremum values
. . . **limits (mathematics)**
RT differential calculus
∞ envelopes
∞ limits

limnology

DEF The physical, chemical, meteorological, and especially the biological and ecological conditions in inland waters.

RT aquifers
arroyos
Earth hydrosphere
fresh water
geochemistry
geophysics
ground water
∞ hydraulics
hydrography
hydrology
Lake Texoma (OK-TX)
lakes
marine biology

- marine chemistry
 - ponds
 - potable water
 - rain
 - streams
 - water
 - water management
 - water pollution
 - water resources
 - wells
- limonite**
- GS iron compounds
 - . **limonite**
 - minerals
 - . **limonite**
- Lincoln Experimental Satellites**
- UF *LES (satellites)*
 - GS artificial satellites
 - . **Lincoln Experimental Satellites**
- line current**
- GS electric current
 - . **line current**
 - RT electric power supplies
 - electrodynamics
 - magnetohydrodynamic flow
 - plasma currents
 - ∞ power supplies
- line of sight**
- DEF An aim or observation taken with mechanical or optical aid to establish a direct path to an objective, target, etc.
 - RT area
 - coordinates
 - ∞ direction
 - loci
 - proportional navigation
 - targets
- line of sight communication**
- DEF Electromagnetic wave propagation, usually microwaves, in a straight line between the transmitter and receiver. The useful transmission distance is generally limited to the horizon as sighted from the elevation of the transmitter.
 - GS telecommunication
 - . communication
 - . . **line of sight communication**
 - RT boresight error
 - frequency modulation
 - space communication
 - television transmission
- line shape**
- GS shapes
 - . **line shape**
 - RT curves (geometry)
 - inflection points
 - ∞ profiles
- line spectra**
- DEF The spontaneous emission of electromagnetic radiation from the bound electrons as they jump from high to low energy levels in an atom. Used for spectral lines.
 - UF *spectral lines*
 - GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **line spectra**
 - Balmer series
 - D lines
 - electronic spectra
 - Fraunhofer lines
 - H lines
 - H alpha line
 - H beta line
 - H gamma line
 - K lines
 - Lyman spectra
 - Paschen series
 - Rydberg series
 - telluric lines
 - RT absorption spectra
 - atomic energy levels
 - Bohr theory
- emission spectra
 - fine structure
 - flame spectroscopy
 - frequencies
 - hyperfine structure
 - infrared spectra
 - light (visible radiation)
 - ∞ lines
 - molecular spectroscopy
 - oscillator strengths
 - pressure broadening
 - Raman spectra
 - Raman spectroscopy
 - resonance lines
 - rotational spectra
 - Seyfert galaxies
 - solar spectra
 - spectral bands
 - spectral emission
 - spectral energy distribution
 - spectral line width
 - spectral resolution
 - spectrograms
 - spectrum analysis
 - Stark effect
 - stellar spectra
 - ultraviolet spectra
 - visible spectrum
- lineament*
- USE **structural properties (geology)**
- linear AC alternators*
- USE **linear alternators**
- linear accelerators**
- DEF Devices for accelerating charged particles employing alternate electrodes and gaps arranged in a straight line, so proportioned that when their potentials are varied in the proper amplitudes and frequency, particles passing through them receive successive increments of energy.
 - GS particle accelerators
 - . **linear accelerators**
 - RT ∞ accelerators
 - electron accelerators
 - ion sources
 - multipactor discharges
 - neutron sources
- linear alternators**
- (added July 1991)
 - DEF An electromagnetic energy converter that converts reciprocating linear harmonic motion and driving force input to AC electrical power and energy output.
 - UF *linear AC alternators*
 - GS electric generators
 - . AC generators
 - . . **linear alternators**
 - RT free-piston engines
 - ∞ generators
 - Stirling engines
- linear amplifiers**
- GS amplifiers
 - . **linear amplifiers**
- linear arrays**
- DEF Antenna arrays whose elements are equally spaced along a straight line.
 - GS arrays
 - . antenna arrays
 - . . **linear arrays**
 - . . . endfire arrays
 - Yagi antennas
 - multispectral linear arrays
 - RT dipole antennas
 - focal plane devices
 - laser arrays
 - multiple beam interval scanners
 - phased arrays
 - pushbroom sensor modes
- linear circuits**
- GS circuits
 - . **linear circuits**
 - RT amplifiers
 - distributed parameter systems
- electrical resistance
 - superposition (mathematics)
 - transconductance
 - volt-ampere characteristics
- linear energy transfer (LET)**
- GS energy transfer
 - . **linear energy transfer (LET)**
 - RT ionizing radiation
- linear equations**
- GS algebra
 - . **linear equations**
 - . . Fflowcs Williams-Hawkings equation
 - . . linear evolution equations
 - . . Riccati equation analysis (mathematics)
 - . real variables
 - . . **linear equations**
 - . . . Fflowcs Williams-Hawkings equation
 - . . . linear evolution equations
 - . . . Riccati equation
 - RT determinants
 - differential equations
 - ∞ equations
 - Floquet theorem
 - Gaussian elimination
 - linear operators
 - matrices (mathematics)
 - operational calculus
 - polynomials
- linear evolution equations**
- DEF Denotes a large class of differential or integral differential equations which are used to describe the evolution in time of some physical systems from an initial state. The equation is said to be linear if the unknown functions and their derivatives appear linearly.
 - GS algebra
 - . linear equations
 - . . **linear evolution equations**
 - analysis (mathematics)
 - . real variables
 - . . linear equations
 - . . . **linear evolution equations**
 - RT difference equations
 - ∞ equations
- linear filters**
- GS **linear filters**
 - . Kalman filters
 - . reduced order filters
 - RT adaptive filters
 - electric filters
 - electromagnetic wave filters
 - ∞ filters
 - frequency response
 - nonlinear filters
- linear integrated circuits**
- GS circuits
 - . integrated circuits
 - . . **linear integrated circuits**
 - RT electronic packaging
 - large scale integration
 - microminiaturization
 - molecular electronics
 - operational amplifiers
 - transistor circuits
- linear operators**
- GS operators (mathematics)
 - . **linear operators**
 - RT linear equations
 - linear systems
 - linear transformations
- linear parameter-varying control**
- (added July 2002)
 - RT ∞ control
 - control systems design
 - feedback control
 - H-infinity control
 - multivariable control
- linear polarization**
- DEF Polarization of an electromagnetic

linear prediction

wave in which the electric vector at a fixed point in space remains pointing in a fixed direction although varying in magnitude. Also known as plane polarization.

- GS polarization (waves)
 - . **linear polarization**
- RT light emission
 - microwave emission
 - optical polarization
- ∞ polarization
 - polarized electromagnetic radiation
 - polarized radiation
 - radio astronomy

linear prediction

- GS predictions
 - . **linear prediction**
- RT computation
 - differential pulse code modulation
 - mathematical models
 - operations research
 - quality control
 - statistical analysis

linear programming

DEF An optimization problem characterization in which a set of parameter values are to be determined, subject to given linear constraints.

- GS optimization
 - . mathematical programming
 - . . **linear programming**
 - research
 - . **linear programming**
- RT ∞ applications of mathematics
 - computer programming
 - constraints
 - dynamic programming
 - formalism
 - game theory
 - matrices (mathematics)
 - nonlinear programming
 - numerical analysis
 - operations research
- ∞ programming
 - simplex method

linear quadratic Gaussian control

DEF A type of optimal-state feedback control whose design considers noise. It is primarily used to control aircraft and spacecraft systems. Used for LQG control.

- UF *LQG control*
- GS automatic control
 - . optimal control
 - . . **linear quadratic Gaussian control**
 - optimization
 - . linear quadratic regulator
 - . . **linear quadratic Gaussian control**
 - . optimal control
 - . . **linear quadratic Gaussian control**
- RT ∞ control
 - control systems design
 - control theory
 - feedback control
 - H-2 control
 - H-infinity control
 - Kalman filters

linear quadratic regulator

DEF A type of optimal-state feedback controller that does not consider noise. It is primarily used to control aircraft and spacecraft. Used for linear regulator and LQR.

- UF *linear regulator*
 - LQR*
- GS optimization
 - . **linear quadratic regulator**
 - . . linear quadratic Gaussian control
- RT ∞ control
 - control systems design
 - control theory
 - controllers
 - feedback control
 - Kalman filters

optimal control

linear receivers

- GS receivers
 - . **linear receivers**
- RT frequency response
 - Nyquist frequencies

linear regulator

- USE **linear quadratic regulator**

linear systems

- RT distributed parameter systems
 - linear operators
 - nonlinear systems
 - robustness (mathematics)
 - state estimation
- ∞ systems
 - tracking problem
 - uncertain systems

linear transformations

- GS algebra
 - . **linear transformations**
 - functions (mathematics)
 - . **linear transformations**
 - transformations (mathematics)
 - . **linear transformations**
- RT Fourier analysis
 - Jordan form
 - linear operators
 - matrices (mathematics)
 - orthogonal functions
 - Schwartz inequality
 - vector spaces

linear vibration

- GS vibration
 - . structural vibration
 - . . **linear vibration**
- RT free vibration
 - missile vibration
 - random vibration
 - vibration mode

linearity

DEF The maximum deviation between an actual instrument reading and the reading predicted by a straight line drawn between upper and lower calibration points; usually expressed as a percentage of the full scale.

- GS **linearity**
 - . collinearity
- RT accuracy
 - consistency
 - differential equations
 - dynamic characteristics
 - errors
 - functions (mathematics)
 - instrument errors
 - linearization
 - nonlinearity
 - tolerances (mechanics)
 - variability

linearization

- RT Bernoulli theorem
 - ∞ equations
 - Galerkin method
 - linearity
 - simplification

linen

- GS fabrics
 - . **linen**
 - fibers
 - . **linen**
 - textiles
 - . **linen**
- RT organic materials

liners

- USE **linings**

∞ lines

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT delay lines
 - line spectra
 - lines of force

pipelines
terminator lines
tetherlines
transmission lines
underground transmission lines

lines (geometry)

- GS geometry
 - . Euclidean geometry
 - . . **lines (geometry)**
 - . . . chords (geometry)
 - . . . geodesic lines
- RT radii
 - reciprocal theorems
 - segments

lines of force

- RT barium ion clouds
 - conjugate points
 - field aligned currents
 - flux pinning
 - flux transfer events
- ∞ force
- ∞ lines
 - magnetic circuits
 - magnetic domains
 - magnetic fields
 - magnetic flux
 - magnetic mirrors
 - magnetic properties
 - magnetostatic fields
 - nonuniform magnetic fields
 - polar cusps

Ling-Temco-Vought aircraft

- UF *LTV aircraft*
- GS **Ling-Temco-Vought aircraft**
 - . A-7 aircraft
 - . F-8 aircraft
 - . XC-142 aircraft
- RT ∞ aircraft

linguistics

- GS **linguistics**
 - . machine translation
 - . phonemics
 - . phonetics
 - . psycholinguistics
 - . semantics
 - . syntax
- RT languages
 - natural language processing
 - orthography
 - phonemes
 - predicate logic
 - speech
 - speech recognition

lining processes

- RT coating
 - coatings
 - insulation
 - linings
 - sealing
 - tunneling (excavation)

linings

- UF *liners*
- GS **linings**
 - . rocket linings
- RT bushings
 - ∞ casing
 - coatings
 - inserts
 - insulation
 - jackets
 - lining processes
 - sheaths
 - shielding
 - ∞ tubes

linkages

- RT cams
 - connectors
 - coupling
 - couplings
 - eccentrics
 - fasteners
 - fittings
 - joints (junctions)

- latches
- ∞ links
 - mechanical devices
 - unions (connectors)
 - yokes
- linking
 - USE **joining**
- ∞ links
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT chains
 - data links
 - linkages
 - links (mathematics)
- links (mathematics)**
 - GS geometry
 - . topology
 - . **links (mathematics)**
 - RT ∞ links
- Liouville equations**
 - GS analysis (mathematics)
 - . real variables
 - . differential equations
 - . partial differential equations
 - . . . **Liouville equations**
 - RT ∞ equations
 - plasma physics
 - plasmas (physics)
 - statistical mechanics
- Liouville theorem**
 - GS analysis (mathematics)
 - . complex variables
 - . **Liouville theorem**
 - theorems
 - . **Liouville theorem**
- lip reading**
 - GS communicating
 - . **lip reading**
 - reading
 - . **lip reading**
- lipid metabolism**
 - GS metabolism
 - . protein metabolism
 - . **lipid metabolism**
 - RT glucocorticoids
 - ∞ nutrients
 - oils
- lipids**
 - GS organic compounds
 - . **lipids**
 - . . . calciferol
 - . . . castor oil
 - . . . fats
 - . . . lipoproteins
 - . . . phyloquinone
 - . . . retinene
 - . . . steroids
 - cholesterol
 - corticosteroids
 - aldosterone
 - hydroxycorticosteroid
 - cortisone
 - glucocorticoids
 - estrogens
 - prostaglandins
 - tocopherol
 - RT amino acids
 - esters
 - glycerols
 - myelin
 - ∞ nutrients
- lipoic acid**
 - GS acids
 - . carboxylic acids
 - . . . fatty acids
 - . . . **lipoic acid**
 - organic compounds
 - . carboxylic acids
 - . . . fatty acids
- . . . **lipoic acid**
- lipoproteins**
 - GS biopolymers
 - . proteins
 - . . . **lipoproteins**
 - organic compounds
 - . lipids
 - . . . **lipoproteins**
 - . . . proteins
 - . . . **lipoproteins**
- lips (anatomy)**
 - GS anatomy
 - . digestive system
 - . . . mouth
 - . . . **lips (anatomy)**
 - . face (anatomy)
 - . . . mouth
 - . . . **lips (anatomy)**
 - RT head (anatomy)
- Lipschitz condition**
 - GS analysis (mathematics)
 - . real variables
 - . . . **Lipschitz condition**
 - conditions
 - . **Lipschitz condition**
 - RT differential equations
- liquefaction**
 - GS phase transformations
 - . **liquefaction**
 - . . . coal liquefaction
 - RT ∞ condensation
 - ∞ conversion
 - jet condensers
 - melting
 - noncondensable gases
 - thixotropy
- liquefied gases**
 - GS gases
 - . **liquefied gases**
 - . . . liquefied natural gas
 - . . . liquid air
 - . . . liquid ammonia
 - . . . liquid fluorine
 - . . . liquid helium
 - liquid helium 2
 - . . . liquid hydrogen
 - . . . liquid neon
 - . . . liquid nitrogen
 - . . . liquid oxygen
 - liquids
 - . **liquefied gases**
 - . . . liquefied natural gas
 - . . . liquid air
 - . . . liquid ammonia
 - . . . liquid fluorine
 - . . . liquid helium
 - liquid helium 2
 - . . . liquid hydrogen
 - . . . liquid neon
 - . . . liquid nitrogen
 - . . . liquid oxygen
 - RT condensates
 - condensers (liquefiers)
 - cryogenic rocket propellants
 - cryogenics
 - gas mixtures
 - liquid rocket propellants
 - solid cryogen cooling
- liquefied natural gas**
 - UF *LNG*
 - GS fuels
 - . chemical fuels
 - . . . hydrocarbon fuels
 - fossil fuels
 - natural gas
 - **liquefied natural gas**
 - gaseous fuels
 - natural gas
 - **liquefied natural gas**
 - gaseous fuels
 - flammable gases
 - gaseous fuels
 - natural gas
 - **liquefied natural gas**
- . . . **liquefied natural gas**
- . . . liquefied gases
- . . . **liquefied natural gas**
- geophysical fluids
 - . natural gas
 - . . . **liquefied natural gas**
 - liquids
 - . liquefied gases
 - . . . **liquefied natural gas**
 - organic compounds
 - . hydrocarbons
 - . . . natural gas
 - **liquefied natural gas**
 - resources
 - . Earth resources
 - . . . fossil fuels
 - natural gas
 - **liquefied natural gas**
 - RT methane
- liquid air**
 - GS gases
 - . gas mixtures
 - . . . air
 - **liquid air**
 - liquefied gases
 - . . . **liquid air**
 - liquids
 - . liquefied gases
 - . . . **liquid air**
 - mixtures
 - . solutions
 - . . . gas mixtures
 - air
 - **liquid air**
- liquid air cycle engines**
 - UF *LACE (engine)*
 - GS engines
 - . rocket engines
 - . . . liquid propellant rocket engines
 - **liquid air cycle engines**
 - RT aerospace planes
 - hydrogen oxygen engines
 - sustainer rocket engines
 - turbo-rocket engines
- liquid alloys**
 - GS alloys
 - . **liquid alloys**
 - RT metals
- liquid ammonia**
 - GS gases
 - . ammonia
 - . . . **liquid ammonia**
 - liquefied gases
 - . . . **liquid ammonia**
 - inorganic compounds
 - . ammonia
 - . . . **liquid ammonia**
 - liquids
 - . liquefied gases
 - . . . **liquid ammonia**
 - nitrogen compounds
 - . ammonia
 - . . . **liquid ammonia**
 - RT fuels
 - liquid fuels
- liquid atomization**
 - GS atomizing
 - . **liquid atomization**
 - RT gas atomization
 - spraying
- liquid bearings**
 - GS bearings
 - . **liquid bearings**
 - RT lubrication
- liquid breathing**
 - GS respiration
 - . **liquid breathing**
 - RT acclimatization
 - pressure breathing
 - resuscitation
- liquid bridges**
 - (added September 1993)

liquid chromatography

DEF Axisymmetric liquid columns held by capillary forces and forming an interface between two solids or between two gaps in a solid. Useful in space processing.

RT ∞ bridges
capillary flow
containerless melts
interfacial tension
liquid-solid interfaces
low gravity manufacturing
Marangoni convection
space manufacturing
space processing

liquid chromatography

GS chemical tests
. chemical analysis
. chromatography
. . . **liquid chromatography**
RT colorimetry
gel chromatography
paper chromatography
sorption

liquid cooled reactors

GS nuclear reactors
. **liquid cooled reactors**
. . . liquid metal cooled reactors
. . . advanced sodium cooled reactor
. . . Experimental Breeder Reactor 1
. . . Experimental Breeder Reactor 2
. . . Lithium Cooled Reactor Experiment
. . . Los Alamos Molten Plutonium Reactor
. . . military compact reactors
. . . sodium graphite reactors
. . . sodium reactor experiment
. . . organic cooled reactors
. . . experimental organic cooled reactors
. . . water cooled reactors
. . . boiling water reactors
. . . experimental boiling water reactors
. . . Halden Boiling Water Reactor
. . . Los Alamos Water Boiler Reactor
. . . Pathfinder nuclear reactor
. . . Spert reactors
. . . heavy water reactors
. . . heavy water components test reactors
. . . plutonium recycle test reactor
. . . zero power reactor 2
. . . light water reactors
. . . NRX reactors
. . . Plum Brook Reactor
. . . pressurized water reactors
. . . spectral shift control reactor
. . . swimming pool reactors
. . . zero power reactors
. . . zero power reactor 2
. . . zero power reactor 3
. . . zero power reactor 6
. . . zero power reactor 9
RT sodium cooling

liquid cooling

SN (COOLING WITH LIQUIDS)
UF *water cooling*
GS cooling
. **liquid cooling**
. . . film cooling
RT air cooling
capillary pumped loops
coolants
cooling systems
sodium cooling
space cooling (buildings)
sweat cooling
thermal pollution
water immersion

liquid crystals

GS crystals
. **liquid crystals**
RT anisotropic fluids
cholesterol
ferroelectric materials

light valves

liquid drops

USE **drops (liquids)**

liquid filled shells

GS shells (structural forms)
. fluid filled shells
. . . **liquid filled shells**
RT hydrodynamic ram effect
propellant tanks
reinforced shells
shell stability
∞ storage
tanks (containers)
∞ vessels

liquid flow

GS fluid flow
. **liquid flow**
. . . open channel flow
. . . water flow
RT critical flow
gas flow
head (fluid mechanics)
head flow
hydrodynamic coefficients
laminar flow
mass flow
multiphase flow
nonNewtonian flow
orifice flow
pipe flow
pressure gradients
pressure heads
rheology
single-phase flow
Soret coefficient
steady flow
subcritical flow
supercritical flow
turbulent flow
two phase flow
uniform flow
unsteady flow

liquid fluorine

GS chemical elements
. halogens
. . . fluorine
. . . **liquid fluorine**
gases
. liquefied gases
. . . **liquid fluorine**
liquids
. liquefied gases
. . . **liquid fluorine**

liquid fuels

GS fuels
. chemical fuels
. . . **liquid fuels**
. . . antimisting fuels
. . . diesel fuels
. . . gasoline
. . . hydrogen fuels
. . . jet engine fuels
. . . JP-4 jet fuel
. . . JP-5 jet fuel
. . . JP-6 jet fuel
. . . JP-7 jet fuel
. . . JP-8 jet fuel
. . . fuel oils
. . . kerosene
RT aircraft fuels
automobile fuels
fuel production
gaseous fuels
liquid ammonia
liquid hydrogen
liquid rocket propellants
liquids
synthetic fuels

liquid helium

UF *helium 2*
GS chemical elements
. rare gases
. . . helium
. . . **liquid helium**

. . . liquid helium 2
gases
. liquefied gases
. . . **liquid helium**
. . . liquid helium 2
. rare gases
. helium
. . . **liquid helium**
. . . liquid helium 2
liquids
. cryogenic fluids
. . . **liquid helium**
. . . liquid helium 2
. liquefied gases
. . . **liquid helium**
. . . liquid helium 2
RT cryostats
superfluidity
two fluid models

liquid helium 2

GS chemical elements
. rare gases
. . . helium
. . . liquid helium
. . . . **liquid helium 2**
gases
. liquefied gases
. . . liquid helium
. . . **liquid helium 2**
. rare gases
. . . helium
. . . liquid helium
. . . . **liquid helium 2**
liquids
. cryogenic fluids
. . . liquid helium
. . . **liquid helium 2**
. liquefied gases
. . . liquid helium
. . . **liquid helium 2**
RT cryostats
superfluidity

liquid hydrogen

GS chemical elements
. hydrogen
. . . **liquid hydrogen**
gases
. hydrogen
. . . **liquid hydrogen**
. liquefied gases
. . . **liquid hydrogen**
liquids
. cryogenic fluids
. . . **liquid hydrogen**
. liquefied gases
. . . **liquid hydrogen**
RT cryogenic rocket propellants
fuels
hydrogen fuels
hydrogen-based energy
liquid fuels
slush hydrogen
topping cycle engines

liquid injection

GS injection
. fluid injection
. . . **liquid injection**
. . . deep well injection (wastes)
. . . water injection
RT film cooling
fuel injection
fuel sprays
mixing
propellant sprays
thrust vector control

liquid lasers

GS stimulated emission devices
. lasers
. . . **liquid lasers**
RT carbon lasers
chemical lasers
dye lasers
infrared lasers

- organic lasers
- liquid levels**
 - GS level (horizontal)
 - . **liquid levels**
 - RT fluid boundaries
- liquid lithium**
 - GS chemical elements
 - . alkali metals
 - . . lithium
 - . . . **liquid lithium**
 - liquids
 - . liquid metals
 - . . **liquid lithium**
 - metals
 - . alkali metals
 - . . lithium
 - . . . **liquid lithium**
 - . liquid metals
 - . . **liquid lithium**
- liquid mercury*
 - USE **mercury (metal)**
- liquid metal cooled reactors**
 - UF *LMCR (reactors)*
 - GS nuclear reactors
 - . liquid cooled reactors
 - . . **liquid metal cooled reactors**
 - . . . advanced sodium cooled reactor
 - . . . Experimental Breeder Reactor 1
 - . . . Experimental Breeder Reactor 2
 - . . . Lithium Cooled Reactor Experiment
 - . . . Los Alamos Molten Plutonium Reactor
 - . . . military compact reactors
 - . . . sodium graphite reactors
 - . . . sodium reactor experiment
 - RT Enrico Fermi atomic power plant sodium
- liquid metal fast breeder reactors**
 - UF *LMFBR*
 - GS nuclear reactors
 - . breeder reactors
 - . . **liquid metal fast breeder reactors**
 - . fast nuclear reactors
 - . . **liquid metal fast breeder reactors**
 - RT nuclear power reactors
- liquid metals**
 - GS liquids
 - . **liquid metals**
 - . . liquid lithium
 - . . liquid potassium
 - . . liquid sodium
 - . . mercury (metal)
 - . . . mercury isotopes
 - . . . mercury vapor
 - metals
 - . **liquid metals**
 - . . liquid lithium
 - . . liquid potassium
 - . . liquid sodium
 - . . mercury (metal)
 - . . . mercury isotopes
 - . . . mercury vapor
 - RT casting
 - levitation melting
 - lubricants
 - melting
 - metal vapors
 - squeeze casting
- liquid neon**
 - GS chemical elements
 - . rare gases
 - . . neon
 - . . . **liquid neon**
 - gases
 - . liquefied gases
 - . . **liquid neon**
 - . rare gases
 - . . neon
 - . . . **liquid neon**
 - liquids
- . liquefied gases
- . . **liquid neon**
- liquid nitrogen**
 - GS chemical elements
 - . nitrogen
 - . . **liquid nitrogen**
 - gases
 - . liquefied gases
 - . . **liquid nitrogen**
 - . nitrogen
 - . . **liquid nitrogen**
 - liquids
 - . cryogenic fluids
 - . . **liquid nitrogen**
 - . liquefied gases
 - . . **liquid nitrogen**
 - RT high temperature superconductors
 - solid cryogens
- liquid oxidizers**
 - GS liquids
 - . **liquid oxidizers**
 - oxidizers
 - . **liquid oxidizers**
 - RT rocket oxidizers
- liquid oxygen**
 - UF *LOX (oxygen)*
 - GS chemical elements
 - . oxygen
 - . . **liquid oxygen**
 - gases
 - . liquefied gases
 - . . **liquid oxygen**
 - . oxygen
 - . . **liquid oxygen**
 - liquids
 - . cryogenic fluids
 - . . **liquid oxygen**
 - . liquefied gases
 - . . **liquid oxygen**
 - oxidizers
 - . **liquid oxygen**
 - RT cryogenic rocket propellants
 - FLOX
 - oxygen-hydrocarbon rocket engines
 - rocket oxidizers
- liquid oxygen hydrocarbon rocket engines*
 - USE **oxygen-hydrocarbon rocket engines**
- liquid phase epitaxy**
 - DEF A liquid phase transformation during crystal growth.
 - GS growth
 - . crystal growth
 - . . epitaxy
 - . . . **liquid phase epitaxy**
 - RT crystal structure
 - liquid phases
 - vapor phase epitaxy
- liquid phase sintering**
 - (*added August 1991*)
 - DEF Sintering of a compact, or loose powder aggregate under conditions where a liquid phase is present during part of the sintering cycle.
 - GS sintering
 - . **liquid phase sintering**
 - RT consolidation
 - metal powder
 - powder metallurgy
- liquid phases**
 - RT alloys
 - critical pressure
 - electroepitaxy
 - eutectics
 - liquid phase epitaxy
 - liquids
 - liquidus
 - melting points
 - phase diagrams
 - phase separation (materials)
 - ∞ phases
 - solid phases
 - solid solutions
- solidus
- solubility
- supercritical pressures
- syntectic alloys
- transition temperature
- vapor phase epitaxy
- vapor phases
- liquid plus solid zones*
 - USE **mushy zones**
- liquid potassium**
 - GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . **liquid potassium**
 - liquids
 - . liquid metals
 - . . **liquid potassium**
 - metals
 - . alkali metals
 - . . potassium
 - . . . **liquid potassium**
 - liquid metals
 - . . **liquid potassium**
- liquid propellant rocket engines**
 - DEF Rocket engines using a propellant or propellants in liquid form.
 - GS engines
 - . rocket engines
 - . . **liquid propellant rocket engines**
 - . . . AJ-10 engine
 - . . . F-1 rocket engine
 - . . . H-1 engine
 - . . . hydrazine engines
 - . . . hydrogen oxygen engines
 - J-2 engine
 - . . . M-1 engine
 - . . . RL-10-A-1 engine
 - . . . RL-10-A-3 engine
 - . . . liquid air cycle engines
 - . . . LR-62-RM-2 engine
 - . . . LR-87-AJ-5 engine
 - . . . LR-91-AJ-5 engine
 - . . . MA-2 engine
 - . . . MA-3 engine
 - . . . MA-5 engine
 - . . . oxygen-hydrocarbon rocket engines
 - . . . RL-10 engines
 - . . . RL-10-A-1 engine
 - . . . RL-10-A-3 engine
 - . . . pulse detonation engines
 - . . . Space Shuttle Main Engine
 - . . . X-405 engine
 - . . . XLR-99 engine
 - . . . YLR-91-AJ-1 engine
 - RT Ablestar launch vehicle
 - Atlas SLV-3 launch vehicle
 - Black Knight rocket vehicle
 - Blue Steel missile
 - Blue Streak launch vehicle
 - Blue Streak missile
 - BOMARC A missile
 - BOMARC B missile
 - booster rocket engines
 - Centaur launch vehicle
 - Corporal missile
 - Corvus missile
 - Delta 4 Heavy launch vehicle
 - Delta Clipper
 - Diamant launch vehicle
 - Dornier paraglider rocket vehicle
 - ducted rocket engines
 - hybrid propellant rocket engines
 - ∞ hybrid rocket engines
 - Hyla-Star rocket vehicle
 - internal combustion engines
 - Juno 1 launch vehicle
 - Juno 2 launch vehicle
 - Juno launch vehicles
 - Jupiter C rocket vehicle
 - Jupiter missile
 - Lance missile
 - Meteor 1 rocket vehicle
 - Navaho missile
 - Nike-Ajax missile
 - Nomad launch vehicle
 - Nova launch vehicles

liquid rocket propellants

- propellant tanks
- restartable rocket engines
- retrorocket engines
- Saturn S-1 stage
- Saturn S-1B stage
- Saturn S-1C stage
- Saturn S-2 stage
- Saturn S-4 stage
- Saturn S-4B stage
- Saturn stages
- solid propellant rocket engines
- Sparrow 3 missile
- sustainer rocket engines
- Talos missile
- Thor Able rocket vehicle
- Thor Agena launch vehicle
- Thor Delta launch vehicle
- Thor launch vehicles
- Thorad launch vehicles
- Titan ICBM
- Titan launch vehicles
- V-1 missile
- V-2 missile
- vanguard 2 launch vehicle
- Vega launch vehicle
- Vernier engines
- Veronique rocket vehicles
- Viking rocket vehicle
- X-33 reusable launch vehicle
- X-34 reusable launch vehicle

liquid rocket propellants

DEF Specifically, rocket propellants in liquid form. Examples of liquid propellants include fuels such as alcohol, gasoline, aniline, liquid ammonia, and liquid hydrogen; oxidants such as liquid oxygen, hydrogen peroxide (also applicable as a monopropellant), and nitric acid; additives such as water; and monopropellants such as nitromethane. Used for bipropellants and tripropellants.

UF *bipropellants*

UF *tripropellants*

GS propellants

- . rocket propellants

- . . **liquid rocket propellants**

- . . . cryogenic rocket propellants

- . . . gelled rocket propellants

- . . . hypergolic rocket propellants

- . . . monopropellants

- . . . RP-1 rocket propellants

- . . . slurry propellants

- . . . slush hydrogen

- . . . aerazine

RT

- aircraft fuels

- chemical compatibility

- chlorine fluorides

- fuel tank pressurization

- gaseous rocket propellants

- high energy propellants

- hybrid propellants

- hydrazines

- hydrogen fuels

- liquefied gases

- liquid fuels

- liquids

- monomethylhydrazines

- nitrogen tetroxide

- propellant sprays

- solid rocket propellants

- storable propellants

liquid rotation

USE **rotating liquids**

liquid sloshing

DEF The back and forth movement of a liquid fuel in its tank, creating problems of stability and control in the vehicle. Used for sloshing.

UF *sloshing*

RT aerodynamic stability

- aircraft stability

- baffles

- controllability

- fuel control

- fuel tanks

- interface stability

- propellant tanks

- propellant transfer

- rotating fluids

- spacecraft stability

- storage stability

- tank geometry

- ullage

liquid sodium

GS chemical elements

- . alkali metals

- . . sodium

- . . . **liquid sodium**

- liquids

- . liquid metals

- . . **liquid sodium**

- metals

- . alkali metals

- . . sodium

- . . . **liquid sodium**

- liquids

- . liquid metals

- . . **liquid sodium**

liquid surfaces

GS **liquid surfaces**

- . menisci

RT

- fluid boundaries

- free boundaries

- interfacial tension

- jet boundaries

- solid surfaces

- surface waves

∞ surfaces

liquid wastes

DEF The liquid counterpart of solid wastes from industrial, chemical, metabolic, and/or mineral sources.

GS wastes

- . **liquid wastes**

- . . urine

- . . waste water

RT

- drainage

- effluents

- human wastes

- industrial wastes

- metabolic wastes

- ponds

- sewage

- sludge

- solid wastes

liquid-gas mixtures

GS mixtures

- . dispersions

- . . **liquid-gas mixtures**

- . . . aerosols

- . . . fog

RT

- air water interactions

- binary mixtures

- gas mixtures

- menisci

- solubility

- vapor phases

- vapor pressure

liquid-liquid interfaces

GS boundaries

- . fluid boundaries

- . . **liquid-liquid interfaces**

- interfaces

- . fluid boundaries

- . . **liquid-liquid interfaces**

RT

- boundary layers

- free boundaries

- heat transfer

- interface stability

- interfacial energy

- interfacial tension

- pressure gradients

- solubility

liquids

DEF Substances in a state in which the individual particles move freely with relation to each other and take the shape of the container, but do not expand to fill the container.

GS **liquids**

- . cryogenic fluids

- . . Fermi liquids

- . . FLOX

- . . liquid helium

- . . . liquid helium 2

- . . liquid hydrogen

- . . liquid nitrogen

- . . liquid oxygen

- . ferrofluids

- . hydraulic fluids

- . . Skydrol (trademark)

- . juices

- . liquefied gases

- . . liquefied natural gas

- . . liquid air

- . . liquid ammonia

- . . liquid fluorine

- . . liquid helium

- . . . liquid helium 2

- . . liquid hydrogen

- . . liquid neon

- . . liquid nitrogen

- . . liquid oxygen

- . liquid metals

- . . liquid lithium

- . . liquid potassium

- . . liquid sodium

- . . mercury (metal)

- . . . mercury isotopes

- . . . mercury vapor

- . liquid oxidizers

- . organic liquids

- . potable liquids

- . . beverages

- . . . wines

- . . potable water

- . rotating liquids

RT ∞ fluids

- globules

- glycerols

- liquid fuels

- liquid phases

- liquid rocket propellants

- nonpoint sources

- phase diagrams

- vapor phases

- water

liquid-solid interfaces

GS boundaries

- . fluid boundaries

- . . **liquid-solid interfaces**

- interfaces

- . fluid boundaries

- . . **liquid-solid interfaces**

RT

- boundary layers

- fluid films

- fluid-solid interactions

∞ fusion

- heat transfer

- interface stability

- liquid bridges

- melting

- menisci

- metal surfaces

- phase change materials

- solid phases

- solid-solid interfaces

- squeeze films

liquidus

RT crystallization

- liquid phases

- melting points

- phase diagrams

- solid phases

- solid solutions

- solidus

liquid-vapor equilibrium

UF *vapor liquid equilibrium*

RT ∞ equilibrium

- thermodynamic equilibrium

- vapors

liquid-vapor interfaces

GS boundaries

- . fluid boundaries

- . . **liquid-vapor interfaces**

- interfaces

- . fluid boundaries

- . . **liquid-vapor interfaces**

RT

- air water interactions

- evaporation

free boundaries
 heat transfer
 interface stability
 menisci
 pressure gradients
 solubility
 vapor phases
 vapor pressure

LIRTS (telescope)

DEF A proposed large infrared telescope for Spacelab superseded by the German infrared laboratory. Used for Large Infrared Telescope on Spacelab.

UF *Large Infrared Telescope on Spacelab*

GS telescopes
 . spaceborne telescopes

. . . **LIRTS (telescope)**

RT European Space Agency
 payloads
 space shuttles
 Spacelab

LISA (observatory)

(added December 2000)

UF *Laser Interferometer Space Antenna*

GS antennas
 . gravitational wave antennas
 . . **LISA (observatory)**

artificial satellites
 . scientific satellites
 . . astronomical satellites

. . . **LISA (observatory)**

observatories
 . astronomical observatories
 . . astronomical satellites

. . . **LISA (observatory)**

RT astronomical interferometry
 gravitational waves
 laser interferometry
 spaceborne astronomy

LISP (programming language)

GS languages

. programming languages
 . . **LISP (programming language)**

RT computer programming
 recursive functions

Lissajous figures

DEF Figures where the path of a particle moving in a plane when the components of its position along two perpendicular axes each undergo simple harmonic motions and the ratio of their frequencies is a rational number.

RT eccentric orbits
 equations of motion
 libration
 lunar orbits
 satellite orbits

lists

GS **lists**
 . hardware utilization lists

RT ∞ catalogs
 display devices
 enumeration
 indexes (documentation)
 printouts

literature

GS **literature**
 . biography
 . documentation

RT bibliographies
 documents
 indexes (documentation)
 knowledge
 libraries
 papers
 philosophy

lithergol rocket engines

GS engines
 . rocket engines
 . . hybrid propellant rocket engines
 . . . **lithergol rocket engines**

RT ∞ hybrid rocket engines

lithergolic propellants

USE **hybrid propellants**

lithiasis

GS diseases
 . **lithiasis**
 RT calculi
 dental calculi

lithium

GS chemical elements
 . alkali metals
 . . **lithium**
 . . . liquid lithium
 . . . lithium isotopes
 metals
 . alkali metals
 . . **lithium**
 . . . liquid lithium
 . . . lithium isotopes

lithium 4

USE **lithium isotopes**

lithium 6

USE **lithium isotopes**

lithium alloys

GS alloys
 . **lithium alloys**
 . . aluminum-lithium alloys
 RT aircraft construction materials
 aluminum alloys
 copper alloys
 magnesium alloys
 zirconium alloys

lithium aluminum hydrides

GS aluminum compounds
 . **lithium aluminum hydrides**
 hydrogen compounds
 . hydrides
 . . metal hydrides
 . . . lithium hydrides
 **lithium aluminum hydrides**
 lithium compounds
 . lithium hydrides
 . . **lithium aluminum hydrides**
 RT powdered aluminum

lithium batteries

(added December 1999)
 GS electrochemical cells
 . electric batteries
 . . **lithium batteries**
 . . . lithium sulfur batteries
 RT storage batteries

lithium borates

GS boron compounds
 . borates
 . . **lithium borates**
 lithium compounds
 . **lithium borates**

lithium chlorides

GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **lithium chlorides**
 . . halides
 . . chlorides
 . . . **lithium chlorides**
 . . metal halides
 . . . **lithium chlorides**
 lithium compounds
 . **lithium chlorides**

lithium compounds

GS **lithium compounds**
 . lithium borates
 . lithium chlorides
 . lithium fluorides
 . lithium hydrides
 . . lithium aluminum hydrides
 . lithium hydroxides
 . lithium iodates
 . lithium niobates
 . lithium oxides

. lithium perchlorates
 . lithium sulfates
 . organic lithium compounds
 . spodumene

RT ∞ alkali metal compounds

∞ chemical compounds

∞ metal compounds

metal fuels

Lithium Cooled Reactor Experiment

UF *LCRE Reactor*

GS nuclear reactors
 . liquid cooled reactors
 . . liquid metal cooled reactors
 . . . **Lithium Cooled Reactor Experiment**

lithium fluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **lithium fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **lithium fluorides**
 . . metal halides
 . . . metal fluorides
 **lithium fluorides**
 lithium compounds
 . **lithium fluorides**

lithium hydrides

GS hydrogen compounds
 . hydrides
 . . metal hydrides
 . . . **lithium hydrides**
 lithium aluminum hydrides
 lithium compounds
 . **lithium hydrides**
 . . lithium aluminum hydrides

lithium hydroxides

GS bases (chemical)
 . alkalis
 . . **lithium hydroxides**
 hydroxides
 . **lithium hydroxides**
 lithium compounds
 . **lithium hydroxides**

lithium iodates

DEF Salts of iodic acid containing the 10 to the third power radical.

GS halogen compounds

. iodine compounds

. . iodates

. . . **lithium iodates**

lithium compounds

. **lithium iodates**

RT ∞ metal compounds

lithium isotopes

UF *lithium 4*

lithium 6

GS chemical elements
 . alkali metals
 . . lithium
 . . . **lithium isotopes**
 . nuclides
 . . isotopes
 . . . **lithium isotopes**
 metals
 . alkali metals
 . . lithium
 . . . **lithium isotopes**

lithium niobates

GS lithium compounds
 . **lithium niobates**
 niobium compounds
 . niobates
 . . **lithium niobates**

lithium oxides

GS chalcogenides
 . oxides
 . . metal oxides
 . . . **lithium oxides**

lithium perchlorates

lithium compounds
. **lithium oxides**

lithium perchlorates

GS halogen compounds
. chlorine compounds
. . . perchlorates
. . . **lithium perchlorates**
lithium compounds
. **lithium perchlorates**

lithium sulfates

GS lithium compounds
. **lithium sulfates**
sulfur compounds
. sulfates
. . **lithium sulfates**

lithium sulfur batteries

DEF Primary cells for producing electrical energy using lithium metal for one electrode and sulfur for the other.
GS electrochemical cells
. electric batteries
. . lithium batteries
. . . **lithium sulfur batteries**
RT ∞ cells
∞ electric cells
∞ energy sources
∞ power supplies

lithography

DEF The process of printing from a plane surface on which the image to be printed is ink receptive and water repellent and the non-image area is ink repellent and water receptive.
UF *stereolithography*
ultraviolet lithography
GS printing
. **lithography**
. . photolithography
RT nanofabrication
photomechanical effect
reproduction (copying)

lithology

DEF Description of the physical character of rocks as determined by eye or with a low-power magnifier and based on color, structure, mineralogical components, and grain size.
GS geology
. petrology
. . **lithology**
RT regolith
rocks

lithosphere

DEF The solid portion of the Earth, as compared to atmosphere and hydrosphere.
UF *geosphere*
GS **lithosphere**
. Earth core
. Earth crust
. Earth mantle
. Earth surface
RT asthenosphere
Earth planetary structure
planetary mantles
plates (tectonics)
subduction (geology)

Lithuania

GS nations
. **Lithuania**
RT Europe

Little Joe 2 launch vehicle

GS launch vehicles
. **Little Joe 2 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Little Joe 2 launch vehicle**
RT Algol engine
Mercury project
sergeant missiles
solid propellant rocket engines
TX-354 engine

XM-33 engine

Little John rocket vehicle

GS rocket vehicles
. single stage rocket vehicles
. . **Little John rocket vehicle**
surface to surface rockets
. . **Little John rocket vehicle**
RT Hercules engine
solid propellant rocket engines

littoral currents

USE **coastal currents**

littoral drift

DEF Material (such as shingle, gravel, sand, and shell fragments) that is moved along the shore by coastal currents.
RT bars (landforms)
beaches
breakwaters
coasts
ocean currents
sands
sediments

littoral transport

RT breakwaters
ocean currents
sands
water waves
∞ waves

liver

GS anatomy
. **liver**
RT gastrointestinal system
glands (anatomy)
hepatitis
tyrosine

Livermore Pool Type Reactor

UF *LPTR Reactor*
GS nuclear reactors
. nuclear research and test reactors
. . **Livermore Pool Type Reactor**

liverworts

USE **Bryophytes**

livestock

GS animals
. **livestock**
RT calves
cattle
deer
goats
horses
rangelands
sheep
swine
turkeys

lixiscopes

DEF Portable light weight battery operated low intensity x ray imaging systems with medical, industrial, and scientific applications. Used for Low Intensity X Ray Imaging Scopes.
UF *Low Intensity X Ray Imaging Scopes*
GS medical equipment
. x ray apparatus
. . **lixiscopes**
RT portable equipment
radiography
x ray astronomy
x ray imagery

lizards

GS animals
. vertebrates
. . reptiles
. . . **lizards**

Llanos Orientales (Colombia)

GS land
. grasslands
. . **Llanos Orientales (Colombia)**
. plains
. . **Llanos Orientales (Colombia)**
landforms
. plains

. . **Llanos Orientales (Colombia)**

RT Colombia

LLR (ranging)

(added July 2001)
USE **laser ranging**
lunar ranging

LMCR (reactors)

USE **liquid metal cooled reactors**

LMFBR

USE **liquid metal fast breeder reactors**

LNG

USE **liquefied natural gas**

load carrying capacity

(added August 1991)
SN (LIMITED TO STRUCTURAL MECHANICS)
DEF The capacity of a structure to bear loads.
GS mechanical properties
. yield strength
. . **load carrying capacity**
RT compressive strength
creep strength
critical loading
fracture strength
loads (forces)
∞ strength
structural failure
structural stability
structural strain
tensile strength

load distribution (forces)

GS distribution (property)
. **load distribution (forces)**
RT ∞ distribution
transverse loads

load factors

USE **loads (forces)**

load testing machines

RT ∞ machinery
∞ test equipment

load tests

RT compression tests
creep tests
destructive tests
fatigue tests
impact tests
loading rate
nondestructive tests
shock tests
specimen geometry
spin tests
static tests
tensile tests
∞ tests
variable amplitude loading

∞ loading

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *dummy loads*
RT feeding (supplying)
filling
input
loading operations
loads (forces)
payloads
refilling
replenishment
shafts (machine elements)
sweep effect
variable amplitude loading

loading forces

USE **loads (forces)**

loading moments

GS moments
. **loading moments**
RT aerodynamic loads
bending moments
flexing

loads (forces)
 mass distribution
 moment distribution
 pressure distribution
 static loads
 structural analysis
 torque
 transverse loads

loading operations
 RT feeders
 ∞ loading
 materials handling
 ∞ operations
 unloading

loading rate
 GS rates (per time)
 . **loading rate**
 RT impact loads
 load tests
 loads (forces)
 strain rate
 variable amplitude loading
 velocity

loading waves
 USE **elastic waves**
loads (forces)

loads (forces)
 UF *load factors*
loading forces
loading waves
 GS **loads (forces)**
 . axial loads
 . . axial compression loads
 . compression loads
 . . axial compression loads
 . . impact loads
 . contact loads
 . . impact loads
 . . rolling contact loads
 . critical loading
 . dynamic loads
 . . aerodynamic loads
 . . . blast loads
 . . . gust loads
 . . cyclic loads
 . . rolling contact loads
 . . thrust loads
 . . transient loads
 . . . gust loads
 . . . impact loads
 . . . landing loads
 . . . shock loads
 blast loads
 . . variable amplitude loading
 . . vibratory loads
 . . wing loading
 . edge loading
 . random loads
 . . gust loads
 . static loads
 . transverse loads
 RT ballast (mass)
 ∞ equilibrium
 ∞ force
 force distribution
 Hugoniot equation of state
 load carrying capacity
 ∞ loading
 loading moments
 loading rate
 mass distribution
 mechanics (physics)
 moment distribution
 payloads
 plane stress
 pressure
 pressure distribution
 pressure effects
 shafts (machine elements)
 shearing
 stress concentration
 stress intensity factors
 stresses
 structural design criteria
 weight (mass)

wind pressure

∞ **lobes**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT antenna design
 antenna radiation patterns
 backlobes
 sidelobes

LOC (microelectronics)
(added August 2009)
 USE **lab-on-a-chip devices**

local area networks
 DEF Networks, generally microcomputer based, that enable users in the same location to use the same programs and equipment such as printers. Used for LAN (computer networks).
 UF *LAN (computer networks)*
 GS networks
 . communication networks
 . . **local area networks**
 . computer networks
 . . **local area networks**
 RT architecture (computers)
 carrier sense multiple access
 data transmission
 Ethernet
 interprocessor communication
 network control
 protocol (computers)
 VSAT (network)
 wide area networks

local group (astronomy)
 DEF The cluster of galaxies to which our galaxy belongs. It is a poor, irregular cluster with some 20 certain members including the Milky Way Galaxy, the Andromeda Galaxy, the Triangulum, four irregular galaxies, and about 13 intermediate or dwarf ellipticals.
 GS celestial bodies
 . galactic clusters
 . . **local group (astronomy)**
 RT Andromeda Galaxy
 barred galaxies
 cosmology
 disk galaxies
 dwarf galaxies
 elliptical galaxies
 Milky Way Galaxy
 solar neighborhood
 spiral galaxies
 Virgo galactic cluster

local scientific survey module
 GS modules
 . **local scientific survey module**
 RT instrument packages
 lunar exploration
 measuring instruments

local thermodynamic equilibrium
(added April 1991)
 UF *LTE (astronomy)*
 RT stellar atmospheres
 stellar physics
 thermodynamic equilibrium

localization
 USE **position (location)**

LOCATES system
 UF *Location of Air Traffic Satellites*
 RT air traffic control
 Beacon satellites
 navigation satellites
 satellite guidance
 ∞ systems

location
 USE **position (location)**

Location of Air Traffic Satellites
 USE **LOCATES system**

loci
 GS geometry
 . Euclidean geometry

. . analytic geometry
 . . . **loci**
 RT ∞ centers
 conics
 foci
 line of sight
 points (mathematics)
 resolution

Lockheed 186 helicopter
 USE **XH-51 helicopter**

Lockheed aircraft
 GS **Lockheed aircraft**
 . C-5 aircraft
 . C-121 aircraft
 . C-130 aircraft
 . C-140 aircraft
 . C-141 aircraft
 . CL-823 aircraft
 . Electra aircraft
 . F-94 aircraft
 . F-104 aircraft
 . L-1011 aircraft
 . L-2000 aircraft
 . Lockheed model 18 aircraft
 . P-3 aircraft
 . S-3 aircraft
 . SR-71 aircraft
 . T-33 aircraft
 . U-2 aircraft
 . X-35 aircraft
 . XH-51 helicopter
 . XV-4 aircraft
 RT ∞ aircraft

Lockheed C-5 aircraft
 USE **C-5 aircraft**

Lockheed CL-595 helicopter
 USE **XH-51 helicopter**

Lockheed CL-823 aircraft
 USE **CL-823 aircraft**

Lockheed Constellation aircraft
 USE **C-121 aircraft**

Lockheed L-2000 aircraft
 USE **L-2000 aircraft**

Lockheed model 18 aircraft
 GS Lockheed aircraft
 . **Lockheed model 18 aircraft**
 monoplanes
 . **Lockheed model 18 aircraft**
 transport aircraft
 . **Lockheed model 18 aircraft**
 RT ∞ aircraft

Lockheed U-2 aircraft
 USE **U-2 aircraft**

Lockheed XV-4A aircraft
 USE **XV-4 aircraft**

locking
 UF *interlocking*
 GS **locking**
 . laser mode locking
 RT fasteners
 ∞ joining
 locks (fasteners)
 retaining

∞ **locks**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT air locks
 locks (fasteners)

locks (fasteners)
 GS fasteners
 . **locks (fasteners)**
 RT locking
 ∞ locks

locomotion
 UF *motility*
 GS **locomotion**
 . astronaut locomotion

locomotives

. gait
. running
. walking
RT exercise physiology
navigation
propulsion
wheelchairs

locomotives

RT diesel engines
handling equipment
rail transportation
windshields

locusts

GS animals
. invertebrates
. . . arthropods
. . . . insects
. . . . **locusts**
RT farm crops
foliage
infestation
vegetation

LOFAR

RT sonar
underwater acoustics

LOFTI satellites

USE **low frequency transionospheric satellites**

lofting

RT aircraft design
ascent trajectories
computer aided design
differential geometry
engineering drawings
mathematical models
spacecraft design
structural design
∞ surface geometry
templates

log periodic antennas

GS antennas
. directional antennas
. . **log periodic antennas**
RT antenna arrays
antenna design
broadband
dipole antennas
frequency response
parasitic elements (antennas)

log spiral antennas

GS antennas
. spiral antennas
. . **log spiral antennas**
RT dipole antennas

logarithmic receivers

GS receivers
. **logarithmic receivers**
RT communication equipment
frequency response
intermediate frequency amplifiers
transfer functions

logarithms

DEF The power to which a fixed number, called the base, usually 10 or e (2. 7182818) must be raised to produce the value to which the logarithm corresponds.

GS analysis (mathematics)
. complex variables
. . exponential functions
. . . **logarithms**
functions (mathematics)
. transcendental functions
. . exponential functions
. . . **logarithms**
RT exponents

logging (industry)

DEF The business of felling trees, cutting them up into logs and transporting the logs to sawmills or to a place of sale.
RT forests

trees (plants)

∞ logic

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT artificial intelligence
axioms
Boolean algebra
branching (mathematics)
complements (mathematics)
expert systems
fluid logic
fluidics
formalism
information theory
logic circuits
logic design
mathematical logic
paradoxes
philosophy
predicate calculus
predicate logic
∞ principles
temporal logic
threshold logic
transistor logic

logic circuits

UF *logic networks*
GS circuits
. **logic circuits**
. . threshold gates
RT adding circuits
architecture (computers)
arithmetic and logic units
central processing units
computers
counting circuits
decisions
digital computers
evolvable hardware
fluid logic
gates (circuits)
∞ logic
logical elements
matrices (circuits)
multipliers
multivibrators
neural nets
programmable logic devices
reconfigurable hardware
∞ relay
switching circuits
threshold logic
transistor circuits
transistor logic

logic design

RT amplifier design
architecture (computers)
computer aided design
computer design
computer programming
∞ design
design analysis
evolvable hardware
hardware description languages
∞ logic
logic programming
logical elements
programmable logic devices
switching theory
transistor logic

logic networks

USE **logic circuits**

logic programming

GS computer programming
. **logic programming**
RT artificial intelligence
expert systems
logic design
temporal logic

logic units

USE **arithmetic and logic units**

logical elements

DEF In computers or data processing sys-

tems, the smallest building blocks which can be represented by operators in an appropriate system of symbolic logic. Typical logical elements are the AND gate and flip-flop, which can be represented as operators in a suitable symbolic logic. Used for decision elements.

UF *decision elements*
RT computer components
digital electronics
∞ elements
gates (circuits)
logic circuits
logic design

logistics

GS **logistics**
. lunar logistics
. space logistics
RT aircraft maintenance
Army-Navy instrumentation program
command and control
cranes
deployment
downtime
∞ electric equipment
energy policy
∞ facilities
inventory management
maintenance
matrix management
portable equipment
rapid transit systems
resource allocation
resources
services
shipyards
site selection
stockpiling
∞ storage
stowage (onboard equipment)
transportation
∞ travel
utilities

logistics management

GS management
. **logistics management**
. . inventory management
. . . inventory controls
RT ∞ facilities
maintenance
resources
services
spare parts
∞ storage

logistics over the shore (LOTS) carrier

RT military technology

LOH helicopter

USE **OH-6 helicopter**

Loki rocket vehicle

GS rocket vehicles
. single stage rocket vehicles
. . **Loki rocket vehicle**
. . sounding rockets
. . . **Loki rocket vehicle**
RT solid propellant rocket engines
WASP sounding rocket

LOLA (simulator)

USE **lunar orbit and landing simulators**

Lomonosov current

GS circulation
. water circulation
. . water currents
. . . ocean currents
. . . . **Lomonosov current**
RT Atlantic Ocean
Gulf Stream
tropical regions

Long Duration Exposure Facility

UF *LDEF*
GS artificial satellites
. scientific satellites
. . **Long Duration Exposure Facility**
laboratories

. space laboratories
 . . **Long Duration Exposure Facility**
 space platforms
 . **Long Duration Exposure Facility**
 RT space weathering
 spaceborne experiments

long duration space flight
 DEF Space flight involving interplanetary and/or interstellar travel. Used for extended duration space flight.
 UF *extended duration space flight*
 GS space flight
 . **long duration space flight**
 RT Crew Exploration Vehicle
 deep space
 extraterrestrial environments
 ∞ flight
 flyby missions
 interplanetary flight
 interstellar travel
 manned Mars missions
 manned space flight
 Mars bases
 ∞ missions
 planetary environments
 space adaptation syndrome

Long Island (NY)
 GS landforms
 . islands
 . . **Long Island (NY)**
 RT Atlantic Ocean
 New York

Long March launch vehicles
 (*added January 1999*)
 GS launch vehicles
 . **Long March launch vehicles**
 RT Chinese space program
 Chinese spacecraft
 heavy lift launch vehicles
 Shenzhou 5 spacecraft

long period variables
 USE **Mira variables**

long range navigation
 USE **loran**

long range weather forecasting
 GS meteorology
 . weather forecasting
 . . **long range weather forecasting**
 predictions
 . forecasting
 . . weather forecasting
 . . . **long range weather forecasting**
 RT Atmospheric General Circulation
 Models
 numerical weather forecasting
 statistical weather forecasting

long term effects
 UF *secular perturbation*
 RT celestial mechanics
 climate
 closed ecological systems
 cycles
 durability
 ∞ effects
 life (durability)
 life support systems
 orbit perturbation
 ∞ performance
 periodic variations
 perturbation
 storage stability
 time temperature parameter
 weather

Long Term Zonal Earth Energy Experiment
 USE **LZEEBE satellite**

long wave radiation
 GS electromagnetic radiation
 . radio waves
 . . **long wave radiation**
 RT far infrared radiation
 monochromatic radiation

∞ radiation
 short wave radiation
 solar radiation
 Surface Meteorology and Solar Energy project
 Surface Radiation Budget project

long waves (meteorology)
 USE **planetary waves**

longerons
 UF *astromasts*
 GS structural members
 . **longerons**
 RT keels
 reinforcement (structures)
 ribs (supports)
 strakes
 stringers
 structural stability

∞ **longevity**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT life (durability)
 life span

longitude
 DEF Angular distance, along a primary great circle, from the adopted reference point; the angle between a reference plane through the polar axis and a second plane through that axis.
 GS **longitude**
 . solar longitude
 RT coordinates
 geodetic coordinates
 latitude
 position (location)

longitude measurement
 RT latitude measurement
 ∞ measurement
 navigation
 positioning

longitudinal control
 UF *pitch attitude control*
 GS attitude control
 . **longitudinal control**
 RT aircraft control
 altitude control
 automatic control
 ∞ control
 directional control
 helicopter control
 lateral control
 manual control
 missile control
 pilot induced oscillation
 pitch (inclination)
 satellite attitude control
 satellite control

longitudinal stability
 GS dynamic characteristics
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **longitudinal stability**
 stability
 . dynamic stability
 . . motion stability
 . . . attitude stability
 **longitudinal stability**
 RT aerodynamic stability
 aircraft stability
 directional stability
 flow stability
 hovering stability
 lateral stability
 pitch (inclination)
 pitching moments
 POGO effects
 rotary stability
 spacecraft stability

longitudinal waves
 DEF Waves in which the direction of dis-

placement at each point of the medium is normal to the wave front.

GS **longitudinal waves**
 . plane waves
 RT beams (radiation)
 dilatational waves
 elastic waves
 electrostatic waves
 frequencies
 normal shock waves
 ∞ radiation
 seismic waves
 shock waves
 solar radiation
 sound waves
 transverse waves
 wave packets
 wavelengths
 ∞ waves

longshore currents
 USE **coastal currents**

look angles (electronics)
 DEF The solid angle in which an instrument operates effectively, generally used to describe radars, optical instruments, and space radiation detectors.

GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **look angles (electronics)**
 RT alignment
 directivity
 installing
 instrument orientation
 optical equipment
 positioning
 radar equipment

look angles (tracking)
 DEF The elevation and azimuth at which a particular satellite is predicted to be found at a specified time.

GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **look angles (tracking)**
 RT azimuth
 elevation angle
 field of view

loop antennas
 DEF Antennas whose configuration is that of a loop. If the current in the loop, or in the parallel turns of the loop is essentially uniform and the loop circumference is small compared with the wavelength, the radiation pattern approximates that of a magnetic dipole.

GS antennas
 . directional antennas
 . . **loop antennas**
 RT aircraft antennas
 loops
 monopole antennas

loop transfer functions
 (*added September 1993*)
 GS functions (mathematics)
 . transfer functions
 . . **loop transfer functions**
 RT control systems design
 feedback control
 loop transfer recovery

loop transfer recovery
 (*added September 1993*)
 DEF The recovery of the transfer properties of the controller in a feedback control system compensator design.

RT compensators
 control stability
 control systems design
 control theory
 error signals
 feedback control
 loop transfer functions
 ∞ recovery

loops

systems stability

loops

GS

loops

. corrosion test loops

RT

circuits

closed cycles

loop antennas

toruses

trusses

LOR (*rendezvous*)

USE **lunar orbital rendezvous**

LORAC navigation system

GS

navigation

. radio navigation

. . . hyperbolic navigation

. . . . **LORAC navigation system**

RT

distance measuring equipment

navigation aids

navigation instruments

surface navigation

∞ systems

loran

DEF A two dimensional pulse synchronized radio navigation system to determine hyperbolic lines of position through pulse time differencing from a master compared to two slave stations. Used for long range navigation.

UF *long range navigation*

GS

navigation

. radio navigation

. . hyperbolic navigation

. . . **loran**

. . . . loran C

. . . . loran D

RT

air navigation

Decca navigation

distance measuring equipment

navigation aids

navigation instruments

polar navigation

solar compasses

surface navigation

surveys

loran C

GS

navigation

. radio navigation

. . hyperbolic navigation

. . . loran

. . . . **loran C**

RT

air navigation

Decca navigation

navigation aids

loran D

GS

navigation

. radio navigation

. . hyperbolic navigation

. . . loran

. . . . **loran D**

RT

air navigation

Decca navigation

navigation aids

Lorentz contraction

UF *Fitzgerald-Lorentz contraction*

RT

relativity

Lorentz force

DEF The force affecting a charged particle due to the motion of the particle in a magnetic field.

RT

charged particles

∞ force

magnetic fields

ponderomotive forces

Lorentz force accelerator thrusters

(added April 2001)

USE **magnetoplasmadynamic thrusters**

Lorentz gas

GS

gases

. ionized gases

. . **Lorentz gas**

particles

. charged particles

. . ionized gases

. . . **Lorentz gas**

RT

gas dynamics

kinetic theory

Lorentz transformations

GS

functions (mathematics)

. **Lorentz transformations**

RT

Dirac equation

invariance

Mandelstam representation

LORV

USE **low observable reentry vehicles**

Los Alamos Molten Plutonium Reactor

GS

nuclear reactors

. liquid cooled reactors

. . liquid metal cooled reactors

. . . **Los Alamos Molten Plutonium Reactor**

. . nuclear research and test reactors

. . **Los Alamos Molten Plutonium Reactor**

Los Alamos Turret Reactor

USE **high temperature nuclear reactors**

Los Alamos Water Boiler Reactor

GS

nuclear reactors

. liquid cooled reactors

. . water cooled reactors

. . . boiling water reactors

. . . . **Los Alamos Water Boiler Reactor**

loss of coolant

UF *coolant loss*

GS

accidents

. **loss of coolant**

RT

coolants

leakage

losses

nuclear reactors

reactor materials

losses

GS

losses

. dielectric loss

RT

auditory defects

commerce

damage

depletion

eddy currents

energy dissipation

impairment

insertion loss

leakage

legal liability

liabilities

loss of coolant

ohmic dissipation

plasma loss

seepage

transmission loss

wastes

water loss

yield

lossless equipment

RT lossless materials

lossless materials

DEF Dielectric materials that do not dissipate energy or that do not dampen oscillations.

GS

dielectrics

. **lossless materials**

RT

lossless equipment

∞ materials

lossy media

DEF A material that dissipates electromagnetic or acoustic energy passing through it.

RT

electromagnetic wave transmission

ionospheric propagation

transmission loss

wave propagation

lost wax process

USE **investment casting**

LOTS cargo ships

USE **cargo ships**

loudness

DEF The intensive attribute of an auditory sensation, in terms of which sounds may be ordered on a scale extending from soft to loud. Loudness is measured in sones. Loudness depends primarily upon the sound pressure of the stimulus, but it also depends upon the frequency and waveform of the stimulus.

RT

acoustics

effective perceived noise levels

flux density

hearing

∞ intensity

level (quantity)

noise (sound)

noise measurement

noise reduction

power spectra

sound intensity

sound pressure

sound waves

loudspeakers

GS

audio equipment

. **loudspeakers**

transducers

. sound transducers

. . electroacoustic transducers

. . . **loudspeakers**

RT

monaural signals

radio receivers

sound generators

Louisiana

GS

nations

. United States

. . **Louisiana**

RT

Atchafalaya River Basin (LA)

Gulf of Mexico

Lake Pontchartrain (LA)

Mississippi Delta (LA)

∞ lounges

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT

mobile lounges

rooms

seats

louvers

RT

apertures

baffles

∞ diffusers

∞ screening

shades

shielding

∞ shutters

slots

vents

Love waves

DEF Surface waves having a horizontal motion that is shear or transverse to the direction of propagation. Their velocity depends only on density and rigidity and not on bulk modulus. They are named after A.E.H. Love, the English mathematician who discovered them.

GS

elastic waves

. seismic waves

. . **Love waves**

RT

surface waves

low alloy steels

USE **high strength steels**

low altitude

GS

altitude

. **low altitude**

RT

elevation

lower atmosphere

midaltitude

nap-of-the-earth navigation

- terrain following
- low aspect ratio**
GS ratios
. aspect ratio
. . **low aspect ratio**
- low aspect ratio wings**
UF *diamond wings*
GS airfoils
. wings
. . **low aspect ratio wings**
. . . delta wings
. . . trapezoidal wings
RT cruciform wings
fixed wings
rigid wings
wing planforms
- low carbon steels**
DEF Iron alloys containing carbon in low percentages that display temper and malleability characteristics not found in ordinary carbon steels.
GS alloys
. iron alloys
. . steels
. . . carbon steels
. . . . **low carbon steels**
RT iron
- low concentrations**
GS composition (property)
. concentration (composition)
. . **low concentrations**
RT dilution
- low conductivity**
RT electric current
electrical resistivity
transconductance
- low cost**
GS costs
. **low cost**
RT economy
- low currents**
GS electric current
. **low currents**
RT dark current
low voltage
plasma currents
- low density flow**
GS fluid flow
. **low density flow**
RT ∞ flow
molecular flow
rarefied gas dynamics
rarefied gases
- low density gases*
USE **rarefied gases**
- low density materials**
RT absorbents
absorbers (materials)
foams
granular materials
honeycomb cores
honeycomb structures
light elements
 ∞ materials
polyurethane foam
porous materials
porous plates
powder metallurgy
- low density research**
GS research
. **low density research**
RT blowdown wind tunnels
collisionless plasmas
composite materials
epoxy matrix composites
nonuniform plasmas
plasmas (physics)
rarefied gases
shock tubes
shock tunnels
- shock wave luminescence
ultrahigh vacuum
vacuum apparatus
- low density wind tunnels**
GS test facilities
. wind tunnels
. . **low density wind tunnels**
RT hypersonic wind tunnels
hypervelocity wind tunnels
plasma jets
rarefied gas dynamics
shock tubes
shock tunnels
slip flow
supersonic wind tunnels
- low Earth orbital environments*
USE **Earth orbital environments**
- low Earth orbits**
(added April 1995)
DEF Nominally circular Earth orbits of low altitude (typically between 100 and 1,000 km.) and short periodicity.
UF **LEO**
GS orbits
. Earth orbits
. . **low Earth orbits**
RT Earth orbital environments
elliptical orbits
interplanetary transfer orbits
NPOESS
parking orbits
polar orbits
remote sensing
satellite orbits
- low frequencies**
SN (30 TO 300 KHZ)
GS frequencies
. radio frequencies
. . **low frequencies**
. . . very low frequencies
RT ∞ bands
extremely low frequencies
high frequencies
intermediate frequencies
ultrahigh frequencies
very high frequencies
- low frequency transionospheric satellites**
UF *LOFTI satellites*
GS artificial satellites
. communication satellites
. . **low frequency transionospheric satellites**
- low gravity*
USE **microgravity**
- low gravity manufacturing**
GS manufacturing
. **low gravity manufacturing**
RT containerless melts
drop towers
fabrication
levitation melting
liquid bridges
Marangoni convection
metal foams
microgravity
 ∞ microgravity applications
space manufacturing
space processing
space tools
technologies
- Low Intensity X Ray Imaging Scopes*
USE **lixiscopes**
- low latitudes*
USE **tropical regions**
- low level turbulence**
GS turbulence
. atmospheric turbulence
. . **low level turbulence**
- RT homogeneous turbulence
- low mass*
USE **mass**
- low molecular weights**
GS molecular properties
. molecular weight
. . **low molecular weights**
RT diatomic molecules
molecules
monatomic molecules
weight (mass)
- low noise**
RT preamplifiers
signal to noise ratios
- low observable reentry vehicles**
UF *LORV*
GS reentry vehicles
. **low observable reentry vehicles**
RT radar cross sections
reentry
reentry physics
 ∞ vehicles
- low pass filters**
DEF Wave filters having a single transmission band extending from zero frequency up to some critical or bounding frequency, not infinite.
RT bandstop filters
electric filters
electromagnetic wave filters
 ∞ filters
Gabor filters
microwave filters
optical filters
- low pressure**
GS pressure
. **low pressure**
. . high altitude pressure
RT altitude tolerance
cyclogenesis
cyclones
 ∞ depression
high altitude environments
high pressure
hypobaric atmospheres
troughs
vacuum
- low pressure chambers*
USE **vacuum chambers**
- ∞ **low resistance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical properties
electrical resistance
flow resistance
mechanical properties
 ∞ resistance
thermal resistance
transconductance
- low Reynolds number**
SN (RN BELOW 2,000)
DEF A Reynolds number below the critical Reynolds number of a sphere.
GS dimensionless numbers
. Reynolds number
. . **low Reynolds number**
ratios
. Reynolds number
. . **low Reynolds number**
RT direct numerical simulation
high Reynolds number
laminar flow
viscosity
- low speed**
UF *low velocity*
GS rates (per time)
. **low speed**
velocity
. **low speed**
RT airspeed
flow velocity

low speed stability

ground speed
landing speed
subsonic speed

low speed stability

GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **low speed stability**
stability
. dynamic stability
. . motion stability
. . . **low speed stability**
RT aerodynamic stability
aerodynamic stalling
aircraft stability
attitude stability
controllability
dynamic tests
flight characteristics
flow stability
hovering stability
spacecraft stability

low speed wind tunnels

GS test facilities
. wind tunnels
. . **low speed wind tunnels**
. . . subsonic wind tunnels
RT blowdown wind tunnels

low temperature

GS temperature
. **low temperature**
. . cryogenic temperature
RT bay ice
cooling
cryogenics
freezing
frost
frost damage
ice formation
magnetic cooling
pressure ice
refrigerating

low temperature brazing

GS welding
. fusion welding
. . gas welding
. . . brazing
. . . . **low temperature brazing**
RT soldering

low temperature environments

GS environments
. **low temperature environments**
RT cold strength
cold weather
high altitude environments
lunar temperature
magnetic cooling
mountain inhabitants
thermal environments

low temperature physics

RT cryochemistry
cryogenics
high temperature superconductors
Kondo effect
 ∞ physics
 ∞ science
solidified gases
superconducting power transmission
superconductivity
YBCO superconductors

low temperature plasmas

USE **cold plasmas**

low temperature tests

GS environmental tests
. **low temperature tests**
RT chemical tests
cold strength
cold weather tests
cryostats
hardness tests
lubricant tests
melting points

nondestructive tests
quality control
temperature control
 ∞ tests
thermal expansion
thermal stability

low thrust

GS thrust
. **low thrust**
. . microthrust
RT high thrust
jet thrust
rocket thrust
variable thrust

low thrust propulsion

GS propulsion
. **low thrust propulsion**
. . electromagnetic propulsion
. . . magnetic sails
. . . electrostatic propulsion
. . . ion propulsion
. . man operated propulsion systems
. . photonic propulsion
. . . laser propulsion
. . plasma propulsion
. . solar propulsion
. . . solar electric propulsion
. . . solar thermal propulsion
RT electric propulsion
microthrust
rocket thrust
space station propulsion
spacecraft propulsion
variable thrust

low turbulence

GS turbulence
. **low turbulence**
RT steady flow

low vacuum

SN (PRESSURES BETWEEN 3. 001 AND 1. 0 TORR)
DEF The condition in a gas filled space at pressures less than 760 torr corresponding approximately to the vapor pressure of water at 25 deg. C and to 1 inch of mercury.
GS pressure
. vacuum
. . **low vacuum**
RT high vacuum

low velocity

USE **low speed**

low visibility

GS visibility
. **low visibility**
RT aircraft landing
all-weather landing systems
hazards
haze
instrument flight rules
light transmission

low voltage

GS potential energy
. electric potential
. . **low voltage**
RT low currents

low volume ramjet engines

GS engines
. air breathing engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **low volume ramjet engines**
. . internal combustion engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines
. **low volume ramjet engines**
. turbine engines
. . gas turbine engines
. . . jet engines
. . . . ramjet engines

. **low volume ramjet engines**

low weight

RT gravitation
microgravity
weightlessness

∞ low wing aircraft

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ aircraft
aircraft configurations
Beech 99 aircraft
general aviation aircraft
hypersonic aircraft
jet aircraft
light aircraft
monoplanes
passenger aircraft
tailless aircraft
transport aircraft
turbofan aircraft
turboprop aircraft

lower atmosphere

SN (ALTITUDE BELOW ABOUT 50 KM)
DEF Generally, and quite loosely, that part of the atmosphere in which most weather phenomena occur (i.e., the troposphere and lower stratosphere); hence, used in contrast to the common meaning for the upper atmosphere.
GS Earth atmosphere
. **lower atmosphere**
. . troposphere
. . . tropopause
RT biosphere
chemosphere
heterosphere
homosphere
Intasat satellite
LACATE (experiment)
low altitude
mesometeorology
middle atmosphere

Lower Atmospheric Composition Experiment

USE **LACATE (experiment)**

lower body negative pressure

DEF Application and/or measurement of reduced pressure in the portion of the body below the iliac crests. Used as a simulator or orthostatic stress or as an indicator of cardiovascular deconditioning in a weightless environment.
GS hemodynamics
. **lower body negative pressure**
pressure
. blood pressure
. . **lower body negative pressure**
RT acceleration stresses (physiology)
artificial gravity
cardiovascular system
fluid shifts (biology)
gravitational effects
head up tilt
orthostatic tolerance
space flight stress
stress (physiology)
tilt-table test
weightlessness

Lower California (Mexico)

UF *Baja California*
RT Mexico
North America

lower ionosphere

GS Earth atmosphere
. upper atmosphere
. . Earth ionosphere
. . . **lower ionosphere**
. . . . D region

RT E region

LOX (oxygen)
USE **liquid oxygen**

LOX-hydrocarbon rocket engines
USE **oxygen-hydrocarbon rocket engines**

LOX-hydrogen engines
USE **hydrogen oxygen engines**

LPTR Reactor
USE **Livermore Pool Type Reactor**

LQG control
USE **linear quadratic Gaussian control**

LQR
USE **linear quadratic regulator**

LR circuits
USE **RL circuits**

LR-62-RM-2 engine
GS engines
. rocket engines
. liquid propellant rocket engines
. . . **LR-62-RM-2 engine**
RT Bullpup missiles

LR-87-AJ-5 engine
GS engines
. rocket engines
. booster rocket engines
. . . **LR-87-AJ-5 engine**
. liquid propellant rocket engines
. . . **LR-87-AJ-5 engine**
RT Titan 1 ICBM

LR-91-AJ-5 engine
GS engines
. rocket engines
. liquid propellant rocket engines
. . . **LR-91-AJ-5 engine**
RT Titan ICBM

LRC circuits
USE **RLC circuits**

LRV (vehicle)
USE **lunar roving vehicles**

L-Sat
DEF A communications satellite designed by European Space Agency member states to meet future communications satellite market needs such as European broadcast services, global telecommunications trunk services, and mobile services. Used for European Large Telecomm Satellite.
UF *European Large Telecomm Satellite*
GS artificial satellites
. communication satellites
. . . **L-Sat**
. ESA satellites
. . . **L-Sat**
ESA spacecraft
. ESA satellites
. . . **L-Sat**
RT satellite networks

LSI
USE **large scale integration**

LSS (cosmology)
(added May 2002)
USE **large-scale structure of the universe**

LSSM
UF *Lunar Surface Scientific Modules*
GS lunar spacecraft
. lunar landing modules
. Lunar Module
. . . **LSSM**
manned spacecraft
. Lunar Module
. . . **LSSM**
modules
. spacecraft modules

. . landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . **LSSM**
soft landing spacecraft
. landing modules
. lunar landing modules
. . . Lunar Module
. . . . **LSSM**
spacecraft components
. spacecraft modules
. landing modules
. . . lunar landing modules
. . . . Lunar Module
. . . . **LSSM**

RT Apollo project
lunar laboratories
∞ surfaces

LST
USE **Hubble Space Telescope**

LTE (astronomy)
USE **local thermodynamic equilibrium**

LTV aircraft
USE **Ling-Temco-Vought aircraft**

lubricant tests
RT engine tests
high temperature tests
low temperature tests
∞ materials tests
∞ tests
tribometers
wear resistance

lubricants
DEF Substances interposed between two surfaces for the purpose of reducing the friction or wear between them.
GS **lubricants**
. gas lubricants
. high temperature lubricants
. lubricating oils
. solid lubricants
RT additives
boundary lubrication
graphite
greases
kerogen
liquid metals
lubrication
lubrication systems
maintenance
oils
petroleum products
squeeze films

lubricating oils
GS lubricants
. **lubricating oils**
oils
. **lubricating oils**
RT detergents
lubrication
mineral oils
petroleum products
shale oil

lubrication
GS **lubrication**
. boundary lubrication
. self lubrication
. spacecraft lubrication
. vapor phase lubrication
RT bearings
elastohydrodynamics
engines
friction reduction
gears
impregnating
liquid bearings
lubricants
lubricating oils
lubrication systems
maintenance
self lubricating materials
sliding

tribology

lubrication systems
RT automobiles
cooling systems
internal combustion engines
lubricants
lubrication
pumps
∞ systems
vapor phase lubrication

Lucite (trademark)
USE **polymethyl methacrylate**

Luder bands
USE **plastic deformation yield point**

Ludox (trademark)
DEF Composite material utilizing colloidal silica matrixes.
GS refractory materials
. **Ludox (trademark)**
RT densification
heat shielding
reentry shielding
spacecraft construction materials
thermal protection tiles

lugs
RT fasteners
holders
studs (structural members)
supports

lumbar region
GS anatomy
. **lumbar region**
regions
. **lumbar region**
RT human body
sciatic region

lumbering areas
USE **forests**

lumens
DEF Units of luminous flux equal to the luminous flux radiated into a unit solid angle (steradian) from a point source having a luminous intensity of 1 candela.
GS pressure
. radiation pressure
. . **lumens**
rates (per time)
. flux density
. . radiant flux density
. . . **lumens**
RT light (visible radiation)
luminance
luminescence
luminosity
optical properties
radiance

luminaires
UF *electroluminescent lamps lamps light bulbs lights*
GS lighting equipment
. **luminaires**
. aircraft lights
. airport lights
. . . runway lights
. arc lamps
. flash lamps
. . alkali vapor lamps
. . mercury lamps
. quartz lamps
. searchlights
. xenon lamps
RT ballasts (impedances)
bulbs
fixtures
∞ flares
∞ globes
illuminating

luminance

light (visible radiation)
light sources
projectors
visual signals

luminance

SN (LIMITED TO EMISSION RATE PER UNIT AREA OF VISIBLE RADIATION)

DEF In photometry, a measure of the intrinsic luminous intensity emitted by a source in a given direction; the illuminance produced by light from the source upon a unit surface area oriented normal to the line of sight at any distance from the source, divided by the solid angle subtended by the source at the receiving surface. Also called brightness but luminance is preferred.

GS pressure
. radiation pressure
. . luminous intensity
. . . **luminance**
rates (per time)
. flux density
. . radiant flux density
. . . luminous intensity
. . . . **luminance**

RT brightness
glare
illuminance
illuminating
∞ intensity
irradiance
light (visible radiation)
lumens
optical properties
photometry
sky brightness
solar flux density
stellar magnitude

luminescence

DEF Light emission by a process in which kinetic heat energy is not essential for the mechanism of excitation. Used for glow and noctilucence.

UF *glow*
noctilucence

GS emission
. light emission
. . **luminescence**
. . . bioluminescence
. . . cathode glow
. . . cathodoluminescence
. . . chemiluminescence
. . . electroluminescence
. . . fluorescence
. . . . laser induced fluorescence
. . . . phosphorescence
. . . . resonance fluorescence
. . . . x ray fluorescence
. . . lunar luminescence
. . . optical resonance
. . . photoluminescence
. . . triboluminescence
. . . . x ray fluorescence
. . . shock wave luminescence
. . . sonoluminescence
. . . spacecraft glow
. . . thermoluminescence

RT afterglows
alkali vapor lamps
brightness
electron-hole drops
Fraunhofer line discriminators
∞ illumination
illuminators
incandescence
light (visible radiation)
light emitting diodes
lumens
luminosity
luminous intensity
noctilucence clouds
optical transition
plasma radiation
stellar luminosity
Stokes law of radiation
temperature sensitive paints

visibility

luminescent intensity
USE **luminous intensity**

luminescent proteins

(added August 2004)

DEF Proteins which are involved in the phenomenon of light emission in living systems. Included are the "enzymatic" and "non-enzymatic" types of system with or without the presence of oxygen or co-factors.

GS biopolymers
. proteins
. . **luminescent proteins**
organic compounds
. proteins
. . **luminescent proteins**

RT bioluminescence

luminosity

GS electromagnetic properties
. optical properties
. . **luminosity**
. . . stellar luminosity

RT brightness
emissivity
emittance
illuminance
incandescence
light (visible radiation)
lumens
luminescence
mass to light ratios
phosphene
radiance
radiant flux density
Tully-Fisher relation
visibility

luminous flux density

USE **luminous intensity**

luminous intensity

SN (LIMITED TO EMISSION OR DETECTION RATE PER UNIT AREA OF VISIBLE RADIATION)

DEF Luminous energy per unit time per unit solid angle; the intensity (flux per unit solid angle) of visible radiation weighted to take into account the variable response of the human eye as a function of the wavelength of light; usually expressed in candles. Used for light intensity, luminescent intensity, and luminous flux density.

UF *light intensity*
luminescent intensity
luminous flux density

GS pressure
. radiation pressure
. . **luminous intensity**
. . . illuminance
. . . luminance
rates (per time)
. flux density
. . radiant flux density
. . . **luminous intensity**
. . . . illuminance
. . . . luminance

RT BL Lacertae objects
brightness
emittance
flux (rate)
incandescence
∞ intensity
irradiance
light (visible radiation)
luminescence
mass to light ratios
radiance
Seyfert galaxies
solar flux density
stellar magnitude

lumped parameter systems

DEF Systems in which the parameters may be considered to represent, for purposes of analysis, a single inductance, capacitance, resistance, etc., throughout the frequency range of interest.

RT lumping
mathematical models

matrices (mathematics)
∞ systems

lumping

RT agglomeration
coagulation
collection
composition (property)
lumped parameter systems

LUNA lunar probes

USE **Lunik lunar probes**

lunar albedo

GS albedo
. **lunar albedo**

RT absorptance
cosmic ray albedo
Earth albedo
optical properties
surface properties

lunar atmosphere

UF *lunar ionosphere*

GS environments
. extraterrestrial environments
. . lunar environment
. . . **lunar atmosphere**
. . . satellite atmospheres
. . . . **lunar atmosphere**

RT moon
planetary atmospheres

lunar based equipment

(added December 1990)

GS **lunar based equipment**
. lunar construction equipment
. lunar excavation equipment
. lunar retroreflectors

RT ∞ equipment
lunar bases
lunar flying vehicles
lunar laboratories
lunar logistics
lunar mining
lunar shelters
lunar surface vehicles

lunar bases

GS space bases
. **lunar bases**

RT AEPS
Altair Lunar Lander
∞ astronautics
∞ bases
lunar based equipment
lunar construction equipment
lunar laboratories
lunar mining
Mars bases
moon
orbiting lunar stations
space colonies
stations
terraforming

lunar cinematography

USE **lunar photography**

lunar communication

GS telecommunication
. space communication
. . **lunar communication**
. . . circumlunar communication

RT facsimile communication
interplanetary communication
lasers
moon
optical communication
radar
radio communication
satellite communication
spacecraft communication

lunar composition

GS composition (property)
. **lunar composition**

RT lunar core
Lunar Prospector
moon

pre-Imbrian period
selenology
siderophile elements

lunar construction equipment

(added December 1990)
GS lunar based equipment

. **lunar construction equipment**
RT lunar bases
lunar excavation equipment
lunar shelters
lunar surface vehicles

lunar core

GS cores
. **lunar core**
RT lunar composition
lunar geology
planetary cores
selenology

Lunar Crater Observation and Sensing Satellite

(added December 2009)
USE **LCROSS (satellite)**

lunar craters

DEF A depression, usually circular, on the surface of the moon, usually with a raised rim called a ringwall.

GS craters
. **lunar craters**
. . Ptolemaeus Crater
. . Tycho crater
RT LCROSS (satellite)
meteorite craters
moon
pre-Imbrian period
selenography
selenology

lunar crust

GS crusts
. **lunar crust**
RT Earth crust
moon
planetary crusts
selenography
selenology

lunar dust

GS particles
. dust
. . **lunar dust**
soils
. lunar soil
. . **lunar dust**
RT moon
selenology

lunar echoes

GS echoes
. **lunar echoes**
. . lunar radar echoes
RT radio echoes
selenology

lunar eclipses

DEF The phenomenon observed when the moon enters the shadow of the Earth.

GS eclipses
. **lunar eclipses**
RT moon
selenology

lunar effects

UF *lunar perturbation*
GS **lunar effects**
. lunar gravitational effects
. lunar tides
RT ∞ effects
orbit perturbation
selenology

lunar environment

GS environments
. extraterrestrial environments
. . **lunar environment**
. . . lunar atmosphere
RT aerospace environments

bioastronautics
exobiology
life support systems
Lunar Reconnaissance Orbiter
moon
planetary environments
selenology
terraforming
thermal environments

lunar equator

GS equators
. **lunar equator**
RT infrared imagery
radar imagery
selenology

lunar escape devices

RT escape capsules
escape rockets

lunar evolution

GS evolution (development)
. **lunar evolution**
RT GRAIL mission
moon
pre-Imbrian period
selenology
solar system evolution

lunar excavation equipment

(added December 1990)
GS lunar based equipment
. **lunar excavation equipment**
RT ∞ equipment
excavation
lunar construction equipment
lunar mining
lunar resources
lunar surface vehicles
tractors

lunar exploration

GS exploration
. space exploration
. . **lunar exploration**
RT Altair Lunar Lander
Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
Apollo lunar experiment module
Apollo Lunar Surface Experiments Package
Apollo project
Clementine spacecraft
Crew Exploration Vehicle
EASEP
extraterrestrial resources
LCROSS (satellite)
local scientific survey module
Lunar Prospector
Lunar Reconnaissance Orbiter
lunar resources
Mars exploration
moon
selenology

Lunar Exploration System for Apollo

UF *LESA (lunar exploration system)*
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight

Apollo 16 flight
Apollo 17 flight
Apollo project
∞ systems

lunar far side

RT libration
moon
selenology

lunar figure

RT selenology

lunar flight

GS space flight
. **lunar flight**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 9 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
circumlunar trajectories
cislunar space
Earth-Moon trajectories
∞ flight
flyby missions
moon-Earth trajectories
orbits

lunar flying vehicles

RT ∞ flight vehicles
lifting bodies
lunar based equipment
∞ vehicles

lunar geology

DEF The science that applies geologic principles and techniques to the study of the moon, especially its composition and the origin of its surface features.

GS geology
. **lunar geology**
RT geomorphology
GRAIL mission
lunar core
lunar maria
lunar seismographs
moon
moonquakes
planetary geology
pre-Imbrian period
regolith
seismology
selenology

lunar gravitation

GS gravitation
. **lunar gravitation**
RT GRAIL mission
moon
planetary gravitation
selenology

lunar gravitational effects

GS gravitational effects
. **lunar gravitational effects**
lunar effects
. **lunar gravitational effects**
RT ∞ effects
selenology

Lunar Gravity Simulator

GS simulators
. environment simulators
. . **Lunar Gravity Simulator**
RT gravitation

lunar ionosphere

USE **lunar atmosphere**

lunar laboratories

(added April 1993)

lunar landing

GS laboratories
 . **lunar laboratories**
 . . lunar receiving laboratory
RT LSSM
 lunar based equipment
 lunar bases
 lunar observatories
 space laboratories

lunar landing

GS landing
 . spacecraft landing
 . . **lunar landing**
RT Altair Lunar Lander
 Apollo 5 flight
 Apollo 6 flight
 Apollo 7 flight
 Apollo 8 flight
 Apollo 9 flight
 Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight
 Apollo 16 flight
 Apollo 17 flight
 Apollo lunar experiment module
 crash landing
 hard landing
 planetary landing
 soft landing
 Surveyor project

lunar landing modules

GS lunar spacecraft
 . **lunar landing modules**
 . . Lunar Module
 . . . Apollo lunar experiment module
 . . . LSSM
 . . . Lunar Module 5
 . . . Lunar Module 7
 . . Altair Lunar Lander
 modules
 . spacecraft modules
 . . landing modules
 . . . **lunar landing modules**
 Lunar Module
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
 Altair Lunar Lander
 soft landing spacecraft
 . landing modules
 . . **lunar landing modules**
 . . . Lunar Module
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
 Altair Lunar Lander
 spacecraft components
 . spacecraft modules
 . . landing modules
 . . . **lunar landing modules**
 Lunar Module
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
 Altair Lunar Lander
RT Apollo extension system
 maneuverable spacecraft
 manned spacecraft
 reusable spacecraft
 unmanned spacecraft

lunar landing sites

GS sites
 . landing sites
 . . **lunar landing sites**
RT Lunar Reconnaissance Orbiter
 moon

selenography

lunar laser ranging
(added July 2001)
USE **laser ranging**
lunar rangefinding

lunar launch

GS launching
 . rocket launching
 . . **lunar launch**
RT Apollo 5 flight
 Apollo 6 flight
 Apollo 7 flight
 Apollo 8 flight
 Apollo 9 flight
 Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight
 Apollo 16 flight
 Apollo 17 flight
 orbital launching
 Saturn project

lunar limb

RT libration
 ∞ limbs
 moon
 planetary limb
 selenology

lunar logistics

GS logistics
 . **lunar logistics**
RT Altair Lunar Lander
 life support systems
 lunar based equipment
 manned lunar surface vehicles
 materials handling

lunar luminescence

GS emission
 . light emission
 . . luminescence
 . . . **lunar luminescence**
RT moon
 selenology

lunar magnetic fields

GS magnetic fields
 . **lunar magnetic fields**
RT moon
 selenology

lunar mantle

RT core-mantle boundary
 crusts
 Earth mantle
 GRAIL mission
 planetary mantles
 planetary structure
 regolith
 selenology

lunar maps

GS maps
 . **lunar maps**
RT astronomical maps
 Clementine spacecraft
 moon
 selenography

lunar maria

GS maria
 . **lunar maria**
RT basalt
 lunar geology
 lunar rocks
 selenology

lunar mining

(added December 1990)
GS mining
 . **lunar mining**
RT lunar based equipment
 lunar bases
 lunar excavation equipment

lunar resources
 lunar rocks
 lunar soil
 mineral deposits
 mines (excavations)
 space commercialization
 space industrialization
 strip mining

lunar mobile laboratories

UF *MOLABS*
GS laboratories
 . **lunar mobile laboratories**
 surface vehicles
 . lunar surface vehicles
 . . **lunar mobile laboratories**
RT Apollo project
 manned lunar surface vehicles
 selenography

Lunar Module

UF *LEM (lunar module)*
GS lunar spacecraft
 . lunar landing modules
 . . **Lunar Module**
 . . . Apollo lunar experiment module
 . . . LSSM
 . . . Lunar Module 5
 . . . Lunar Module 7
 manned spacecraft
 . **Lunar Module**
 . . Apollo lunar experiment module
 . . LSSM
 . . Lunar Module 5
 . . Lunar Module 7
 modules
 . spacecraft modules
 . . landing modules
 . . . lunar landing modules
 **Lunar Module**
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
 soft landing spacecraft
 . landing modules
 . . lunar landing modules
 . . . **Lunar Module**
 Apollo lunar experiment module
 LSSM
 Lunar Module 5
 Lunar Module 7
 spacecraft components
 . spacecraft modules
 . . landing modules
 . . . lunar landing modules
 **Lunar Module**
 Apollo lunar experiment
 module
 LSSM
 Lunar Module 5
 Lunar Module 7
RT Apollo 5 flight
 Apollo 6 flight
 Apollo 7 flight
 Apollo 8 flight
 Apollo 9 flight
 Apollo 10 flight
 Apollo 11 flight
 Apollo 12 flight
 Apollo 13 flight
 Apollo 14 flight
 Apollo 15 flight
 Apollo 16 flight
 Apollo 17 flight
 Apollo spacecraft
 ascent propulsion systems

Lunar Module 5

GS lunar spacecraft
 . lunar landing modules
 . . Lunar Module
 . . . **Lunar Module 5**
 manned spacecraft
 . Lunar Module
 . . **Lunar Module 5**
 modules
 . spacecraft modules
 . . landing modules

lunar programs

- Lunik 9 lunar probe
- Lunik 10 lunar probe
- Lunik 11 lunar probe
- Lunik 12 lunar probe
- Lunik 13 lunar probe
- Lunik 14 lunar probe
- Lunik 16 lunar probe
- Lunik 17 lunar probe
- Lunik 19 lunar probe
- Lunik 20 lunar probe
- Lunik 22 lunar probe
- . . . Ranger lunar probes
- Ranger 1 lunar probe
- Ranger 2 lunar probe
- Ranger 3 lunar probe
- Ranger 4 lunar probe
- Ranger 5 lunar probe
- Ranger 6 lunar probe
- Ranger 7 lunar probe
- Ranger 8 lunar probe
- Ranger 9 lunar probe
- Ranger lunar landing vehicles
- . . . Surveyor lunar probes
- Surveyor 1 lunar probe
- Surveyor 2 lunar probe
- Surveyor 3 lunar probe
- Surveyor 4 lunar probe
- Surveyor 5 lunar probe
- Surveyor 6 lunar probe
- Surveyor 7 lunar probe
- . . . LCROSS (satellite)
- . . . Lunar Reconnaissance Orbiter

RT Apollo project
Atlas Able 5 launch vehicle
maneuverable spacecraft
Pioneer project
Ranger project
soft landing spacecraft
Surveyor project

lunar programs

GS programs
. **lunar programs**
. . Apollo project
. . Surveyor project

RT Lunar Prospector

Lunar Prospector

(added February 1998)
GS artificial satellites
. lunar satellites
. . **Lunar Prospector**
lunar spacecraft
. lunar satellites
. . **Lunar Prospector**

RT lunar composition
lunar exploration
lunar programs
lunar resources
lunar surface

lunar radar echoes

UF *lunar scattering*
GS echoes
. lunar echoes
. . **lunar radar echoes**
. . radar echoes
. . **lunar radar echoes**

RT selenology

lunar radiation

GS extraterrestrial radiation
. **lunar radiation**

RT ∞ radiation
selenology

lunar rangefinding

UF *LLR (ranging)*
lunar laser ranging

GS rangefinding
. **lunar rangefinding**

RT distance measuring equipment
laser range finders
laser ranging
measuring instruments
optical range finders
range finders

lunar rays

SN (EXCLUDES RADIATION)

RT meteorite craters
moon
∞ rays
selenography

lunar receiving laboratory

GS laboratories
. lunar laboratories
. . **lunar receiving laboratory**

Lunar Reconnaissance Orbiter

(added July 2009)
DEF Orbiter spacecraft and associated lunar mission to identify safe landing sites, locate potential resources, characterize the radiation environment, and demonstrate new technologies. Launched June 18, 2009.

GS artificial satellites
. lunar satellites
. . **Lunar Reconnaissance Orbiter**
lunar spacecraft
. lunar probes
. . **Lunar Reconnaissance Orbiter**
. . lunar satellites
. . **Lunar Reconnaissance Orbiter**
unmanned spacecraft
. space probes
. . lunar probes
. . . **Lunar Reconnaissance Orbiter**

RT LCROSS (satellite)
lunar environment
lunar exploration
lunar landing sites
lunar resources

lunar resources

(added August 1990)
GS resources
. extraterrestrial resources
. . **lunar resources**

RT in situ resource utilization
LCROSS (satellite)
lunar excavation equipment
lunar exploration
lunar mining
Lunar Prospector
Lunar Reconnaissance Orbiter
lunar rocks
lunar soil
lunar surface

lunar retroreflectors

GS lunar based equipment
. **lunar retroreflectors**

RT Apollo Lunar Surface Experiments
Package
Earth-Moon system
geodesy
laser range finders
retroreflection
U.S.S.R. space program

lunar rocks

GS rocks
. **lunar rocks**
. . krep
RT gabbro
impact melts
lunar maria
lunar mining
lunar resources
particle tracks
pre-Imbrian period
regolith
selenography
selenology

lunar rotation

GS gyration
. rotation
. . **lunar rotation**
rotating bodies
. **lunar rotation**

RT center of gravity
selenology
spin dynamics

lunar roving vehicles

UF *LRV (vehicle)*
GS surface vehicles

. lunar surface vehicles
. . **lunar roving vehicles**
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
. . roving vehicles
. . **lunar roving vehicles**
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles

RT research vehicles
∞ vehicles

lunar satellites

GS artificial satellites
. **lunar satellites**
. . Explorer 18 satellite
. . Explorer 28 satellite
. . IMP
. . Lunar Orbiter
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5
. . LCROSS (satellite)
. . Lunar Prospector
. . Lunar Reconnaissance Orbiter
. . orbiting lunar stations
lunar spacecraft
. **lunar satellites**
. . Explorer 18 satellite
. . Explorer 28 satellite
. . IMP
. . Lunar Orbiter
. . . Lunar Orbiter 1
. . . Lunar Orbiter 2
. . . Lunar Orbiter 3
. . . Lunar Orbiter 4
. . . Lunar Orbiter 5
. . LCROSS (satellite)
. . Lunar Prospector
. . Lunar Reconnaissance Orbiter
. . orbiting lunar stations

RT maneuverable spacecraft
manned spacecraft
perilunes
polar orbits
unmanned spacecraft

lunar scattering

USE **diffuse radiation**
lunar radar echoes

lunar seismographs

GS measuring instruments
. vibration meters
. . seismographs
. . . **lunar seismographs**
recording instruments
. seismographs
. . **lunar seismographs**

RT lunar geology
selenology

lunar shadow

GS shadows
. **lunar shadow**

RT eclipses
moon
selenology
solar eclipses

lunar shelters

GS shelters
. **lunar shelters**

RT inflatable structures
life support systems
lunar based equipment
lunar construction equipment
space colonies
survival
∞ tunnels

lunar soil

GS soils
. **lunar soil**
. . lunar dust

RT krep
lunar mining
lunar resources
minerals

- moon
 - penetrometers
 - selenology
 - space weathering
- lunar spacecraft**
- GS **lunar spacecraft**
 - . Apollo spacecraft
 - . . Apollo lunar experiment module
 - . lunar landing modules
 - . . Lunar Module
 - . . . Apollo lunar experiment module
 - . . . LSSM
 - . . . Lunar Module 5
 - . . . Lunar Module 7
 - . . Altair Lunar Lander
 - . lunar probes
 - . Lunik lunar probes
 - . . Lunik 2 lunar probe
 - . . Lunik 3 lunar probe
 - . . Lunik 9 lunar probe
 - . . Lunik 10 lunar probe
 - . . Lunik 11 lunar probe
 - . . Lunik 12 lunar probe
 - . . Lunik 13 lunar probe
 - . . Lunik 14 lunar probe
 - . . Lunik 16 lunar probe
 - . . Lunik 17 lunar probe
 - . . Lunik 19 lunar probe
 - . . Lunik 20 lunar probe
 - . . Lunik 22 lunar probe
 - . Ranger lunar probes
 - . . Ranger 1 lunar probe
 - . . Ranger 2 lunar probe
 - . . Ranger 3 lunar probe
 - . . Ranger 4 lunar probe
 - . . Ranger 5 lunar probe
 - . . Ranger 6 lunar probe
 - . . Ranger 7 lunar probe
 - . . Ranger 8 lunar probe
 - . . Ranger 9 lunar probe
 - . . Ranger lunar landing vehicles
 - . Surveyor lunar probes
 - . . Surveyor 1 lunar probe
 - . . Surveyor 2 lunar probe
 - . . Surveyor 3 lunar probe
 - . . Surveyor 4 lunar probe
 - . . Surveyor 5 lunar probe
 - . . Surveyor 6 lunar probe
 - . . Surveyor 7 lunar probe
 - . . LCROSS (satellite)
 - . . Lunar Reconnaissance Orbiter
 - . lunar satellites
 - . . Explorer 18 satellite
 - . . Explorer 28 satellite
 - . . IMP
 - . . Lunar Orbiter
 - . . . Lunar Orbiter 1
 - . . . Lunar Orbiter 2
 - . . . Lunar Orbiter 3
 - . . . Lunar Orbiter 4
 - . . . Lunar Orbiter 5
 - . . LCROSS (satellite)
 - . . Lunar Prospector
 - . . Lunar Reconnaissance Orbiter
 - . . orbiting lunar stations
 - . . Crew Exploration Vehicle
 - RT Apollo 5 flight
 - Apollo 6 flight
 - artificial satellites
 - Clementine spacecraft
 - Halo Orbit space station
 - manned spacecraft
 - rendezvous spacecraft
 - space capsules
 - ∞ spacecraft
 - Surveyor project
 - unmanned spacecraft
- lunar surface**
- GS satellite surfaces
 - . **lunar surface**
 - RT Clementine spacecraft
 - LCROSS (satellite)
 - Lunar Prospector
 - lunar resources
 - selenology
 - surface layers
 - surface properties
- lunar surface vehicles**
- GS surface vehicles
 - . **lunar surface vehicles**
 - . . lunar mobile laboratories
 - . . lunar roving vehicles
 - . . Lunokhod lunar roving vehicles
 - . . . manned lunar surface vehicles
 - RT crawler tractors
 - lunar based equipment
 - lunar construction equipment
 - lunar excavation equipment
 - ∞ surfaces
 - ∞ vehicles
 - walking machines
- lunar temperature**
- GS temperature
 - . **lunar temperature**
 - RT high temperature environments
 - low temperature environments
 - moon
 - selenology
- lunar tides**
- DEF The parts of tides caused solely by the tide producing force of the moon.
 - GS lunar effects
 - . **lunar tides**
 - tides
 - . **lunar tides**
 - RT atmospheric tides
 - Earth tides
 - moonquakes
 - selenology
- lunar topography**
- GS topography
 - . **lunar topography**
 - RT moon
 - selenography
 - selenology
 - surface properties
 - surface roughness
- lunar trajectories**
- GS trajectories
 - . spacecraft trajectories
 - . . **lunar trajectories**
 - . . . circumlunar trajectories
 - . . . Earth-Moon trajectories
 - . . . moon-Earth trajectories
 - RT parking orbits
 - transfer orbits
- lunation*
- USE **month**
- luneberg lenses*
- USE **radar corner reflectors**
- lung morphology**
- GS morphology
 - . **lung morphology**
 - RT alveoli
 - pulmonary lesions
 - respiratory diseases
- lungs**
- GS anatomy
 - . respiratory system
 - . . **lungs**
 - . . . alveoli
 - RT alveolar air
 - atelectasis
 - bronchi
 - pleurae
 - pneumography
 - pneumothorax
 - pulmonary circulation
 - pulmonary functions
 - pulmonary lesions
 - spirometers
- Lunik 2 lunar probe**
- GS lunar spacecraft
 - . lunar probes
- Lunik 3 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . Lunik lunar probes
 - . . Lunik 3 lunar probe
 - Soviet spacecraft
 - . Lunik lunar probes
 - . . Lunik 3 lunar probe
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Lunik 3 lunar probe
- Lunik 9 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . Lunik lunar probes
 - . . Lunik 9 lunar probe
 - Soviet spacecraft
 - . Lunik lunar probes
 - . . Lunik 9 lunar probe
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Lunik 9 lunar probe
- Lunik 10 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . Lunik lunar probes
 - . . Lunik 10 lunar probe
 - Soviet spacecraft
 - . Lunik lunar probes
 - . . Lunik 10 lunar probe
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Lunik 10 lunar probe
- Lunik 11 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . Lunik lunar probes
 - . . Lunik 11 lunar probe
 - Soviet spacecraft
 - . Lunik lunar probes
 - . . Lunik 11 lunar probe
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Lunik 11 lunar probe
- Lunik 12 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . Lunik lunar probes
 - . . Lunik 12 lunar probe
 - Soviet spacecraft
 - . Lunik lunar probes
 - . . Lunik 12 lunar probe
 - unmanned spacecraft
 - . space probes
 - . . lunar probes
 - . . . Lunik 12 lunar probe
- Lunik 13 lunar probe**
- GS lunar spacecraft
 - . lunar probes
 - . Lunik lunar probes
 - . . Lunik 13 lunar probe
 - Soviet spacecraft
 - . Lunik lunar probes
 - . . Lunik 13 lunar probe
 - unmanned spacecraft

Lunik 14 lunar probe

- . space probes
- . . . lunar probes
- Lunik lunar probes
- **Lunik 13 lunar probe**

Lunik 14 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . Lunik lunar probes
- . . . **Lunik 14 lunar probe**
- Soviet spacecraft
- . Lunik lunar probes
- . . **Lunik 14 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Lunik lunar probes
- **Lunik 14 lunar probe**

Lunik 16 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . Lunik lunar probes
- . . . **Lunik 16 lunar probe**
- Soviet spacecraft
- . Lunik lunar probes
- . . **Lunik 16 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Lunik lunar probes
- **Lunik 16 lunar probe**

Lunik 17 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . Lunik lunar probes
- . . . **Lunik 17 lunar probe**
- Soviet spacecraft
- . Lunik lunar probes
- . . **Lunik 17 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Lunik lunar probes
- **Lunik 17 lunar probe**

Lunik 19 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . Lunik lunar probes
- . . . **Lunik 19 lunar probe**
- Soviet spacecraft
- . Lunik lunar probes
- . . **Lunik 19 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Lunik lunar probes
- **Lunik 19 lunar probe**
- RT U.S.S.R. space program

Lunik 20 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . Lunik lunar probes
- . . . **Lunik 20 lunar probe**
- Soviet spacecraft
- . Lunik lunar probes
- . . **Lunik 20 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Lunik lunar probes
- **Lunik 20 lunar probe**

Lunik 22 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . Lunik lunar probes
- . . . **Lunik 22 lunar probe**
- Soviet spacecraft
- . Lunik lunar probes
- . . **Lunik 22 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Lunik lunar probes
- **Lunik 22 lunar probe**

RT U.S.S.R. space program

Lunik lunar probes

DEF Russian term for a space probe launched to the moon's vicinity or to impact on the Moon. Used for LUNA lunar probes.

UF *LUNA lunar probes*

GS lunar spacecraft

. lunar probes

. . **Lunik lunar probes**

. . . Lunik 2 lunar probe

. . . Lunik 3 lunar probe

. . . Lunik 9 lunar probe

. . . Lunik 10 lunar probe

. . . Lunik 11 lunar probe

. . . Lunik 12 lunar probe

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. . . Lunik 14 lunar probe

. . . Lunik 16 lunar probe

. . . Lunik 17 lunar probe

. . . Lunik 19 lunar probe

. . . Lunik 20 lunar probe

. . . Lunik 22 lunar probe

Soviet spacecraft

. **Lunik lunar probes**

. . Lunik 2 lunar probe

. . Lunik 3 lunar probe

. . Lunik 9 lunar probe

. . Lunik 10 lunar probe

. . Lunik 11 lunar probe

. . Lunik 12 lunar probe

. . Lunik 13 lunar probe

. . Lunik 14 lunar probe

. . Lunik 16 lunar probe

. . Lunik 17 lunar probe

. . Lunik 19 lunar probe

. . Lunik 20 lunar probe

. . Lunik 22 lunar probe

unmanned spacecraft

. space probes

. . lunar probes

. . . **Lunik lunar probes**

. . . . Lunik 2 lunar probe

. . . . Lunik 3 lunar probe

. . . . Lunik 9 lunar probe

. . . . Lunik 10 lunar probe

. . . . Lunik 11 lunar probe

. . . . Lunik 12 lunar probe

. . . . Lunik 13 lunar probe

. . . . Lunik 14 lunar probe

. . . . Lunik 16 lunar probe

. . . . Lunik 17 lunar probe

. . . . Lunik 19 lunar probe

. . . . Lunik 20 lunar probe

. . . . Lunik 22 lunar probe

RT Lunokhod lunar roving vehicles

U.S.S.R. space program

Lunokhod lunar roving vehicles

GS surface vehicles

. lunar surface vehicles

. . lunar roving vehicles

. . . **Lunokhod lunar roving vehicles**

. . . roving vehicles

. . . lunar roving vehicles

. . . . **Lunokhod lunar roving vehicles**

RT Lunik lunar probes

Marsokhod Mars roving vehicles

U.S.S.R. space program

∞ vehicles

luster

DEF The appearance characteristic of a specimen due to pronounced changes in intensity of light reflected from elemental areas of the specimen when the angle of illumination or view is changed. Used for dullness.

UF *dullness*

RT brightness

finishes

glare

reflectance

lutetium

GS chemical elements

. nuclides

. . isotopes

. . . **lutetium**

. . . . lutetium isotopes

. . . . rare earth elements

. . **lutetium**

. . . lutetium isotopes

metals

. rare earth elements

. . **lutetium**

. . . lutetium isotopes

lutetium 176

USE **lutetium isotopes**

lutetium compounds

GS rare earth compounds

. **lutetium compounds**

RT ∞ chemical compounds

∞ metal compounds

lutetium isotopes

UF *lutetium 176*

GS chemical elements

. nuclides

. . isotopes

. . . lutetium

. . . . **lutetium isotopes**

. . . . rare earth elements

. . . . lutetium

. . . . **lutetium isotopes**

metals

. rare earth elements

. . lutetium

. . . **lutetium isotopes**

Luxembourg

GS nations

. **Luxembourg**

RT Europe

Luxembourg space program

Luxembourg effect

RT ∞ effects

ionospheric cross modulation

ionospheric propagation

Luxembourg space program

(*added March 1989*)

GS programs

. space programs

. . European space programs

. . . **Luxembourg space program**

RT Luxembourg

Lyapunov functions

USE **Liapunov functions**

Lybia

USE **Libya**

Lyman alpha radiation

DEF The radiation emitted by hydrogen at 1216 angstrom, first observed in the solar spectrum by rocket borne spectrographs. Lyman alpha is very important in the heating of the upper atmosphere thus affecting other atmospheric phenomena.

GS electromagnetic radiation

. ultraviolet radiation

. . far ultraviolet radiation

. . . **Lyman alpha radiation**

RT atomic spectra

extraterrestrial radiation

polarized electromagnetic radiation

∞ radiation

ultraviolet astronomy

Lyman beta radiation

GS electromagnetic radiation

. ultraviolet radiation

. . far ultraviolet radiation

. . . **Lyman beta radiation**

RT atomic spectra

extraterrestrial radiation

polarized electromagnetic radiation

∞ radiation

ultraviolet astronomy

Lyman spectra

GS spectra

. radiation spectra

. . electromagnetic spectra

. . . line spectra

. . . . **Lyman spectra**

RT atomic spectra

electronic spectra
 emission spectra
 H lines
 solar spectra
 spectral theory
 ultraviolet spectra

lymph

GS body fluids
 . **lymph**
 RT lymphatic system
 lymphocytes

lymph nodes

(added February 2002)
 USE **lymphatic system**

lymphatic system

(added February 2002)
 DEF A major component of the immune system consisting of a network of vessels, organs, and nodes that collect and filter lymph from body tissues and return it to the bloodstream.

UF *lymph nodes*
lymphoid system
 GS anatomy
 . immune systems
 . . **lymphatic system**
 . . . spleen
 . . . thymus gland
 RT antibodies
 bone marrow
 immunology
 lymph
 lymphocytes
 metastasis

lymphocytes

GS cells (biology)
 . blood cells
 . . leukocytes
 . . . **lymphocytes**
 RT blood cell count
 immune systems
 lymph

lymphatic system

lymphoid system
 (added February 2002)
 USE **lymphatic system**

lyophilization
 USE **colloiding**

lyophils
 USE **colloids**

Lyra constellation
 GS constellations
 . **Lyra constellation**
 RT celestial bodies
 celestial sphere
 stars

lysergine
 GS bases (chemical)
 . alkaloids
 . . **lysergine**
 nitrogen compounds
 . alkaloids
 . . **lysergine**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **lysergine**

lysimeters
 DEF Instruments for measuring the water percolating through soils and determining the materials dissolved by the water.
 GS measuring instruments
 . **lysimeters**
 RT ground water
 moisture content
 percolation
 soil moisture
 soils
 water balance
 water pollution

lysine
 GS acids
 . amino acids
 . . **lysine**
 . carboxylic acids
 . . **lysine**
 organic compounds

. amino acids
 . . **lysine**
 . carboxylic acids
 . . **lysine**
 RT digesting
 lysogenesis

Lysithea
 (added January 1996)
 DEF A natural satellite of Jupiter orbiting at a mean distance of 11,720,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . Jupiter satellites
 . . . **Lysithea**
 RT Jupiter (planet)

lysogenesis
 RT disintegration
 lysine

lysosomes
 GS organelles
 . **lysosomes**
 RT cells (biology)
 cytology
 enzyme activity
 lysozyme

lysozyme
 GS biopolymers
 . proteins
 . . enzymes
 . . . **lysozyme**
 organic compounds
 . proteins
 . . enzymes
 . . . **lysozyme**
 RT body fluids
 lysosomes

LZEEBE satellite
 UF *Earth Energy Budget Experiment*
Long Term Zonal Earth Energy
Experiment
Zonal Earth Energy Budget
Experiment
 GS artificial satellites
 . scientific satellites
 . . **LZEEBE satellite**

M

M region

- GS regions
 - . **M region**
- RT geomagnetism
 - solar atmosphere
 - solar corpuscular radiation
 - solar wind

M stars

- GS celestial bodies
 - . stars
 - .. late stars
 - ... cool stars
 - **M stars**
 - Van Biesbroeck star
- RT asymptotic giant branch stars
 - flare stars
 - giant stars
 - main sequence stars
 - Mira variables
 - red giant stars
 - S stars
 - subgiant stars
 - supergiant stars
 - symbiotic stars

M wings

- USE **variable sweep wings**

M-1 engine

- UF *AJ-1000 engine*
- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **M-1 engine**
 - .. liquid propellant rocket engines
 - ... hydrogen oxygen engines
 - **M-1 engine**
- RT Nova launch vehicles
 - Saturn 1 launch vehicles
 - Saturn 1B launch vehicles

M-2 lifting body

- GS lifting bodies
 - . lifting reentry vehicles
 - .. **M-2 lifting body**
 - ... M-2F2 lifting body
 - reentry vehicles
 - . maneuverable reentry bodies
 - .. lifting reentry vehicles
 - ... **M-2 lifting body**
 - M-2F2 lifting body

M-2F2 lifting body

- GS lifting bodies
 - . lifting reentry vehicles
 - .. M-2 lifting body
 - ... **M-2F2 lifting body**
 - reentry vehicles
 - . maneuverable reentry bodies
 - .. lifting reentry vehicles
 - ... M-2 lifting body
 - **M-2F2 lifting body**

M-2F3 lifting body

- GS lifting bodies
 - . **M-2F3 lifting body**

M-46 engine

- GS engines
 - . rocket engines
 - .. solid propellant rocket engines
 - ... **M-46 engine**
- RT Falcon missile

M-55 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **M-55 engine**
 - .. solid propellant rocket engines
 - ... **M-55 engine**
- RT Minuteman ICBM

M-56 engine

- GS engines
 - . rocket engines
 - .. solid propellant rocket engines
 - ... **M-56 engine**

- RT Minuteman ICBM

M-57 engine

- GS engines
 - . rocket engines
 - .. solid propellant rocket engines
 - ... **M-57 engine**
- RT Minuteman ICBM

M-100 engine

- GS engines
 - . rocket engines
 - .. **M-100 engine**

MA-2 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **MA-2 engine**
 - .. liquid propellant rocket engines
 - ... **MA-2 engine**
- RT Atlas ICBM
 - Vernier engines

MA-2 mission

- USE **Mercury MA-2 flight**

MA-3 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **MA-3 engine**
 - .. liquid propellant rocket engines
 - ... **MA-3 engine**
- RT Atlas ICBM
 - Vernier engines

MA-3 flight

- USE **Mercury MA-3 flight**

MA-4 flight

- USE **Mercury MA-4 flight**

MA-5 engine

- GS engines
 - . rocket engines
 - .. booster rocket engines
 - ... **MA-5 engine**
 - .. liquid propellant rocket engines
 - ... **MA-5 engine**
- RT Atlas launch vehicles
 - Atlas SLV-3 launch vehicle
 - Vernier engines

MA-5 flight

- USE **Mercury MA-5 flight**

MA-8 flight

- USE **Mercury MA-8 flight**

MA-9 flight

- USE **Mercury MA-9 flight**

maars

- USE **craters**

Mace missiles

- GS missiles
 - . surface to surface missiles
 - .. **Mace missiles**
- RT booster rocket engines
 - J-33 engine
 - solid propellant rocket engines
 - turbojet engines

Mach cones

DEF The cone shaped shock waves theoretically emanating from an infinitesimally small particle moving at supersonic speed through a fluid medium. It is the locus of the Mach lines. The cone shaped shock waves generated by a sharp pointed body, as at the nose of a high speed aircraft.

- GS cones
 - . **Mach cones**
 - elastic waves
 - . shock waves
 - .. **Mach cones**
- RT acoustic velocity
 - bow waves

- hypersonic shock
- sound waves
- supersonic flight
- supersonic flow
- supersonics

Mach inertia principle

- GS inertia
 - . inertia principle
 - .. **Mach inertia principle**
- RT equations of motion
 - moments of inertia

Mach number

DEF A number expressing the ratio of the speed of a body or a point on a body with respect to the surrounding air or other fluid, or the speed of a flow, to the speed of sound in the medium; the speed represented by this number. Used for critical Mach number and Glauert coefficient.

- UF *critical Mach number*
- Glauert coefficient*
- GS dimensionless numbers
 - . **Mach number**
 - ratios
 - . **Mach number**
- RT acoustic velocity
 - aerodynamics
 - airspeed
 - shock waves
 - superharmonics
 - sweep angle

Mach reflection

DEF The reflection of a shock wave from a rigid wall in which the shock strength of the reflected wave and the angle of reflection both have the smaller of the two values theoretically possible.

- GS reflection
 - . wave reflection
 - .. **Mach reflection**
- RT shock waves

machine aided indexing

- (added April 2000)
- USE **indexing (information science)**

machine learning

- (added May 1989)
- UF *learning machines*
- RT adaptive control
 - artificial intelligence
 - automata theory
 - backpropagation (artificial intelligence)
 - cybernetics
 - data mining
 - feedback control
 - genetic algorithms
 - ∞ machinery
 - membership functions
 - self organizing systems
 - teaching machines

machine life

- USE **service life**

machine oriented languages

- GS languages
 - . programming languages
 - .. **machine oriented languages**
- RT ALGOL
 - Assembly language
 - autocoders
 - language programming
 - PL/1

machine recognition

- USE **artificial intelligence**

machine storage

- USE **computer storage devices**
- core storage**

machine tools

- GS tools
 - . **machine tools**
 - .. boring machines

- . . grinding machines
 - . . lathes
 - . . . turret lathes
 - . . milling machines
 - . . shapers
 - RT cutters
 - dies
 - drills
 - ∞ machinery
 - machining
 - mandrels
 - mechanical devices
 - mechanical engineering
 - metal cutting
 - numerical control
 - presses
 - punches
 - saws
 - shears
 - taps
 - ultrasonic cleaning
- machine translation**
- GS linguistics
 - . **machine translation**
 - translating
 - . **machine translation**
 - RT computer programs
 - information theory
 - language programming
 - languages
 - natural language processing
- machine vision*
- USE **computer vision**
- machine-independent programs**
- GS computer programs
 - . **machine-independent programs**
 - RT computer programming
 - computers
 - multiprogramming
- ∞ **machinery**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT boring machines
 - computers
 - drafting machines
 - engines
 - fatigue testing machines
 - grinding machines
 - ground effect machines
 - impact testing machines
 - levers
 - load testing machines
 - machine learning
 - machine tools
 - mechanical engineering
 - ∞ mechanism
 - mechanization
 - milling machines
 - positioning devices (machinery)
 - refrigerating machinery
 - ∞ rotating electrical machines
 - self focusing
 - teaching machines
 - tide powered machines
 - tools
 - turbomachinery
 - Turing machines
 - vibration simulators
 - walking machines
 - waterwave powered machines
 - welding machines
 - windmills (windpowered machines)
- machining**
- UF *material removal (machining)*
 - GS **machining**
 - . chemical machining
 - . . electrochemical machining
 - . hot machining
 - . laser machining
 - . micromachining
 - . milling (machining)
 - . spark machining
 - . ultrasonic machining
 - RT ∞ cut-off
- cutting
 - drilling
 - finishes
 - forming techniques
 - grinding (material removal)
 - grooving
 - knurling
 - laser cutting
 - machine tools
 - metal cutting
 - metal working
 - planing
 - residual stress
 - setups
 - surface finishing
 - surface roughness
 - tooling
 - V grooves
- MACHOs (astronomy)*
(added November 1999)
- USE **massive compact halo objects**
- Mach-Zehnder interferometers**
- GS measuring instruments
 - . interferometers
 - . . **Mach-Zehnder interferometers**
 - RT aerodynamics
 - argon lasers
 - carbon dioxide lasers
 - diffractometers
 - gas lasers
 - goniometers
 - optical equipment
 - optical measuring instruments
 - Schlieren photography
- Macintosh PC*
- USE **Macintosh personal computers**
- Macintosh personal computers**
(added September 1992)
- UF *Macintosh PC*
 - GS data processing equipment
 - . computers
 - . . digital computers
 - . . . microcomputers
 - personal computers
 - **Macintosh personal computers**
 - RT computer graphics
 - computer programs
- MacLaurin series**
- UF *MacLaurin series*
 - GS analysis (mathematics)
 - . calculus
 - . . series (mathematics)
 - . . . power series
 - Taylor series
 - **MacLaurin series**
 - . real variables
 - . . series (mathematics)
 - . . . power series
 - Taylor series
 - **MacLaurin series**
- macroclimate*
- USE **climate**
- macromolecules**
(added March 1990)
- GS molecules
 - . **macromolecules**
 - . . dendrimers
 - RT molecular chains
 - molecular structure
 - molecular weight
 - ∞ polymers
 - proteins
- macrophages**
- GS cells (biology)
 - . **macrophages**
 - RT tissues (biology)
- macroscopic equations**
- RT ∞ equations
 - ∞ measurement
 - ∞ properties
- statistical mechanics
- macular vision*
- USE **vision**
- Madagascar**
(added September 1993)
- UF *Malagasy Republic*
 - GS landforms
 - . islands
 - . . **Madagascar**
 - nations
 - . **Madagascar**
 - RT Africa
 - Indian Ocean
- Madden-Julian Oscillation**
(added September 2000)
- DEF The most dominant and coherent component of the intraseasonal variability in the tropical atmosphere; characterized by a strong eastward propagation of atmospheric features, with a typical period of 30-60 days. The Madden-Julian Oscillation (MJO) may influence the tropical climate and its short-term variability by modulating the timing and strength of El Niño - Southern Oscillation (ENSO) events, contributing to the mean heat budget of the western Pacific, and regulating the annual cycle of the tropical western Pacific, especially the Australian summer monsoon.
- UF *MJO (meteorology)*
 - GS oscillations
 - . **Madden-Julian Oscillation**
 - variations
 - . periodic variations
 - . . intraseasonal variations
 - . . . **Madden-Julian Oscillation**
 - RT air water interactions
 - annual variations
 - atmospheric circulation
 - atmospheric models
 - climatology
 - el Niño
 - monsoons
 - Southern Oscillation
 - tropical meteorology
 - zonal flow (meteorology)
- Maffei galaxies**
- GS celestial bodies
 - . galaxies
 - . . **Maffei galaxies**
 - RT nebulae
 - radio astronomy
 - radio galaxies
 - radio sources (astronomy)
 - spiral galaxies
- magazines (supply chambers)**
- RT ammunition
 - photographic film
 - spools
- Magdalena-Cauca Valley (Colombia)**
- GS landforms
 - . **Magdalena-Cauca Valley (Colombia)**
 - valleys
 - . **Magdalena-Cauca Valley (Colombia)**
 - RT Colombia
 - South America
- Magellan Mission (ESA)*
- USE **Magellan ultraviolet astronomy satellite**
- Magellan project (NASA)**
- SN (DOES NOT INCLUDE THE MAGELLAN ULTRAVIOLET ASTRONOMY SATELLITE)
 - DEF A Venus exploratory mission to acquire radar imagery and topographic profiles of the planet surface and determine the characteristics of the Venusian gravity field. (This term is used to designate general project reviews, chronologies, and project management and planning.) Used for Venus Radar Mapper Project.
 - UF *Venus Radar Mapper Project*
 - GS programs
 - . NASA programs

Magellan spacecraft (NASA)

- . . NASA space programs
- . . . **Magellan project (NASA)**
- . projects
- . . . **Magellan project (NASA)**
- . space programs
- . . NASA space programs
- . . . **Magellan project (NASA)**

- RT Magellan spacecraft (NASA)
- space exploration
- space missions
- Venus orbiting imaging radar
- (spacecraft)
- Venus probes
- Venus surface

Magellan spacecraft (NASA)

SN (DOES NOT INCLUDE THE MAGELLAN ULTRAVIOLET ASTRONOMY SATELLITE)

DEF A Venus probe incorporating Voyager and Galileo hardware designs equipped with a synthetic aperture radar system to acquire surface imagery, altimetric profiles, and surface radiothermal emissivities. Earth-based Doppler radio tracking of the spacecraft will be used to derive gravimetric data. (This term designates the spacecraft intrinsic and support hardware, instrumentation acquired data.) Used for Venus Radar Mapper.

- UF *Venus Radar Mapper*
- GS interplanetary spacecraft
- . Venus probes
- . . **Magellan spacecraft (NASA)**
- unmanned spacecraft
- . space probes
- . . Venus probes
- . . . **Magellan spacecraft (NASA)**
- RT Magellan project (NASA)
- radar imagery
- ∞ spacecraft
- synthetic aperture radar
- Venus orbiting imaging radar
- (spacecraft)
- Venus surface

Magellan ultraviolet astronomy satellite

DEF This ESA mission will provide high resolution spectra of celestial sources down to sixteenth magnitude over the extreme ultraviolet wavelength range (between 50 and 150 nm). This mission is still in the study phase. Used for Magellan Mission (ESA).

- UF *Magellan Mission (ESA)*
- GS artificial satellites
- . ESA satellites
- . . **Magellan ultraviolet astronomy satellite**
- . scientific satellites
- . . astronomical satellites
- . . . **Magellan ultraviolet astronomy satellite**
- ESA spacecraft
- . ESA satellites
- . . **Magellan ultraviolet astronomy satellite**
- observatories
- . astronomical observatories
- . . astronomical satellites
- . . . **Magellan ultraviolet astronomy satellite**
- RT extreme ultraviolet radiation
- far ultraviolet radiation
- spaceborne astronomy

Magellanic clouds

- GS celestial bodies
- . galaxies
- . . **Magellanic clouds**
- RT ∞ clouds
- nebulae
- Orion nebula
- star clusters
- stars
- supernova 1987A

magic tees

DEF Compound waveguides or coaxial tees with four arms which exhibit directional characteristics, when properly matched, so that a signal entering one arm will be split between two of the other arms but not the third. A signal entering

another arm is likewise split with half the energy entering one of the arms common to the other input but not its second arm and the other half of the energy entering the arm not used by the other input. Magic tees are used in radar as transmitter receiver duplexers.

- RT duplexers

magma

DEF Naturally occurring mobile rock materials, generated within the Earth and capable of intrusion and extrusion, from which igneous rocks are thought to have been derived by solidification and related processes.

- GS geophysical fluids
- . **magma**
- RT igneous rocks
- lava
- petrogenesis
- regolith
- rhyolite
- rocks
- soils
- volcanic eruptions

magnesium

- GS chemical elements
- . **magnesium**
- . . magnesium isotopes
- metals
- . **magnesium**
- . . magnesium isotopes

magnesium alloys

- GS alloys
- . light alloys
- . . **magnesium alloys**
- RT aluminum-lithium alloys
- bismuth alloys
- lithium alloys
- silicon alloys

magnesium bromides

- GS halogen compounds
- . bromine compounds
- . . bromides
- . . . **magnesium bromides**
- . halides
- . . bromides
- . . . **magnesium bromides**
- . metal halides
- . . . **magnesium bromides**
- magnesium compounds
- . **magnesium bromides**

magnesium cells

DEF Primary cells with the negative electrodes made of magnesium or its alloy.

- GS electric generators
- . direct power generators
- . . primary batteries
- . . . dry cells
- **magnesium cells**
- electrochemical cells
- . electric batteries
- . . primary batteries
- . . . dry cells
- **magnesium cells**
- RT chemical auxiliary power units
- electrolytic polarization

magnesium chlorides

- GS halogen compounds
- . chlorine compounds
- . . chlorides
- . . . **magnesium chlorides**
- . halides
- . . chlorides
- . . . **magnesium chlorides**
- magnesium compounds
- . **magnesium chlorides**

magnesium compounds

- GS **magnesium compounds**
- . brucite
- . chlorophylls
- . cordierite
- . dolomite (mineral)
- . enstatite
- . forsterite

- . magnesium bromides
- . magnesium chlorides
- . magnesium fluorides
- . magnesium germanates
- . magnesium germanides
- . magnesium oxides
- . . akermanite
- . . periclase
- . magnesium perchlorates
- . magnesium sulfates
- . . hexahedrite
- . magnesium titanates
- . merwinite
- . monticellite
- . talc
- RT ∞ alkaline earth compounds
- ∞ chemical compounds
- ∞ metal compounds

magnesium fluorides

- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . metal fluorides
- **magnesium fluorides**
- . halides
- . . fluorides
- . . . metal fluorides
- **magnesium fluorides**
- . metal halides
- . . metal fluorides
- **magnesium fluorides**
- magnesium compounds
- . **magnesium fluorides**

magnesium germanates

- GS germanium compounds
- . germanates
- . . **magnesium germanates**
- magnesium compounds
- . **magnesium germanates**

magnesium germanides

- GS germanium compounds
- . germanides
- . . **magnesium germanides**
- magnesium compounds
- . **magnesium germanides**

magnesium isotopes

- GS chemical elements
- . magnesium
- . . **magnesium isotopes**
- . nuclides
- . . isotopes
- . . . **magnesium isotopes**
- metals
- . magnesium
- . . **magnesium isotopes**

magnesium oxides

- GS chalcogenides
- . oxides
- . . metal oxides
- . . . alkaline earth oxides
- **magnesium oxides**
- akermanite
- periclase
- magnesium compounds
- . **magnesium oxides**
- . . akermanite
- . . periclase

magnesium perchlorates

- GS halogen compounds
- . chlorine compounds
- . . perchlorates
- . . . **magnesium perchlorates**
- magnesium compounds
- . **magnesium perchlorates**

magnesium sulfates

- GS magnesium compounds
- . **magnesium sulfates**
- . . hexahedrite
- sulfur compounds
- . sulfates
- . . **magnesium sulfates**
- . . . hexahedrite

- RT bloedite
nonuniform magnetic fields
magnetic damping
- magnesium titanates**
GS magnesium compounds
. **magnesium titanates**
titanium compounds
. titanates
. . **magnesium titanates**
- Magnesyln (trademark)*
USE **servomotors**
- magnet coils**
GS electric coils
. magnetic coils
. . **magnet coils**
RT ∞ coils
electromagnetism
electromagnets
field coils
inductors
magnetic circuits
magnetic cores
magnetic energy storage
magnets
saturable reactors
solenoids
superconducting magnets
toroids
transformers
wire winding
yokes
- magnetars**
(*added January 2000*)
DEF Highly magnetized neutron stars believed to emit quasi-steady x-rays along with bursts of soft gamma rays-- emissions powered by their magnetic energy. According to the magnetar theory, these stars form in some fraction of all supernovae. When they are young (with ages less than about 10,000 years) magnetars may be observed as soft gamma repeaters (SGRs) or anomalous X-ray pulsars.
GS celestial bodies
. stars
. . magnetic stars
. . . **magnetars**
. . neutron stars
. . . **magnetars**
RT pulsars
soft gamma repeaters
supernova remnants
x ray sources
- magnetic absorption*
USE **electromagnetic absorption**
- magnetic amplifiers**
GS amplifiers
. **magnetic amplifiers**
RT magnetostatic amplifiers
nonlinearity
power amplifiers
saturable reactors
voltage amplifiers
- magnetic annular arc**
RT ∞ arcs
current distribution
plasma accelerators
plasma control
plasma propulsion
- magnetic annular shock tubes**
UF *MAST shock tubes*
GS shock wave generators
. shock tubes
. . **magnetic annular shock tubes**
- magnetic anomalies**
UF *geomagnetic anomalies*
GS anomalies
. **magnetic anomalies**
. . geomagnetic hollow
RT aeromagnetism
geomagnetism
- magnetic bearings**
DEF Any application of the principle in which something capable of rotation and translation is held by the use of electromagnetic force without touching it. Applications range from small instruments to very large forces.
GS bearings
. **magnetic bearings**
RT levitation
magnetic suspension
- magnetic charge density**
UF *scalar magnetic charge*
GS divergence
. **magnetic charge density**
RT ∞ charging
constitutive equations
Maxwell equation
- magnetic circuits**
GS circuits
. **magnetic circuits**
RT flux (rate)
lines of force
magnet coils
saturable reactors
transformers
- magnetic clouds**
GS magnetic fields
. **magnetic clouds**
particles
. charged particles
. . plasma clouds
. . . **magnetic clouds**
RT ∞ clouds
interplanetary magnetic fields
interplanetary medium
interstellar gas
interstellar magnetic fields
magnetic field configurations
solar corona
solar wind
stellar mass ejection
- magnetic coils**
GS electric coils
. **magnetic coils**
. . field coils
. . magnet coils
RT ∞ coils
electromagnetic hammers
electromagnetism
flux pumps
- magnetic compasses**
DEF Compasses whose operation depends upon an element that senses the Earth's magnetic field, e.g., an instrument having a magnetic needle that turns freely on a pivot in a horizontal plane and that always swings to such a position that one end points to magnetic north.
GS measuring instruments
. indicating instruments
. . compasses
. . . **magnetic compasses**
navigation aids
. navigation instruments
. . compasses
. . . **magnetic compasses**
RT gyrocompasses
solar compasses
- magnetic compression**
DEF The force exerted by a magnetic field on an electrically conducting fluid or on a plasma.
RT compressing
confinement
plasma control
plasmas (physics)
- magnetic control**
RT attitude control
 ∞ control
- magnetic cooling**
DEF Keeping a substance cooled to about 0. 2 K by using a working substance (paramagnetic salt) in a cycle of processes between a high-temperature reservoir (liquid helium) at 1. 2 K and a low temperature reservoir containing the substance to be cooled.
GS cooling
. **magnetic cooling**
RT absorption cooling
adiabatic demagnetization cooling
low temperature
low temperature environments
refrigerating
- magnetic cores**
GS cores
. **magnetic cores**
RT bubble memory devices
electric coils
ferrites
ferromagnetism
laminates
magnet coils
magnets
parametrons
saturable reactors
toroids
transformers
- magnetic damping**
(*added January 2004*)
DEF Mechanical, electromagnetic, or plasmadynamic damping induced by an applied magnetic field.
GS damping
. **magnetic damping**
magnetic properties
. magnetic effects
. . **magnetic damping**
RT Landau damping
magnetic control
vibration damping
- magnetic diffusion**
SN (DIFFUSION VIA A MAGNETIC FIELD)
GS diffusion
. **magnetic diffusion**
RT field strength
- magnetic dipoles**
RT ∞ dipoles
electric dipoles
 ∞ physical properties
 ∞ poles
- magnetic disks**
GS computer components
. computer storage devices
. . **magnetic disks**
magnetic storage
. **magnetic disks**
RT core storage
disk operating system (DOS)
 ∞ disks
memory (computers)
peripheral equipment (computers)
video disks
- magnetic dispersion**
RT ∞ dispersion
electromagnetic scattering
ferromagnetism
magnetization
wave scattering
- magnetic disturbances**
GS **magnetic disturbances**
. magnetic storms
. . polar substorms
RT auroras
Birkeland currents
 ∞ disturbances
geomagnetism
KP index
nonadiabatic theory
solar activity
solar activity effects

magnetic domains

solar flares
solar planetary interactions
solar terrestrial interactions
solar wind velocity
space weather
starspots
stellar activity
sudden ionospheric disturbances
sudden storm commencements
sunspots

magnetic domains

DEF Small areas on the surface of the body of thin films of a magnetic medium, each of which maintains a discrete magnetic field orientation relative to the others around it.

GS domains
. **magnetic domains**
RT bubble memory devices
bubble technique
dipole moments
domain wall
lines of force
magnetic force microscopy

magnetic drums

DEF Memory devices used in computers; rotating cylinders on which information may be stored as magnetically polarized areas, usually along several parallel tracks around the periphery.

GS computer components
. computer storage devices
. . **magnetic drums**
magnetic storage
. **magnetic drums**
RT core storage
 ∞ drums

magnetic effects

UF *geomagnetic effects*
GS magnetic properties
. **magnetic effects**
. . magnetic damping
. . magnetic rigidity
RT ∞ effects
flux transfer events
geomagnetism
magnetoactivity
plasma compression
quantum Hall effect
temperature effects

magnetic energy storage

GS energy storage
. **magnetic energy storage**
RT energy technology
magnet coils
magnetic fields
superconducting magnets

magnetic equator

DEF That line on the surface of the Earth connecting all points at which the magnetic dip is zero. Used for geomagnetic equator.

UF *geomagnetic equator*
GS equators
. **magnetic equator**
RT geomagnetism
 ∞ inclination

magnetic field configurations

GS **magnetic field configurations**
. magnetic islands
RT astrophysics
divertors (fusion reactors)
electromagnetic fields
flux transfer events
force-free magnetic fields
helical windings
magnetic clouds
magnetic field reconnection
plasma compression
plasma control
plasma physics
polar cusps
poloidal flux
spheromaks

stellar magnetic fields

magnetic field intensity
USE **magnetic flux**

magnetic field inversions

GS inversions
. **magnetic field inversions**
RT electromagnetic fields
electromagnetism
electromechanics
field theory (physics)

magnetic field reconnection

DEF A change in topology of the magnetic field configuration resulting from a localized breakdown of the requirement for 'connection' of fluid elements at one time on a common magnetic field line. Alternatively, it occurs when an electric field exists with a component parallel to a locally two-dimensional X-type magnetic neutral line which is equivalent to a breakdown in connection.

GS magnetic properties
. magnetoactivity
. . **magnetic field reconnection**
RT field aligned currents
flux transfer events
interplanetary magnetic fields
magnetic field configurations
magnetic fields
magnetic flux
magnetic islands
magnetosphere-ionosphere coupling
solar magnetic field
space plasmas

magnetic fields

DEF Regions of space wherein magnetic dipoles would experience a magnetic force or torque; often represented as the geometric array of the imaginary magnetic lines of force that exist in relation to magnetic poles. Magnetic fields are also considered to be the regions of influence of magnetized bodies or electric currents.

GS **magnetic fields**
. biomagnetism
. force-free magnetic fields
. geomagnetism
. interplanetary magnetic fields
. interstellar magnetic fields
. lunar magnetic fields
. magnetic clouds
. magnetostatic fields
. nonuniform magnetic fields
. paleomagnetism
. planetary magnetic fields
. stellar magnetic fields
. . solar magnetic field
. trapped magnetic fields

RT Bernstein energy principle
beta factor
Biot-Savart law
conjugate points
constitutive equations
crossed fields
demagnetization
Earth magnetosphere
electric fields
electromagnetic acceleration
electromagnetic fields
electromagnetism
electromechanics
electron-hole drops
ferromagnetic resonance
field emission
field strength
field theory (physics)
 ∞ fields
flux pumps
flux transfer events
geomagnetic tail
Helios satellites
Intasat satellite
 ∞ Kerr effects
lines of force
Lorentz force
magnetic energy storage
magnetic field reconnection

magnetic force microscopy
magnetization
magnetoactivity
magneto-optics
magnetoplasma dynamics
magneto-resistivity
magnetostatics
magnets
multipolar fields
nonthermal radiation
particle acceleration
pinch effect
polar cusps
polarity
pulsar magnetospheres
racetracks (particle accelerators)
radiation belts
screw pinch
Scylla
self consistent fields
square wells
stellar magnetospheres
Suhl effect
Zeeman effect

magnetic films

GS coatings
. **magnetic films**
RT ∞ films

magnetic flux

DEF The magnetic force exerted on an imaginary unit magnetic pole placed at any specified point of space. It is a vector quantity. Its direction is taken as the direction toward which a north magnetic pole would tend to move under the influence of the field. If the force is measured in dynes and the unit pole is a cgs unit pole, the field intensity is given in oersteds. Used for magnetic field intensity.

UF *magnetic field intensity*
GS field strength
. **magnetic flux**
rates (per time)
. flux (rate)

. . **magnetic flux**
RT beta factor
constitutive equations
current sheets
flux pinning
flux quantization
flux transfer events
force-free magnetic fields
lines of force
magnetic field reconnection
pinning

magnetic force microscopy

(added June 2004)

DEF A form of microscopy designed to study magnetic materials on a nanometer scale by detecting magnetic forces or force gradients exerted on a probing tip that is moved over a sample surface.

UF *MFM (microscopy)*
GS microscopy
. **magnetic force microscopy**
RT imaging techniques
magnetic domains
magnetic fields
magnetic materials
magnetic measurement
magnetic probes
magnetic resonance

magnetic forming

GS forming techniques
. **magnetic forming**
metal working
. **magnetic forming**
RT bulging
cold working
deep drawing
electromagnetic hammers
metal drawing

magnetic induction

UF *electromagnetic deduction*
GS magnetic properties
. **magnetic induction**

- RT coupling coefficients
flux (rate)
inductance
∞ induction
induction heating
- magnetic induction probes*
USE **magnetic probes**
- magnetic islands**
(added October 1994)
GS magnetic field configurations
. **magnetic islands**
RT coalescing
collisionless plasmas
current sheets
geomagnetic tail
magnetic field reconnection
- magnetic lenses**
UF *quadrupole lenses*
GS lenses
. **magnetic lenses**
RT cathode ray tubes
electron beams
electron guns
electron microscopes
electron microscopy
plasma guns
plasma jets
scanning electron microscopy
transmission electron microscopy
wire grid lenses
- magnetic levitation vehicles**
GS surface vehicles
. **magnetic levitation vehicles**
RT levitation
lift devices
mass drivers
rail transportation
suspension systems (vehicles)
∞ vehicles
- magnetic materials**
UF *magnetic metals*
GS **magnetic materials**
. ferrimagnetic materials
. ferromagnetic materials
. . ferrofluids
. . ferromagnetic films
. . magnetite
. . Permalloys (trademark)
RT Kondo effect
magnetic force microscopy
magnetorheological fluids
magnets
∞ materials
permanent magnets
- magnetic measurement**
SN (MEASUREMENT OF MAGNETIC PROPERTIES, QUANTITIES OR CONDITIONS)
UF *fluxmeters*
magnetometry
RT electromagnetic measurement
magnetic force microscopy
magnetometers
∞ materials tests
∞ measurement
squid (detectors)
- magnetic memories*
USE **magnetic storage**
- magnetic metals*
USE **magnetic materials**
metals
- magnetic mirrors**
DEF Magnetic fields so arranged that they will theoretically confine a hot plasma.
GS mirrors
. **magnetic mirrors**
. . tandem mirrors
RT lines of force
mirror fusion
mirror point
nonuniform magnetic fields
nuclear fusion
- plasma control
plasma equilibrium
Q devices
Scylla
spheromaks
- magnetic moments**
DEF The quantities obtained by multiplying the distances between two magnetic poles by the average strength of the poles. Measures of the magnetic flux set up by the gyration of an electric field in a magnetic field. Moments are negative, indicating they are diagramatic, and equal to the energy of rotation divided by the magnetic field. In atomic and nuclear physics, moments, measured in Bohr magnetrons, are associated with the intrinsic spin of the particle and with the orbital motion of the particle in a system.
GS magnetic properties
. **magnetic moments**
moments
. dipole moments
. . **magnetic moments**
RT Bohr magneton
electric moments
Langevin formula
quenching (atomic physics)
- magnetic monopoles**
GS monopoles
. **magnetic monopoles**
particles
. elementary particles
. . **magnetic monopoles**
RT quantum theory
- magnetic nozzles**
(added September 1999)
DEF Nozzle devices used in some nuclear and plasma propulsion systems that utilize magnetic fields to direct and accelerate plasma flows, thereby providing thrust for propulsion.
RT coaxial plasma accelerators
electric rocket engines
∞ nozzles
nuclear propulsion
nuclear rocket engines
plasma acceleration
plasma engines
plasma propulsion
rocket nozzles
spacecraft propulsion
VASIMR (propulsion system)
- magnetic permeability**
UF *magnetic susceptibility*
susceptibility (magnetism)
GS magnetic properties
. **magnetic permeability**
RT Curie-Weiss law
dielectric permeability
hysteresis
neel temperature
reluctance
- magnetic pistons**
GS pistons
. **magnetic pistons**
RT hypersonic wind tunnels
hypervelocity wind tunnels
shock tubes
shock wave generators
- magnetic poles**
DEF Either of the two places on the surface of the Earth where the magnetic dip is 90 deg., that in the Northern Hemisphere (at, approximately, latitude 73 deg. 8 N, longitude 101 deg. W in 1955) being designated north magnetic pole, and that in the Southern Hemisphere (at, approximately, latitude, 68 deg. S, longitude 144 deg. E in 1955) being designated south magnetic pole. Either of those two points of a magnet where the magnetic force is the greatest. In magnetic theory, a fictitious entity analogous to a unit charge of electrostatic theory. In nature, only dipoles, not isolate magnetic poles exist.
RT auroral zones
∞ dipoles
- geomagnetism
polarity
∞ poles
- magnetic probes**
UF *magnetic induction probes*
GS measuring instruments
. **magnetic probes**
RT magnetic force microscopy
magnetometers
resonance probes
space probes
- magnetic properties**
GS **magnetic properties**
. antiferromagnetism
. biomagnetism
. Curie temperature
. diamagnetism
. ferrimagnetism
. ferromagnetism
. geomagnetism
. gyromagnetism
. . gyrofrequency
. magnetic effects
. . magnetic damping
. . magnetic rigidity
. magnetic induction
. magnetic moments
. magnetic permeability
. magnetic relaxation
. . spin-lattice relaxation
. magnetic suspension
. magnetoacoustics
. magnetoactivity
. . flux transfer events
. . magnetic field reconnection
. . magnetoconductivity
. magnetostriction
. paleomagnetism
. paramagnetism
. polarization characteristics
. reluctance
. remanence
. thermomagnetic effects
RT coercivity
Curie-Weiss law
dipole moments
eddy currents
electrical properties
electromagnetic properties
electromagnetism
ferritic stainless steels
field strength
hysteresis
inductance
KP index
lines of force
magnetization
magnetomechanics (physics)
magnets
Maxwell equation
∞ physical properties
polarization (spin alignment)
∞ properties
∞ solid state physics
spin glass
- magnetic pumping**
RT electron cyclotron heating
induction heating
ion cyclotron radiation
kinetic heating
plasma heating
∞ pumping
- magnetic recording**
UF *magnetic tape recorders*
GS recording
. **magnetic recording**
RT bubble memory devices
data recording
recording heads
- magnetic relaxation**
GS magnetic properties
. **magnetic relaxation**
. . spin-lattice relaxation

magnetic resonance

RT relaxation (mechanics)

magnetic resonance

GS resonance

. **magnetic resonance**

. . ferromagnetic resonance

. . nuclear magnetic resonance

. . . proton magnetic resonance

. . . proton resonance

. . paramagnetic resonance

. . . electron paramagnetic resonance

RT magnetic force microscopy

magnetic resonance spectroscopy

nuclear spin

Overhauser effect

spectrum analysis

magnetic resonance spectroscopy

(added August 2004)

DEF Spectroscopic method of measuring the magnetic moment of elementary particles such as atomic nuclei, protons or electrons. It is employed in clinical applications such as NMR Tomography (magnetic resonance imaging).

GS spectroscopy

. magnetic spectroscopy

. . **magnetic resonance**

spectroscopy

RT chemical analysis

magnetic resonance

magnetic rigidity

UF *gyrointeraction*

GS magnetic properties

. magnetic effects

. . **magnetic rigidity**

RT electron trajectories

ionospheric drift

particle mass

particle motion

∞ rigidity

magnetic sails

(added May 1995)

DEF Devices that provide low thrust spacecraft propulsion by deflecting plasma winds with a superconducting cable-generated magnetic field.

UF *field sails*

magsails

GS propulsion

. electric propulsion

. . electromagnetic propulsion

. . . **magnetic sails**

. low thrust propulsion

. . electromagnetic propulsion

. . . **magnetic sails**

. spacecraft propulsion

. . electromagnetic propulsion

. . . **magnetic sails**

sails

. **magnetic sails**

RT interplanetary flight

interstellar travel

ion propulsion

manned Mars missions

particle beams

plasma propulsion

solar wind

magnetic shielding

GS shielding

. **magnetic shielding**

RT electromagnetic shielding

magnetometers

radiation shielding

magnetic signals

RT nuclear magnetic resonance

signal mixing

∞ signals

magnetic signatures

UF *magnetograms*

GS signatures

. **magnetic signatures**

RT pattern registration

magnetic spectroscopy

GS spectroscopy

. **magnetic spectroscopy**

. . magnetic resonance spectroscopy

RT Alpha Magnetic Spectrometer

gas spectroscopy

mass spectroscopy

spectroscopic analysis

vacuum spectroscopy

magnetic stars

GS celestial bodies

. stars

. . **magnetic stars**

. . . magnetars

RT peculiar stars

magnetic storage

DEF In computer terminology, any device which makes use of the magnetic properties of materials for the storage of information. Used for magnetic memories.

UF *magnetic memories*

GS **magnetic storage**

. bubble memory devices

. core storage

. magnetic disks

. magnetic drums

RT computer storage devices

data recording

data storage

∞ drums

parametrons

∞ storage

virtual memory systems

magnetic storms

DEF Worldwide disturbances of the Earth's magnetic field. Used for geomagnetic storms and magnetic substorms.

UF *geomagnetic storms*

magnetic substorms

GS magnetic disturbances

. **magnetic storms**

. . polar substorms

storms

. **magnetic storms**

. . polar substorms

RT Birkeland currents

dawn chorus

Forbush decreases

IMAGE satellite

noise storms

solar storms

solar terrestrial interactions

space weather

spread F

sudden ionospheric disturbances

sudden storm commencements

magnetic substorms

USE **magnetic storms**

magnetic surveys

UF *magnetotelluric profiling*

RT aeromagnetism

geomagnetism

magnetic susceptibility

USE **magnetic permeability**

magnetic suspension

UF *electromagnetic levitation*

electrostatic levitation

GS magnetic properties

. **magnetic suspension**

suspending (hanging)

. **magnetic suspension**

RT annular suspension and pointing

system

levitation melting

magnetic bearings

magnetic switching

GS switching

. **magnetic switching**

RT antiferromagnetism

beam switching

bubble memory devices

saturable reactors

magnetic tape recorders

USE **magnetic recording**

tape recorders

magnetic tape transports

GS mechanical drives

. **magnetic tape transports**

RT tape recorders

magnetic tapes

DEF Ribbons of paper, metal, or plastic, coated or impregnated with magnetic material on which information may be stored in the form of magnetically polarized areas.

GS **magnetic tapes**

. computer compatible tapes

RT audio tapes

peripheral equipment (computers)

plastic tapes

playbacks

punched tapes

readers

recording heads

reels

tape recorders

∞ tapes

video tapes

magnetic transducers

GS transducers

. **magnetic transducers**

RT electromagnetic measurement

electronic transducers

microphones

magnetic variations

DEF Changes in magnetic fields in time or space.

GS variations

. **magnetic variations**

. . geomagnetic pulsations

. . . geomagnetic micropulsations

. . . nocturnal variations

RT aeromagnetism

annual variations

diurnal variations

ionospheric disturbances

KP index

Scylla

traveling ionospheric disturbances

magnetically trapped particles

GS particles

. charged particles

. . **magnetically trapped particles**

. . . radiation belts

. . . . artificial radiation belts

. . . . inner radiation belt

. . . . outer radiation belt

. . . . proton belts

. trapped particles

. . **magnetically trapped particles**

. . . radiation belts

. . . . artificial radiation belts

. . . . inner radiation belt

. . . . outer radiation belt

. . . . proton belts

RT plasma control

trapped magnetic fields

magnetite

GS chalcogenides

. oxides

. . metal oxides

. . . iron oxides

. . . . **magnetite**

iron compounds

. iron oxides

. . **magnetite**

magnetic materials

. ferromagnetic materials

. . **magnetite**

minerals

. **magnetite**

magnetization

UF *remagnetization*

RT coercivity

- magnetic dispersion
 - magnetic fields
 - magnetic properties
 - magnetomechanics (physics)
 - magnets
 - magnons
 - ∞ polarization
 - polarization (charge separation)
 - polarization (spin alignment)
- magnetoacoustic waves**
 - GS elastic waves
 - . magnetoelastic waves
 - . . **magnetoacoustic waves**
 - RT magneto hydrodynamic waves
 - plasma waves
- magnetoacoustics**
 - GS acoustics
 - . **magnetoacoustics**
 - magnetic properties
 - . **magnetoacoustics**
- magnetoactivity**
 - GS magnetic properties
 - . **magnetoactivity**
 - . . flux transfer events
 - . . magnetic field reconnection
 - . . magneto resistivity
 - RT magnetic effects
 - magnetic fields
- magnetocardiography**
 - GS bioengineering
 - . biometrics
 - . . cardiology
 - . . . **magnetocardiography**
 - RT bioinstrumentation
- magnetoelastic vibrations*
 - USE **magnetoelastic waves**
- magnetoelastic waves**
 - UF *magnetoelastic vibrations*
 - GS elastic waves
 - . **magnetoelastic waves**
 - . . magnetoacoustic waves
 - RT electrostatic waves
 - magnetosonic resonance
 - magnetospheric instability
 - magnetostriction
 - plasma waves
 - sound waves
 - ultrasonic radiation
- magnetoelasticity*
 - USE **magnetostriction**
- magneto electric media**
 - RT dielectrics
 - magnetoionics
 - Maxwell equation
 - mechanical drives
- magnetogas dynamics*
 - USE **magneto hydrodynamics**
- magnetograms*
 - USE **magnetic signatures**
- magneto hydrodynamic acceleration*
 - USE **plasma acceleration**
- magneto hydrodynamic flow**
 - UF *hydromagnetic flow*
 - plasma flow*
 - GS fluid flow
 - . **magneto hydrodynamic flow**
 - RT compressible flow
 - core flow
 - gas flow
 - geomagnetic hollow
 - Hartmann flow
 - Kelvin-Helmholtz instability
 - line current
 - magneto hydrodynamic simulation
 - magneto hydrodynamics
 - plasma flux measurement
 - plasma turbulence
 - plasmas (physics)
 - reverse field pinch
- screw pinch
- solar wind velocity
- transverse waves
- two fluid models
- magneto hydrodynamic generators**
 - GS electric generators
 - . direct power generators
 - . . **magneto hydrodynamic generators**
 - RT fuel cells
 - ∞ generators
 - magneto hydrodynamics
 - plasma accelerators
 - plasma generators
 - thermionic converters
 - thermoelectric generators
- magneto hydrodynamic shear heating**
 - GS heating
 - . **magneto hydrodynamic shear heating**
 - RT plasma heating
 - plasma sheaths
 - shock heating
 - viscous flow
- magneto hydrodynamic simulation**
 - (added June 2005)
 - DEF Simulation of the interaction that exists between a magnetic field and an electrically conducting fluid.
 - GS simulation
 - . **magneto hydrodynamic simulation**
 - RT magneto hydrodynamic flow
 - magneto hydrodynamics
 - meshfree methods
 - plasma turbulence
 - turbulence models
- magneto hydrodynamic stability**
 - UF *hydromagnetic stability*
 - plasma instability*
 - plasma stability*
 - GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **magneto hydrodynamic stability**
 - Weibel instability
 - flow characteristics
 - flow stability
 - **magneto hydrodynamic stability**
 - Weibel instability
 - stability
 - dynamic stability
 - motion stability
 - flow stability
 - **magneto hydrodynamic stability**
 - Weibel instability
 - RT ballooning modes
 - beta factor
 - elastic waves
 - elliptical plasmas
 - force-free magnetic fields
 - helical flow
 - Kelvin-Helmholtz instability
 - Langmuir turbulence
 - magneto hydrodynamics
 - magneto hydrostatics
 - nonequilibrium plasmas
 - nonuniform plasmas
 - plasma conductivity
 - plasma cooling
 - plasma decay
 - plasma drift
 - plasma equilibrium
 - plasma lifetime
 - plasma loss
 - plasma pinch
 - plasma potentials
 - plasma slabs
 - plasma temperature
 - plasma turbulence
 - plasmas (physics)
 - plasmons
 - space plasmas
 - strongly coupled plasmas
- thermal instability
- zeta pinch
- magneto hydrodynamic turbulence**
 - GS turbulence
 - . **magneto hydrodynamic turbulence**
 - . . plasma turbulence
 - . . . Langmuir turbulence
 - RT homogeneous turbulence
 - isotropic turbulence
- magneto hydrodynamic waves**
 - DEF Low frequency waves in an electrically highly conducting fluid (such as a plasma) permeated by static magnetic fields. The restoring forces of the waves are, in general, the combination of a magnetic tensile stress along the magnetic field lines and the comprehensive stress between the field lines and the fluid pressure. Used for Alfvén waves, hydromagnetic waves, and plasma sound waves.
 - UF *Alfvén waves*
 - hydromagnetic waves*
 - plasma sound waves*
 - GS elastic waves
 - . **magneto hydrodynamic waves**
 - . . plasma waves
 - . . . electrostatic waves
 - RT magnetoacoustic waves
 - magneto hydrodynamics
 - normal shock waves
 - oblique shock waves
 - shock waves
 - wave-particle interactions
- magneto hydrodynamics**
 - DEF The study of the interaction that exists between a magnetic field and an electrically conducting fluid. Used for geometrical hydro-magnetics, hydromagnetics, hydromagnetism, and magnetogas dynamics.
 - UF *geometrical hydromagnetics*
 - hydromagnetics*
 - hydromagnetism*
 - magnetogas dynamics*
 - GS mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . hydrodynamics
 - **magneto hydrodynamics**
 - hydromechanics
 - hydrodynamics
 - **magneto hydrodynamics**
 - RT alpha plasma devices
 - conducting fluids
 - ∞ dynamics
 - electric arcs
 - electrohydrodynamics
 - gas dynamics
 - gas transport
 - Hall accelerators
 - Hall effect
 - Hartmann flow
 - Hartmann number
 - ionization
 - magneto hydrodynamic flow
 - magneto hydrodynamic generators
 - magneto hydrodynamic simulation
 - magneto hydrodynamic stability
 - magneto hydrodynamic waves
 - magneto hydrostatics
 - magnetoionics
 - magnetosonic resonance
 - pinch effect
 - plasma currents
 - plasma dynamics
 - plasma physics
 - plasma propulsion
 - plasmas (physics)
 - space charge
 - space mechanics
 - space plasmas
 - stellar activity
 - stellarators
 - thermonuclear reactions
 - uranium plasmas
 - wave-particle interactions
- magneto hydrostatics**
 - GS mechanics (physics)

magnetoionics

. fluid mechanics
. . . hydromechanics
. . . . hydrostatics
. **magneto hydrostatics**
statics
. hydrostatics
. . **magneto hydrostatics**

RT magnetohydrodynamic stability
magnetohydrodynamics
magnetoionics
plasma physics
static stability

magnetoionic plasma

USE **plasmas (physics)**

magnetoionics

RT electromagnetic wave transmission
elliptical polarization
geomagnetism
gyrofrequency
ionospheric propagation
magnetolectric media
magnetohydrodynamics
magnetohydrostatics
plasmas (physics)
radio transmission

magnetomechanics (physics)

DEF Study of the effects which the magnetization of a material and its strain have on each other.

RT magnetic properties
magnetization
∞ physics

magnetometers

DEF Instruments used in the study of geomagnetism for measuring a magnetic element. Used for Gaussmeters.

UF *Gaussmeters*
GS measuring instruments
. **magnetometers**
. . . variometers

RT electrical measurement
field intensity meters
geomagnetism
∞ gradiometers
magnetic measurement
magnetic probes
magnetic shielding
MagSat 1 satellite
Magsat A satellite
MagSat B satellite
MagSat satellites
nuclear magnetic resonance
proton masers

magnetometry

USE **magnetic measurement**

magneto-optics

RT acousto-optics
electromagnetic radiation
electro-optics
Faraday effect
Kerr magneto-optical effect
light modulators
magnetic fields
optical switching
∞ optics
polarization (waves)
polarized electromagnetic radiation

magnetopause

GS environments
. Earth magnetosphere
. . **magnetopause**

RT Chapman-Ferraro problem
flux transfer events
IMAGE satellite
magnetosheath
magnetospheric instability
planetary magnetotails
polar cusps
satellite atmospheres
solar wind

magnetoplasma dynamic thrusters

(added April 2001)

DEF Electromagnetic rocket engines that produce thrust via the Lorentz body force ejecting a high velocity plasma stream. The thrusters can be operated in either steady-state or pulsed mode, and typically have an axisymmetric geometry (annular anode surrounding a central cathode).

UF *LFA thrusters*
Lorentz force accelerator thrusters
MPD thrusters

GS engines
. rocket engines
. . electric rocket engines
. . . plasma engines
. . . . **magnetoplasma dynamic thrusters**

RT arc jet engines
electromagnetic propulsion
magnetoplasma dynamics
plasma accelerators
plasma propulsion
spacecraft propulsion
∞ thrusters

magnetoplasma dynamics

DEF The study of the dynamics of generating electricity by passing a beam of ionized gas through a magnetic field.

RT magnetic fields
magnetoplasma dynamic thrusters
plasma density
plasma propulsion
rocket engines
spacecraft propulsion

magnetoplasmas

USE **plasmas (physics)**

magneto-resistivity

GS electrical properties
. electrical resistivity
. . **magneto-resistivity**
electromagnetic properties
. **magneto-resistivity**
magnetic properties
. magnetoactivity
. . **magneto-resistivity**
transport properties
. electrical resistivity
. . **magneto-resistivity**

RT ∞ conductivity
electromagnetism
Fermi surfaces
Hall resistance
magnetic fields
reluctance
∞ resistance

magnetorheological fluids

(added September 2000)

DEF Fluids comprised of magnetically soft particles dispersed in liquids and possessing rheological properties that can be rapidly and reversibly altered by the application of a magnetic field.

RT electrorheological fluids
ferrofluids
ferromagnetic materials
∞ fluids
magnetic materials
rheology
smart materials
vibration damping

magnetosheath

GS environments
. Earth magnetosphere
. . **magnetosheath**

RT bow waves
Earth environment
geomagnetism
magnetopause
plasma sheaths
shock fronts
solar planetary interactions
solar terrestrial interactions
solar wind

magnetosonic resonance

GS resonance

. **magnetosonic resonance**

RT magnetoelastic waves
magnetohydrodynamics

magnetosphere-ionosphere coupling

UF *ionosphere-magnetosphere coupling*
coupling

GS . **magnetosphere-ionosphere coupling**

RT aeronomy
atmospheric physics
coupled modes
Earth ionosphere
Earth magnetosphere
electromagnetic coupling
flux transfer events
∞ ionospheres
magnetic field reconnection
magnetospheric instability
planetary ionospheres

∞ **magnetospheres**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Region surrounding a celestial body where its magnetic field controls the motions of charged particles.

RT cometary magnetospheres
Earth magnetosphere
planetary magnetospheres
pulsar magnetospheres
stellar magnetospheres

magnetospheric electron density

GS density (number/volume)
. particle density (concentration)
. . electron density (concentration)
. . . **magnetospheric electron density**

RT atmospheric density
ionospheric electron density
plasma density

magnetospheric instability

GS stability
. **magnetospheric instability**

RT geomagnetic pulsations
magnetoelastic waves
magnetopause
magnetosphere-ionosphere coupling

magnetospheric ion density

GS density (number/volume)
. particle density (concentration)
. . ion density (concentration)
. . . **magnetospheric ion density**
. . . . magnetospheric proton density

RT atmospheric density
ionospheric ion density
plasma density
positive ions

magnetospheric proton density

GS density (number/volume)
. particle density (concentration)
. . ion density (concentration)
. . . magnetospheric ion density
. . . . **magnetospheric proton density**

. . . . proton density (concentration)
. . . . **magnetospheric proton density**

RT atmospheric density
plasma density

magnetostatic amplifiers

GS amplifiers
. **magnetostatic amplifiers**

RT gadolinium-gallium garnet
magnetic amplifiers
parametric amplifiers
traveling wave tubes
yttrium-aluminum garnet
yttrium-iron garnet

magnetostatic fields

GS magnetic fields
. **magnetostatic fields**

RT field theory (physics)

lines of force

magnetostatics

- GS electromagnetism
- . **magnetostatics**
- RT electrostatics
- flux (rate)
- magnetic fields

magnetostratigraphy

- (added April 1999)
- GS stratigraphy
- . **magnetostratigraphy**
- RT geochronology
- paleomagnetism

magnetostriction

DEF The phenomenon wherein ferromagnetic materials experience an elastic strain when subjected to an external magnetic field. The converse in which mechanical stresses cause a change in the magnetic induction of a ferromagnetic material. Used for magnetoelasticity.

- UF *magnetoelasticity*
- GS magnetic properties
- . **magnetostriction**
- mechanical properties
- . elastic properties
- . . **magnetostriction**
- RT electrostriction
- magnetoelastic waves

∞ **magnetotails**

- (added April 1990)
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED-CONSULT TERMS LISTED BELOW)
- RT geomagnetic tail
- planetary magnetotails

magnetotelluric profiling

USE **magnetic surveys**

magnetovariographs

USE **variometers**

magnetron sputtering

DEF A deposition method in which a microwave tube is utilized to confine a plasma magnetically to produce high deposition rates and a low working-gas partial pressure.

- GS sputtering
- . **magnetron sputtering**
- RT deposition
- metal coatings

magnetrons

DEF Electron tubes characterized by the interaction of electrons with the electric field of a circuit element in crossed steady electric and magnetic fields to produce alternating current power output.

- GS electron tubes
- . vacuum tubes
- . . microwave tubes
- . . . **magnetrons**
- nigtotrons
- microwave equipment
- . microwave oscillators
- . . **magnetrons**
- . . . nigtotrons
- . microwave tubes
- . . **magnetrons**
- . . . nigtotrons
- oscillators
- . microwave oscillators
- . . **magnetrons**
- . . . nigtotrons
- RT cavity resonators
- crossed field amplifiers
- crossed fields
- electrostatic generators
- klystrons
- multimode resonators
- planotrons
- resonators

traveling wave tubes

magnets

DEF Bodies which produce magnetic fields around themselves.

- GS **magnets**
- . cryogenic magnets
- . electromagnets
- . . high field magnets
- . . superconducting magnets
- . ferrimagnets
- . permanent magnets
- . wiggler magnets
- RT electrets
- ferromagnetic materials
- ferromagnetism
- magnet coils
- magnetic cores
- magnetic fields
- magnetic materials
- magnetic properties
- magnetization
- Permalloys (trademark)

magnification

DEF A ratio of the size of an image to its corresponding object. This is usually determined by linear measurement. Used for magnifiers.

- UF *magnifiers*
- RT amplification
- increasing
- lenses
- ∞ projection

magnifiers

USE **magnification**

magnitude

- GS **magnitude**
- . stellar magnitude
- RT amplitudes
- dimensions
- displacement
- ∞ intensity
- level (quantity)

magnons

- UF *spin waves*
- GS elementary excitations
- . **magnons**
- RT antiferromagnetism
- ferrimagnetism
- ferromagnetism
- magnetization
- plasmons

Magnus effect

- RT Bernoulli theorem
- boundary layer flow
- ∞ effects
- fluid dynamics
- fluid flow
- missile design
- rotating cylinders

magsails

USE **magnetic sails**

MagSat 1 satellite

DEF A scientific satellite launched by NASA for surveying the Earth's magnetic field. It was launched in October 1979 and reentered in June 1980.

- GS artificial satellites
- . scientific satellites
- . . MagSat satellites
- . . . **MagSat 1 satellite**
- RT geomagnetism
- magnetometers

Magsat A satellite

- GS artificial satellites
- . scientific satellites
- . . MagSat satellites
- . . . **Magsat A satellite**
- RT geomagnetism
- magnetometers

MagSat B satellite

DEF The second in a series of satellites for

measuring the Earth's magnetic field. Similar magnetic measurements are proposed as part of the Geopotential Research Mission.

- GS artificial satellites
- . scientific satellites
- . . MagSat satellites
- . . . **MagSat B satellite**
- RT geomagnetism
- magnetometers

MagSat satellites

DEF A series of satellites used to study the magnetic field.

- GS artificial satellites
- . scientific satellites
- . . **MagSat satellites**
- . . . MagSat 1 satellite
- . . . Magsat A satellite
- . . . MagSat B satellite
- RT geomagnetism
- magnetometers

main sequence stars

- GS celestial bodies
- . stars
- . . **main sequence stars**
- . . . dwarf stars
- dwarf novae
- flare stars
- red dwarf stars
- . . sun
- RT color-magnitude diagram
- early stars
- F stars
- G stars
- giant stars
- K stars
- late stars
- M stars
- pre-main sequence stars
- stellar evolution
- stellar mass
- subdwarf stars
- subgiant stars

Maine

- GS nations
- . United States
- . . **Maine**
- RT St Lawrence Valley (North America)

maintainability

DEF A measure of the ease and rapidity with which a system or equipment can be retained in operational status through preventive maintenance or restored to operational status following a failure. It is characteristic of equipment design and installation, personnel availability in the required skill levels, adequacy of maintenance procedures and test equipment, and the physical environment under which maintenance is performed.

- RT design analysis
- maintenance
- reliability

maintenance

- UF *repairing*
- troubleshooting*
- GS **maintenance**
- . aircraft maintenance
- . file maintenance (computers)
- . preventive maintenance
- . space maintenance
- . spacecraft maintenance
- RT checkout
- construction
- damage assessment
- downtime
- equipment specifications
- fault detection
- ∞ fixing
- ground crews
- ground support equipment
- installing
- logistics
- logistics management
- lubricants
- lubrication
- maintainability

maintenance training

- manuals
- mechanical engineering
- operating costs
- reliability
- replacing
- self repairing devices
- service life
- shipyards
- shops
- spare parts
- specifications

maintenance training

- GS education
- . **maintenance training**

majority carriers

- GS charge carriers
- . **majority carriers**
- RT additives
- bipolar transistors
- carrier injection
- electron mobility
- electrons
- holes (electron deficiencies)
- semiconductors (materials)

Malagasy Republic

- USE **Madagascar**

Malawi

- GS nations
- . **Malawi**
- RT Africa

Malaya

- USE **Malaysia**

Malaysia

- UF *Malaya*
- GS nations
- . **Malaysia**
- RT Asia

Maldivé Islands

- GS landforms
- . islands
- . . **Maldivé Islands**
- nations
- . **Maldivé Islands**

maleates

- GS esters
- . **maleates**

males

- RT adults
- children
- females
- human beings
- sex
- sex factor

malfunctions

- DEF Improper functioning of components, causing improper operation of a system.

- RT aborted missions
- aircraft accidents
- aircraft hazards
- downtime
- errors
- failure
- system failures

Mali

- GS nations
- . **Mali**
- RT Africa

Malkus theory

- RT statistical mechanics
- ∞ theories

malleability

- GS mechanical properties
- . **malleability**
- RT ductility
- metal working

malononitrile

- GS cyanides

- . **malononitrile**
- nitrogen compounds
- . nitriles
- . . **malononitrile**
- organic compounds
- . nitriles
- . . **malononitrile**

Malta

- GS landforms
- . islands
- . . **Malta**
- nations
- . **Malta**
- RT Mediterranean Sea

mammals

- GS animals
- . vertebrates
- . . **mammals**
- . . . bats
- . . . bears
- . . . cats
- . . . cattle
- . . . calves
- . . . deer
- caribous
- goats
- horses
- marine mammals
- dolphins
- manatees
- porpoises
- seals (animals)
- whales
- . . . moles
- . . . primates
- apes
- chimpanzees
- baboons
- human beings
- monkeys
- rodents
- guinea pigs
- hamsters
- mice
- jerboas
- knockout mice
- pocket mice
- rabbits
- rats
- squirrels
- ground squirrels
- . . . dogs
- . . . sheep
- . . . swine
- . . . wolves
- RT Earth resources
- homeotherms
- mammary glands

mammary glands

- GS anatomy
- . chest
- . . breast
- . . . **mammary glands**
- . . . glands (anatomy)
- . . **mammary glands**
- RT mammals

man

- USE **human beings**

man environment interactions

- RT biomass burning
- climate change
- desertification
- environment effects
- environment management
- human beings
- ∞ interactions
- International Geosphere-Biosphere program
- resources

man machine systems

- DEF Systems in which the functions of the man and the machine are interrelated and necessary for the operation of the system.

- GS **man machine systems**

- . human-computer interface
- RT astronaut performance
- ∞ automation
- balancing
- bionics
- biotechnology
- computer systems design
- consoles
- cybernetics
- data processing terminals
- depersonalization
- display devices
- ∞ engineering
- human factors engineering
- management
- mechanization
- office automation
- pilot induced oscillation
- pilot support systems
- robotics
- ∞ systems
- systems analysis
- systems engineering
- systems management
- teleoperators
- virtual reality
- workstations

man operated propulsion systems

- UF *MOPS (propulsion systems)*
- GS propulsion
- . low thrust propulsion
- . . **man operated propulsion systems**
- RT astronaut locomotion
- compressed air
- extravehicular activity
- gaseous rocket propellants
- manned space flight
- pilot performance
- retrorocket engines
- ∞ systems

man powered aircraft

- DEF Aircraft powered by human energy.
- RT ∞ aircraft
- hang gliders
- soaring
- ultralight aircraft
- ∞ winged vehicles

man tended free flyers

- (added July 1989)
- DEF Intermittently manned spacecraft or platforms designed primarily to carry out experiments in reduced gravity and life science research. They also serve as annexes or components of space stations. Used for MTFF (space station).

- UF *MTFF (space station)*

- GS artificial satellites
- . space stations
- . . **man tended free flyers**
- manned spacecraft
- . **man tended free flyers**
- space platforms
- . **man tended free flyers**
- stations
- . space stations
- . . **man tended free flyers**

- RT Columbus space station
- European space programs
- orbital servicing
- space station payloads
- spaceborne experiments
- spacecraft modules

management

- UF *administration*
- GS **management**
- . configuration management
- . contract management
- . data management
- . environment management
- . financial management
- . industrial management
- . . engineering management
- . . inventory management
- . . . inventory controls
- . . personnel management

- . information management
- . . information resources management
- . . records management
- . logistics management
- . . inventory management
- . . . inventory controls
- . matrix management
- . procurement management
- . production management
- . project management
- . research management
- . resources management
- . . forest management
- . . . reforestation
- . . information resources management
- . . land management
- . . resource allocation
- . safety management
- . systems management
- . terminal area energy management
- . total quality management
- . waste management
- . water management
- . weapon system management
- . . waste disposal
- . . . composting
- . . . hazardous material disposal (in space)
- . . waste treatment
- . . . sewage treatment
- . . waste utilization
- . risk management
- RT autonomy
- Central Electronic Management System
- command and control
- contract negotiation
- cost analysis
- cost estimates
- cost incentives
- cost reduction
- cybernetics
- decision making
- decisions
- ∞ direction
- economic analysis
- economic factors
- evaluation
- fiduciaries
- forecasting
- GERT
- incentive techniques
- incentives
- information flow
- man machine systems
- marketing
- mission planning
- operations research
- performance prediction
- personnel development
- prejudices
- problem solving
- procurement policy
- product development
- production engineering
- progress
- project planning
- ∞ research projects
- statistical analysis
- systems engineering
- management analysis**
- RT ∞ analyzing
- cost analysis
- GERT
- PERT
- tradeoffs
- management information systems**
- GS information systems
- . **management information systems**
- management systems
- . **management information systems**
- RT computer techniques
- data base management systems
- data retrieval
- data storage
- data systems
- information retrieval
- information theory
- records management
- ∞ systems
- management methods**
- GS **management methods**
- . Delphi method (forecasting)
- . pattern method (forecasting)
- . probe method (forecasting)
- . profile method (forecasting)
- RT computer techniques
- cost reduction
- critical path method
- decision making
- estimates
- forecasting
- GERT
- incentives
- matrix management
- ∞ methodology
- multidisciplinary research
- NASA Interactive Planning System
- operations research
- PERT
- retraining
- Starsite program
- systems management
- total quality management
- management planning**
- GS planning
- . **management planning**
- . . production planning
- . . project planning
- RT consulting
- cost analysis
- cost reduction
- decision making
- ∞ development
- economy
- estimates
- feasibility analysis
- finance
- forecasting
- GERT
- human resources
- interfaces
- life cycle costs
- mediation
- mission planning
- operations research
- personnel management
- PERT
- program trend line analysis
- project management
- research and development
- selective dissemination of information
- systems engineering
- tradeoffs
- value engineering
- management systems**
- GS **management systems**
- . flight management systems
- . management information systems
- RT computer techniques
- information systems
- project management
- ∞ systems
- manatees**
- DEF Large plant eating aquatic mammals living in shallow tropical waters near the coasts of North and South America.
- GS animals
- . vertebrates
- . . mammals
- . . . marine mammals
- **manatees**
- man-computer interface*
- USE **human-computer interface**
- Mandelstam representation**
- GS models
- . mathematical models
- . . **Mandelstam representation**
- RT elementary particle interactions
- inelastic scattering
- Lorentz transformations
- nuclear scattering
- quantum theory
- scattering amplitude
- mandrels**
- RT cores
- machine tools
- molds
- shafts (machine elements)
- maneuverability**
- RT air slew missiles
- aircraft control
- aircraft maneuvers
- aircraft performance
- controllability
- flight characteristics
- flight control
- flight envelopes
- helicopter performance
- maneuvers
- spacecraft maneuvers
- maneuverable reentry bodies**
- DEF (1) Reentry vehicles capable of performing preplanned flight maneuvers during the reentry phase. (2) Ballistic missile reentry vehicles whose ballistic trajectory can be adjusted by internal or external mechanisms, enabling them to evade antiballistic defenses and/or strike their target with a high degree of accuracy.
- GS reentry vehicles
- . **maneuverable reentry bodies**
- . . lifting reentry vehicles
- . . . FDL-5 reentry vehicle
- . . . HL-10 reentry vehicle
- . . . HLD-35 reentry vehicle
- . . . Janus spacecraft
- . . . M-2 lifting body
- M-2F2 lifting body
- . . . X-20 aircraft
- . . . X-24 aircraft
- RT ∞ bodies
- maneuverable spacecraft**
- GS **maneuverable spacecraft**
- . aerospace planes
- . . HOPE aerospace plane
- . . HOTOL launch vehicle
- . . VentureStar launch vehicle
- . . X-30 vehicle
- . . X-37 vehicle
- . . X-40A vehicle
- . Apollo spacecraft
- . . Apollo lunar experiment module
- . Astro vehicle
- . evasive satellites
- . ferry spacecraft
- . Janus spacecraft
- . rendezvous spacecraft
- . X-20 aircraft
- RT artificial satellites
- interplanetary spacecraft
- landing modules
- lunar landing modules
- lunar probes
- lunar satellites
- manned spacecraft
- MARS (Manned Reusable Spacecraft)
- recoverable spacecraft
- reentry vehicles
- space probes
- ∞ spacecraft
- spacecraft maneuvers
- thrust vector control
- maneuvers**
- GS **maneuvers**
- . aircraft maneuvers
- . docking
- . evasive actions
- . hovering
- . . autonomous docking
- . . offshore docking
- . . spacecraft docking
- . . spacecraft maneuvers
- . . spacecraft docking
- . orbital maneuvers
- . terrain following

manganese

. . . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT aerobatics
aircraft spin
flight control
landing
maneuverability
minor circle turning flight
rendezvous
self maneuvering units
sideslip
takeoff
turning flight

manganese

GS chemical elements
. **manganese**
. . . manganese isotopes
metals
. transition metals
. . **manganese**
. . . manganese isotopes
RT strategic materials

manganese 53

USE **manganese isotopes**

manganese 54

USE **manganese isotopes**

manganese 56

USE **manganese isotopes**

manganese alloys

GS alloys
. **manganese alloys**
. . Manganin (trademark)

manganese compounds

GS **manganese compounds**
. manganese oxides
. . Hopcalite (trademark)
. manganese phosphides
. permanganates
RT ∞ chemical compounds
∞ Group 7B compounds
∞ metal compounds

manganese ions

GS ions
. metal ions
. . **manganese ions**
RT permanganates

manganese isotopes

UF *manganese 53*
manganese 54
manganese 56
GS chemical elements
. manganese
. . **manganese isotopes**
. nuclides
. . isotopes
. . . **manganese isotopes**
metals
. transition metals
. . manganese
. . . **manganese isotopes**

manganese oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **manganese oxides**
. . . Hopcalite (trademark)
manganese compounds
. **manganese oxides**
. . Hopcalite (trademark)

manganese phosphides

GS manganese compounds
. **manganese phosphides**
phosphorus compounds
. phosphides
. . **manganese phosphides**

Manganin (trademark)

GS alloys
. copper alloys
. . Manganin (trademark)

. manganese alloys
. . **Manganin (trademark)**
RT electrical resistance
thermocouples

manifolds

RT air intakes
exhaust systems
fuel systems
intake systems
pipes (tubes)
plenum chambers
∞ tubes
∞ water intakes

manifolds (mathematics)

GS **manifolds (mathematics)**
. Riemann manifold
RT coordinates
curves (geometry)
fibers (mathematics)
fixed points (mathematics)
topology

manipulation

USE **manipulators**

manipulators

SN (LIMITED TO MECHANICAL DEVICES FOR REMOTE HANDLING)
UF *manipulation*
GS **manipulators**
. remote manipulator system
. . Space Station Mobile Servicing System
RT control equipment
∞ effectors
end effectors
inverse kinematics
payload deployment & retrieval system
remote control
remote handling
robot arms
robot dynamics
robotics
servocontrol
shielding
tactile sensors (robotics)
teleoperators
telerobotics
torque sensors (robotics)

Manitoba

GS nations
. Canada
. . **Manitoba**

Manitou (CO)

GS cities
. **Manitou (CO)**
RT Colorado

Manned Aerodynamic Reusable Spaceship

USE **MARS (Manned Reusable Spacecraft)**

manned lunar surface vehicles

GS surface vehicles
. lunar surface vehicles
. . lunar roving vehicles
. . . **manned lunar surface vehicles**
. roving vehicles
. . lunar roving vehicles
. . . **manned lunar surface vehicles**
RT crawler tractors
lunar logistics
lunar mobile laboratories
∞ surfaces
∞ vehicles
walking machines

manned maneuvering units

SN (LIMITED TO ASTRONAUT PROPULSIVE UNITS OF THAT NAME DESIGNED FOR THE SPACE TRANSPORTATION SYSTEM AND THE SPACE STATION)
DEF A propulsive backpack device for extravehicular activity. It uses a low thrust, dry, cold nitrogen propellant.
GS astronaut maneuvering equipment
. **manned maneuvering units**

RT astronaut locomotion
extravehicular activity
life support systems
orbital servicing
self maneuvering units
space transportation system

manned Mars missions

DEF Any of several options for manned missions to Mars in which spacecraft are built for a particular mission. A mission is estimated by around 2020 and may last from one year to three years depending on speed and design.

GS space missions
. Mars missions

. . . manned Mars missions

RT Crew Exploration Vehicle
in situ resource utilization
interplanetary flight
interplanetary spacecraft
long duration space flight
magnetic sails
manned spacecraft
Mars (planet)
Mars exploration
NASA space programs
return to Earth space flight
space exploration
terraforming

manned orbital laboratories

UF *MOL (orbital laboratories)*
MORL

GS laboratories

. space laboratories
. . **manned orbital laboratories**
. . . Columbus module
. . . Destiny Laboratory Module
. . . Kibo Japanese Experiment Module
. . . Skylab 1
. . . Skylab 2
. . . Skylab 3
. . . Skylab 4
. . . Spacelab
manned spacecraft
. **manned orbital laboratories**
. . Columbus module
. . Destiny Laboratory Module
. . Kibo Japanese Experiment Module
. . Skylab 1
. . Skylab 2
. . Skylab 3
. . Skylab 4
. . Spacelab
RT Apollo spacecraft
Columbus space station
International Space Station
orbital workshops
reconnaissance spacecraft
space stations
∞ spacecraft
Titan 3 launch vehicle

manned orbital space stations

USE **space stations**

manned orbital telescopes

UF *MOT (orbital telescopes)*
GS telescopes
. **manned orbital telescopes**
. . Apollo telescope mount
RT OAO

manned reentry

GS atmospheric entry
. reentry
. . **manned reentry**
space flight
. manned space flight
. . **manned reentry**
RT descent trajectories
environmental control
lifting reentry vehicles
reentry communication
spacecraft reentry

manned space flight

GS space flight
. **manned space flight**

- .. Apollo flights
- ... Apollo 5 flight
- ... Apollo 6 flight
- ... Apollo 7 flight
- ... Apollo 8 flight
- ... Apollo 9 flight
- ... Apollo 10 flight
- ... Apollo 11 flight
- ... Apollo 12 flight
- ... Apollo 13 flight
- ... Apollo 14 flight
- ... Apollo 15 flight
- ... Apollo 16 flight
- ... Apollo 17 flight
- .. Gemini flights
- ... Gemini 3 flight
- ... Gemini 4 flight
- ... Gemini 5 flight
- ... Gemini 6 flight
- ... Gemini 7 flight
- ... Gemini 8 flight
- ... Gemini 9 flight
- ... Gemini 10 flight
- ... Gemini 11 flight
- ... Gemini 12 flight
- .. manned reentry
- .. Mercury flights
- ... Mercury MA-1 flight
- ... Mercury MA-2 flight
- ... Mercury MA-3 flight
- ... Mercury MA-4 flight
- ... Mercury MA-5 flight
- ... Mercury MA-6 flight
- ... Mercury MA-7 flight
- ... Mercury MA-8 flight
- ... Mercury MA-9 flight
- ... Mercury MR-1 flight
- ... Mercury MR-2 flight
- ... Mercury MR-3 flight
- ... Mercury MR-4 flight
- .. Space Shuttle missions
- ... Space Shuttle mission 31-A
- ... Space Shuttle mission 31-B
- ... Space Shuttle mission 31-C
- ... Space Shuttle mission 31-D
- ... Space Shuttle mission 41-A
- ... Space Shuttle mission 41-B
- ... Space Shuttle mission 41-C
- ... Space Shuttle mission 41-D
- ... Space Shuttle mission 41-G
- ... Space Shuttle mission 51-A
- ... Space Shuttle mission 51-B
- ... Space Shuttle mission 51-C
- ... Space Shuttle mission 51-D
- ... Space Shuttle mission 51-E
- ... Space Shuttle mission 51-F
- ... Space Shuttle mission 51-G
- ... Space Shuttle mission 51-H
- ... Space Shuttle mission 51-I
- ... Space Shuttle mission 51-J
- ... Space Shuttle mission 51-L
- ... Space Shuttle mission 61-A
- ... Space Shuttle mission 61-B
- ... Space Shuttle mission 61-C
- ... Space Shuttle mission 61-E
- RT aerospace environments
- Apollo extension system
- Atlantis (orbiter)
- Columbia (Orbiter)
- Constellation program
- Crew Exploration Vehicle
- Discovery (Orbiter)
- Enterprise (Orbiter)
- extravehicular activity
- Gemini 2 spacecraft
- Gemini (GT-1) spacecraft
- Gemini B spacecraft
- Gemini spacecraft
- human factors engineering
- Indian space program
- interplanetary flight
- interstellar travel
- intravehicular activity
- long duration space flight
- man operated propulsion systems
- Mercury project
- space adaptation syndrome
- space communication
- space exploration
- space flight stress
- space logistics
- space programs
- space psychology
- Space Shuttle orbiters
- space shuttles
- spacecrew transfer
- suborbital flight
- manned space flight network**
- GS networks
- .. tracking networks
- ... **manned space flight network**
- RT Advanced Range Instrumentation Ship
- unified S band
- manned spacecraft**
- GS **manned spacecraft**
- .. Apollo spacecraft
- .. Apollo lunar experiment module
- .. Astro vehicle
- .. Columbus space station
- .. ferry spacecraft
- .. Gemini B spacecraft
- .. Gemini spacecraft
- .. Gemini 2 spacecraft
- .. Gemini (GT-1) spacecraft
- .. Janus spacecraft
- .. Lunar Module
- .. Apollo lunar experiment module
- .. LSSM
- .. Lunar Module 5
- .. Lunar Module 7
- .. man tended free flyers
- .. manned orbital laboratories
- .. Columbus module
- .. Destiny Laboratory Module
- .. Kibo Japanese Experiment Module
- .. Skylab 1
- .. Skylab 2
- .. Skylab 3
- .. Skylab 4
- .. Spacelab
- .. MARS (Manned Reusable Spacecraft)
- .. Mercury spacecraft
- .. Aurora 7
- .. Faith 7
- .. Friendship 7
- .. SIGMA 7
- .. Mir space station
- .. orbital workshops
- .. Saturn workshops
- ... Saturn 1 workshop
- ... Saturn 5 workshop
- .. Skylab 1
- .. Skylab 2
- .. Skylab 3
- .. Skylab 4
- .. Salyut space station
- .. Soyuz spacecraft
- .. Space Operations Center (NASA)
- .. space shuttles
- .. Buran space shuttle
- .. Hermes manned spaceplane
- .. Space Shuttle orbiters
- ... Atlantis (orbiter)
- ... Challenger (Orbiter)
- ... Columbia (Orbiter)
- ... Discovery (Orbiter)
- ... Endeavour (orbiter)
- ... Enterprise (Orbiter)
- .. voskhod manned spacecraft
- .. Voskhod 1 spacecraft
- .. Voskhod 2 spacecraft
- .. Vostok spacecraft
- .. Vostok 1 spacecraft
- .. Vostok 2 spacecraft
- .. Vostok 3 spacecraft
- .. Vostok 4 spacecraft
- .. Vostok 5 spacecraft
- .. Vostok 6 spacecraft
- .. Altair Lunar Lander
- .. Crew Exploration Vehicle
- .. HOPE aerospace plane
- .. Shenzhou 5 spacecraft
- RT Apollo 7 flight
- Apollo 8 flight
- Apollo 10 flight
- Apollo 11 flight
- Apollo 12 flight
- Apollo 13 flight
- Apollo 14 flight
- Apollo 15 flight
- Apollo 16 flight
- Apollo 17 flight
- Apollo project
- Apollo Soyuz test project
- approach and landing tests (STS)
- artificial satellites
- biosatellites
- boostglide vehicles
- command service modules
- environmental control
- gravity gradient satellites
- interplanetary spacecraft
- landing modules
- lifting reentry vehicles
- lunar landing modules
- lunar satellites
- lunar spacecraft
- maneuverable spacecraft
- manned Mars missions
- Mercury flights
- Mercury project
- military spacecraft
- reconnaissance spacecraft
- recoverable spacecraft
- rendezvous spacecraft
- reusable spacecraft
- Shuttle Derived Vehicles
- space capsules
- space navigation
- Space Shuttle Boosters
- space stations
- ∞ spacecraft
- spacecraft cabin simulators
- unmanned spacecraft
- X-20 aircraft
- Manning theory**
- RT fluid flow
- ∞ theories
- wall flow
- mannitol**
- GS organic compounds
- .. carbohydrates
- .. sugars
- ... **mannitol**
- Mann-Whitney-Wilcoxon U test**
- GS statistical analysis
- .. statistical tests
- .. **Mann-Whitney-Wilcoxon U test**
- RT quality control
- manometers**
- DEF Instruments for measuring pressure of gases and vapors above and below atmospheric pressure. Used for micromanometers and U tubes.
- UF *micromanometers*
- U tubes*
- GS measuring instruments
- .. pressure gages
- .. **manometers**
- RT barometers
- blood pressure
- flame probes
- pressure distribution
- pressure measurement
- vacuum gages
- manpower**
- GS **manpower**
- .. engineers
- .. scientists
- RT engineering management
- human resources
- labor
- personnel
- research management
- resources

retraining

mantle (Earth structure)
 USE **Earth mantle**

∞ **manual**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT manual control
 manuals

manual control
 GS **manual control**
 . visual control
 RT aircraft control
 attitude control
 automatic control
 ∞ buttons
 consoles
 ∞ control
 control boards
 control equipment
 control sticks
 directional control
 engine control
 guidance (motion)
 handles
 helicopter control
 human factors engineering
 knobs
 landing instruments
 lateral control
 levers
 longitudinal control
 ∞ manual
 pedals
 reentry guidance
 remote control
 satellite control
 satellite guidance
 servocontrol
 spacecraft control
 spacecraft guidance
 speed control
 temperature control

manuals
 GS documents
 . **manuals**
 . . installation manuals
 . . user manuals (computer programs)
 RT directories
 educational resources
 handbooks
 maintenance
 ∞ manual
 textbooks

manufacturing
 GS **manufacturing**
 . computer aided manufacturing
 . group technology (manufacturing)
 . low gravity manufacturing
 . space manufacturing
 RT aircraft production costs
 commerce
 commodities
 containerless melts
 contract negotiation
 economic development
 fabrication
 industries
 Kraft process (woodpulp)
 ∞ processing
 production management
 products
 space industrialization
 technologies
 technology assessment
 technology utilization

manures
 DEF Materials that fertilize land. Refuse of stables and barnyards consisting of mammal and bird excreta with or without litter.
 GS wastes
 . **manures**
 RT biomass energy production
 metabolic wastes
 waste disposal

waste utilization

many body problem
 UF *many particle theory*
N-body problem
 RT BCS theory
 celestial mechanics
 density functional theory
 elementary excitations
 field theory (physics)
 four body problem
 Green's functions
 Hartree approximation
 orbital mechanics
 orbits
 particle theory
 perturbation
 perturbation theory
 ∞ problems
 ∞ quantum statistics
 statistical mechanics
 superfluidity
 three body problem
 Trojan orbits
 two body problem

many electron effects
 RT autoionization
 electron capture
 electron scattering
 electron states
 electron transitions

many particle theory
 USE **many body problem**

MAP (programming language)
 GS languages
 . programming languages
 . . Assembly language
 . . . **MAP (programming language)**
 RT computer programming

MAP (space probe)
 (added November 2002)
 USE **Microwave Anisotropy Probe**

map matching guidance
 GS guidance (motion)
 . **map matching guidance**
 RT airborne equipment
 display devices
 image correlators
 radar maps
 radar navigation
 TERCOM
 terrain following
 video landmark acquisition and tracking

mapping
 SN (EXCLUDES CONFORMAL MAPPING)
 UF *cartography*
flux mapping
 GS **mapping**
 . cadastral mapping
 . computer aided mapping
 . ice mapping
 . photomapping
 . planetary mapping
 . soil mapping
 . thematic mapping
 . thermal mapping
 RT astrography
 Bonne projection
 contours
 declination
 fixed points (mathematics)
 functions (mathematics)
 geographic applications program
 geography
 Heat Capacity Mapping Mission
 hypsography
 maps
 Mapsat
 orthophotography
 Phoenix quadrangle (AZ)
 photogrammetry
 photography
 scale (ratio)

SPOT (French satellite)
 surveys
 terrain analysis
 topography
 topology
 triangulation

maps
 GS **maps**
 . astronomical maps
 . . planispheres
 . lunar maps
 . meteorological charts
 . photomaps
 . radar clutter maps
 . radar maps
 . relief maps
 RT Bonne projection
 cadastral mapping
 charts
 computer aided mapping
 coordinates
 datum (elevation)
 geography
 ∞ globes
 hypsography
 mapping
 Mercator projection
 navigation aids
 photomapping
 soil mapping
 surveys
 thematic mapping

Mapsat
 DEF A proposed stereoscopic system for mapping the Earth from space to replace Landsat D as defined by the US Geological Survey.
 GS artificial satellites
 . **Mapsat**
 RT Landsat satellites
 mapping
 remote sensing
 stereophotography

maraging
 GS hardening (materials)
 . precipitation hardening
 . . **maraging**
 heat treatment
 . **maraging**

maraging steels
 GS alloys
 . high strength alloys
 . . high strength steels
 . . . **maraging steels**
 . iron alloys
 . . steels
 . . . high strength steels
 **maraging steels**
 RT martensitic stainless steels
 stainless steels

Marangoni convection
 DEF Convective flow induced by surface tension gradients. This is important in both ground and space processing where a free surface is present.
 GS convection
 . surface tension driven convection
 . . **Marangoni convection**
 RT convective flow
 free convection
 interfacial tension
 liquid bridges
 low gravity manufacturing
 melts (crystal growth)
 microgravity
 space processing
 thermocapillary migration

Marbore 2 engine
 USE **J-69-T-25 engine**

Marecs maritime satellites
 DEF The European Space Agency's system of two satellites provides maritime communications links between ships and coast Earth stations. Originally known as Marots, the system

operates with one satellite over the Atlantic Ocean and one over the Pacific Ocean. It was leased to the International Maritime Satellite Organization for five years. Also known as the maritime European communications satellite.

- GS artificial satellites
 - . communication satellites
 - . . . **Marecs maritime satellites**
 - . ESA satellites
 - . . . **Marecs maritime satellites**
 - . maritime satellites
 - . . **Marecs maritime satellites**
- ESA spacecraft
 - . ESA satellites
 - . . **Marecs maritime satellites**
- RT European space programs
 - satellite networks

margins

- RT borders
 - edges
 - rims

maria

- GS **maria**
 - . lunar maria
- RT lava
 - meteorite craters
 - topography

marijuana

- GS drugs
 - . psychotropic drugs
 - . . . **marijuana**
- RT alkaloids

marine biology

- DEF The study of marine fauna and flora and related topics.
- RT algae
 - aquatic plants
 - aquiculture
- ∞ biology
 - environment effects
 - environmental quality
 - fisheries
 - limnology
 - oceanography
 - phytoplankton
- ∞ science
 - sea grasses
 - seals (animals)
 - seaweeds
 - shellfish
 - thermal pollution
 - waterfowl
 - wetlands
 - zooplankton

marine chemistry

- DEF The study of the chemical processes in oceanic environments.
- GS environmental chemistry
 - . **marine chemistry**
- RT biochemistry
- ∞ chemistry
 - geochemistry
 - hydrology
 - limnology
 - ocean bottom
- ∞ science
 - sediments

marine environments

- GS environments
 - . **marine environments**
- RT aquiculture
 - beaches
 - coastal ecology
 - coasts
 - environment effects
 - ice environments
 - nearshore water
 - ocean models
 - oceanography
 - red tide
 - sea breeze
 - shellfish
 - waterfowl

wetlands

marine mammals

- GS animals
 - . vertebrates
 - . . . mammals
 - . . . **marine mammals**
 - dolphins
 - manatees
 - porpoises
 - seals (animals)
 - whales

marine meteorology

- GS meteorology
 - . hydrometeorology
 - . . **marine meteorology**
- RT fronts (meteorology)
 - GOES 13
 - oceanography
- ∞ science
 - typhoons
 - wind (meteorology)

marine navigation

USE **surface navigation**

marine propulsion

- GS propulsion
 - . **marine propulsion**
 - . . underwater propulsion
 - . . . submarine propulsion
- RT chemical propulsion
 - electric propulsion
 - jet propulsion
 - nuclear electric propulsion
 - nuclear propulsion
 - propeller drive
 - Savannah nuclear ship

marine resources

- GS resources
 - . Earth resources
 - . . **marine resources**
- RT aquiculture
 - coastal ecology
 - fisheries
 - oceanography
 - oceans
 - sea water
 - shellfish
 - underwater resources
 - water pollution
 - wetlands

marine rudders

- GS control surfaces
 - . rudders
 - . . **marine rudders**
- RT aerial rudders
 - hydrofoils
 - tail assemblies

marine technology

- GS technologies
 - . **marine technology**
- RT aquiculture
 - artificial harbors
 - deepwater terminals
 - oceanography
 - offshore docking
 - offshore energy sources
 - offshore platforms
 - tanker terminals
 - wharves

marine transportation

- GS transportation
 - . **marine transportation**
- RT air transportation
 - deepwater terminals
 - harbors
 - offshore docking
 - rail transportation
 - ships
 - tanker ships
 - water vehicles

Mariner 1 space probe

- GS interplanetary spacecraft

- . Mariner space probes
- . . **Mariner 1 space probe**
- . Venus probes
- . . **Mariner 1 space probe**
- unmanned spacecraft
 - . space probes
 - . . Mariner space probes
 - . . . **Mariner 1 space probe**
 - . . Venus probes
 - . . . **Mariner 1 space probe**

Mariner 2 space probe

- GS interplanetary spacecraft
 - . Mariner space probes
 - . . **Mariner 2 space probe**
 - . Venus probes
 - . . **Mariner 2 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mariner space probes
 - . . . **Mariner 2 space probe**
 - . . Venus probes
 - . . . **Mariner 2 space probe**
- RT Atlas Agena B launch vehicle

Mariner 3 space probe

- GS interplanetary spacecraft
 - . Mariner space probes
 - . . **Mariner 3 space probe**
 - . Mars probes
 - . . **Mariner 3 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mariner space probes
 - . . . **Mariner 3 space probe**
 - . . Mars probes
 - . . . **Mariner 3 space probe**

Mariner 4 space probe

- GS interplanetary spacecraft
 - . Mariner space probes
 - . . **Mariner 4 space probe**
 - . Mars probes
 - . . **Mariner 4 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mariner space probes
 - . . . **Mariner 4 space probe**
 - . . Mars probes
 - . . . **Mariner 4 space probe**

Mariner 5 space probe

- GS interplanetary spacecraft
 - . Mariner space probes
 - . . **Mariner 5 space probe**
 - . Venus probes
 - . . **Mariner 5 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mariner space probes
 - . . . **Mariner 5 space probe**
 - . . Venus probes
 - . . . **Mariner 5 space probe**
- RT Atlas Agena launch vehicles

Mariner 6 space probe

- GS interplanetary spacecraft
 - . Mariner space probes
 - . . **Mariner 6 space probe**
 - . Mars probes
 - . . **Mariner 6 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mariner space probes
 - . . . **Mariner 6 space probe**
 - . . Mars probes
 - . . . **Mariner 6 space probe**
- RT Atlas Agena launch vehicles
 - Mars 69 project

Mariner 7 space probe

- GS interplanetary spacecraft
 - . Mariner space probes
 - . . **Mariner 7 space probe**
 - . Mars probes
 - . . **Mariner 7 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mariner space probes
 - . . . **Mariner 7 space probe**

Mariner 8 space probe

- . . Mars probes
- . . . **Mariner 7 space probe**
- RT Mars 69 project
- Mariner 8 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 8 space probe**
- . Mars probes
- . . **Mariner 8 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 8 space probe**
- . Mars probes
- . . **Mariner 8 space probe**
- RT Mars 71 project

- Mariner 9 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 9 space probe**
- . Mars probes
- . . **Mariner 9 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 9 space probe**
- . Mars probes
- . . **Mariner 9 space probe**

- Mariner 10 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 10 space probe**
- . Venus probes
- . . **Mariner 10 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 10 space probe**
- . Venus probes
- . . . **Mariner 10 space probe**
- RT Mariner Venus-Mercury 1973
- Mariner-Mercury 1973

- Mariner 11 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner 11 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner 11 space probe**

- Mariner C spacecraft**
- GS interplanetary spacecraft
- . Mariner spacecraft
- . . **Mariner C spacecraft**
- unmanned spacecraft
- . space probes
- . . Mariner spacecraft
- . . . **Mariner C spacecraft**

- Mariner Jupiter-Saturn flyby**
- GS space missions
- . flyby missions
- . . Grand Tours
- . . . **Mariner Jupiter-Saturn flyby**
- RT interplanetary flight
- ∞ missions
- space flight

- Mariner Jupiter-Uranus flyby**
- GS space missions
- . flyby missions
- . . Grand Tours
- . . . **Mariner Jupiter-Uranus flyby**
- RT interplanetary flight
- ∞ missions
- space flight

- Mariner Mark 2 Spacecraft**
- DEF A NASA concept of a basic planetary spacecraft for studying the outer planets, comets, and asteroids. The first of the series will be a comet rendezvous mission to be launched in 1994.
- RT Cassini mission

- Comet Rendezvous Asteroid Flyby Mission
- flyby missions
- interplanetary flight
- ∞ spacecraft

- Mariner program**
- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Mariner program**
- Mariner Venus-Mercury 1973
- Mariner-Mercury 1973
- . space programs
- . . NASA space programs
- . . . **Mariner program**
- Mariner Venus-Mercury 1973
- Mariner-Mercury 1973

- RT Agena B rocket vehicle
- Agena rocket vehicles
- Atlas Agena launch vehicles
- Atlas launch vehicles
- Centaur project
- flyby missions
- Mars probes
- space probes
- unmanned spacecraft
- Venus probes

- Mariner R 2 space probe**
- GS interplanetary spacecraft
- . Mariner space probes
- . . **Mariner R 2 space probe**
- unmanned spacecraft
- . space probes
- . . Mariner space probes
- . . . **Mariner R 2 space probe**

- Mariner space probes**
- GS interplanetary spacecraft
- . **Mariner space probes**
- . . Mariner 1 space probe
- . . Mariner 2 space probe
- . . Mariner 3 space probe
- . . Mariner 4 space probe
- . . Mariner 5 space probe
- . . Mariner 6 space probe
- . . Mariner 7 space probe
- . . Mariner 8 space probe
- . . Mariner 9 space probe
- . . Mariner 10 space probe
- . . Mariner 11 space probe
- . . Mariner R 2 space probe
- unmanned spacecraft
- . space probes
- . . **Mariner space probes**
- . . . Mariner 1 space probe
- . . . Mariner 2 space probe
- . . . Mariner 3 space probe
- . . . Mariner 4 space probe
- . . . Mariner 5 space probe
- . . . Mariner 6 space probe
- . . . Mariner 7 space probe
- . . . Mariner 8 space probe
- . . . Mariner 9 space probe
- . . . Mariner 10 space probe
- . . . Mariner 11 space probe
- . . . Mariner R 2 space probe

- Mariner spacecraft**
- GS interplanetary spacecraft
- . **Mariner spacecraft**
- . . Mariner C spacecraft
- . . Mariner Venus 67 spacecraft
- unmanned spacecraft
- . space probes
- . . **Mariner spacecraft**
- . . . Mariner C spacecraft
- . . . Mariner Venus 67 spacecraft

- Mariner Venus 67 spacecraft**
- GS interplanetary spacecraft
- . Mariner spacecraft
- . . **Mariner Venus 67 spacecraft**
- unmanned spacecraft
- . space probes
- . . Mariner spacecraft
- . . . **Mariner Venus 67 spacecraft**

- RT Venus probes

- Mariner Venus-Mercury 1973**
- GS programs
- . NASA programs
- . . NASA space programs
- . . . Mariner program
- **Mariner Venus-Mercury 1973**
- . space programs
- . . NASA space programs
- . . . Mariner program
- **Mariner Venus-Mercury 1973**
- space missions
- . flyby missions
- . . **Mariner Venus-Mercury 1973**
- RT Mariner 10 space probe
- Mariner-Mercury 1973

- Mariner-Mercury 1973**
- GS programs
- . NASA programs
- . . NASA space programs
- . . . Mariner program
- **Mariner-Mercury 1973**
- . space programs
- . . NASA space programs
- . . . Mariner program
- **Mariner-Mercury 1973**
- space missions
- . flyby missions
- . . **Mariner-Mercury 1973**
- RT Mariner 10 space probe
- Mariner Venus-Mercury 1973

- Marisat 1 satellite**
- DEF The first commercial maritime communication satellite.
- GS artificial satellites
- . Marisat satellites
- . . **Marisat 1 satellite**
- RT radio communication

- Marisat satellites**
- DEF A class of maritime commercial communication service satellites designed to provide telephone, telegraph, radio, distress messages and facsimile services to merchant ships, etc.
- GS artificial satellites
- . **Marisat satellites**
- . . Marisat 1 satellite
- RT communication
- Fleet Satellite Communication System
- INMARSAT satellites
- Marots (ESA)
- radio communication

- Maritime Communication Satellite (ESA)*
- USE **Marots (ESA)**

- Maritime Orbital Test Satellite*
- USE **Marots (ESA)**

- maritime satellites**
- GS artificial satellites
- . **maritime satellites**
- . . ERS-1 (ESA satellite)
- . . Marecs maritime satellites
- . . Marots (ESA)
- RT MSAT
- National Oceanic Satellite System
- TOPEX

- Mark 1 reentry body**
- GS reentry vehicles
- . **Mark 1 reentry body**
- RT intercontinental ballistic missiles
- intermediate range ballistic missiles

- Mark 1 spacecraft**
- RT ∞ spacecraft

- Mark 2 reentry body**
- GS reentry vehicles
- . **Mark 2 reentry body**
- RT intercontinental ballistic missiles
- intermediate range ballistic missiles

- Mark 3 reentry body**
- GS reentry vehicles
- . **Mark 3 reentry body**

- RT intercontinental ballistic missiles
intermediate range ballistic missiles
- Mark 4 reentry body**
 - GS reentry vehicles
 - . **Mark 4 reentry body**
 - RT intercontinental ballistic missiles
- Mark 5 reentry body**
 - GS reentry vehicles
 - . **Mark 5 reentry body**
 - RT intercontinental ballistic missiles
- Mark 6 reentry body**
 - GS reentry vehicles
 - . **Mark 6 reentry body**
 - RT intercontinental ballistic missiles
- Mark 11 reentry body**
 - GS reentry vehicles
 - . **Mark 11 reentry body**
 - RT intercontinental ballistic missiles
- Mark 12 reentry body**
 - GS reentry vehicles
 - . **Mark 12 reentry body**
 - RT intercontinental ballistic missiles
- Mark 17 reentry body**
 - GS reentry vehicles
 - . **Mark 17 reentry body**
 - RT intercontinental ballistic missiles
- Markarian galaxies**
 - GS celestial bodies
 - . galaxies
 - . . active galaxies
 - . . . **Markarian galaxies**
 - RT Seyfert galaxies
- ∞ **markers**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT beacons
 - biomarkers
 - buoys
 - crayons
 - dyes
 - radio beacons
 - runway lights
 - smoke
- market research**
 - GS research
 - . **market research**
 - RT commerce
 - commodities
 - consumers
 - marketing
 - product development
- marketing**
 - RT commerce
 - commercialization
 - consumers
 - finance
 - industrial areas
 - management
 - market research
 - product development
 - supplying
- marking**
 - UF *labeling (marking)*
 - tagging*
 - GS **marking**
 - . isotopic labeling
 - RT detection
 - identifying
 - materials handling
 - packaging
 - staining
 - ∞ tracers
- Markov chains**
 - GS stochastic processes
 - . Markov processes
 - . . **Markov chains**
 - RT Monte Carlo method
- random walk
- Markov processes**
 - GS stochastic processes
 - . **Markov processes**
 - . . Markov chains
 - RT random processes
 - zero sum games
- markup languages*
(added June 2000)
- USE **document markup languages**
- Marots (ESA)**
 - DEF Earlier name for the Marecs maritime satellites. Used for Maritime Communication Satellite (ESA) and Maritime Orbital Test Satellite.
 - UF *Maritime Communication Satellite (ESA)*
 - Maritime Orbital Test Satellite*
 - GS artificial satellites
 - . communication satellites
 - . . **Marots (ESA)**
 - . ESA satellites
 - . . **Marots (ESA)**
 - . maritime satellites
 - . . **Marots (ESA)**
 - ESA spacecraft
 - . ESA satellites
 - . . **Marots (ESA)**
 - RT European Space Agency
 - Marisat satellites
 - rangefinding
 - rescue operations
 - ship terminals
- Marquardt R4D engine**
 - GS engines
 - . **Marquardt R4D engine**
 - RT Apollo project
 - auxiliary propulsion
 - command modules
 - ∞ reaction control
 - satellite attitude control
 - spacecraft control
- ∞ **mars**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT MARS (Manned Reusable Spacecraft)
 - Mars (planet)
 - navigation aids
 - tracking stations
- Mars 1 spacecraft**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars 1 spacecraft**
 - Soviet spacecraft
 - . **Mars 1 spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars 1 spacecraft**
 - RT U.S.S.R. space program
- Mars 2 spacecraft**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars 2 spacecraft**
 - Soviet spacecraft
 - . **Mars 2 spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars 2 spacecraft**
 - RT U.S.S.R. space program
- Mars 3 spacecraft**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars 3 spacecraft**
 - Soviet spacecraft
 - . **Mars 3 spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars 3 spacecraft**
- Mars 4 Spacecraft**
 - DEF One of a series of Soviet unmanned spacecraft designed for Mars exploration.
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars 4 Spacecraft**
 - Soviet spacecraft
 - . **Mars 4 Spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars 4 Spacecraft**
 - RT U.S.S.R. space program
- Mars 5 spacecraft**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars 5 spacecraft**
 - Soviet spacecraft
 - . **Mars 5 spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars 5 spacecraft**
 - RT U.S.S.R. space program
- Mars 6 spacecraft**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars 6 spacecraft**
 - Soviet spacecraft
 - . **Mars 6 spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars 6 spacecraft**
 - RT U.S.S.R. space program
- Mars 7 spacecraft**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars 7 spacecraft**
 - Soviet spacecraft
 - . **Mars 7 spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars 7 spacecraft**
 - RT U.S.S.R. space program
- Mars 69 project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Mars 69 project**
 - . projects
 - . . **Mars 69 project**
 - . space programs
 - . . NASA space programs
 - . . . **Mars 69 project**
 - RT Mariner 6 space probe
 - Mariner 7 space probe
 - space exploration
- Mars 71 project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Mars 71 project**
 - . projects
 - . . **Mars 71 project**
 - . space programs
 - . . NASA space programs
 - . . . **Mars 71 project**
 - RT Mariner 8 space probe
 - space exploration
- MARS (Manned Reusable Spacecraft)**
 - SN (NOT RESTRICTED TO SPACECRAFT FOR FLIGHT TO PLANET MARS)
 - UF *Manned Aerodynamic Reusable Spaceship*
 - GS manned spacecraft
 - . **MARS (Manned Reusable Spacecraft)**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft

Mars (planet)

- . . . **MARS (Manned Reusable Spacecraft)**
- RT ferry spacecraft
- maneuverable spacecraft
- ∞ mars
- Mars (planet)**
- GS celestial bodies
 - . planets
 - . . terrestrial planets
 - . . . **Mars (planet)**
- RT 2001 Mars Odyssey
- Amor asteroid
- Apollo asteroids
- Deimos
- dust storms
- extraterrestrial water
- manned Mars missions
- ∞ mars
- Mars atmosphere
- Mars bases
- Mars environment
- Mars Reconnaissance Orbiter
- Mars sample return missions
- Mars surface
- Mars volcanoes
- Phobos
- planetary craters
- planetary cryospheres
- polar caps
- SNC meteorites
- terraforming
- Mars atmosphere**
- GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . Mars environment
 - **Mars atmosphere**
 - planetary atmospheres
 - **Mars atmosphere**
- RT aerospace environments
- Mars (planet)
- Mars Climate Orbiter
- Mars Express
- Mars Global Surveyor
- Mars Polar Lander
- Mars Surveyor 98 Program
- Mars volcanoes
- Phobos spacecraft
- planetary ionospheres
- planetary meteorology
- Mars bases**
- (added September 1994)
- UF *Mars colonies*
- GS space bases
 - . planetary bases
 - . . **Mars bases**
- RT extraterrestrial environments
- long duration space flight
- lunar bases
- Mars (planet)
- space colonies
- space habitats
- Mars Climate Orbiter**
- (added March 1999)
- DEF One of two spacecraft comprising the Mars Surveyor 98 program; launched December 1998. After obtaining a polar, nearly circular orbit around Mars, the Orbiter will serve as a radio relay during the Lander surface mission, then begin monitoring the atmosphere, surface, and polar caps for a complete Martian year. The Orbiter carries two science instruments: the Pressure Modulated Infrared Radiometer and the Mars Color Imager.
- UF *Mars Surveyor 98 Orbiter*
- GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Climate Orbiter**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Climate Orbiter**
- RT Mars atmosphere
- Mars missions
- Mars Polar Lander
- Mars surface

Mars Surveyor 98 Program

Mars colonies
USE **Mars bases**

Mars craters

DEF Craters from meteoritic impact on the surface of Mars.

GS craters

- . planetary craters
- . . **Mars craters**

RT cratering

ejecta

impact damage

meteorite craters

meteoritic damage

Mars environment

GS environments

- . extraterrestrial environments
- . . planetary environments
- . . . **Mars environment**
- Mars atmosphere

RT dust storms

Mars (planet)

Mars Surveyor 2001 Mission

Mars volcanoes

Phobos spacecraft

terraforming

Mars Excursion Module

UF *MEM (excursion module)*

GS modules

- . spacecraft modules
- . . landing modules
- . . . **Mars Excursion Module**
- soft landing spacecraft
- . landing modules
- . . **Mars Excursion Module**
- spacecraft components
- . spacecraft modules
- . . landing modules
- . . . **Mars Excursion Module**

RT Mars exploration

Mars exploration

(added September 1994)

GS exploration

- . space exploration
- . . **Mars exploration**

RT 2001 Mars Odyssey

Crew Exploration Vehicle

Earth-Mars trajectories

interplanetary flight

lunar exploration

manned Mars missions

Mars Excursion Module

Mars Express

Mars landing sites

Mars missions

Mars Reconnaissance Orbiter

Mars roving vehicles

Marsokhod Mars roving vehicles

space colonies

Mars Express

(added November 2003)

DEF European Space Agency spacecraft and related mission designed to search for sub-surface water on Mars and collect data on the Mars atmosphere, structure, geology, and composition. The spacecraft will deploy a lander (Beagle 2) that will perform exobiology and geochemistry research. Launched June 2003.

GS interplanetary spacecraft

- . Mars probes
- . . **Mars Express**
- unmanned spacecraft
- . space probes
- . . Mars probes
- . . . **Mars Express**

RT European Space Agency

European space programs

Mars atmosphere

Mars exploration

Mars landing

Mars missions

Mars surface

planetary geology

Mars Geoscience Climatology Orbiter
USE **Mars Observer**

Mars Global Surveyor

(added March 1999)

DEF Spacecraft and related mission designed to orbit Mars over a two year period and collect data on the surface morphology, topography, composition, gravity, atmospheric dynamics, and magnetic field. Launched November 1996.

UF *Mars Orbiter Camera (MOC)*

Mars Orbiter Laser Altimeter (MOLA)

MGS (spacecraft)

GS interplanetary spacecraft

- . Mars probes
- . . **Mars Global Surveyor**
- unmanned spacecraft
- . space probes
- . . Mars probes
- . . . **Mars Global Surveyor**

RT Mars atmosphere

Mars missions

Mars Observer

Mars surface

Mars landing

GS landing

- . spacecraft landing
- . . planetary landing
- . . . **Mars landing**

RT AEPS

Mars Express

Mars landing sites

Mars missions

Mars Pathfinder

Mars sample return missions

soft landing

Viking 1975 entry vehicle

Mars landing sites

(added February 2001)

DEF Areas on the Martian surface selected for spacecraft landing, or areas where spacecraft have actually landed.

GS sites

- . landing sites
- . . **Mars landing sites**

RT Mars exploration

Mars landing

Mars missions

Mars surface

site selection

Mars missions

(added February 1999)

GS space missions

- . **Mars missions**
- . . 2001 Mars Odyssey
- . . manned Mars missions
- . . Mars sample return missions
- . . Mars Surveyor 2001 Mission

RT Earth-Mars trajectories

Mars Climate Orbiter

Mars exploration

Mars Express

Mars Global Surveyor

Mars landing

Mars landing sites

Mars Observer

Mars Pathfinder

Mars Polar Lander

Mars probes

Mars Reconnaissance Orbiter

Mars roving vehicles

Mars surface samples

Mars Surveyor 98 Program

- ∞ missions
- Phoenix Mars Lander
- return to Earth space flight

Mars Observer

DEF Spacecraft and related mission to study the geoscience and climate of Mars. Launched September 1992. Contact with the spacecraft was lost in August 1993, three days before the scheduled Mars orbit insertion.

UF *Mars Geoscience Climatology Orbiter*

- MGCO
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Observer**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Observer**
 - RT Mars Global Surveyor
 - Mars missions
 - Mars Orbiter Camera (MOC)*
 - (added January 2004)
 - USE **Mars Global Surveyor**
 - Mars Orbiter Laser Altimeter (MOLA)*
 - (added January 2004)
 - USE **Mars Global Surveyor**
 - Mars Pathfinder**
 - (added January 1996)
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Pathfinder**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Pathfinder**
 - RT exobiology
 - landing sites
 - Mars landing
 - Mars missions
 - parachute descent
 - planetary geology
 - Mars photographs**
 - GS photographs
 - . **Mars photographs**
 - RT photography
 - satellite-borne photography
 - spaceborne photography
 - Mars Polar Lander**
 - (added March 1999)
 - DEF One of two spacecraft comprising the Mars Surveyor 98 program; launched January 1999. After a soft landing near the Martian south pole, the Lander will search for near-surface ice and possible surface records of cyclic climate change, and characterize physical processes key to the seasonal cycles of water, carbon dioxide and dust on Mars. Prior to landing, the Deep Space 2 microprobes will be released as part of a technology-validation mission related to multiple-lander spacecraft.
 - UF *Mars Surveyor 98 Lander*
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Polar Lander**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Polar Lander**
 - RT Mars atmosphere
 - Mars Climate Orbiter
 - Mars missions
 - Mars surface
 - Mars Surveyor 98 Program
 - Mars probes**
 - GS interplanetary spacecraft
 - . **Mars probes**
 - . . Advanced Reconn Electric Spacecraft
 - . . Mariner 3 space probe
 - . . Mariner 4 space probe
 - . . Mariner 6 space probe
 - . . Mariner 7 space probe
 - . . Mariner 8 space probe
 - . . Mariner 9 space probe
 - . . Mars 1 spacecraft
 - . . Mars 2 spacecraft
 - . . Mars 3 spacecraft
 - . . Mars 4 spacecraft
 - . . Mars 5 spacecraft
 - . . Mars 6 spacecraft
 - . . Mars 7 spacecraft
 - . . Mars Observer
 - . . Mars Pathfinder
 - . . Viking 1975 entry vehicle
 - . . Viking spacecraft
 - . . . Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - . . . Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - . . Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - . . Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - . . Mars Climate Orbiter
 - . . Mars Express
 - . . Mars Global Surveyor
 - . . Mars Polar Lander
 - . . Mars Reconnaissance Orbiter
 - . . Nozomi Mars Orbiter
 - . . Phobos spacecraft
 - . . Phoenix Mars Lander
 - . . Zond 2 space probe
 - RT Mariner program
 - Mars missions
 - Mars sample return missions
 - outer planets explorers
 - Venus probes
 - Voyager project
 - Zond space probes
 - Mars Reconnaissance Orbiter**
 - (added August 2005)
 - DEF A spacecraft launched on August 12, 2005 to determine how long water existed on Mars by conducting surface and subsurface mapping. The Mars Reconnaissance Orbiter carries instruments for geological and meteorological observations from Martian orbit, and for spacecraft navigation and communication. After completion of its science mission, the spacecraft will provide data relay services between other Mars missions and Earth.
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Mars Reconnaissance Orbiter**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Mars Reconnaissance Orbiter**
 - RT extraterrestrial water
 - ground penetrating radar
 - interplanetary communication
 - Mars (planet)
 - Mars exploration
 - Mars missions
 - Mars surface
 - planetary mapping
 - radar geology
 - soil mapping
- Mars Rover Sample Return Mission*
 - USE **Mars sample return missions**
- Mars roving vehicles**
 - (added March 2003)
 - DEF Remote-, autonomous-, or human-controlled ground vehicles designed for the exploration of the Martian surface.
 - GS surface vehicles
 - . roving vehicles
 - . . **Mars roving vehicles**
 - . . . Marsokhod Mars roving vehicles
 - RT Mars exploration
 - Mars missions
 - Mars surface
 - planetary surfaces
 - research vehicles
 - ∞ vehicles
- Mars sample return missions**
 - (added March 1989)
 - UF *Mars Rover Sample Return Mission*
 - GS space missions
 - . Mars missions
 - . . **Mars sample return missions**
 - . . . sample return missions
 - . . . **Mars sample return missions**
 - RT Mars (planet)
 - Mars landing
 - Mars probes
 - Mars surface samples
 - NASA space programs
 - planetary protection
 - roving vehicles
 - samples
 - space exploration
- Mars satellites**
 - GS celestial bodies
 - . natural satellites
 - . . **Mars satellites**
 - . . . Deimos
 - . . . Phobos
- Mars surface**
 - GS planetary surfaces
 - . **Mars surface**
 - RT 2001 Mars Odyssey
 - canals
 - dust storms
 - Mars (planet)
 - Mars Climate Orbiter
 - Mars Express
 - Mars Global Surveyor
 - Mars landing sites
 - Mars Polar Lander
 - Mars Reconnaissance Orbiter
 - Mars roving vehicles
 - Mars Surveyor 98 Program
 - Mars Surveyor 2001 Mission
 - Mars volcanoes
 - meteorite craters
 - Phoenix Mars Lander
 - planetary craters
 - SNC meteorites
 - ∞ surfaces
 - terraforming
 - topography
- Mars surface samples**
 - GS samples
 - . **Mars surface samples**
 - RT assaying
 - chemical analysis

Mars Surveyor 98 Program

Mars missions
Mars sample return missions
Mars Surveyor 2001 Mission
soil sampling
specimens
∞ surfaces
Viking lander 1
Viking lander 2

Mars Surveyor 98 Lander
(added March 1999)
USE **Mars Polar Lander**

Mars Surveyor 98 Orbiter
(added March 1999)
USE **Mars Climate Orbiter**

Mars Surveyor 98 Program

(added March 1999)

DEF Mars exploration program consisting of two mission spacecraft-- the Mars Climate Orbiter and the Mars Polar Lander. Two surface penetrating microprobes (part of the associated Deep Space 2 mission) for detecting water ice are also piggybacking on the Lander.

GS programs
. NASA programs
. NASA space programs
. . . **Mars Surveyor 98 Program**
. space programs
. NASA space programs
. . . **Mars Surveyor 98 Program**
RT Mars atmosphere
Mars Climate Orbiter
Mars missions
Mars Polar Lander
Mars surface

Mars Surveyor 2001 Mission

(added July 1999)

DEF Mars exploration mission including an orbiter with a gamma ray spectrometer and a multispectral thermal imager, and a lander with an extensive set of instrumentation, a robotic arm, and the Marie Curie Rover. (In March 2000, the lander portion of the mission was cancelled; the orbiter mission was superceded by the 2001 Mars Odyssey mission.)

GS space missions
. Mars missions
. . . **Mars Surveyor 2001 Mission**
RT 2001 Mars Odyssey
Mars environment
Mars surface
Mars surface samples
NASA space programs

Mars volcanoes

DEF Volcanoes on the planet Mars.
GS geology
. planetary geology
. . . **Mars volcanoes**
. volcanoes
. . . **Mars volcanoes**
landforms
. volcanoes
. . . **Mars volcanoes**
RT basalt
calderas
cones (volcanoes)
effusives
lava
Mars (planet)
Mars atmosphere
Mars environment
Mars surface
mountains
orography
paleomagnetism
petrology
Rouse belts
volcanology

marshes
USE **marshlands**

marshlands

DEF Transitional land-water areas, covered at least part of the time by estuarine or coastal waters and characterized by aquatic and grass-

like vegetation. Used for bogs, coastal marshlands, marshes, and swamps.

UF *bogs*
coastal marshlands
marshes
swamps
GS land
. wetlands
. . . **marshlands**
RT bayous
Earth resources
Earth surface
flats (landforms)
muskegs
oceanography
tidal flats
waterfowl

Marsokhod Mars roving vehicles

(added August 1995)

GS surface vehicles
. roving vehicles
. . . Mars roving vehicles
. . . **Marsokhod Mars roving vehicles**
RT Lunokhod lunar roving vehicles
Mars exploration
planetary surfaces
∞ vehicles

martensite

RT austenite
hardening (materials)
heat treatment
iron alloys
martensitic stainless steels
microstructure
phase transformations
steels

martensitic stainless steels

GS alloys
. iron alloys
. . steels
. . . stainless steels
. . . . **martensitic stainless steels**
RT austenitic stainless steels
maraging steels
martensite

martensitic transformation

DEF A phase transformation occurring in some metals and resulting in formation of martensite.

GS phase transformations
. **martensitic transformation**
RT austenite

Martian meteorites

(added March 1998)
USE **SNC meteorites**

Martin aircraft

GS **Martin aircraft**
. B-26 aircraft
. B-57 aircraft
RT ∞ aircraft

martingales

DEF In game theory, a procedure for recouping one's losses in previous wagers by doubling or otherwise increasing the amount bet.

RT decision theory
game theory
∞ mathematics
probability theory
stochastic processes

Martinique

GS landforms
. islands
. . West Indies
. . . **Martinique**
nations
. France
. . **Martinique**

RT Caribbean region

Maryland

GS nations
. United States
. . **Maryland**
RT Allegheny Plateau (US)
Assateague Island (MD-VA)
Chesapeake Bay (US)
Delmarva Peninsula (DE-MD-VA)
Potomac River Valley (MD-VA-WV)
Susquehanna River Basin
(MD-NY-PA)

mascons

DEF Large scale, high density lunar mass concentrations below ringed mare.
GS composition (property)
. concentration (composition)
. . **mascons**
RT center of mass
gravity anomalies
mass
weight (mass)

maser materials

(added June 1989)
RT laser materials
masers
∞ materials
∞ materials science

maser outputs

GS output
. **maser outputs**
RT ∞ coherence
diffraction radiation
laser outputs
maser pumping
pulse duration
radiant flux density
water masers
wavelengths

maser pumping

(added June 1989)
RT laser pumping
maser outputs
masers
optical pumping
∞ pumping

maser resonators

USE **masers**

masers

DEF Amplifiers or oscillators utilizing the principle of microwave amplification by stimulated emission of radiation.

UF *maser resonators*
paramagnetic amplifiers
rasers
GS stimulated emission devices
. **masers**
. . gas masers
. . . hydrogen masers
. . interstellar masers
. . proton masers
. . traveling wave masers
. . water masers

RT amplifiers
atomic clocks
coherent electromagnetic radiation
cross relaxation
diffraction radiation
frequency standards
krypton fluoride lasers
lasers
maser materials
maser pumping
microwave amplifiers
molecular oscillators
resonators
stimulated emission
transient oscillations
two-wavelength lasers
ultraviolet lasers

masking

GS **masking**

. target masking
 RT audiometry
 chemisorption
 coverings
 photomasks

masks
 GS **masks**
 . oxygen masks
 RT chemical defense
 protective clothing

Masonite (trademark)
 RT cellulose
 ∞ construction materials
 trees (plants)
 wood

masonry
 GS **masonry**
 . bricks
 RT cements
 ceramics
 clays
 concretes
 construction
 ∞ construction materials
 mortars (material)
 structural members
 tiles
 veneers

mass
 DEF A quantity characteristic of a body, which relates the attraction of this body toward another body. Since the mass of a body is not fixed in magnitude, all masses are referred to the standard kilogram, which is a lump of platinum. Used for low mass.
 UF *low mass*
 GS **mass**
 . center of mass
 . critical mass
 . galactic mass
 . missing mass (astrophysics)
 . particle mass
 . . electron mass
 . planetary mass
 . stellar mass
 . subcritical mass
 RT center of gravity
 de Broglie wavelengths
 inertia
 mascons
 mass to light ratios
 moments of inertia
 negative matter
 relativistic effects
 weight (mass)

∞ **mass balance**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT balance
 mass distribution
 material balance
 variable mass systems

mass distribution
 GS distribution (property)
 . **mass distribution**
 RT aerodynamic balance
 aerodynamic stability
 angular distribution
 balance
 ballast (mass)
 charge distribution
 cosmology
 counterbalances
 density wave model
 ∞ distribution
 flux density
 force distribution
 galactic mass
 intergalactic media
 interplanetary medium
 interstellar matter
 loading moments
 loads (forces)
 ∞ mass balance

mass to light ratios
 meteoroid concentration
 missing mass (astrophysics)
 moment distribution
 moments of inertia
 pressure distribution
 size distribution
 star distribution
 static loads
 structural design criteria
 variable mass systems

mass drivers
 (added May 1989)
 DEF Electromagnetic devices for the linear acceleration of projectiles or payloads. Applications include orbital insertion and transfer, propulsion systems, and hypervelocity accelerators.
 RT ∞ accelerators
 electromagnetic acceleration
 electromagnetic propulsion
 launchers
 magnetic levitation vehicles
 moon-Earth trajectories
 propulsion
 railgun accelerators
 spacecraft propulsion

mass filters
 USE **fluid filters**

mass flow
 GS fluid flow
 . **mass flow**
 RT Crocco-Lee theory
 ∞ flow
 flow theory
 gas flow
 Kelvin-Helmholtz instability
 kinetic theory
 laminar flow
 Lewis numbers
 liquid flow
 molecular interactions
 multiphase flow
 pipe flow
 sediment transport
 single-phase flow
 sliding
 slumping
 solids flow
 steady flow
 steam flow
 turbulent flow
 uniform flow
 unsteady flow

mass flow factors
 RT discharge coefficient
 flow coefficients
 heat transfer coefficients
 heat transmission
 nozzle geometry

mass flow rate
 GS rates (per time)
 . **mass flow rate**
 RT convective flow
 diffusion coefficient
 flow velocity
 pneumatic probes
 specific impulse
 transient pressures

mass ratios
 DEF The ratios of the mass of the propellant charge of a rocket to the total mass of the rocket when charged with the propellant.
 GS ratios
 . **mass ratios**
 . . mass to light ratios
 . . mixing ratios
 . . payload mass ratio
 . . propellant mass ratio
 RT metallicity
 pressure ratio
 structural weight

thrust-weight ratio

mass spectra
 GS spectra
 . **mass spectra**
 RT energy spectra
 molecular spectra
 radiation spectra

mass spectrometers
 DEF Instruments that are capable of separating ionized molecules of different mass to charge ratio and measuring the respective ion currents. Used for ion spectrometers and retarding ion mass spectrometers.
 UF *ion spectrometers*
retarding ion mass spectrometers
 GS measuring instruments
 . spectrometers
 . . **mass spectrometers**
 RT chemical analysis
 gas analysis
 ion mobility spectroscopy
 ion optics
 microanalysis
 neutron activation analysis
 qualitative analysis
 secondary ion mass spectrometry

mass spectrometry
 USE **mass spectroscopy**

mass spectroscopy
 UF *mass spectrometry*
 GS spectroscopy
 . **mass spectroscopy**
 . . inductively coupled plasma mass spectrometry
 . . secondary ion mass spectrometry
 RT chemical analysis
 gas spectroscopy
 magnetic spectroscopy
 nuclear radiation spectroscopy
 spectroscopic analysis
 vacuum spectroscopy

mass to light ratios
 DEF The ratio of the mass of celestial body to its luminosity.
 GS ratios
 . mass ratios
 . . **mass to light ratios**
 RT astronomy
 astrophysics
 galactic radiation
 indexes (ratios)
 luminosity
 luminous intensity
 mass
 mass distribution
 missing mass (astrophysics)
 radiant flux density
 stellar luminosity
 stellar mass

mass transfer
 RT ablation
 charge transfer
 convective flow
 convective heat transfer
 energy transfer
 gas transport
 gas-liquid interactions
 heat transfer
 Lewis numbers
 porous boundary layer control
 sediment transport
 transferring
 transpiration

Massachusetts
 GS nations
 . United States
 . . **Massachusetts**

massaging
 GS therapy
 . **massaging**
 RT fatigue (biology)

massifs

relaxation (physiology)

massifs

DEF Massive topographic and structural features, especially in orogenic belts, commonly formed of rocks more rigid than those of their surroundings. These rocks may be protruding bodies of basement rocks, consolidated during earlier orogenies, or younger plutonic bodies.

GS landforms
. **massifs**
RT Earth crust

∞ faults
geological faults
geology
mountains

massive compact halo objects

(added November 1999)

DEF Objects, such as brown dwarfs, black holes, and massive planets, hypothesized to account for the dark matter in the halo of the Milky Way. The signature of these objects is the occasional amplification of the light from extragalactic stars by the gravitational lens effect.

UF *MACHOs (astronomy)*
GS celestial bodies

. **massive compact halo objects**

RT brown dwarf stars
dark matter
galactic halos
gravitational lenses
Milky Way Galaxy
missing mass (astrophysics)
red dwarf stars

massive stars

(added July 1991)

GS celestial bodies
. stars

. . **massive stars**

RT black holes (astronomy)
degenerate matter
stellar mass
supergiant stars
supermassive stars

massively parallel processors

(added December 1988)

UF *MPP (computers)*
GS data processing equipment
. computers

. . digital computers
. . . parallel computers
. . . . **massively parallel processors**
. . . . Connection Machine

RT architecture (computers)
parallel processing (computers)

MAST shock tubes

USE **magnetic annular shock tubes**

mastication

UF *chewing*
RT digesting
eating
teeth

mastoids

GS anatomy
. head (anatomy)
. . skull
. . . **mastoids**
. . . musculoskeletal system
. . bones
. . . skull
. . . . **mastoids**
RT cranium
ear

matched filters

GS electromagnetic wave filters
. **matched filters**
RT communication equipment
demodulators
∞ filters
modulators

signal to noise ratios

matching

RT adjusting
comparison
fitting
homology
image resolution
impedance matching
mismatch (electrical)
pattern registration

material absorption

RT absorbents
absorbers (equipment)
∞ absorption
assimilation
bioavailability
extraction
hygroscopicity
radiation absorption
sorption
water treatment

material balance

GS balance
. **material balance**
. . water balance
RT heat balance
∞ mass balance
stoichiometry

material removal (machining)

USE **machining**

material strength

USE **mechanical properties**

∞ materials

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *substances*

RT ablative materials
absorbents
absorbers (materials)
acceptor materials
aging (materials)
aircraft construction materials
airframe materials
amorphous materials
anisotropic media
binary systems (materials)
binders (materials)
bitumens
boron reinforced materials
Borsic (tradename)
brittle materials
carbonaceous materials
composite materials
concrete structures
∞ construction materials
contaminants
cork (materials)
curl (materials)
dislocations (materials)
donor materials
dredged materials
electric furnaces
electrons
epoxy matrix composites
fatigue (materials)
ferrimagnetic materials
ferroelastic materials
ferroelectric materials
ferromagnetic materials
fissionable materials
foams
foils (materials)
fractures (materials)
glass
glassy carbon
granular materials
graphite-epoxy composites
hazardous materials
holes (electron deficiencies)
∞ inorganic materials
insulation
laminates
laser materials
lossless materials

low density materials
magnetic materials
maser materials
materials handling
materials recovery
∞ materials science
∞ materials tests
matrix materials
mechanical properties
metal matrix composites
molding materials
nonflammable materials
optical materials
organic materials
paper (material)
phase change materials
photoelastic materials
photoelectric materials
polymer matrix composites
porous materials
pyrolytic materials
pyrophoric materials
radioactive materials
radome materials
reactor materials
refractory materials
reinforcing materials
reserves
resources
self lubricating materials
semiconductors (materials)
sizing materials
smart materials
solids
spacecraft construction materials
sponges (materials)
strategic materials
superhybrid materials
thermochromatic materials
thermoelectric materials
thickeners (materials)
three dimensional composites
vitreous materials
Vycor

materials handling

GS **materials handling**

. ground handling
. propellant transfer
. remote handling

RT airfield surface movements

∞ automation
blowers
canals
cargo
cargo aircraft
carts
chemical engineering
chutes
∞ containers
contingency
conveyors
cranes
delivery
dispensers
disposal
distributing
∞ distribution
distributors
dollies
dumping
ejection
ejectors
emptying
encapsulating
excavation
feeders
feeding (supplying)
fluid flow
fuel pumps
hauling
heavy lift airships
hoppers
loading operations
lunar logistics
marking
∞ materials
mechanical engineering
mines (excavations)

- mooring
- packaging
- pipelines
- ∞ pumping
- pumps
- railroad humping tests
- releasing
- rigging
- services
- siphons
- sprayers
- spreading
- stacks
- ∞ storage
- tanks (containers)
- tractors
- transferring
- transportation
- trucks
- unloading
- vacuum pumps
- waste disposal
- wharves

materials recovery

SN (LIMITED TO TREATMENT OF A MATERIAL TO RECLAIM ONE OR MORE OF ITS COMPONENTS)
 DEF The treatment of a material to reclaim one or more of its components.

GS reclamation
 . **materials recovery**
 . . gas recovery
 . . nuclear fuel reprocessing
 . . solvolysis
 . . water reclamation

RT ∞ absorption
 by-products
 centrifuging
 crystallization
 disposal
 distillation
 extraction
 filtration
 in situ resource utilization
 ∞ materials
 ∞ precipitation
 precipitation (chemistry)
 ∞ processing
 ∞ recovery
 recycling
 refining
 removal
 ∞ separation
 waste management

∞ **materials science**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ceramics
 laser cutting
 maser materials
 ∞ materials
 metal foams
 plastics
 ∞ properties
 ∞ science

materials selection

(added August 2001)

DEF Process of choosing the most appropriate materials for a given application.

GS selection
 . **materials selection**
 RT aircraft construction materials
 airframe materials
 ∞ construction materials
 ∞ materials tests
 optical materials
 reactor materials
 spacecraft construction materials
 structural design
 structural weight
 weight reduction

materials testing reactors

USE **nuclear research and test reactors**

∞ **materials tests**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT bend tests
 burst tests
 Charpy impact test
 chemical analysis
 compression tests
 corrosion tests
 destructive tests
 electrophotometry
 environmental tests
 fatigue tests
 fiber pullout
 fiber pushout
 fuel tests
 gas analysis
 hardness tests
 high temperature tests
 impact tests
 lubricant tests
 magnetic measurement
 ∞ materials
 materials selection
 mechanical properties
 metallography
 microanalysis
 nanoindentation
 neutron radiography
 nondestructive tests
 propellant tests
 quality control
 quality control
 radiography
 specifications
 static tests
 ∞ tests
 ultrasonic tests
 wear tests
 x ray analysis
 x ray spectroscopy

mathematical analysis

USE **applications of mathematics**

mathematical logic

GS **mathematical logic**
 . algorithms
 . . backpropagation (artificial intelligence)
 . . genetic algorithms
 . . greedy algorithms
 . . parsing algorithms
 . . simplex method
 . . sorting algorithms
 . axioms
 . formulas (mathematics)
 . . Bethe-Heitler formula
 . lattices (mathematics)
 . . Boolean algebra
 . . . Boolean functions
 . predicate calculus
 . set theory
 . . Borel sets
 . . equivalence
 . . threshold logic

RT branching (mathematics)
 functions (mathematics)
 hypotheses
 induction (mathematics)
 instruction sets (computers)
 ∞ logic
 philosophy
 proving
 temporal logic
 theorems
 Turing machines
 Venn diagrams

mathematical models

GS models
 . **mathematical models**
 . . analog simulation
 . . BGK model
 . . biological models (mathematics)
 . . digital simulation
 . . Mandelstam representation
 . . Petri nets
 . . Thomas-Fermi model
 . . turbulence models
 . . . Baldwin-Lomax turbulence model
 . . . k-epsilon turbulence model
 . . . k-omega turbulence model

. . Veneziano model
 RT aircraft models
 ∞ applications of mathematics
 astronomical models
 asymptotic properties
 atmospheric models
 bond graphs
 broken symmetry
 chaos
 computational astrophysics
 computational grids
 computational mechanics
 computer systems simulation
 computerized simulation
 continuum modeling
 control systems design
 decision theory
 dynamic models
 dynamic programming
 dynamical systems
 Euler-Bernoulli beams
 exhaust flow simulation
 experiment design
 factorial design
 flow charts
 footprints
 forecasting
 functions (mathematics)
 game theory
 goodness of fit
 graph theory
 inelastic stress
 inventory controls
 large eddy simulation
 likelihood ratio
 linear prediction
 lofting
 lumped parameter systems
 method of moments
 ∞ missile simulators
 model reference adaptive control
 Monte Carlo method
 multiscale models
 numerical weather forecasting
 ocean models
 operations research
 outliers (statistics)
 parameter identification
 parameterization
 quantiles
 queueing theory
 regression coefficients
 risk
 robustness (mathematics)
 scheduling
 similarity theorem
 simulation
 spacecraft models
 spatial dependencies
 statistical distributions
 stochastic processes
 system identification
 systems analysis
 systems engineering
 systems simulation
 three dimensional models
 trajectory analysis
 two dimensional bodies
 two dimensional models
 validity
 war games

mathematical programming

SN (LIMITED TO MATHEMATICAL OPTIMIZATION THEORY--EXCLUDES COMPUTER PROGRAMMING)
 GS optimization
 . **mathematical programming**
 . . dynamic programming
 . . linear programming
 . . nonlinear programming
 . . quadratic programming
 RT game theory
 operations research
 ∞ programming
 simplex method

mathematical tables

GS tables (data)
 . **mathematical tables**

mathematics

RT information
numerical analysis
random numbers

∞ mathematics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The study of the logical relationships among abstract entities. These relationships are expressed in numbers, symbols, and signs and may also be applied to concrete instances such as measures and properties of shapes. The main subdivisions include algebra, geometry, and analysis.

RT algebra
analysis (mathematics)
axioms
bond graphs
calculus
current algebra
duality theorem
formulas (mathematics)
fractals
functions (mathematics)
geometry
inequalities
information theory
integrals
Latin square method
lattices (mathematics)
martingales
morphology
number theory
numerical analysis
primitive equations
∞ principles
probability theory
rings (mathematics)
∞ science
series expansion
stars (mathematics)
statistical analysis
superposition (mathematics)
symbols
theorems

Mathieu equation

USE **Mathieu function**

Mathieu function

UF *Mathieu equation*
GS analysis (mathematics)
. complex variables
. . **Mathieu function**
functions (mathematics)
. **Mathieu function**
RT boundary value problems
differential equations
eigenvectors
∞ equations
Hill determinant
orthogonal functions

Matra missile

GS missiles
. air to air missiles
. . **Matra missile**
RT solid propellant rocket engines

∞ matrices

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT composite materials
epoxy matrix composites
eutectic composites
∞ grids
∞ imbeddings
lattices (mathematics)
matrices (circuits)
matrices (mathematics)
metal matrix composites
monotectic alloys
polymer matrix composites

matrices (circuits)

GS circuits
. **matrices (circuits)**
RT logic circuits
∞ matrices

switching circuits

matrices (mathematics)

UF *differential algebra*
matrix analysis
GS algebra
. vector spaces
. . **matrices (mathematics)**
. . . adjoints
. . . canonical forms
. . . eigenvalues
. . . eigenvectors
. . . Hessian matrices
. . . Jordan form
. . . stiffness matrix
RT arrays
chiral dynamics
determinants
energy methods
factor analysis
finite element method
Gaussian elimination
Hermitian polynomial
isoperimetric problem
linear equations
linear programming
linear transformations
lumped parameter systems
∞ matrices
method of moments
roots of equations
simplex method
simultaneous equations
subgroups
U spin space
Walsh function

matrix analysis

USE **matrices (mathematics)**

matrix management

DEF An organized approach to administration of a program by defining and structuring all elements to form a single system with components united by interaction.

GS management
. **matrix management**
RT allocations
logistics
management methods
∞ methodology
operations research
productivity
project planning
scheduling
tasks

matrix materials

DEF The ingredients used as binding agents to produce composite materials.

RT bismaleimide
ceramic matrix composites
composite materials
debonding (materials)
epoxy matrix composites
fiber composites
fiber-matrix interfaces
functionally gradient materials
laminates
∞ materials
metal matrix composites
polymer matrix composites
reinforcing materials
resin matrix composites
resin transfer molding

matrix methods

SN (LIMITED TO METHODS FOR STRUCTURAL ANALYSIS)
UF *matrix stress calculation*
GS structural analysis
. **matrix methods**
RT equilibrium methods
∞ methodology
NASTRAN

spline functions

matrix stress calculation

USE **matrix methods**

matrix theory

RT operators (mathematics)
∞ theories

matter (physics)

GS **matter (physics)**
. dark matter
. degenerate matter
. negative matter
. rotating matter
. . rotating fluids
. . . rotating liquids
. . . rotating plasmas
RT antimatter
condensed matter physics
extraterrestrial matter
∞ physics

matter-antimatter propulsion

(added December 1988)

DEF Spacecraft propulsion by use of matter-antimatter annihilation reactions.

GS propulsion
. spacecraft propulsion
. . **matter-antimatter propulsion**
RT annihilation reactions
antimatter
interplanetary flight
interplanetary spacecraft
interstellar travel
negative matter propulsion
nuclear propulsion
positron annihilation
proton-antiproton interactions
rocket engines

MATTS (systems)

UF *multiple target trajectory systems*
GS networks
. tracking networks
. . **MATTS (systems)**
RT abort trajectories
airborne equipment
angular correlation
target acquisition

maturing

USE **growth**

Mauler missile

GS missiles
. anti-aircraft missiles
. . **Mauler missile**
. . antimissile missiles
. . **Mauler missile**
. surface to air missiles
. . **Mauler missile**
RT single stage rocket vehicles
solid propellant rocket engines

Mauritania

GS nations
. **Mauritania**
RT Africa

Mauritius

(added February 1989)

GS landforms
. islands
. . **Mauritius**
nations
. **Mauritius**
RT Africa
Indian Ocean

Maverick missiles

GS missiles
. air to surface missiles
. . **Maverick missiles**

Max Holste MH-262 aircraft

USE **MH-262 aircraft**

maxima

GS analysis (mathematics)
. real variables

- . . extremum values
- . . . **maxima**
- RT apexes
- calculus of variations
- cusps (mathematics)
- minima
- optimization
- ∞ peaks
- penalty function
- range (extremes)
- zenith
- maximum entropy method**
- DEF Procedure used in estimating high resolution power spectra from short data lengths.
- GS entropy (statistics)
- . **maximum entropy method**
- spectrum analysis
- . **maximum entropy method**
- RT distribution functions
- entropy
- Fourier transformation
- information theory
- ∞ methodology
- power spectra
- signal processing
- signal to noise ratios
- statistical analysis
- time series analysis
- maximum likelihood estimates**
- RT confidence limits
- Cramer-Rao bounds
- forecasting
- goodness of fit
- likelihood ratio
- parameter identification
- predictions
- reliability
- risk
- system identification
- maximum principle**
- RT complex variables
- differential equations
- elliptic differential equations
- harmonic functions
- pontryagin principle
- real variables
- maximum usable frequency**
- DEF For a given distance from a transmitter, the highest frequency at which sky waves can be received.
- GS frequencies
- . **maximum usable frequency**
- RT frequency assignment
- frequency reuse
- high frequencies
- very high frequencies
- Maxwell bodies**
- RT classical mechanics
- continuum mechanics
- Hookes law
- oscillation dampers
- relaxation time
- Maxwell equation**
- RT Biot-Savart law
- Boltzmann-Vlasov equation
- Born-Infeld theory
- electricity
- electrodynamics
- electromechanics
- ∞ equations
- Gauss equation
- magnetic charge density
- magnetic properties
- magnetoelectric media
- perfectly matched layers
- Poynting theorem
- ∞ Stokes law
- Maxwell fluids**
- RT compressible fluids
- fluid mechanics
- ∞ fluids
- rheology
- viscoelasticity
- viscous flow
- viscous fluids
- Maxwell-Boltzmann density function**
- UF *Maxwellian distribution (density)*
- GS functions (mathematics)
- . **Maxwell-Boltzmann density function**
- statistical analysis
- . **Maxwell-Boltzmann density function**
- RT density distribution
- kinetic theory
- probability theory
- statistical mechanics
- Maxwellian distribution (density)*
- USE **Maxwell-Boltzmann density function**
- Maxwell-Mohr method**
- RT deflection
- ∞ equilibrium
- ∞ methodology
- static deformation
- trusses
- Mayer problem**
- RT ∞ condensation
- critical point
- Gibbs free energy
- ∞ molecular physics
- ∞ problems
- supersaturation
- maypole antennas**
- DEF A class of antennas which use the deployable reflector concept for large space systems applications.
- GS antennas
- . **maypole antennas**
- RT antenna design
- large space structures
- space erectable structures
- maze learning**
- GS learning
- . **maze learning**
- RT problem solving
- MB-1 rocket vehicle*
- USE **Genie rocket vehicle**
- MBM junctions**
- DEF Diode devices using metal-barrier-metal layers. Used for metal-barrier-metal junctions.
- UF *metal-barrier-metal junctions*
- GS semiconductor junctions
- . **MBM junctions**
- RT barrier layers
- ∞ barriers
- junction transistors
- solid state devices
- Mcdonnell aircraft**
- GS McDonnell Douglas aircraft
- . **Mcdonnell aircraft**
- . . C-9 aircraft
- . . DC 10 aircraft
- . . F-4 aircraft
- . . F-101 aircraft
- RT ∞ aircraft
- McDonnell Douglas aircraft**
- GS **McDonnell Douglas aircraft**
- . C-17 aircraft
- . Douglas aircraft
- . . A-1 aircraft
- . . A-3 aircraft
- . . A-4 aircraft
- . . B-66 aircraft
- . . C-9 aircraft
- . . C-47 aircraft
- . . C-54 aircraft
- . . C-118 aircraft
- . . C-124 aircraft
- . . C-133 aircraft
- . . D-558 aircraft
- . . DC 3 aircraft
- . . DC 7 aircraft
- . . DC 8 aircraft
- . . DC 9 aircraft
- . . DC 10 aircraft
- . . PD-808 aircraft
- . . X-3 aircraft
- . F-18 aircraft
- . Mcdonnell aircraft
- . . C-9 aircraft
- . . DC 10 aircraft
- . . F-4 aircraft
- . . F-101 aircraft
- . MD 11 aircraft
- . MD 80 aircraft
- . X-36 aircraft
- RT ∞ aircraft
- Boeing aircraft
- McLaurin series*
- USE **MacLaurin series**
- Mcleod gages**
- GS measuring instruments
- pressure gages
- . vacuum gages
- . . . **Mcleod gages**
- vacuum apparatus
- vacuum gages
- . **Mcleod gages**
- RT ionization gages
- Knudsen gages
- Pirani gages
- pressure measurement
- McMurdo sound**
- GS regions
- polar regions
- . Antarctic regions
- . . . **McMurdo sound**
- remote regions
- . Antarctic regions
- . . . **McMurdo sound**
- sounds (topographic features)
- . **McMurdo sound**
- Southern Hemisphere
- . Antarctic regions
- . . **McMurdo sound**
- RT Ross ice shelf
- MCR reactors*
- USE **military compact reactors**
- MD 11 aircraft**
- (added October 1994)*
- UF *DC 11 aircraft*
- GS commercial aircraft
- . **MD 11 aircraft**
- jet aircraft
- . **MD 11 aircraft**
- McDonnell Douglas aircraft
- . **MD 11 aircraft**
- passenger aircraft
- . **MD 11 aircraft**
- transport aircraft
- . **MD 11 aircraft**
- RT ∞ aircraft
- MD 80 aircraft**
- (added October 1994)*
- GS commercial aircraft
- . **MD 80 aircraft**
- jet aircraft
- . **MD 80 aircraft**
- McDonnell Douglas aircraft
- . **MD 80 aircraft**
- passenger aircraft
- . **MD 80 aircraft**
- transport aircraft
- . **MD 80 aircraft**
- RT ∞ aircraft

mean

DC 9 aircraft
... J integral
... Lebesgue theorem
... numerical integration
... Runge-Kutta method
... Stieltjes integral
... weighting functions
Fourier analysis

MDA
USE **multiple docking adapters**

ME P-160 aircraft
USE **P-160 aircraft**

ME P-308 aircraft
USE **P-308 aircraft**

meadowlands
USE **grasslands**

MEAM (physical chemistry)
(added February 1998)
USE **embedded atom method**

mean

GS average
. **mean**
moments
. distribution moments
... **mean**

RT median (statistics)
mode (statistics)
normality
quality control
range (extremes)
statistical analysis
variance (statistics)

mean free path

DEF Of any particle, the average distance that a particle travels between successive collisions with the other particles of an ensemble. Specifically, the average distance traveled by the molecules of a perfect gas between consecutive collisions with one another. For any process the reciprocal of the cross section per unit volume for that process.

RT collision parameters

∞ cross sections
Knudsen flow
particle collisions
particle motion

∞ paths
scattering
vacuum

mean square values

DEF In statistics, values representing the average of the sum of the squares of the deviations from the mean value.

GS analysis (mathematics)
. numerical analysis
... approximation
... **mean square values**

RT algorithms
error analysis
least squares method

mean time between failures

USE **MTBF**

meanders

DEF Freely developing sinuous curves, bends, loops, turns, or windings in the courses of streams. They are produced by mature streams swinging from side to side as they flow across flood plains or shift course laterally toward the convex side of an original curve.

RT open channel flow
rapids
river basins
rivers
streams
topography
valleys

measure and integration

UF *integration (real variables)*
measure theory
Riemann integral

GS analysis (mathematics)
. real variables
... **measure and integration**
... binary integration
... Borel sets
... functional integration
... integral calculus

measure theory

USE **measure and integration**

∞ measurement

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The technical action required to assign values (numbers) to represent certain properties or attributes, using rules based on scientific laws. Used for determination, measuring, and quantization.

UF *determination*

measuring

quantization

RT acceleration measurement

accuracy

acoustic measurement

airborne range and orbit

determination

aircraft instruments

analog data

astrometry

audiometry

chemical analysis

confidence limits

consistency

counting

∞ data

definition

densimeters

density measurement

depth measurement

detection

dilatometry

dimensional measurement

Downrange Antimissile Measurement

Program

downrange measurement

drag measurement

Earth terminal measurement system

electrical measurement

electromagnetic measurement

electromagnetic noise measurement

ellipsometry

estimating

evaluation

examination

flow measurement

frequency measurement

friction measurement

gamma ray absorptiometry

geometry

gravimetry

heat measurement

high alt target and background

measurement

humidity measurement

identifying

in situ measurement

International System of Units

latitude measurement

longitude measurement

macroscopic equations

magnetic measurement

∞ measures

measuring instruments

mechanical measurement

metrology

monitors

noise measurement

nonintrusive measurement

optical measurement

optometry

photographic measurement

pneumography

precipitation measurement

pressure measurement

proving

pupillometry

radar measurement

radiation measurement

radioactive age determination
rangefinding
signal measurement
size determination
sounding
sphygmography
standards
strain measurement
synoptic measurement
temperature measurement
thrust measurement
time measurement
trajectory measurement
ultrasonic densimeters
units of measurement
velocity measurement
vibration measurement
weight measurement
wind measurement

∞ measures

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT criteria

∞ measurement

standards

measuring

USE **measurement**

measuring instruments

UF *fluxmeters*

gages

meters

rate meters

GS **measuring instruments**

. accelerometers

. . . strain gage accelerometers

. ammeters

. . . micromillimeters

. . . thermoelement ammeters

. analyzers

. . . engine analyzers

. . . signal analyzers

. anemometers

. . . drag force anemometers

. . . hot-film anemometers

. . . hot-wire anemometers

. . . laser anemometers

. . . sonic anemometers

. balloon-borne instruments

. bathymeters

. burettes

. calorimeters

. . . bomb calorimeters

. . . drop calorimeters

. . . flame calorimeters

. comparators

. conductivity meters

. . . electrical conductivity meters

. coulometers

. counters

. . . radiation counters

. . . Cerenkov counters

. . . electron counters

. . . Geiger counters

. . . neutron counters

. . . neutron spectrometers

. . . particle telescopes

. . . proportional counters

. . . quantum counters

. . . scintillation counters

. . . spark chambers

. deformeters

. densimeters

. . . ultrasonic densimeters

. densitometers

. . . microdensitometers

. distance measuring equipment

. . . altimeters

. . . laser altimeters

. . . radio altimeters

. . . geodimeters

. . . range finders

. . . optical range finders

. . . laser range finders

. . . stadimeters

. . . tellurometers

. dynamometers

- . . Ebert spectrometers
- . . Fabry-Perot spectrometers
- . . gamma ray spectrometers
- . . imaging spectrometers
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . laser spectrometers
- . . mass spectrometers
- . . microwave spectrometers
- . . neutron spectrometers
- . . Solar Backscatter UV Spectrometer
- . . solar spectrometers
- . . spectroheliographs
- . . time of flight spectrometers
- . . ultraviolet spectrometers
- . . . high dispersion spectrographs
- . . . Total Ozone Mapping Spectrometer
- . . Alpha Magnetic Spectrometer
- . . x ray spectrometers
- . sputtering gages
- . strain gages
- . temperature measuring instruments
- . . bathythermographs
- . . optical pyrometers
- . . pneumatic probes
- . . pyrometers
- . . . radiation pyrometers
- . . . thermocouple pyrometers
- . . temperature probes
- . . thermometers
- . . . resistance thermometers
- . tensiometers
- . tensometers
- . thermal conductivity gages
- . tiltmeters
- . time measuring instruments
- . . clocks
- . . . atomic clocks
- . . . autonomous spacecraft clocks
- . . . chronometers
- . . timing devices
- . . titrimeters
- . . torquemeters
- . . turbulence meters
- . . vibration meters
- . . seismographs
- . . . lunar seismographs
- . . viscometers
- . . voltmeters
- . . millivoltmeters
- . . wattmeters
- RT aircraft instruments
- automatic control
- automatic test equipment
- bioinstrumentation
- calibrating
- circumsolar telescopes
- control moment gyroscopes
- controllers
- ∞ detectors
- drag measurement
- duochromators
- electric bridges
- electrical measurement
- flight instruments
- forest fire detection
- Fraunhofer line discriminators
- IMBLMS
- instrument receivers
- instrument transmitters
- ∞ instruments
- International System of Units
- laboratory equipment
- landing instruments
- large aperture seismic array
- local scientific survey module
- lunar ranging
- ∞ measurement
- metrology
- microinstrumentation
- monitors
- navigation instruments
- ∞ probes
- propellant actuated instruments
- radio probing
- radio telemetry
- rapid ballistics identification

- recording instruments
- remote sensors
- rocket-borne instruments
- Ronchi test
- satellite instruments
- ∞ sensors
- sound detecting and ranging
- spacecraft instruments
- synchrosopes
- telemetry
- ∞ test equipment
- transducers
- ultrasonic scanners
- Venturi tubes
- Wheatstone bridges
- wind tunnel calibration

mecamylamine

- GS organic compounds
- . amines
- . . **mecamylamine**
- terpenes
- . **mecamylamine**

mechanical devices

- RT cams
- clamps
- clips
- clutches
- ∞ devices
- ∞ equipment
- holders
- jigs
- levers
- linkages
- machine tools
- ∞ mechanism
- mechanization
- tools

mechanical drawings

USE **engineering drawings**

mechanical drives

- UF *rotary drives*
- GS **mechanical drives**
- . magnetic tape transports
- . . propeller drive
- . . . helicopter propeller drive
- . . transmissions (machine elements)
- RT clutches
- counter-rotating wheels
- coupling
- couplings
- ∞ drives
- ∞ gear
- gear teeth
- gears
- magnetolectric media
- ∞ power transmission
- shafts (machine elements)
- vehicle wheels
- wind tunnel drives
- windmills (windpowered machines)

mechanical engineering

DEF Branch of engineering dealing with the design, development and operation of machines including mechanical devices and prime movers, vehicles, machine tools, and manufacturing machinery.

- RT aeronautical engineering
- aerospace engineering
- ∞ engineering
- fluid flow
- flywheels
- furnaces
- heat transfer
- machine tools
- ∞ machinery
- maintenance
- materials handling
- stress analysis
- thermodynamics

vibration tests

mechanical fingers

USE **end effectors**

mechanical hands

USE **end effectors**

mechanical impedance

- GS impedance
- . **mechanical impedance**
- RT attenuation
- damping
- friction
- impedance measurement

mechanical measurement

- SN (MEASUREMENT OF MECHANICAL PROPERTIES, QUANTITIES OR CONDITIONS)
- GS **mechanical measurement**
- . displacement measurement
- . drag measurement
- . flow measurement
- . . particle image velocimetry
- . . friction measurement
- . . pressure measurement
- . . stress measurement
- . . x ray stress measurement
- . . thrust measurement
- . . velocity measurement
- . . . particle image velocimetry
- . . . wind velocity measurement
- . . vibration measurement
- . . wind measurement
- . . . wind velocity measurement
- RT accelerometers
- acoustic measurement
- deformeters
- density measurement
- depth measurement
- dynamometers
- extensometers
- flowmeters
- ∞ measurement
- strain gages
- tensiometers
- torquemeters
- weight indicators

mechanical oscillators

- GS oscillators
- . **mechanical oscillators**
- . . pendulums
- . . . gyoscopic pendulums
- RT electric choppers
- harmonic oscillators
- reciprocation
- resonant vibration
- vibration

mechanical properties

- UF *material strength*
- meteorite compression tests*
- strength of materials*
- GS **mechanical properties**
- . brittleness
- . bulk modulus
- . cold strength
- . compressibility
- . compressive strength
- . creep properties
- . . creep rupture strength
- . . shear creep
- . . steady state creep
- . . tensile creep
- . . creep strength
- . . dimensional stability
- . . structural stability
- . . . shell stability
- . ductility
- . earthquake resistance
- . elastic properties
- . . aeroelasticity
- . . . aeroservoelasticity
- . . . aerothermoelasticity
- . . anelasticity
- . . elastoplasticity
- . . hydroelasticity
- . . hypoelasticity
- . . magnetostriction

- . . modulus of elasticity
- . . . dynamic modulus of elasticity
- . . photoelasticity
- . . . photoviscoelasticity
- . . proportional limit
- . . thermoelasticity
- . . . aérothermoelasticity
- . . viscoelasticity
- . . . photoviscoelasticity
- . . . thermoviscoelasticity
- . . ferroelasticity
- . electrostriction
- . fatigue life
- . fiber strength
- . flexibility
- . fracture strength
- . . flexural strength
- . hardness
- . . microhardness
- . . . Knoop hardness
- . . Rockwell hardness
- . . Vickers hardness
- . high strength
- . impact strength
- . malleability
- . modular ratios
- . notch strength
- . piezoelectricity
- . plastic properties
- . . elastoplasticity
- . . photoplasticity
- . . superplasticity
- . . thermoplasticity
- . . viscoplasticity
- . . yield point
- . Poisson ratio
- . resilience
- . set
- . shear properties
- . . shear strength
- . stiffness
- . stress cycles
- . stress ratio
- . stress relaxation
- . tensile properties
- . . tensile strength
- . thermal resistance
- . toughness
- . . notch sensitivity
- . wear resistance
- . . abrasion resistance
- . weld strength
- . yield strength
- . . load carrying capacity
- . . microyield strength
- RT acoustic properties
- aging (materials)
- anisotropy
- buoyancy
- cast alloys
- coefficients
- compressing
- compression loads
- deformation
- durability
- elongation
- fatigue (materials)
- ferritic stainless steels
- fiber orientation
- flatness
- ∞ high resistance
- hysteresis
- impedance
- interfacial tension
- interference fit
- internal friction
- isotropy
- J integral
- ∞ low resistance
- ∞ materials
- ∞ materials tests
- ∞ metallurgy
- micromechanics
- microporosity
- nanointerdentation
- peeling
- permeability
- ∞ physical properties
- propellant properties
- ∞ properties
- radiation effects
- reliability
- ∞ rigidity
- roughness
- ruggedness
- shear strain
- shear stress
- shock resistance
- solid mechanics
- specifications
- specimen geometry
- strain rate
- ∞ strength
- stress concentration
- stresses
- structural failure
- supercooling
- surface defects
- surface properties
- surface roughness
- tearing
- temperature inversions
- textures
- tolerances (mechanics)
- triaxial stresses
- triboluminescence
- weathering
- mechanical resonance*
- USE **resonant vibration**
- mechanical shock**
- UF *jarring*
- GS **mechanical shock**
- . hydraulic shock
- RT acceleration (physics)
- high acceleration
- hypervelocity impact
- impact
- impact acceleration
- ∞ shock
- shock absorbers
- shock resistance
- shock spectra
- shock waves
- vibration
- mechanical twinning**
- GS twinning
- . **mechanical twinning**
- RT crystal defects
- crystal growth
- crystal structure
- work hardening
- mechanics (physics)**
- SN (LIMITED TO GENERAL DISCUSSIONS OF THE BROAD BRANCH OF PHYSICS RELATED TO MOTION AND THE BEHAVIOR OF PHYSICAL SYSTEMS. USE OF A MORE SPECIFIC TERM IS RECOMMENDED.)
- DEF The branch of physics that studies the motion of bodies and the behavior of physical systems under the influence of internal and external forces.
- GS **mechanics (physics)**
- . classical mechanics
- . . space mechanics
- . . . astrodynamics
- . . . celestial mechanics
- . . . orbital mechanics
- Kepler laws
- minimum variance orbit determination
- . quantum mechanics
- . . Pauli exclusion principle
- . . quantum electrodynamics
- . fluid mechanics
- . . fluid dynamics
- . . . computational fluid dynamics
- . . . gas dynamics
- aerodynamics
- aérothermodynamics
- hypersonics
- rotor aerodynamics
- supersonics
- unsteady aerodynamics
- interactional aerodynamics
- rarefied gas dynamics
- . . . hydrodynamics
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- rotors
- vortex shedding
- . . hydromechanics
- . . . hydrodynamics
- elastohydrodynamics
- electrohydrodynamics
- magnetohydrodynamics
- . . . hydrostatics
- magnetohydrostatics
- . . pneumatics
- . solid mechanics
- . . fracture mechanics
- . computational mechanics
- . continuum mechanics
- . flight mechanics
- RT ∞ dynamics
- electromechanics
- ∞ hydraulics
- kinematics
- kinetics
- loads (forces)
- ∞ mechanism
- megamechanics
- micromechanics
- statics
- statistical mechanics
- ∞ **mechanism**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT ∞ machinery
- mechanical devices
- mechanics (physics)
- ∞ methodology
- mechanization**
- RT ∞ automation
- data processing
- depersonalization
- ∞ machinery
- man machine systems
- mechanical devices
- ∞ operations
- systems engineering
- tooling
- tools
- mechanograms**
- GS measuring instruments
- . **mechanograms**
- medical equipment
- . **mechanograms**
- recording instruments
- . **mechanograms**
- RT muscular function
- mechanoreceptors**
- DEF Nerve endings that react to mechanical stimuli, such as touch, tension, and acceleration.
- GS anatomy
- . sense organs
- . . **mechanoreceptors**
- receptors (physiology)
- . **mechanoreceptors**
- RT sensitometry
- meclizine**
- GS halogen compounds
- . chlorine compounds
- . . **meclizine**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . azines
- **meclizine**
- pyrazines
- . azines
- . . **meclizine**
- media**
- SN (EXCLUDES COMMUNICATION TECHNIQUES)
- GS **media**
- . anisotropic media
- . . anisotropic fluids

hormones
moods
photoperiod
pineal gland
secretions
sleep

Mellin transforms

GS functions (mathematics)
. **Mellin transforms**
RT integral equations
kernel functions

melt spinning

DEF A material process by which polymers such as nylon and polyesters and glass are melted to permit extrusion into fibers through spinnerets.

GS crystallization
. **melt spinning**
melts (crystal growth)
. **melt spinning**
solidification
. **melt spinning**
RT ∞ metallurgy
phase transformations

melting

UF *remelting*
thawing
GS phase transformations
. **melting**
. . arc melting
. . fusion (melting)
. . levitation melting
. . vacuum melting
. . zone melting
RT ablation
aufeis (ice)
burnthrough (failure)
casting
coal liquefaction
containerless melts
cooling
defrosting
deicing
drop transfer
extraction
freezing
furnaces
heat of fusion
heating
ice prevention
impact melts
induction heating
injection molding
liquefaction
liquid metals
liquid-solid interfaces
melts (crystal growth)
metal cutting
metal foams
∞ metallurgy
molds
phase change materials
pseudopotentials
∞ separation
smelting
solar furnaces
spiking

melting points

DEF liquidus and solidus coincide at an invariant point. In a phase diagram, the temperature at which the

UF *freezing points*
GS thermodynamic properties
. thermophysical properties
. . **melting points**

RT high temperature tests
liquid phases
liquidus
low temperature tests
phase diagrams
reaction bonding
solid solutions
solid state
solidification
solidified gases
specific heat

temperature
transition temperature

melts (crystal growth)

DEF Molten substances from which crystals are formed during the cooling or solidifying process.

GS **melts (crystal growth)**
. containerless melts
. impact melts
. melt spinning
RT atomic structure
crystal growth
crystallization
float zones
Marangoni convection
melting
semiconductors (materials)

MEM (excursion module)

USE **Mars Excursion Module**

membership functions

(added December 2000)
DEF Characteristic functions of a fuzzy set, which assign a value indicating the degree of membership for each element in a universal set.

GS functions (mathematics)
. **membership functions**
RT control systems design
fuzzy sets
fuzzy systems
machine learning
neural nets

membrane analogy

USE **membrane structures**
structural analysis

membrane structures

DEF Shell structures, often pressurized, that do not take wall bending or compression loads. Used for membrane analogy.

UF *membrane analogy*
GS membranes
. **membrane structures**
. . skin (structural member)
structural members
. **membrane structures**
. . skin (structural member)
RT diaphragms (mechanics)
metal shells
perforated shells
Scotchlite (trademark)
∞ sheets
shells (structural forms)
∞ structures
thin walled shells
webs (supports)

membrane theory

USE **structural analysis**

membranes

UF *webs (membranes)*
GS **membranes**
. cell membranes (biology)
. choroid membranes
. conjunctiva
. epicardium
. ion exchange membrane electrolytes
. membrane structures
. . skin (structural member)
. peritoneum
. pleurae
RT biofilms
∞ diaphragms
diaphragms (mechanics)
∞ films
jet membrane process
∞ layers
osmosis
reverse osmosis
septum
∞ sheets
shells (structural forms)
skin (anatomy)
∞ webs
webs (sheets)

webs (supports)

memory

SN (LIMITED TO SENTIENT ORGANISMS—EXCLUDES COMPUTER STORAGE DEVICES AND PLASTIC MEMORY)
RT education
learning
mnemonics
recognition
retention (psychology)

memory (computers)

DEF The component of a computer, control system, guidance system, instrumented satellite, or the like, designed to provide ready access to data or instructions previously recorded so as to make them bear upon an immediate problem, such as the guidance of a physical object, or the analysis and reduction of data.

GS **memory (computers)**
. random access memory
. . carbon nanotube based memory
. . core storage
. . associative memory
. . distributed memory
. . optical memory (data storage)
RT architecture (computers)
chips (memory devices)
computer design
computer storage devices
computers
hole burning
magnetic disks
video disks

MEMS (electromechanical devices)

(added October 1998)
USE **microelectromechanical systems**

mendelevium

GS chemical elements
. actinide series
. . transuranium elements
. . . **mendelevium**
. . nuclides
. . isotopes
. . . radioactive isotopes
. . . . transuranium elements
. . . . **mendelevium**
metals
. actinide series
. . transuranium elements
. . . **mendelevium**

meningitis

GS diseases
. infectious diseases
. . **meningitis**
RT acquired immunodeficiency syndrome
bacterial diseases
viral diseases

menisci

GS liquid surfaces
. **menisci**
RT Bond number
curves (geometry)
liquid-gas mixtures
liquid-solid interfaces
liquid-vapor interfaces
∞ surfaces

menstruation

RT females
ovaries
physiology

mental health

GS health
. **mental health**
RT human performance
intelligence
neuropsychiatry
psychotherapy
Rorschach tests
schizophrenia

mental performance

RT abilities

menthol

- cognitive psychology
- consciousness
- human performance
- hypernea
- inspiration
- intellect
- intelligence
- intelligence tests
- irrationality
- lies
- operator performance
- ∞ performance
- psychomotor performance
- stress (psychology)
- workloads (psychophysiology)

mental stress

USE **stress (psychology)**

menthol

GS organic compounds

- . cyclic compounds
- . . cyclic hydrocarbons
- . . . **menthol**
- . hydrocarbons
- . . cyclic hydrocarbons
- . . . **menthol**
- terpenes
- . **menthol**

meprobamate

GS esters

- . **meprobamate**

mercaptan

USE **thiols**

mercapto compounds

USE **thiols**

Mercator projection

DEF An equatorial, cylindrical, conformal map projection derived by mathematical analysis (not geometrically) in which the equator is represented by a straight line true to scale. The meridians are represented by parallel straight lines perpendicular to the equator and equally spaced according to their distance apart at the equator. The parallels are represented by straight lines perpendicular to the meridians and parallel with (and the same length as) the equator. The parallels are spaced so as to achieve conformality, their spacing increasing rapidly with their distance from the equator so that at all places the degrees of latitude and longitude have the same ratio to each other as to the sphere itself. This results in greater distortion of distances, areas, and shapes in the polar regions (above 80 deg. latitude). The scale is increasingly poleward as the secant of the latitude. Because any line of constant direction (azimuth) on the sphere is truly represented on the projection by a straight line, the Mercator projection is of great value in navigation. It is used for hydrographic charts, and also to show geographic variations of some physical property (such as magnetic declination) or to plot trajectories of Earth satellites in oblique orbits. It is named after Gerhardus Mercator (1512-1594), a Flemish mathematician and geographer, whose world map of 1569 used this projection.

GS geometry

- . Euclidean geometry
- . . analytic geometry
- . . . **Mercator projection**
- . . projective geometry
- . . . **Mercator projection**

RT maps

Mercure aircraft

GS transport aircraft

- . short haul aircraft
- . . **Mercure aircraft**

RT ∞ aircraft

- cargo aircraft
- passenger aircraft

mercury (metal)

UF *liquid mercury*

GS chemical elements

- . **mercury (metal)**
- . . mercury isotopes
- . . mercury vapor
- liquids
- . liquid metals
- . . **mercury (metal)**
- . . . mercury isotopes
- . . . mercury vapor
- metals
- . liquid metals
- . . **mercury (metal)**
- . . . mercury isotopes
- . . . mercury vapor
- transition metals
- . . **mercury (metal)**
- . . . mercury isotopes
- . . . mercury vapor

RT heavy metals

Mercury (planet)

GS celestial bodies

- . planets
- . . terrestrial planets
- . . . **Mercury (planet)**

RT Mercury atmosphere

Mercury surface

MESSENGER (spacecraft)

planetary craters

mercury alloys

GS alloys

- . **mercury alloys**
- . . mercury amalgams

mercury amalgams

UF *amalgams*

GS alloys

- . mercury alloys
- . . **mercury amalgams**

mercury arcs

GS electric current

- . electric discharges
- . . electric arcs
- . . . **mercury arcs**

RT arc lamps

metallic plasmas

rectifiers

Mercury atmosphere

GS environments

- . extraterrestrial environments
- . . planetary environments
- . . . planetary atmospheres
- **Mercury atmosphere**

RT Mercury (planet)

Mercury surface

planetary meteorology

mercury cadmium tellurides

DEF Compounds of tellurium exhibiting photovoltaic characteristics and used for photodiodes and photodetectors in the 3 to 12 micrometer wavelengths at cryogenic temperatures. Used for cadmium mercury tellurides.

UF *cadmium mercury tellurides*

GS chalcogenides

- . tellurides
- . . mercury tellurides
- . . . **mercury cadmium tellurides**

mercury compounds

- . mercury tellurides
- . . **mercury cadmium tellurides**

tellurium compounds

- . tellurides
- . . mercury tellurides
- . . . **mercury cadmium tellurides**

RT infrared detectors

photoconductivity

photoconductors

photodiodes

mercury compounds

GS **mercury compounds**

- . mercury oxides
- . mercury tellurides
- . . mercury cadmium tellurides

RT ∞ chemical compounds

- ∞ Group 2B compounds

∞ metal compounds

Mercury flights

GS space flight

- . manned space flight
- . . **Mercury flights**
- . . . Mercury MA-1 flight
- . . . Mercury MA-2 flight
- . . . Mercury MA-3 flight
- . . . Mercury MA-4 flight
- . . . Mercury MA-5 flight
- . . . Mercury MA-6 flight
- . . . Mercury MA-7 flight
- . . . Mercury MA-8 flight
- . . . Mercury MA-9 flight
- . . . Mercury MR-1 flight
- . . . Mercury MR-2 flight
- . . . Mercury MR-3 flight
- . . . Mercury MR-4 flight

RT Atlas launch vehicles

manned spacecraft

space capsules

mercury ion engines

DEF Machines providing thrust by expelling accelerated or high velocity mercury ions and often using energy provided by nuclear reactors.

GS engines

- . rocket engines
- . . electric rocket engines
- . . . electrostatic engines
- ion engines
- **mercury ion engines**

RT nuclear propulsion

nuclear rocket engines

plasma engines

mercury isotopes

GS chemical elements

- . mercury (metal)
- . . **mercury isotopes**
- . . nuclides
- . . isotopes
- . . . **mercury isotopes**

liquids

- . liquid metals
- . . mercury (metal)
- . . . **mercury isotopes**

metals

- . liquid metals
- . . mercury (metal)
- . . . **mercury isotopes**
- . transition metals
- . . mercury (metal)
- . . . **mercury isotopes**

mercury lamps

GS lighting equipment

- . luminaires
- . . **mercury lamps**

RT light sources

phosphors

sterilization

xenon lamps

Mercury MA-1 flight

GS space flight

- . manned space flight
- . . Mercury flights
- . . . **Mercury MA-1 flight**

RT Atlas launch vehicles

Mercury MA-2 flight

UF *MA-2 mission*

GS space flight

- . manned space flight
- . . Mercury flights
- . . . **Mercury MA-2 flight**

RT Atlas launch vehicles

Faith 7

Mercury MA-3 flight

UF *MA-3 flight*

GS space flight

- . manned space flight
- . . Mercury flights
- . . . **Mercury MA-3 flight**

RT Atlas launch vehicles

Mercury MA-4 flight
 UF *MA-4 flight*
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-4 flight**
 RT Atlas launch vehicles

Mercury MA-5 flight
 UF *MA-5 flight*
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-5 flight**
 RT Atlas launch vehicles

Mercury MA-6 flight
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-6 flight**
 RT Atlas launch vehicles
 Friendship 7

Mercury MA-7 flight
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-7 flight**
 RT Atlas launch vehicles
 Aurora 7

Mercury MA-8 flight
 UF *MA-8 flight*
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-8 flight**
 RT Atlas launch vehicles
 SIGMA 7

Mercury MA-9 flight
 UF *MA-9 flight*
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MA-9 flight**
 RT Atlas launch vehicles
 Faith 7

Mercury MR-1 flight
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MR-1 flight**

Mercury MR-2 flight
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MR-2 flight**

Mercury MR-3 flight
 UF *MR-3 flight*
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MR-3 flight**

Mercury MR-4 flight
 GS space flight
 . manned space flight
 . . Mercury flights
 . . . **Mercury MR-4 flight**

mercury oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **mercury oxides**
 mercury compounds
 . **mercury oxides**

Mercury project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Mercury project**
 . projects

. . **Mercury project**
 . space programs
 . . NASA space programs
 . . . **Mercury project**

RT Apollo project
 Atlas launch vehicles
 Gemini project
 Little Joe 2 launch vehicle
 manned space flight
 manned spacecraft

Mercury spacecraft
 GS manned spacecraft
 . **Mercury spacecraft**
 . . Aurora 7
 . . Faith 7
 . . Friendship 7
 . . SIGMA 7
 reentry vehicles
 . recoverable spacecraft
 . **Mercury spacecraft**
 . . . Aurora 7
 . . . Faith 7
 . . . Friendship 7
 . . . SIGMA 7
 soft landing spacecraft
 . **Mercury spacecraft**
 . . Aurora 7
 . . Faith 7
 . . Friendship 7
 . . SIGMA 7
 space capsules
 . **Mercury spacecraft**
 . . Aurora 7
 . . Faith 7
 . . Friendship 7
 . . SIGMA 7

Mercury surface
 DEF The surface of the planet Mercury.
 GS planetary surfaces
 . **Mercury surface**
 RT extraterrestrial environments
 Mercury (planet)
 Mercury atmosphere
 MESSENGER (spacecraft)
 planetary craters
 satellite surfaces
 solar system
 terrestrial planets

mercury tellurides
 GS chalcogenides
 . tellurides
 . . **mercury tellurides**
 . . . mercury cadmium tellurides
 mercury compounds
 . **mercury tellurides**
 . . mercury cadmium tellurides
 tellurium compounds
 . tellurides
 . . **mercury tellurides**
 . . . mercury cadmium tellurides

mercury vapor
 GS chemical elements
 . mercury (metal)
 . . **mercury vapor**
 liquids
 . liquid metals
 . . mercury (metal)
 . . . **mercury vapor**
 metals
 . liquid metals
 . . mercury (metal)
 . . . **mercury vapor**
 . metal vapors
 . . **mercury vapor**
 . transition metals
 . . mercury (metal)
 . . . **mercury vapor**
 vapors
 . metal vapors
 . . **mercury vapor**
 RT cesium vapor
 sodium vapor

merging routines
 GS computer programs
 . **merging routines**

RT ∞ routines

meridional flow
 GS fluid flow
 . gas flow
 . . air flow
 . . . air currents
 **meridional flow**
 RT atmospheric circulation
 flow geometry
 wind (meteorology)
 wind direction
 zonal flow (meteorology)

Merlin (helicopter)
 (added April 1997)
 USE **EH-101 helicopter**

meromorphic functions
 GS analysis (mathematics)
 . complex variables
 . . **meromorphic functions**
 . . . elliptic functions
 . . . rational functions
 functions (mathematics)
 . **meromorphic functions**
 . . elliptic functions
 . . rational functions

Merritt Island (FL)
 GS landforms
 . islands
 . . **Merritt Island (FL)**
 RT Florida

merwinite
 GS calcium compounds
 . **merwinite**
 magnesium compounds
 . **merwinite**
 minerals
 . **merwinite**
 silicon compounds
 . silicates
 . . **merwinite**

mesas
 DEF Isolated, nearly level landmasses standing distinctly above the surrounding country, bounded by abrupt or steeply sloping erosion scarps on all sides, and capped by layers of resistant, nearly horizontal rock (often lava). Less strictly, very broad, flat topped, usually isolated hills or mountains of moderate height bounded on at least one side by a steep cliff or slope and representing an erosion remnant. Mesas are similar to, but have more summit area than buttes and are common topographical features in arid and semiarid regions of the United States. Mesas are often considered broad terraces or comparatively flat plateaus along river valleys. They are marked by an abrupt slope or escarpment on one side.
 GS landforms
 . terraces (landforms)
 . . plateaus
 . . . **mesas**
 buttes
 RT flats (landforms)
 highlands
 mountains

MESFETs
 USE **field effect transistors**

mesh
 RT fabrics
 ∞ grids
 strands
 webbing

meshfree methods

∞ webs

mesh (mathematics)

USE **computational grids**

mesh generation (mathematics)

USE **grid generation (mathematics)**

mesh refinement (mathematics)

(added August 2003)

USE **grid refinement (mathematics)**

meshfree methods

(added April 2008)

DEF Computational techniques that provide numerical solutions by using a set of arbitrarily distributed nodes (discretization points) and weight functions without the use of mesh or grid information in their formulations.

UF *gridfree methods*

meshless methods

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . **meshfree methods**

RT computational electromagnetics

computational fluid dynamics

computational mechanics

finite element method

Galerkin method

integral equations

kernel functions

magnetohydrodynamic simulation

partial differential equations

particle in cell technique

plasma dynamics

solid mechanics

weighting functions

meshless methods

(added May 2008)

USE **meshfree methods**

mesitylene

GS organic compounds

. hydrocarbons

. . **mesitylene**

mesometeorology

GS meteorology

. **mesometeorology**

RT aeronomy

lower atmosphere

micrometeorology

meson resonance

GS particles

. elementary particles

. . bosons

. . . mesons

. . . . **meson resonance**

. X mesons

. . fermions

. . . **meson resonance**

. . . . X mesons

. . hadrons

. . . mesons

. . . . **meson resonance**

. X mesons

. . nuclear particles

. . bosons

. . . mesons

. . . . **meson resonance**

. X mesons

resonance

. **meson resonance**

. . X mesons

RT baryons

hyperons

meson-meson interactions

GS particle interactions

. elementary particle interactions

. . **meson-meson interactions**

RT electromagnetic interactions

∞ interactions

meson-nucleon interactions

GS particle interactions

. elementary particle interactions

. . **meson-nucleon interactions**

RT charged particles

∞ interactions

mesons

Yukawa potential

mesons

DEF In the classification of subatomic particles by mass, the second lightest of such particles. Their mass is intermediate between that of the lepton and the nucleon.

GS particles

. elementary particles

. . bosons

. . . **mesons**

. . . . eta-mesons

. . . . hyperons

. xi hyperons

. . . . kaons

. . . . meson resonance

. X mesons

. . . . muons

. . . . omega-mesons

. . . . pions

. . . . vector mesons

. rho-mesons

. sigma-mesons

. . hadrons

. . . **mesons**

. . . . eta-mesons

. . . . hyperons

. xi hyperons

. . . . kaons

. . . . meson resonance

. X mesons

. . . . muons

. . . . omega-mesons

. . . . pions

. . . . vector mesons

. rho-mesons

. sigma-mesons

. nuclear particles

. . bosons

. . . **mesons**

. . . . eta-mesons

. . . . hyperons

. xi hyperons

. . . . kaons

. . . . meson resonance

. X mesons

. . . . muons

. . . . omega-mesons

. . . . pions

. . . . vector mesons

. rho-mesons

. sigma-mesons

RT baryons

boson fields

charged particles

corpuscular radiation

cosmic rays

gluons

leptons

meson-nucleon interactions

muonium

Pomeranchuk theorem

strangeness

mesopause

SN (ALTITUDE APPROXIMATELY 90 KM)

DEF The base of the inversion at the top of the mesosphere, usually found at 80 to 85 kilometers.

GS Earth atmosphere

. middle atmosphere

. . mesosphere

. . . **mesopause**

RT stratopause

mesophiles

RT microorganisms

psychrophiles

thermophiles

mesoscale phenomena

DEF Meteorological phenomena extending approximately one to a hundred kilometers (mesoscale cloud patterns, for example).

GS **mesoscale phenomena**

. jet streams (meteorology)

RT arc clouds

meteorology

phenomenology

wind (meteorology)

mesosphere

SN (ALTITUDE RANGE BETWEEN

APPROXIMATELY 45 AND 90 KM)

DEF The atmospheric shell, in which temperature generally decreases with heights, extending from the stratopause at about 50 to 55 kilometers to the mesopause at about 80 to 85 kilometers.

GS Earth atmosphere

. middle atmosphere

. . **mesosphere**

. . . mesopause

RT chemosphere

Earth ionosphere

homosphere

Solar Mesosphere Explorer

stratopause

Mesozoic Era

(added June 1989)

DEF An era of geologic time, from the end of the Paleozoic Era to the beginning of the Cenozoic Era, or from about 225 to about 65 million years ago.

GS **Mesozoic Era**

. Cretaceous Period

RT Cretaceous-Tertiary boundary

geochronology

paleontology

Paleozoic Era

message processing

DEF In communication operations, the acceptance, preparation for transmission, receipt and/or delivery of a series of words or symbols intended for conveying information.

RT automatic repeat request

communicating

communication

cryptography

information flow

messages

packet transmission

∞ processing

semantics

signal processing

signal transmission

symbols

messages

GS communicating

. information dissemination

. . **messages**

RT automatic repeat request

communication theory

information theory

intelligibility

message processing

semantics

sentences

signal transmission

∞ signals

syllables

symbols

vocoders

words (language)

MESSENGER (spacecraft)

(added October 2004)

DEF Spacecraft and related mission designed to study the structure, geochemistry, and magnetic fields of the planet Mercury. The science payload consists of the Mercury Dual Imaging System (MDIS), the Gamma-Ray and Neutron Spectrometer, the Mercury Laser Altimeter, the Mercury Atmospheric and Surface Composition Spectrometer, the Energetic Particle and Plasma Spectrometer, and a magnetometer, radio science instrument, and x-ray spectrometer. MESSENGER (MErcury Surface, Space ENvironment, Geochemistry, and Ranging) was launched August 2004.

GS interplanetary spacecraft

. **MESSENGER (spacecraft)**

unmanned spacecraft

. space probes
 . . **MESSENGER (spacecraft)**
 RT Mercury (planet)
 Mercury surface
 planetary geology
 planetary magnetic fields
 space exploration
 space missions

messenger RNA
 USE **ribonucleic acids**

Messerschmitt ME P-160 aircraft
 USE **P-160 aircraft**

Messerschmitt ME P-308 aircraft
 USE **P-308 aircraft**

metabolic diseases
 GS diseases
 . **metabolic diseases**
 RT metabolism

metabolic wastes
 GS wastes
 . **metabolic wastes**
 . . human wastes
 . . . feces
 . . . urine
 RT activated sludge
 air pollution
 carbon dioxide
 composting
 environment effects
 environment pollution
 environmental surveys
 expired air
 liquid wastes
 manures
 metabolites
 organic wastes (fuel conversion)
 pollution
 sewage
 sewers
 solid wastes
 waste disposal

metabolism
 DEF The sum of all physical and chemical processes by which living organized substance is produced and maintained and by which energy is made available for the use of the organism.
 GS **metabolism**
 . adrenal metabolism
 . ascorbic acid metabolism
 . calcium metabolism
 . carbohydrate metabolism
 . . hyperglycemia
 . . hypoglycemia
 . catabolism
 . electrolyte metabolism
 . enzyme activity
 . . fermentation
 . hormone metabolisms
 . hydrogen metabolism
 . hypometabolism
 . mineral metabolism
 . nitrogen metabolism
 . oxygen metabolism
 . phosphorus metabolism
 . protein metabolism
 . . lipid metabolism
 RT adenosine monophosphate
 caloric requirements
 enzymology
 heterotrophs
 homeostasis
 Krebs cycle
 metabolic diseases
 metabolites
 nutrition
 obesity
 osteoporosis
 oxygen consumption
 physiology
 respiration
 secretions
 thermoregulation

vasopressins

metabolites
 DEF Products of biological synthesis and/or metabolism.
 RT biochemistry
 biosynthesis
 metabolic wastes
 metabolism
 organic compounds

metacomputing
 (added December 2003)
 USE **grid computing (computer networks)**

metadata
 (added June 2004)
 DEF Data that provides information about other data. Structured information describing any object or resource.
 GS information
 . **metadata**
 RT ∞ data
 data bases
 data management
 indexing (information science)
 information retrieval

metagalaxy
 USE **universe**

metal air batteries
 GS electric generators
 . direct power generators
 . . primary batteries
 . . . **metal air batteries**
 zinc-oxygen batteries
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . **metal air batteries**
 zinc-oxygen batteries
 RT dry cells
 storage batteries

metal bonding
 GS bonding
 . **metal bonding**
 . . metal-metal bonding
 RT adhesion
 adhesive bonding
 bimetals
 brazing
 diffusion welding
 explosive welding
 heat affected zone
 joints (junctions)
 laminates
 resin bonding
 soldering
 welding

metal clusters
 (added January 1994)
 DEF Bonded aggregations of like metal atoms.
 RT agglomeration
 atomic clusters
 chemisorption
 clumps
 ∞ clusters
 metals
 molecular clusters
 nanoclusters
 nucleation

metal coatings
 SN (COATINGS CONSISTING OF METAL)
 GS coatings
 . **metal coatings**
 . . aluminum coatings
 . . gold coatings
 . . nickel coatings
 . . zinc coatings
 RT anodic stripping
 antiradar coatings
 ceramic coatings
 cladding
 corrosion

corrosion prevention
 deposition
 electroless deposition
 hot corrosion
 ion plating
 lacquers
 magnetron sputtering
 metallizing
 ∞ metallurgy
 metals
 optical coatings
 oxides
 paints
 ∞ plates
 plating
 primers (coatings)
 protective coatings
 sprayed coatings

metal combustion
 GS combustion
 . **metal combustion**
 RT fuel combustion
 gas-metal interactions
 metals
 oxidation
 propellant combustion
 pyrophoric materials
 solid propellant combustion
 solid propellant ignition

∞ **metal compounds**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ∞ alkali metal compounds
 aluminum compounds
 amines
 antimony compounds
 barium compounds
 beryllium compounds
 bismuth compounds
 cadmium compounds
 calcium compounds
 cerium compounds
 cesium compounds
 ∞ chemical compounds
 chromium compounds
 cobalt compounds
 copper compounds
 dysprosium compounds
 erbium compounds
 europium compounds
 gallium compounds
 germanium compounds
 hafnium compounds
 indium compounds
 iridium compounds
 iron compounds
 lanthanum compounds
 lead compounds
 lead organic compounds
 lithium compounds
 lithium iodates
 lutetium compounds
 magnesium compounds
 manganese compounds
 mercury compounds
 metal fluorides
 metal halides
 metal hydrides
 metal oxides
 metals
 molybdenum compounds
 neodymium compounds
 neptunium compounds
 nickel compounds
 niobium compounds
 organic aluminum compounds
 organic germanium compounds
 organic lithium compounds
 organic tin compounds
 organometallic compounds
 osmium compounds
 platinum compounds
 plutonium compounds
 potassium compounds
 praseodymium compounds
 protactinium compounds
 rare earth compounds

metal crystals

refractory materials
rhenium compounds
rubidium compounds
ruthenium compounds
samarium compounds
scandium compounds
silver compounds
sodium compounds
strontium compounds
strontium oxides
tantalum compounds
technetium compounds
thallium compounds
thorium compounds
thulium compounds
tin compounds
titanium compounds
tungsten compounds
uranium compounds
vanadium compounds
vanadyl compounds
ytterbium compounds
yttrium compounds
zinc compounds
zirconium compounds

metal corrosion

USE **corrosion**

metal crystals

GS crystals
. **metal crystals**
RT crystal lattices
crystal structure
metallography
metals

metal cutting

GS cutting
. **metal cutting**
RT countersinking
grinding (material removal)
knurling
laser cutting
machine tools
machining
melting
micromachining
milling (machining)
perforating
planing
plasma arc cutting
scarfing
shearing
slicing
spark machining
spiking

metal drawing

GS forming techniques
. **metal drawing**
metal working
. **metal drawing**
RT bulging
bundle drawing
cold drawing
cold working
∞ drawing
ductility
hot working
magnetic forming
stretch forming

metal fatigue

GS fatigue (materials)
. **metal fatigue**
RT bending fatigue
Coffin-Manson law
crack closure
crack initiation
crack propagation
fracturing
grain size
inelastic stress
retirement for cause
rupturing
Segre characteristic
short cracks
S-N diagrams
stress corrosion

stress corrosion cracking
thermal fatigue
transgranular corrosion

metal fibers

GS fibers
. **metal fibers**
RT Borsic (tradename)
fiber composites
filament winding
reinforcing fibers

metal films

RT coatings
diamond films
∞ films
metallizing
metals
nickel coatings
pickling (metallurgy)
sputtering gages
thin films

metal finishing

GS **metal finishing**
. electropolishing
. peening
. shot peening
RT cleaning
coating
coatings
descaling
pickling (metallurgy)
plating
surface finishing

metal fluorides

GS halogen compounds
. fluorine compounds
. . . fluorides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . . zirconium fluorides
. halides
. . fluorides
. . . **metal fluorides**
. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . . zirconium fluorides
. . metal halides
. . . **metal fluorides**

. . . . aluminum fluorides
. . . . beryllium fluorides
. . . . cadmium fluorides
. . . . calcium fluorides
. fluorspar
. . . . cesium fluorides
. . . . chromium fluorides
. . . . cobalt fluorides
. . . . copper fluorides
. . . . lanthanum fluorides
. . . . lithium fluorides
. . . . magnesium fluorides
. . . . nickel fluorides
. . . . plutonium fluorides
. . . . protactinium fluorides
. . . . sodium fluorides
. . . . strontium fluorides
. . . . thorium fluorides
. . . . tungsten fluorides
. . . . uranium fluorides
. . . . zinc fluorides
. . . . zirconium fluorides
RT ∞ metal compounds

metal foams

DEF Foamed materials formed under low gravity conditions in space from sputtered metal deposits. This experimental space processing was completed in the second NASA SPAR flight.

GS foams

. **metal foams**
RT bubbles
foaming
low gravity manufacturing
∞ materials science
melting
∞ metallurgy
Space Processing Applications
Rocket

metal foils

GS foils (materials)
. **metal foils**
RT honeycomb structures
metals
multilayer insulation
∞ sheets

metal forging

USE **forging**

metal forming

USE **forming techniques**
metal working

metal fuels

GS fuels
. chemical fuels
. . **metal fuels**
RT aluminum compounds
beryllium compounds
boron compounds
cesium compounds
gelled propellants
hybrid propellants
lithium compounds
metals
slurry propellants
solid propellants

metal grinding

GS grinding (material removal)
. **metal grinding**
RT forming techniques
grinding machines
surface finishing

metal halides

GS halogen compounds
. halides
. . **metal halides**
. . . alkali halides
. . . . cesium halides
. cesium bromides
. cesium fluorides
. cesium iodides
. potassium iodides
. . . . sodium bromides
. . . . sodium chlorides
. . . . sodium fluorides

- sodium iodides
- aluminum chlorides
- barium fluorides
- beryllium chlorides
- cadmium chlorides
- calcium chlorides
- chromium bromides
- copper chlorides
- hafnium iodides
- iron chlorides
- lanthanum chlorides
- lead chlorides
- lithium chlorides
- magnesium bromides
- metal fluorides
- aluminum fluorides
- beryllium fluorides
- cadmium fluorides
- calcium fluorides
- fluorspar
- cesium fluorides
- chromium fluorides
- cobalt fluorides
- copper fluorides
- lanthanum fluorides
- lithium fluorides
- magnesium fluorides
- nickel fluorides
- plutonium fluorides
- protactinium fluorides
- sodium fluorides
- strontium fluorides
- thorium fluorides
- tungsten fluorides
- uranium fluorides
- zinc fluorides
- zirconium fluorides
- niobium iodides
- potassium bromides
- potassium chlorides
- silver halides
- silver bromides
- silver chlorides
- silver iodides
- strontium bromides
- technetium fluorides
- titanium chlorides
- tungsten halides
- tungsten chlorides
- tungsten fluorides
- zinc chlorides
- zirconium iodides

RT ∞ metal compounds

metal hardening

USE **hardening (materials)**

metal hydrides

- UF *plumbane*
- GS hydrogen compounds
- . hydrides
- . . **metal hydrides**
- aluminum hydrides
- aluminum borohydrides
- beryllium hydrides
- cesium hydrides
- lithium hydrides
- lithium aluminum hydrides
- potassium hydrides
- sodium hydrides

RT ∞ metal compounds

metal insulator semiconductors

USE **MIS (semiconductors)**

metal ions

- GS ions
- . **metal ions**
- . . ferric ions
- . . manganese ions
- RT barium ion clouds
- cations
- crystal field theory
- ion implantation
- ion plating
- metals
- positive ions

metal joints

GS joints (junctions)

. **metal joints**

- . . soldered joints
- . . welded joints
- . . . spot welds
- RT butt joints
- explosive welding
- lap joints
- riveted joints
- scarf joints
- seams (joints)

metal matrix composites

- GS composite materials
- . **metal matrix composites**
- . . aluminum boron composites
- . . aluminum graphite composites
- . . Borsic (tradename)
- . . eutectic composites
- RT aramid fiber composites
- boron fibers
- chemical compatibility
- crack bridging
- electrodeposition
- fiber composites
- fiber pullout
- fiber pushout
- fibers
- functionally gradient materials
- hybrid composites
- ∞ materials
- ∞ matrices
- matrix materials
- monotectic alloys
- particulate reinforced composites
- plasma spraying
- powder metallurgy
- reinforcing fibers
- resin matrix composites
- squeeze casting
- whisker composites

metal nitrides

- GS nitrogen compounds
- . nitrides
- . . **metal nitrides**
- . . . aluminum nitrides
- . . . beryllium nitrides
- . . . gallium nitrides
- . . . tantalum nitrides
- . . . titanium nitrides
- . . . zirconium nitrides
- RT transition metals

metal organic chemical vapor deposition

USE **metalorganic chemical vapor deposition**

metal oxide semiconductors

- UF *MOS (semiconductors)*
- GS electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . **metal oxide semiconductors**
- CMOS
- ITO (semiconductors)
- SOS (semiconductors)
- semiconductors (materials)
- . **metal oxide semiconductors**
- . . CMOS
- . . ITO (semiconductors)
- . . SOS (semiconductors)
- RT capacitance-voltage characteristics
- ion implantation
- rectifiers
- SOI (semiconductors)

metal oxides

- GS chalcogenides
- . oxides
- . . **metal oxides**
- . . . alkaline earth oxides
- barium oxides
- beryllium oxides
- alexandrite
- calcium oxides
- akermanite
- magnesium oxides
- akermanite
- periclase
- . . . aluminum oxides

- alexandrite
- sapphire
- bismuth oxides
- cerium oxides
- cesium oxides
- chromium oxides
- cobalt oxides
- copper oxides
- gallium oxides
- hafnium oxides
- iron oxides
- hematite
- ilmenite
- magnetite
- lanthanum oxides
- lead oxides
- lithium oxides
- manganese oxides
- Hopcalite (trademark)
- mercury oxides
- mixed oxides
- BSCCO superconductors
- YBCO superconductors
- molybdenum oxides
- nickel oxides
- niobium oxides
- platinum oxides
- plutonium oxides
- potassium oxides
- scandium oxides
- silver oxides
- sodium peroxides
- strontium oxides
- tantalum oxides
- thorium oxides
- tin oxides
- titanium oxides
- anatase
- ilmenite
- rutile
- tungsten oxides
- scheelite
- uranium oxides
- vanadium oxides
- yttrium oxides
- zinc oxides
- zirconium oxides
- yttria-stabilized zirconia
- RT cathodic coatings
- high temperature superconductors
- ∞ metal compounds
- oxide films
- vanadates

metal particles

- GS particles
- . **metal particles**
- . . metal powder
- . . . platinum black
- . . . powdered aluminum
- sintered aluminum powder
- RT particulate reinforced composites
- powder metallurgy
- scrap
- sputtering

metal plates

- UF *plate (metal)*
- GS structural members
- . plates (structural members)
- . . **metal plates**
- . . . boiler plate
- RT armor
- bars
- billets
- flanges
- flat plates
- girder webs
- parallel plates
- ∞ plates
- rectangular plates
- slabs
- thick plates
- thin plates

metal polishing

- UF *polished metals*
- GS polishing
- . **metal polishing**
- . . electropolishing

metal powder

RT cleaning
surface finishing

metal powder

UF *powdered metals*

GS particles
. metal particles
. . . **metal powder**
. . . . platinum black
. . . . powdered aluminum
. . . . sintered aluminum powder
. powder (particles)
. . . **metal powder**
. . . . platinum black
. . . . powdered aluminum
. . . . sintered aluminum powder

RT atomizing
bearing alloys
comminution
compressibility
compressing
electrodeposition
flakes
liquid phase sintering
metals
mixing
porous materials
powder metallurgy
reduction (chemistry)
sintering
size separation

metal propellants

GS propellants
. rocket propellants
. . solid rocket propellants
. . . **metal propellants**
. solid propellants
. . solid rocket propellants
. . . **metal propellants**

RT aluminum compounds
beryllium compounds
boron compounds
gelled propellants
gelled rocket propellants
hybrid propellants
monopropellants
slurry propellants

metal sheets

UF *sheet metal*

RT plates (structural members)
∞ sheets

metal shells

GS shells (structural forms)
. **metal shells**

RT circular shells
cylindrical shells
hemispherical shells
hulls (structures)
membrane structures
orthotropic shells
reinforced shells
skin (structural member)
spherical shells
thin walled shells
toroidal shells

metal spinning

UF *spin forging*
spinning (metallurgy)

GS forming techniques
. **metal spinning**
. . hydrospinning
metal working
. **metal spinning**
. . hydrospinning
spin
. **metal spinning**
. . hydrospinning

RT cold working
extruding
hot working

metal spraying

GS spraying
. **metal spraying**

RT arc spraying
coating

coatings
flame spraying
HVOF thermal spraying
metallizing
surface finishing

metal strips

RT billets
ribbons
strakes
∞ strip
strip transmission lines

metal surfaces

RT adatoms
crack initiation
crystal surfaces
erosion
gas-solid interfaces
liquid-solid interfaces
oxide films
solid surfaces
surface finishing
surface properties
surface reactions
∞ surfaces

metal vapor lasers

DEF Stimulated emission devices, the active materials of which are vaporized metals.

GS stimulated emission devices
. lasers
. . **metal vapor lasers**

RT laser materials
laser microscopy
optical pumping

metal vapors

GS metals
. **metal vapors**
. . mercury vapor
. . sodium vapor
vapors
. **metal vapors**
. . mercury vapor
. . sodium vapor

RT alkali metals
alkali vapor lamps
gas-metal interactions
heat transfer
liquid metals
vapor deposition

metal whisker reinforcement

USE **whisker composites**

metal working

SN (METAL DEFORMATION FOR CHANGING SHAPE AND FOR PROPERTIES--EXCLUDES CASTING, CUTTING, DEPOSITION PROCESS AND MACHINING)

UF *metal forming*

GS **metal working**
. ausforming
. bulging
. cladding
. coining
. explosive forming
. forging
. hydroforming
. magnetic forming
. metal drawing
. metal spinning
. . hydrospinning
. sizing (shaping)

RT brakes (forming or bending)
∞ breakdown
casting
cold pressing
cold rolling
cold working
decarburization
deep drawing
dimpling
electrohydraulic forming
electromagnetic hammers
explosive welding
extruding
flattening
forming techniques

hardening (materials)
hot isostatic pressing
hot pressing
hot working
laser applications
laser machining
leveling
machining
malleability
∞ metallurgy
micromachining
peening
perforating
piercing
plasma arc cutting
pressing (forming)
pyrometallurgy
∞ reduction
roll forming
∞ rolling
shearing
shot peening
squeeze casting
stamping
stretch forming
stretching
superplastic forming
swaging
tempering
winding
work hardening

metal-barrier-metal junctions

USE **MBM junctions**

metal-gas systems

RT gas lubricants
gases
gas-metal interactions
metals
∞ systems
vapor phases

metal-insulator-metal diodes

USE **MIM diodes**

metal-insulator-metal semiconductors

USE **MIM (semiconductors)**

metallic glasses

DEF Amorphous alloys (glassy metals) produced by extremely rapid quenching of molten transition-metal alloys (e.g., iron, nickel, and/or cobalt). These metallic glasses exhibit unique mechanical, magnetic, and electrical properties, superconductive behavior, and anticorrosion resistance, depending on the alloys, their formation and quenching techniques.

GS glass

. **metallic glasses**

RT glass coatings
glass fibers
optical properties
silicon dioxide
spin glass
vitreous materials

metallic hydrogen

GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **metallic hydrogen**
. nuclides
. isotopes
. . . hydrogen isotopes
. . . . **metallic hydrogen**
gases
. hydrogen
. . hydrogen isotopes
. . . **metallic hydrogen**

RT critical temperature
solid phases
solid state
solidified gases
solids

metallic plasmas

GS particles
. charged particles
. . energetic particles

- ... plasmas (physics)
- ... **metallic plasmas**
- ... cesium plasma
- ... uranium plasmas
- . corpuscular radiation
- . energetic particles
- . plasmas (physics)
- ... **metallic plasmas**
- ... cesium plasma
- ... uranium plasmas
- RT electron plasma
- mercury arcs
- plasma sheaths

- metallic stars**
- GS celestial bodies
- . stars
- . **metallic stars**
- RT abundance
- chemical composition
- metallicity
- stellar atmospheres
- stellar structure

- metallicity**
- DEF The abundance index of a metal or metals for a celestial body.
- RT abundance
- chemical analysis
- chemical composition
- galactic clusters
- galaxies
- globular clusters
- hydrogen
- interstellar matter
- mass ratios
- metallic stars
- metals
- spectroscopic analysis
- star clusters
- stars

- metallizing**
- GS coating
- . **metallizing**
- coatings
- . **metallizing**
- RT cladding
- electroplating
- finishes
- flame spraying
- laminates
- metal coatings
- metal films
- metal spraying
- plating
- spraying
- substrates
- vapor deposition

- metallography**
- RT abrasion
- alloys
- anisotropy
- crystal lattices
- crystallography
- electropolishing
- etching
- ferrography
- inclusions
- isotropy
- ∞ materials tests
- metal crystals
- ∞ metallurgy
- metals
- microporosity
- microscopes
- microstructure
- mushy zones
- order-disorder transformations
- photomicrography
- polishing
- radiography
- replicas
- solid suspensions
- time temperature parameter
- vibratory polishing
- Widmanstätten structure

- x ray diffraction

- metalloids**
- UF *semimetals*
- GS chemical elements
- . **metalloids**
- . antimony
- . antimony isotopes
- . arsenic
- . . . arsenic isotopes
- . boron
- . . . boron isotopes
- . . . boron 10
- . germanium
- . . . germanium isotopes
- . polonium
- . . . polonium isotopes
- polonium 208
- polonium 209
- polonium 210
- . silicon
- . . . amorphous silicon
- . . . porous silicon
- . . . silicon isotopes
- . tellurium
- . . . tellurium isotopes
- RT alloys
- arsenic alloys
- boron alloys
- intermetallics
- metals
- organometallic compounds
- semiconductors (materials)

- metalloorganic compounds*
- USE **organometallic compounds**

- metalloxiloxane polymers*
- USE **organometallic polymers**

- metalloxane polymers*
- USE **organometallic polymers**

- ∞ **metallurgy**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT alloying
- alloys
- beneficiation
- casting
- coating
- coatings
- corrosion
- crystallography
- dispersion strengthening
- duplex operation
- ferrous metals
- foundries
- fractography
- furnaces
- hardening (materials)
- heat affected zone
- heat treatment
- hydrometallurgy
- levitation melting
- light alloys
- mechanical properties
- melt spinning
- melting
- metal coatings
- metal foams
- metal working
- metallography
- metals
- nonferrous metals
- ∞ physical sciences
- powder metallurgy
- pyrometallurgy
- rapid quenching (metallurgy)
- recrystallization
- ∞ science
- smelting
- thermomechanical treatment

- metal-metal bonding**
- GS bonding
- . metal bonding
- . **metal-metal bonding**
- RT adhesive bonding
- adhesives

- diffusion welding
- explosive welding
- heat affected zone
- inertia bonding
- resin bonding
- soldering
- welding

- metal-nitride-oxide-semiconductors**
- DEF Class of semiconductors utilizing silicon nitride and silicon oxide dielectrics.
- GS electronic equipment
- . solid state devices
- . . .
- metal-nitride-oxide-semiconductors**
- semiconductors (materials)
- .
- metal-nitride-oxide-semiconductors**
- RT chips (memory devices)

- metal-nitride-oxide-silicon**
- UF *MNOS*
- GS semiconductors (materials)
- . **metal-nitride-oxide-silicon**

- metalorganic chemical vapor deposition**
- (added May 1991)
- UF *metal organic chemical vapor deposition*
- MOCVD (vapor deposition)*
- OMCVD (vapor deposition)*
- organometallic vapor deposition*
- GS deposition
- . vapor deposition
- . **metalorganic chemical vapor deposition**
- deposition**
- RT coating
- crystal growth
- organometallic compounds
- space processing

- metal-oxide-metal semiconductors*
- USE **MOM (semiconductors)**

- metals**
- UF *magnetic metals*
- GS **metals**
- . actinide series
- . . actinium
- . . . radium
- radium isotopes
- radium 226
- . . . thorium
- . . . thorium isotopes
- . . transuranium elements
- . . . americium
- americium isotopes
- americium 241
- . . . berkelium
- . . . californium
- californium isotopes
- . . . curium
- curium isotopes
- curium 242
- curium 244
- . . . einsteinium
- . . . fermium
- . . . lawrencium
- . . . mendelevium
- . . . neptunium
- neptunium isotopes
- . . . nobelium
- . . . plutonium
- plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- . . . sergenium
- . . . uranium
- uranium isotopes
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- . . . alkali metals
- . . . cesium
- cesium isotopes

metal-water reactions

- cesium 133
- cesium 134
- cesium 137
- cesium 144
- . . cesium vapor
- . . francium
- . . lithium
- . . liquid lithium
- . . lithium isotopes
- . . potassium
- . . liquid potassium
- . . potassium isotopes
- potassium 38
- potassium 39
- potassium 40
- . . rubidium
- . . rubidium isotopes
- rubidium 86
- . . sodium
- . . liquid sodium
- . . sodium isotopes
- sodium 22
- sodium 24
- . . sodium vapor
- . alkaline earth metals
- . . barium isotopes
- . aluminum
- . . aluminum isotopes
- aluminum 26
- aluminum 27
- . . antimony isotopes
- . . astatine
- . . astatine isotopes
- . . barium
- . . barium isotopes
- . . beryllium
- . . beryllium isotopes
- beryllium 7
- beryllium 9
- beryllium 10
- . bismuth
- . . bismuth isotopes
- . . calcium
- . . calcium isotopes
- . ferrous metals
- . . gallium
- . . gallium isotopes
- . indium
- . . indium isotopes
- . . lead (metal)
- . . lead isotopes
- . liquid metals
- . . liquid lithium
- . . liquid potassium
- . . liquid sodium
- . . mercury (metal)
- mercury isotopes
- mercury vapor
- . magnesium
- . . magnesium isotopes
- . metal vapors
- . . mercury vapor
- . . sodium vapor
- . noble metals
- . . gold
- gold isotopes
- gold 198
- . . ruthenium
- ruthenium isotopes
- . . silver
- silver isotopes
- . nonferrous metals
- . . protactinium
- . . protactinium isotopes
- . rare earth elements
- . . cerium
- cerium isotopes
- cerium 137
- cerium 144
- . . dysprosium
- dysprosium isotopes
- . . erbium
- erbium isotopes
- . . europium
- europium isotopes
- . . gadolinium
- gadolinium isotopes
- . . holmium
- holmium isotopes
- . . lanthanum
- lanthanum isotopes
- . . lutetium
- lutetium isotopes
- . . neodymium
- neodymium isotopes
- . . praseodymium
- praseodymium isotopes
- . . promethium
- promethium isotopes
- . . samarium
- samarium isotopes
- . . scandium
- scandium isotopes
- . . terbium
- terbium isotopes
- . . thulium
- thulium isotopes
- . . ytterbium
- ytterbium isotopes
- . . yttrium
- yttrium isotopes
- . . refractory metals
- . . chromium
- chromium isotopes
- . . iridium
- iridium isotopes
- . . molybdenum
- . . niobium
- niobium isotopes
- niobium 95
- . . osmium
- osmium isotopes
- . . rhenium
- rhenium isotopes
- . . tantalum
- tantalum isotopes
- . . tungsten
- tungsten isotopes
- . . strontium
- strontium isotopes
- strontium 85
- strontium 87
- strontium 89
- strontium 90
- . . thallium
- thallium isotopes
- . . tin
- tin isotopes
- . . transition metals
- . . cadmium
- cadmium isotopes
- . . chromium
- chromium isotopes
- . . cobalt
- cobalt isotopes
- cobalt 58
- cobalt 60
- . . copper
- copper isotopes
- . . gold
- gold isotopes
- gold 198
- . . hafnium
- hafnium isotopes
- . . iridium
- iridium isotopes
- . . iron
- iron isotopes
- iron 57
- iron 58
- iron 59
- . . manganese
- manganese isotopes
- . . mercury (metal)
- mercury isotopes
- mercury vapor
- . . molybdenum
- . . nickel
- nickel isotopes
- . . niobium
- niobium isotopes
- niobium 95
- . . osmium
- osmium isotopes
- . . palladium
- . . platinum
- platinum isotopes
- . . rhenium
- rhenium isotopes
- . . rhodium
- rhodium isotopes
- . . ruthenium
- ruthenium isotopes
- . . scandium
- scandium isotopes
- . . silver
- silver isotopes
- . . tantalum
- tantalum isotopes
- . . technetium
- technetium isotopes
- . . titanium
- titanium isotopes
- . . tungsten
- tungsten isotopes
- . . vanadium
- vanadium isotopes
- . . yttrium
- yttrium isotopes
- . . zinc
- zinc isotopes
- . . zirconium
- zirconium isotopes
- zirconium 95
- . heavy metals
- . ultrapure metals
- . uranium plasmas

RT alloys

- antimony
- arsenic
- arsenic isotopes
- bimetals
- Borsic (tradename)
- cermets
- chemical elements
- composite materials
- conductors
- embedded atom method
- eutectic composites
- gadolinium alloys
- intermetallics
- isotopes
- light alloys
- liquid alloys
- metal clusters
- metal coatings
- metal combustion
- ∞ metal compounds
- metal crystals
- metal films
- metal foils
- metal fuels
- metal ions
- metal powder
- metal-gas systems
- metallicity
- metallography
- metalloids
- ∞ metallurgy
- monotectic alloys
- palladium compounds
- polonium
- polonium 208
- polonium 209
- polonium 210
- polonium isotopes
- strategic materials
- syntectic alloys

metal-semiconductor-metal semiconductors

USE **MSM (semiconductors)**

metal-water reactions

- GS chemical reactions
- . **metal-water reactions**
- RT corrosion
- electrochemical corrosion
- erosion
- pitting
- rusting
- surface reactions

metamorphic rocks

- DEF Rocks derived from pre-existing rocks by mineralogical, chemical and/or structural changes, essentially in the solid state. These changes are in response to marked changes in temperature, pressure, shearing stress, and

chemical environment, generally at the depth of the Earth's crust. Metamorphic rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and sedimentary rocks.

- GS rocks
 - . **metamorphic rocks**
 - . . quartzite
- RT metamorphism (geology)

metamorphism (geology)

DEF The mineralogical and structural adjustment of solid rocks to physical and chemical conditions which have been imposed at depth below the surface zones of weathering and cementation, which differ from the conditions under which the rocks in question originated.

- RT contacts (geology)
 - metamorphic rocks
 - phase transformations
 - rocks

metastability

- USE **metastable state**

metastable atoms

- GS atoms
 - . **metastable atoms**
- RT Penning effect

metastable state

- UF *metastability*
- RT excitation
 - radiation trapping
 - stability
 - steady state
 - unsteady state

metastasis

(added February 2002)

DEF The transfer of a neoplasm from one organ or part of the body to another remote from the primary site.

- RT cancer
 - lymphatic system
 - neoplasms

metathesis

- GS chemical reactions
 - . **metathesis**
- RT electrolysis
 - ion exchanging

metazoa

- USE **animals**

Meteor 1 rocket vehicle

- GS rocket vehicles
 - . **Meteor 1 rocket vehicle**
- RT liquid propellant rocket engines
 - ramjet engines
 - solid propellant rocket engines

meteor bursts

- USE **meteoroid showers**

meteor craters

- USE **meteorite craters**

meteor hazards

- USE **meteoroid hazards**

meteor trails

DEF Anything, such as light or ionization, left along the trajectory of the meteor after the head of the meteor has passed. Used for meteoritic ionization.

- UF *meteoritic ionization*
- RT bolides
 - Earth atmosphere
 - meteoroid showers
 - meteoroids
 - micrometeoroids
- ∞ paths
 - Pribram meteorite
 - radio meteors
 - scatter propagation
 - sporadic meteoroids
- ∞ tracks

upper atmosphere

meteorite collisions

- UF *meteorite impacts*
- GS collisions
 - . **meteorite collisions**
- RT asteroid collisions
 - cometary collisions
 - hypervelocity impact
 - meteoritic damage
 - meteoroid hazards
 - near Earth objects
 - shatter cones
 - Tungusk meteorite

meteorite compression tests

- USE **compression tests**
 - mechanical properties**
 - meteorites**

meteorite craters

- UF *fossil meteorite craters*
 - meteor craters*
 - meteoroid craters*
- GS craters
 - . **meteorite craters**
- RT Canadian Shield
 - cratering
 - ejecta
 - lunar craters
 - lunar rays
 - maria
 - Mars craters
 - Mars surface
 - meteorites
 - meteoritic damage
 - planetary craters
 - projectile cratering
 - Ptolemaeus Crater
 - shatter cones
 - Tungusk meteorite
 - Tycho crater

meteorite impacts

(added July 2002)

- USE **meteorite collisions**

meteorite parent bodies

(added August 2001)

DEF Any celestial body that is the original source of meteoritic material.

- UF *meteoroid parent bodies*
- GS celestial bodies
 - . **meteorite parent bodies**
- RT asteroid belts
 - asteroids
 - comets
 - meteorites
 - meteoritic composition
 - meteoritic microstructures
- ∞ origins
 - petrogenesis

meteorites

SN (LIMITED TO METEOROIDS WHICH HAVE REACHED THE SURFACE OF AN ASTEROID, NATURAL SATELLITE OR PLANET)

DEF Meteoroids which have reached the surface of the Earth without being completely vaporized. Used for meteorite compression tests.

- UF *meteorite compression tests*
- GS celestial bodies
 - . **meteorites**
 - . . iron meteorites
 - . . . Aroos meteorite
 - . . . Lazarev meteorite
 - . . . Odessa meteorite
 - . . . Sikhote-Alin meteorite
 - . . micrometeorites
 - . . stony meteorites
 - . . . achondrites
 - Bondoc meteorite
 - chassignites
 - Kapoeta achondrite
 - nakhlites
 - Norton County achondrite
 - shergottites
 - SNC meteorites
 - ureilites

- . . . carbonaceous meteorites
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- ureilites
- . . . chondrites
- Bruderheim meteorite
- carbonaceous chondrites
- Alais meteorite
- Allende meteorite
- Cold Bokkeveld meteorite
- Ivuna meteorite
- Murchison meteorite
- Murray meteorite
- Orgueil meteorite
- Tonk meteorite
- . . . Harleton meteorite
- . . . Hvittis chondrite
- . . . Okhansk meteorite
- . . . Pantar chondrites
- . . . Pribram meteorite
- . . . tektites
- . . . australites
- . . . bediasites
- . . . Tungusk meteorite
- . . stony-iron meteorites
- RT bolides
- chondrule
- coesite
- foreign bodies
- impact melts
- meteorite craters
- meteorite parent bodies
- meteoritic composition
- meteoritic microstructures
- meteoroid showers
- meteoroids
- micrometeoroids
- oldavite
- near Earth objects

meteoritic composition

- GS composition (property)
 - . **meteoritic composition**
- RT carbonaceous meteorites
 - cosmochemistry
 - iron meteorites
 - isotope ratios
 - kamacite
 - meteorite parent bodies
 - meteorites
 - schreibersite
 - siderophile elements
 - solar nebula
 - stony meteorites
 - tektites
 - trollite
 - veins (petrology)

meteoritic damage

- GS damage
 - . impact damage
 - . . **meteoritic damage**
- RT ∞ bombardment
 - cratering
 - ejecta
 - hypervelocity impact
 - Mars craters
 - meteorite collisions
 - meteorite craters
 - meteoroid hazards
 - meteoroid protection
 - projectile cratering

meteoritic diamonds

- GS diamonds
 - . **meteoritic diamonds**

meteoritic microstructures

RT urelites

meteoritic dust
USE **micrometeoroids**

meteoritic ionization
USE **atmospheric ionization**
meteor trails

meteoritic microstructures
GS microstructure
. **meteoritic microstructures**
RT chondrule
iron meteorites
meteorite parent bodies
meteorites
stony meteorites
tektites
Widmanstätten structure

meteoroid concentration
GS composition (property)
. concentration (composition)
. . **meteoroid concentration**
density (number/volume)
. **meteoroid concentration**
RT flux density
mass distribution
spatial distribution
sporadic meteoroids

meteoroid craters
USE **meteorite craters**

meteoroid dust clouds
GS celestial bodies
. meteoroids
. . micrometeoroids
. . . **meteoroid dust clouds**
. . . . zodiacal dust
extraterrestrial matter
. interstellar matter
. . cosmic dust
. . . interplanetary dust
. . . . **meteoroid dust clouds**
. zodiacal dust
media
. interplanetary medium
. . interplanetary dust
. . . **meteoroid dust clouds**
. . . . zodiacal dust
particles
. dust
. . cosmic dust
. . . interplanetary dust
. . . . **meteoroid dust clouds**
. zodiacal dust
RT ∞ clouds
Explorer satellites
terrestrial dust belt

meteoroid hazards
UF *meteor hazards*
GS hazards
. flight hazards
. . **meteoroid hazards**
RT meteorite collisions
meteoritic damage
meteoroids
operational hazards
projectile cratering
spacecraft breakup

meteoroid parent bodies
(added August 2001)
USE **meteorite parent bodies**

meteoroid protection
GS protection
. **meteoroid protection**
RT bumpers
impact damage
meteoritic damage
spacecraft shielding
spacecraft structures

meteoroid showers
DEF Groups of meteoroids with approximately parallel trajectories. Used for meteor bursts.

UF *meteor bursts*
GS celestial bodies
. **meteoroid showers**
. . Aquarid meteoroids
. . Arietid meteoroids
. . Cyrillid meteoroids
. . Draconid meteoroids
. . Geminid meteoroids
. . Leonid meteoroids
. . Orionid meteoroids
. . Perseid meteoroids
. . Quadrantid meteoroids
. . Taurid meteoroids

RT astronomy
bolides
comets
meteor trails
meteorites
meteoroids
∞ showers

Meteoroid Technology Satellite
USE **Explorer 46 satellite**

meteoroids
SN (LIMITED TO SOLID OBJECTS IN SPACE, MUCH SMALLER THAN AN ASTEROID AND MUCH LARGER THAN A MOLECULE)
DEF Solid objects moving in interplanetary space, of a size considerably smaller than asteroids and considerably larger than atoms or molecules. Used for meteors.
UF *meteors*
GS celestial bodies
. **meteoroids**
. . Aquarid meteoroids
. . Arietid meteoroids
. . bolides
. . . Cyrillid meteoroids
. . Draconid meteoroids
. . Geminid meteoroids
. . Leonid meteoroids
. . micrometeoroids
. . . meteoroid dust clouds
. . . . zodiacal dust
. . Orionid meteoroids
. . Perseid meteoroids
. . Quadrantid meteoroids
. . radio meteors
. . sporadic meteoroids
. . Taurid meteoroids

RT asteroid belts
asteroids
bumpers
Chiron
comets
cosmic dust
Gaspra asteroid
hypervelocity projectiles
Iida asteroid
interplanetary dust
interplanetary medium
meteor trails
meteorites
meteoroid hazards
meteoroid showers
micrometeorites
natural satellites
particle tracks
Radiation Meteoroid spacecraft
solar system
space debris
Tempel 2 comet
Toro asteroid
Toutatis asteroid
Vesta asteroid

meteorological balloons
GS expandable structures
. inflatable structures
. . balloons
. . . **meteorological balloons**
. . . . jimsphere balloons
. ROBIN balloons
RT dropsondes
high altitude balloons
radiosondes
rawinsondes
rockoons
skyhook balloons

sounding
superpressure balloons
tethered balloons
upper atmosphere
weather forecasting

meteorological charts
UF *weather charts*
weather maps
GS charts
. **meteorological charts**
maps
. **meteorological charts**
RT isobars (pressure)
radar maps
synoptic meteorology

meteorological flight
RT aerial reconnaissance
balloon flight
∞ flight
ice reporting
rocket flight
SIRS B satellite
sounding
space flight
weather forecasting

meteorological instruments
GS measuring instruments
. **meteorological instruments**
. . barometers
. . cloud height indicators
. . dropsondes
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . ozonesondes
. . rain gages
. . weather data recorders
. . wind vanes
RT anemometers
balloon-borne instruments
hot-film anemometers
hot-wire anemometers
humidity measurement
hygrometers
hypsometers
∞ instruments
light scattering meters
meteorology
nephanalysis
precipitation measurement
psychrometers
recording instruments
rocket-borne instruments
SIRS B satellite
sodar
sound detecting and ranging
sounding rockets
transducers
weather reconnaissance aircraft
weather stations

meteorological parameters
GS constraints
. **meteorological parameters**
. . Brunt-Vaisala frequency
RT aerology
agroclimatology
annual variations
Atmospheric & Oceanographic Inform Sys
Atmospheric Cloud Physics Lab (Spacelab)
atmospheric pressure
atmospheric temperature
atmospheric turbulence
aviation meteorology
ceilings (meteorology)
cloud cover
cockpit weather information systems
cold fronts
equatorial atmosphere
fronts (meteorology)
hindcasting
humidity
isotherms
moisture

ocean data acquisitions systems
oceanographic parameters
precipitation (meteorology)
storms (meteorology)
teleconnections (meteorology)
temperature inversions
tropical meteorology
warm fronts
weather
wind direction
wind measurement
wind velocity

meteorological probes

USE **sondes**

meteorological radar

UF *weather radar*
GS radar
. **meteorological radar**
RT precipitation measurement
precipitation particle measurement
pulse radar
radar scanning
radar tracking
radio meteorology
surveillance radar
weather forecasting

meteorological research aircraft

GS research vehicles
. research aircraft
. **meteorological research aircraft**
RT ∞ aircraft
data acquisition

meteorological rockets

USE **sounding rockets**

meteorological satellites

GS artificial satellites
. **meteorological satellites**
. . AEROS satellite
. . Cosmos 144 satellite
. . D-2 satellites
. . DMSP satellites
. . Elektron satellites
. . Elektron 1 satellite
. . Elektron 2 satellite
. . Elektron 4 satellite
. . EOLE satellites
. . ESSA satellites
. . ESSA 1 satellite
. . ESSA 2 satellite
. . ESSA 3 satellite
. . ESSA 4 satellite
. . ESSA 5 satellite
. . ESSA 6 satellite
. . ESSA 7 satellite
. . ESSA 8 satellite
. . ESSA 9 satellite
. . Explorer 9 satellite
. . Explorer 17 satellite
. . Explorer 19 satellite
. . GEOLE satellites
. . GOES satellites
. . GOES 1
. . GOES 2
. . GOES 3
. . GOES 4
. . GOES 5
. . GOES 6
. . GOES 7
. . GOES 8
. . GOES 9
. . GOES 10
. . GOES 13
. . METEOSAT satellite
. . Nimbus satellites
. . . Nimbus 1 satellite
. . . Nimbus 2 satellite
. . . Nimbus 3 satellite
. . . Nimbus 4 satellite
. . . Nimbus 5 satellite
. . . Nimbus 6 satellite
. . . Nimbus 7 satellite
. . NOAA satellites
. . . NOAA 2 satellite
. . . NOAA 3 satellite
. . . NOAA 4 satellite

. . . NOAA 5 satellite
. . . NOAA 6 satellite
. . . NOAA 7 satellite
. . . NOAA 8 satellite
. . . NOAA 9 satellite
. . . NOAA 10 satellite
. . . NOAA 11 satellite
. . . NOAA 12 satellite
. . . NOAA 14 satellite
. . . NOAA 19 satellite
. . San Marco satellites
. . . San Marco 1 satellite
. . . San Marco 2 satellite
. . . San Marco 3 satellite
. . SEOCS (satellite)
. . SIRS B satellite
. . Sputnik 1 satellite
. . Sputnik 2 satellite
. . Sputnik 3 satellite
. . SRET satellites
. . . SRET 1 satellite
. . . SRET 2 satellite
. . Synchronous Earth Observatory
satellite
. . . SMS 1
. . . SMS 2
. . Synchronous Meteorological
Satellite
. . . SMS 1
. . . SMS 2
. . TIROS satellites
. . . ITOS satellites
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4
. . . TIROS 1 satellite
. . . TIROS 2 satellite
. . . TIROS 3 satellite
. . . TIROS 4 satellite
. . . TIROS 5 satellite
. . . TIROS 6 satellite
. . . TIROS 7 satellite
. . . TIROS 8 satellite
. . . TIROS 9 satellite
. . . TIROS 10 satellite
. . . TIROS M
. . . TIROS N series satellites
. . . . NOAA 6 satellite
. . NPOESS
. . TRMM satellite
. . Vanguard 2 satellite
RT AgRISTARS project
ATS
CALIPSO (Pathfinder satellite)
cloud photography
CloudSat
geophysical satellites
GOES 1
GOES 2
GOES 3
GOES 4
GOES 5
infrared photography
Japanese space program
meteorology
military spacecraft
navigation satellites
Nimbus project
NOESS
precipitation measurement
satellite observation
satellite sounding
satellite television
sounding rockets
space probes
TIROS project
unmanned spacecraft
Vanguard satellites
weather forecasting
weather stations

meteorological services

UF *World Weather Watch*
WWW (meteorology)
GS services
. **meteorological services**
RT automatic weather stations
aviation meteorology

flight conditions
weather forecasting
weather stations

meteorological solenoids

RT baroclinity
vortices

meteorological stations

USE **weather stations**

meteorology

DEF The study dealing with the phenomena of the atmosphere especially as they relate to weather and climate. Used for atmospheric conditions.

UF *atmospheric conditions*

GS **meteorology**

. aerology
. agrometeorology
. Alpine meteorology
. aviation meteorology
. biometeorology
. hydrometeorology
. . marine meteorology
. mesometeorology
. micrometeorology
. . microbursts (meteorology)
. nuclear meteorology
. planetary meteorology
. polar meteorology
. radio meteorology
. synoptic meteorology
. tropical meteorology
. weather forecasting
. . long range weather forecasting
. . nowcasting
. . numerical weather forecasting
. . statistical weather forecasting

RT

acid rain
acoustic sounding
aeronomy
agroclimatology
air land interactions
air masses
annual variations
anticyclones
anvil clouds
arc clouds
∞ atmospheres
Atmospheric & Oceanographic Inform
Sys
atmospheric density
atmospheric physics
atmospheric turbulence
baroclinic instability
brightness temperature
CALIPSO (Pathfinder satellite)
cap clouds
ceilings (meteorology)
cirrocumulus clouds
cirrostratus clouds
cirrus shields
climate
climatology
cloud cover
clouds (meteorology)
CloudSat
cold fronts
condensation nuclei
convection
convection clouds
Coriolis effect
cyclones
DMSP satellites
Earth cryosphere
Earth sciences
environmental engineering
environmental monitoring
fronts (meteorology)
GARP Atlantic Tropical Experiment
geology
geophysics
Global Atmospheric Research
Program
hailstorms
humidity
hurricanes
hydroclimatology
hydrodynamic equations

METEOSAT satellite

hydrography
hydrology
insolation
isotherms
mesoscale phenomena
meteorological instruments
meteorological satellites
METEOSAT satellite
method of characteristics
moisture
National Severe Storms Project
nephanalysis
NOESS
oceanography
∞ physical sciences
precipitation (meteorology)
∞ science
sea breeze
seasons
sodar
sound detecting and ranging
storms (meteorology)
teleconnections (meteorology)
temperature
temperature inversions
tropical regions
tropical storms
typhoons
warm fronts
weather
wind (meteorology)
wind measurement
World Meteorological Organization
zonal flow (meteorology)

meteors

USE **meteoroids**

METEOSAT satellite

GS artificial satellites
. ESA satellites
. . **METEOSAT satellite**
. meteorological satellites
. . **METEOSAT satellite**
ESA spacecraft
. ESA satellites
. . **METEOSAT satellite**
RT cloud cover
cloud photography
European Space Agency
European space programs
French satellites
French space program
infrared photography
ISCCP Project
meteorology
satellite observation
weather

meters

USE **measuring instruments**

methacrylate resins

USE **acrylic resins**

methamphetamine

GS drugs
. **methamphetamine**
organic compounds
. amines
. . amphetamines
. . . **methamphetamine**

methanation

DEF The conversion of various organic compounds to produce methane.

GS chemical reactions
. **methanation**
RT biomass energy production
coal gasification
hydrocarbon fuels
hydrolysis

methane

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **methane**
RT bioconversion

chlorofluoromethane
coal derived gases
hydrocarbon fuels
hydrolysis
landfills
liquefied natural gas
natural gas
natural gas exploration
Neptune atmosphere
oil fields
petroleum products
solvent refined coal
synthane
Uranus atmosphere

methanol

USE **methyl alcohol**

methenyl

USE **methylidyne**

methionine

GS acids
. amino acids
. . **methionine**
organic compounds
. amino acids
. . **methionine**

method of characteristics

UF *characteristic method*
RT ∞ characteristics
compressible fluids
flow distribution
hyperbolic functions
meteorology
∞ methodology
partial differential equations
plastic properties
Prandtl-Meyer expansion
steady flow
unsteady flow

method of moments

DEF A method of estimating the parameters of a distribution by relating the parameters to moments.

RT distribution moments
integral equations
mathematical models
matrices (mathematics)
∞ methodology
moment distribution
moments
numerical analysis

∞ **methodology**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *methods*

techniques

RT approximation
asymptotic methods
Biot method
boundary integral method
Bridgman method
cluster variation method
critical path method
Crocco method
Czochralski method
Debye-Scherrer method
Delphi method (forecasting)
digital techniques
embedded atom method
emergency breathing techniques
Encke method
energy methods
equilibrium methods
ethics
finite element method
finite volume method
Fujita method
Galerkin method
GERT
Glimm method
Halphen method
Hartree-Fock-Slater method
heuristic methods
Hill method
imaging techniques

in vitro methods and tests
in vivo methods and tests
Jacobi matrix method
Kjeldahl method
Latin square method
Laue method
least squares method
Lighthill method
management methods
matrix management
matrix methods
maximum entropy method
Maxwell-Mohr method
∞ mechanism
method of characteristics
method of moments
Milne method
Milne-Thomson method
minimum entropy method
Moire effects
Monte Carlo method
multigrid methods
Newton-Raphson method
panel method (fluid dynamics)
particle in cell technique
pattern method (forecasting)
Percus method
Pohlhausen method
probe method (forecasting)
problem solving
profile method (forecasting)
Rayleigh-Ritz method
relaxation method (mathematics)
Ritz averaging method
ruler method
Runge-Kutta method
Schmidt method
Schwartz method
simplex method
spectral methods
steepest descent method
strain energy methods
traveling solvent method
Van Slyke method
von Zeipel method
vortex in cell technique
Wentzel-Kramer-Brillouin method
wing flow method tests

methods

USE **methodology**
procedures

methoxy systems

RT alcohols
∞ chemical compounds
indoles
organic chemistry
organic compounds
pyrroles
∞ systems

methyl alcohol

UF *methanol*
GS hydroxyl compounds
. alcohols
. . **methyl alcohol**
RT Karl Fischer reagent

methyl chloride

GS drugs
. anesthetics
. . **methyl chloride**
RT chlorides

methyl chlorosilanes

GS hydrogen compounds
. hydrides
. . silanes
. . . **methyl chlorosilanes**
methyl compounds
. **methyl chlorosilanes**
silicon compounds
. silanes
. . **methyl chlorosilanes**

methyl compounds

GS **methyl compounds**
. acetonitrile
. methyl chlorosilanes

. methyl nitrate
 . methyl polysiloxanes
 RT ∞ chemical compounds
 dimethyl compounds
 organic compounds
 trimethyl compounds

methyl cyanide
 USE **acetonitrile**

methyl nitrate
 GS alkyl compounds
 . **methyl nitrate**
 methyl compounds
 . **methyl nitrate**
 nitrogen compounds
 . nitrates
 . . **methyl nitrate**

methyl polysiloxanes
 GS methyl compounds
 . **methyl polysiloxanes**
 silicon polymers
 . silicones
 . . polysiloxanes
 . . . **methyl polysiloxanes**
 RT ∞ polymers
 silicon compounds

methylation
 GS chemical reactions
 . **methylation**
 RT alkylation

methylene
 GS organic compounds
 . hydrocarbons
 . . **methylene**
 RT dyes
 staining

methylene blue
 GS dyes
 . **methylene blue**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . azines
 **methylene blue**
 pyrazines
 . azines
 . . **methylene blue**
 RT chemical analysis
 chemical indicators
 ∞ indicators
 staining

methylene diamine
 GS organic compounds
 . amines
 . . **methylene diamine**

methylhydrazine
 GS hydrazines
 . **methylhydrazine**
 . . monomethylhydrazines
 RT dimethylhydrazines

methylidyne
 (*added June 1993*)
 UF *CH (methylidyne)*
methenyl
 GS organic compounds
 . hydrocarbons
 . . **methylidyne**
 radicals
 . **methylidyne**
 RT ∞ aromatic compounds
 carbon compounds
 diatomic molecules
 interstellar gas
 interstellar matter
 molecular clouds

Metis
 (*added January 1996*)
 DEF A natural satellite of Jupiter orbiting at a mean distance of 127,960 kilometers.
 GS celestial bodies
 . natural satellites

. . . Jupiter satellites
 . . . **Metis**
 RT Jupiter (planet)

metric conversion
 USE **metrication**

metric photography
 DEF The recording of events by means of photography (either singly or sequentially), together with appropriate metric coordinates to form the basis for accurate measurements.
 GS imagery
 . photography
 . . **metric photography**

metric space
 GS geometry
 . topology
 . . **metric space**
 . . . Hilbert space
 Sobolev space
 RT Banach space
 bimetric theories

metric system
 USE **International System of Units**

metrication
 DEF The conversion on an industry and/or nationwide basis of English units of measurement into the International System of Units, including engineering and manufacturing standards, tools and instruments, and all affected areas in the government and private sectors. Used for metric conversion.
 UF *metric conversion*
 RT ∞ conversion
 International System of Units
 metrology
 standardization
 units of measurement

metrology
 DEF The science of dimensional measurement; sometimes includes the science of weighing.
 RT International System of Units
 ∞ measurement
 measuring instruments
 metrication
 standards
 units of measurement

Metropolitan aircraft
 USE **CV-440 aircraft**

metropolitan areas
 USE **cities**

Mexican space program
 (*added March 1989*)
 GS programs
 . space programs
 . . **Mexican space program**
 RT Mexico

Mexico
 GS nations
 . **Mexico**
 RT Colorado River (North America)
 Gulf of California (Mexico)
 Gulf of Mexico
 Imperial Valley (CA)
 Lower California (Mexico)
 Mexican space program
 North America
 Rio Grande (North America)
 San Andreas Fault

Southern California

MFM (microscopy)
 (*added June 2004*)
 USE **magnetic force microscopy**

MGCO
 USE **Mars Observer**

MGS (spacecraft)
 (*added March 1999*)
 USE **Mars Global Surveyor**

MH-262 aircraft
 UF *Max Holste MH-262 aircraft*
Nord 262 aircraft
 GS jet aircraft
 . turboprop aircraft
 . . **MH-262 aircraft**
 light aircraft
 . **MH-262 aircraft**
 monoplanes
 . **MH-262 aircraft**
 Nord aircraft
 . **MH-262 aircraft**
 transport aircraft
 . **MH-262 aircraft**
 RT ∞ aircraft
 cargo aircraft
 passenger aircraft

mica
 UF *fluoromica*
 GS minerals
 . **mica**
 . . biotite
 . . fluorophlogopite
 . . muscovite
 RT igneous rocks
 vermiculite

micarta
 GS composite materials
 . polymer matrix composites
 . . reinforced plastics
 . . . **micarta**
 plastics
 . reinforced plastics
 . . **micarta**
 . . synthetic resins
 . . thermosetting resins
 . . . phenolic resins
 **micarta**
 resins
 . synthetic resins
 . . thermosetting resins
 . . . phenolic resins
 **micarta**
 RT fabrics
 fiber composites
 insulation
 ∞ polymers

mice
 GS animals
 . vertebrates
 . . mammals
 . . . rodents
 **mice**
 jerboas
 knockout mice
 pocket mice
 RT animal models
 rats

micelles
 (*added June 2001*)
 DEF Electrically charged colloidal particles or ions consisting of oriented molecules; aggregates of a number of molecules held loosely together by secondary bonds.
 GS molecular clusters
 . **micelles**
 RT agglomeration
 aggregates
 block copolymers
 ∞ clusters
 colloids
 flocculating
 nanostructure (characteristics)

Michael reaction

self assembly

Michael reaction

GS chemical reactions
. **Michael reaction**

Michaelis theory

RT ∞ theories

Michell theorem

GS theorems
. **Michell theorem**
RT stress analysis
structural analysis

Michelson interferometers

GS measuring instruments
. interferometers
. . **Michelson interferometers**
RT astrophysics
radio astronomy
spectrometers

Michigan

GS nations
. United States
. . **Michigan**
RT Pontiac (MI)
Saginaw Bay (MI)

microanalysis

GS chemical tests
. chemical analysis
. . **microanalysis**
RT electron microscopes
electron microscopy
electrophotometry
inductively coupled plasma mass spectrometry
lab-on-a-chip devices
mass spectrometers
 ∞ materials tests
neutron activation analysis
qualitative analysis
quantitative analysis
scanning electron microscopy
spectroscopic analysis
transmission electron microscopy
x ray analysis

microbalances

UF *microscapes*
GS measuring instruments
. indicating instruments
. . weight indicators
. . . **microbalances**

microballoons

DEF Very small glass spheres (50 to 100 micrometers in diameter) used as targets in the laser fusion programs.

GS expandable structures
. inflatable structures
. . balloons
. . . **microballoons**
RT globules
lasers
spheres
targets

microbe

USE **microorganisms**

microbeams

GS beams (radiation)
. **microbeams**
RT collimation
crystallography
x ray analysis

microbiology

GS **microbiology**
. bacteriology
RT ∞ biology
cell culturing
culture media
culture techniques
cultured cells
gnotobiotics
organ culturing

tissue culturing

microbursts (meteorology)

SN (EXCLUDES IONOSPHERIC RADIATION MICROBURSTS)
DEF A strong, localized downdraft that strikes the ground creating an outflow of severe winds near the ground that diverge radically from the impact point.
GS meteorology
. micrometeorology
. . **microbursts (meteorology)**
storms
. storms (meteorology)
. . downbursts
. . . **microbursts (meteorology)**
RT aviation meteorology
flight hazards
thunderstorms
vertical air currents
wind shear

microcalorimeters

USE **calorimeters**

microchannel plates

DEF An array of microchannels formed into plates and contained in a photomultiplier tube. Used for multichannel plates.
UF *multichannel plates*
RT channel multipliers
dynamic range
integrated circuits
microchannels
microwave equipment
photomultiplier tubes
 ∞ plates
thin films

microchannels

RT frequencies
image converters
light amplifiers
microchannel plates
multi-anode microchannel arrays
night vision
optical equipment
photocathodes
ultraviolet radiation

microcircuits

USE **microelectronics**

microclimatology

GS climatology
. **microclimatology**
RT agroclimatology
biometeorology
micrometeorology

microcomputers

DEF Complete digital computers utilizing a microprocessor consisting of one or more integrated circuit chips as the central arithmetic and logic unit, and added chips to provide timing, program memory, random access memory interfaces for input and output signals and other functions. Some microcomputers consist of a single integrated-circuit chip.

GS data processing equipment
. computers
. . digital computers
. . . **microcomputers**
. . . . personal computers
. . . . IBM personal computers
. . . . Macintosh personal computers
RT microprocessors
minicomputers

microcracks

GS fractures (materials)
. cracks
. . **microcracks**
RT crack closure
crack geometry
crack initiation
Elber equation
surface cracks

microcrystals

GS crystals

. **microcrystals**

RT crystallites
nanocrystals
spherulites

Microcystis

GS plants (botany)
. algae
. . blue green algae
. . . **Microcystis**
. thermophilic plants
. . blue green algae
. . . **Microcystis**
RT pollution

microdensitometers

DEF Image analysis devices for resolving gray-level differences within or between features and for integrating the optical density across scanned images of irregularly shaped objects.
GS measuring instruments
. densitometers
. . **microdensitometers**
. optical measuring instruments
. . **microdensitometers**
optical equipment
. optical measuring instruments
. . **microdensitometers**
RT gravimeters
optical density
optical measurement
photometers

microelectromechanical systems

(added October 1998)
UF *MEMS (electromechanical devices)*
GS electromechanical devices
. **microelectromechanical systems**
. . lab-on-a-chip devices
. . microoptoelectromechanical systems
RT electroactive polymers
microfluidic devices
microinstrumentation
microminiaturization
microminiaturized electronic devices
microsatellites
nanosatellites
nanotechnology
piezoelectric actuators
piezoelectric motors

microelectronics

UF *microcircuits*
GS **microelectronics**
. large scale integration
. medium scale integration
. very large scale integration
RT beam leads
chips (electronics)
circuits
 ∞ electronics
encapsulated microcircuits
ion implantation
laser microscopy
microinstrumentation
microminiaturization
microminiaturized electronic devices
micromodules
microoptoelectromechanical systems
molecular electronics
nanotechnology
photolithography
photomasks
photoresists
single event upsets
systems-on-a-chip
transistor circuits
wafers

microfibers

GS fibers
. **microfibers**

microfilms

GS photographic film
. **microfilms**
RT data retrieval
data storage
microphotographs

readers
reproduction (copying)

microfluidic devices

(added October 2003)

DEF Various devices that incorporate one or more micro-scale fluid channels where measurements, analysis, reactions, and separations occur. Often applied in systems for chemical analysis, biochemical sensing, and cytometry.

GS **microfluidic devices**

. lab-on-a-chip devices

RT fluidic circuits

fluidics

microelectromechanical systems

microinstrumentation

micrography

USE **photomicrography**

microgravity

DEF A condition in which the acceleration acting on a body is less than normal gravity, between 0 and 1 g. Used for low gravity, reduced gravity, and subgravity.

UF *hypogravity*

low gravity

reduced gravity

subgravity

GS gravitation

. **microgravity**

RT antigravity

bioprocessing

clinorotation

clinostats

drop towers

Earth orbital environments

fluid management

high gravity environments

low gravity manufacturing

low weight

Marangoni convection

∞ microgravity applications

space processing

thermocapillary migration

weightlessness

∞ **microgravity applications**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT bioprocessing

commerce lab

crystal growth

electrophoresis

low gravity manufacturing

microgravity

space commercialization

space manufacturing

space processing

surface tension driven convection

tissue engineering

microhardness

UF *microindentation*

GS mechanical properties

. hardness

. . **microhardness**

. . . Knoop hardness

RT nanoindentation

Rockwell hardness

microindentation

USE **microhardness**

microinstrumentation

RT measuring instruments

microelectromechanical systems

microelectronics

microfluidic devices

microminiaturization

micromachining

(added September 1993)

DEF Performing various microscopic scale cutting or grinding operations on a piece of work.

GS machining

. **micromachining**

RT cutting

drilling

grinding (material removal)

grooving

laser cutting

laser drilling

metal cutting

metal working

micromechanics

microstructure

photoengraving

photomasks

photomechanical effect

surface finishing

V grooves

micromanometers

USE **manometers**

micromechanics

DEF The study of the constraints, the grain size, and their interrelationship in materials.

RT composite materials

crack propagation

fracture mechanics

mechanical properties

mechanics (physics)

micromachining

microoptoelectromechanical systems

microstructure

reinforcing fibers

stress concentration

micrometeorites

DEF Very small meteorites or meteoritic particles with a diameter in general less than a millimeter.

GS celestial bodies

. meteorites

. . **micrometeorites**

RT cosmic dust

hypervelocity projectiles

meteoroids

micrometeoroids

space weathering

tektites

zodiacal dust

Micrometeoroid Explorer satellites

GS artificial satellites

. scientific satellites

. . Explorer satellites

. . . **Micrometeoroid Explorer satellites**

micrometeoroids

UF *meteoritic dust*

micrometeors

GS celestial bodies

. meteoroids

. . **micrometeoroids**

. . . meteoroid dust clouds

. . . . zodiacal dust

RT cosmic dust

Explorer satellites

interplanetary dust

meteor trails

meteorites

micrometeorites

Poynting-Robertson effect

space debris

terrestrial dust belt

zodiacal light

micrometeorology

GS meteorology

. **micrometeorology**

. . microbursts (meteorology)

RT agrometeorology

mesometeorology

microclimatology

turbulence

micrometeors

USE **micrometeoroids**

micrometers

DEF Instruments for making precise linear measurements in which the displacements measured correspond to the travel of a screw of accurately known pitch.

GS measuring instruments

. **micrometers**

RT dimensional measurement
distance measuring equipment

micromillimeters

GS measuring instruments

. ammeters

. . **micromillimeters**

RT electric current

electrical measurement

galvanometers

microminiaturization

GS miniaturization

. **microminiaturization**

RT circuits

DTL integrated circuits

integrated circuits

lab-on-a-chip devices

large scale integration

linear integrated circuits

microelectromechanical systems

microelectronics

microinstrumentation

microminiaturized electronic devices

microsatellites

miniature electronic equipment

molecular electronics

nanosatellites

semiconductor devices

subminiaturization

thick films

thin films

TTL integrated circuits

wafers

microminiaturized electronic devices

GS **microminiaturized electronic devices**

. micromodules

RT microelectromechanical systems

microelectronics

microminiaturization

microsatellites

miniature electronic equipment

nanosatellites

systems-on-a-chip

micromodules

GS electronic equipment

. electronic modules

. . **micromodules**

microminiaturized electronic devices

. **micromodules**

modules

. electronic modules

. . **micromodules**

RT beam leads

∞ containers

electronic packaging

microelectronics

microprocessors

miniature electronic equipment

photolithography

micromotors

SN (EXCLUDES ROCKET ENGINES)

GS electromechanical devices

. electric motors

. . **micromotors**

motors

. electric motors

. . **micromotors**

RT piezoelectric motors

microoptoelectromechanical systems

(added December 2005)

DEF Integrated, hybrid micro-systems that include mechanical structures, microelectronics, and optics, and allow the dynamic manipulation of light beams for applications such as optical switches, tunable filters and lasers, displays, and specialized sensors.

UF *MOEMS*

optical MEMS

GS electromechanical devices

. microelectromechanical systems

. . **microoptoelectromechanical systems**

RT actuators

microelectronics

microorganisms

micromechanics
optoelectronic devices
∞ sensors
systems-on-a-chip

microorganisms

UF *microbe*
GS **microorganisms**
. bacteria
. . . actinomycetes
. . . archaeobacteria
. . . Azotobacter
. . . Bacillus
. stearothermophilus
. . . Clostridium
. . . Clostridium botulinum
. . . Escherichia
. . . hydrogenomonas
. . . Klebsiella
. . . nitrobacter
. . . pseudomonas
. . . salmonella
. . . sarcina
. . . serratia
. . . staphylococcus
. . . streptococcus
. . . streptomycetes
. . . protozoa
. . . amoeba
. pelomyxa
. . . Flagellata
. Euglena
. trypanosome
. paramecia
. . . Rotifera
. . . viruses
. adenoviruses
. bacteriophages
. human immunodeficiency virus
RT aerobes
algae
anaerobes
animals
antibiotics
biofilms
gnotobiotics
invertebrates
mesophiles
microparticles
microspores
plants (botany)
pollution
psychrophiles
red tide
saprophytes
spores
virulence

microparticles

GS particles
. **microparticles**
RT condensation nuclei
ferrofluids
microorganisms
particulate reinforced composites

microphones

DEF Electroacoustic transducers which receive acoustic signals and deliver corresponding electric signals.
GS audio equipment
. **microphones**
transducers
. sound transducers
. . . electroacoustic transducers
. . . . **microphones**
RT hydrophones
interphones
magnetic transducers
monaural signals
transmitters
ultrasonic wave transducers

microphotographs

GS photographs
. **microphotographs**
RT data storage
microfilms
photography

photomasks

microphotometers

USE **photometers**

microplasmas

GS particles
. charged particles
. . . energetic particles
. plasmas (physics)
. **microplasmas**
. corpuscular radiation
. energetic particles
. plasmas (physics)
. **microplasmas**

micropolar fluids

GS incompressible fluids
. **micropolar fluids**
RT fluid mechanics
∞ fluids
microstructure

microporosity

GS porosity
. **microporosity**
RT mechanical properties
metallography
microstructure

microprocessors

GS computer components
. **microprocessors**
. . . Intel 8080 microprocessor
data processing equipment
. **microprocessors**
. . . Intel 8080 microprocessor
RT central processing units
chips (electronics)
computer design
computer storage devices
computer techniques
data processing
distributed processing
firmware
integrated circuits
large scale integration
microcomputers
micromodules
onboard data processing
transputers

microprogramming

GS computer programming
. **microprogramming**
RT firmware
∞ programming

micropulsations

GS pulses
. **micropulsations**
. . . geomagnetic micropulsations
RT variations

microrocket engines

GS engines
. rocket engines
. . . **microrocket engines**
. Orbit Maneuvering Engine (Space Shuttle)
RT electric rocket engines
electrostatic engines
microthrust
Vernier engines

microsatellites

(added October 1998)
DEF Satellites with a total mass between 10 and 100 kg often incorporating miniaturized electronic and mechanical systems.
UF *microsats*
GS artificial satellites
. **microsatellites**
RT microelectromechanical systems
microminiaturization
microminiaturized electronic devices
nanosatellites
satellite constellations
satellite design
small satellite technology

small scientific satellites

microsats

(added October 1998)

USE **microsatellites**

microscales

USE **microbalances**

microscopes

DEF Optical instruments capable of producing a magnified image of a small object.

GS **microscopes**
. acoustic microscopes
. electron microscopes
. ion microscopes
. optical microscopes

RT binoculars
eyepieces
metallography
microscopy
optical equipment
optical measuring instruments
photomicrography
ultraviolet microscopy

microscopy

DEF The science of the interpretive use and applications of microscopes.

GS **microscopy**
. atomic force microscopy
. electron microscopy
. . . scanning electron microscopy
. . . scanning tunneling microscopy
. . . transmission electron microscopy
. . . laser microscopy
. . . magnetic force microscopy
. . . photoacoustic microscopy
. . . ultraviolet microscopy

RT cytometry
microscopes
microtomy
phase contrast
photomicrography
slides (microscopy)

microseisms

DEF Seismic pulses of short duration and low amplitude, often occurring previous to failure of a material or structures.

GS elastic waves
. seismic waves
. . . **microseisms**
RT crustal fractures
earthquake damage
earthquakes

microsonics

GS acoustics
. **microsonics**
RT elastic properties
piezoelectric crystals
sound fields
sound waves
surface acoustic wave devices
surface waves

microspores

GS spores
. **microspores**
RT fungi
microorganisms
plants (botany)
protozoa

microstrip antennas

DEF Antennas which consist of thin metallic conductors bonded to thin grounded dielectric substrates. The metallic conductors generally have some regular shape, for example, rectangular, circular, or elliptical. Feeding is often by means of a coaxial probe or a microstrip transmission line.

GS antennas
. **microstrip antennas**
microstrip devices
. **microstrip antennas**
RT antenna design
microstrip transmission lines
microwave antennas

- patch antennas
- waveguide antennas
- microstrip devices**
 - GS **microstrip devices**
 - . microstrip antennas
 - . microstrip transmission lines
 - RT circuits
 - integrated circuits
 - microwave circuits
 - microwave equipment
- microstrip transmission lines**
 - UF *flat coaxial transmission lines*
 - parallel strip lines*
 - GS microstrip devices
 - . **microstrip transmission lines**
 - transmission lines
 - . strip transmission lines
 - . . **microstrip transmission lines**
 - RT directional couplers
 - microstrip antennas
 - microwave transmission
- microstructure**
 - GS **microstructure**
 - . meteoritic microstructures
 - . nanostructure (characteristics)
 - . Widmanstatten structure
 - RT aging (materials)
 - aging (metallurgy)
 - antiphase boundaries
 - atomic force microscopy
 - austenite
 - bainite
 - Bauschinger effect
 - cast alloys
 - casting
 - castings
 - cementite
 - crystal structure
 - crystallography
 - ferrites
 - grain size
 - hardening (materials)
 - heat treatment
 - kink bands
 - lamella (metallurgy)
 - Laves phases
 - martensite
 - metallography
 - micromachining
 - micromechanics
 - micropolar fluids
 - microporosity
 - molecular dynamics
 - order-disorder transformations
 - Ostwald ripening
 - pearlite
 - photomicrography
 - precipitates
 - quenching (cooling)
 - shape memory alloys
 - silicon alloys
 - spherulites
 - ∞ structures
 - thermomechanical treatment
 - vanadium alloys
 - work softening
- microthrust**
 - SN (NOT USED FOR GEOLOGICAL FAULTS, SEISMOLOGY, OR TECTONICS)
 - GS thrust
 - . low thrust
 - . . **microthrust**
 - RT jet thrust
 - low thrust propulsion
 - microrocket engines
 - rocket thrust
 - variable thrust
- microtomy**
 - RT medical equipment
 - microscopy
- microtrons**
 - GS particle accelerators
 - . cyclotrons
 - . . **microtrons**
- RT betatrons
 - synchrotrons
- microvision landing aid**
 - GS display devices
 - . **microvision landing aid**
 - landing aids
 - . **microvision landing aid**
- microwave absorption**
 - (added August 1991)
 - DEF The absorption of electromagnetic radiation in the microwave frequency range.
 - GS energy absorption
 - . radiation absorption
 - . . electromagnetic absorption
 - . . . **microwave absorption**
 - RT absorptance
 - ∞ absorption
 - absorption spectra
 - absorptivity
 - activation
 - atmospheric attenuation
 - microwave attenuation
 - microwave frequencies
 - microwave scattering
 - microwave transmission
 - microwaves
 - radar
 - radar absorbers
- microwave amplifiers**
 - GS amplifiers
 - . **microwave amplifiers**
 - . . crossed field amplifiers
 - . . cyclotron resonance devices
 - . . planotrons
 - microwave equipment
 - . **microwave amplifiers**
 - . . crossed field amplifiers
 - . . cyclotron resonance devices
 - . . planotrons
 - RT interstellar masers
 - masers
 - parametric amplifiers
 - transferred electron devices
- Microwave Anisotropy Probe**
 - (added November 2002)
 - DEF Spacecraft and related mission to map the relative cosmic microwave background temperature over the full sky with a high angular resolution and sensitivity. Launched June 2001.
 - UF *MAP (space probe)*
 - GS unmanned spacecraft
 - . space probes
 - . . **Microwave Anisotropy Probe**
 - RT cosmic microwave background
 - radiation
 - relic radiation
 - spaceborne astronomy
- microwave antennas**
 - GS antennas
 - . radio antennas
 - . . **microwave antennas**
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - microwave equipment
 - . **microwave antennas**
 - . . horn antennas
 - . . lens antennas
 - . . rectennas
 - . . spacetennas
 - radio equipment
 - . radio antennas
 - . . **microwave antennas**
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - RT aircraft antennas
 - antenna arrays
 - backfire antennas
 - directional antennas
 - Gregorian antennas
 - helical antennas
 - microstrip antennas
- missile antennas
- multibeam antennas
- omnidirectional antennas
- parabolic antennas
- parabolic reflectors
- patch antennas
- radar antennas
- reflector antennas
- slot antennas
- waveguide antennas
- microwave attenuation**
 - GS attenuation
 - . **microwave attenuation**
 - transmission
 - . electromagnetic wave transmission
 - . . **microwave attenuation**
 - . signal transmission
 - . . **microwave attenuation**
 - RT microwave absorption
 - wave propagation
- microwave circuits**
 - GS circuits
 - . **microwave circuits**
 - RT microstrip devices
- microwave coupling**
 - GS coupling
 - . electromagnetic coupling
 - . . **microwave coupling**
 - RT antenna couplers
 - coupling circuits
 - cross coupling
 - directional antennas
 - directional couplers
 - optical coupling
- microwave emission**
 - GS electromagnetic radiation
 - . radio waves
 - . . short wave radiation
 - . . . microwaves
 - **microwave emission**
 - emission
 - . **microwave emission**
 - RT cosmic noise
 - diffraction radiation
 - extraterrestrial radiation
 - extraterrestrial radio waves
 - linear polarization
 - microwave signatures
 - stellar radiation
- microwave equipment**
 - GS **microwave equipment**
 - . gyrators
 - . . microwave filters
 - . . microwave amplifiers
 - . . crossed field amplifiers
 - . . cyclotron resonance devices
 - . . planotrons
 - . microwave antennas
 - . . horn antennas
 - . . lens antennas
 - . . rectennas
 - . . spacetennas
 - . microwave interferometers
 - . microwave oscillators
 - . . magnetrons
 - . . . nigostrons
 - . microwave probes
 - . . microwave plasma probes
 - . microwave radiometers
 - . . Advanced Microwave Sounding Unit
 - . microwave scanning beam landing system
 - . microwave tubes
 - . . telescopes
 - . . cyclotron resonance devices
 - . . klystrons
 - . . magnetrons
 - . . . nigostrons
 - . . planotrons
 - . . traveling wave tubes
 - . . . backward wave tubes
 - helitrons
 - carcinotrons
 - thyratrons

microwave filters

RT gas discharge tubes
microchannel plates
microstrip devices

microwave filters

GS electromagnetic wave filters
. electric filters
. . **microwave filters**
microwave equipment
. gyrators
. . **microwave filters**

RT bandpass filters
bandstop filters
digital filters
FIR filters
high pass filters
low pass filters
radar filters
radio filters
rectangular waveguides
tunable filters
waveguide filters

microwave frequencies

SN (1 TO 100 GHz)
GS frequencies
. radio frequencies
. . **microwave frequencies**
. . . C band
. . . extremely high frequencies
. . . P band
. . . superhigh frequencies

RT acoustic microscopes
centimeter waves
microwave absorption
microwaves
passive L-band radiometers
praetersonic devices

microwave holography

GS imagery
. photography
. . holography
. . . **microwave holography**

RT imaging techniques
microwaves
wave front reconstruction

microwave imagery

GS imagery
. **microwave imagery**

RT radarscopes
synthetic aperture radar
x ray imagery

microwave interferometers

GS measuring instruments
. interferometers
. . **microwave interferometers**
microwave equipment
. **microwave interferometers**

RT Fabry-Perot interferometers
plasma diagnostics

microwave landing systems

DEF A precision instrument approach landing system operating in the microwave spectrum which provides lateral and vertical guidance to aircraft having compatible avionics equipment.

GS landing aids
. **microwave landing systems**
. . microwave scanning beam landing system

RT air traffic control
aircraft landing
aircraft safety
approach control
automated en route ATC
automatic landing control
∞ systems

microwave oscillators

GS microwave equipment
. **microwave oscillators**
. . magnetrons
. . . nigostrons
oscillators
. **microwave oscillators**
. . magnetrons
. . . nigostrons

RT backward wave tubes
Barritt diodes
diffraction radiation
gas discharge tubes
klystrons
microwave tubes
superconducting cavity resonators
transferred electron devices
traveling wave tubes
vacuum tube oscillators
voltage controlled oscillators

microwave photography

GS imagery
. photography
. . **microwave photography**

RT radar data
radar photography
radarscopes

microwave plasma probes

GS measuring instruments
. microwave probes
. . **microwave plasma probes**
microwave equipment
. microwave probes
. . **microwave plasma probes**

RT electron probes
plasma flux measurement
plasmaguides
plasmas (physics)
resonance probes

microwave power beaming

(added November 1989)
UF *power transmission (microwave)*
GS power beaming
. **microwave power beaming**

RT laser power beaming
microwave transmission
satellite power transmission
spacecraft power supplies

microwave probes

GS measuring instruments
. **microwave probes**
. . microwave plasma probes
microwave equipment
. **microwave probes**
. . microwave plasma probes

RT radio frequency impedance probes

microwave radiation

USE **microwaves**

microwave radiometers

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **microwave radiometers**
. Advanced Microwave Sounding Unit
microwave equipment
. **microwave radiometers**
. . Advanced Microwave Sounding Unit

microwave reflectometers

GS measuring instruments
. optical measuring instruments
. . reflectometers
. . . **microwave reflectometers**
optical equipment
. optical measuring instruments
. . reflectometers
. . . **microwave reflectometers**

RT kinematics

microwave resonance

GS resonance
. **microwave resonance**

RT cavity resonators
harmonic analysis
nonresonance

microwave scanning beam landing system

DEF Primary position sensor of Space Shuttle orbiter's navigation system during the autoland phase of the flight. Used for MSBLS.

UF *MSBLS*
GS landing aids
. microwave landing systems
. . **microwave scanning beam landing system**
microwave equipment
. **microwave scanning beam landing system**
navigation aids
. **microwave scanning beam landing system**

RT approach indicators
Space Shuttle orbiters
∞ systems

microwave scattering

GS scattering
. radio scattering
. . **microwave scattering**
. wave scattering
. . electromagnetic scattering
. . . **microwave scattering**

RT atmospheric scattering
microwave absorption
microwave signatures
scatterometers
Sunyaev-Zeldovich effect

microwave sensors

GS measuring instruments
. **microwave sensors**
. . Advanced Microwave Sounding Unit

RT ∞ instruments
radar receivers
∞ sensors
signal detectors
synthetic aperture radar

microwave signatures

(added September 1988)
GS signatures
. spectral signatures
. . **microwave signatures**

RT backscattering
microwave emission
microwave scattering
microwaves
radar signatures
signature analysis

microwave sounding

GS sounding
. **microwave sounding**

RT Advanced Microwave Sounding Unit
imagery
microwaves
NOAA 12 satellite
rocket sounding

microwave spectra

UF *interstellar microwave spectra*
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . radio spectra
. . . . **microwave spectra**

RT absorption spectra
infrared spectra
molecular rotation
molecular spectra
molecular spectroscopy

microwave spectrometers

GS measuring instruments
. spectrometers
. . **microwave spectrometers**

microwave switching

GS switching
. **microwave switching**

RT ferroelectricity
gyrators
packet switching
phase shift
switching circuits
waveguides

microwave transmission

GS transmission

- . electromagnetic wave transmission
- . . . radio transmission
- **microwave transmission**
- . signal transmission
- . . . radio transmission
- **microwave transmission**
- RT ACTS
- circular waveguides
- dielectric waveguides
- domestic satellite communications systems
- downlinking
- Fleet Satellite Communication System
- frequency reuse
- laser power beaming
- microstrip transmission lines
- microwave absorption
- microwave power beaming
- power beaming
- satellite solar energy conversion
- satellite solar power stations
- spacetennas
- teletypewriter systems
- uplinking
- VSAT (network)
- wave propagation
- waveguides
- microwave tubes**
- GS electron tubes
- . vacuum tubes
- . . . **microwave tubes**
- telescopes
- cyclotron resonance devices
- klystrons
- magnetrons
- nigotrons
- planotrons
- traveling wave tubes
- backward wave tubes
- helitrons
- carcinotrons
- microwave equipment
- . **microwave tubes**
- . . . telescopes
- . . . cyclotron resonance devices
- . . . klystrons
- . . . magnetrons
- . . . nigotrons
- . . . planotrons
- . . . traveling wave tubes
- . . . backward wave tubes
- helitrons
- carcinotrons
- RT diffraction radiation
- gas discharge tubes
- microwave oscillators
- oscillators
- photomultiplier tubes
- phototubes
- triodes
- ∞ tubes
- microwaves**
- DEF Of, or pertaining to, radiation in the microwave region. Used for microwave radiation.
- UF *microwave radiation*
- GS electromagnetic radiation
- . radio waves
- . . short wave radiation
- . . . **microwaves**
- centimeter waves
- cosmic microwave background radiation
- decimeter waves
- microwave emission
- millimeter waves
- RT cosmic noise
- diffraction radiation
- electromagnetic noise
- extraterrestrial radio waves
- infrared radiation
- microwave absorption
- microwave frequencies
- microwave holography
- microwave signatures
- microwave sounding
- ∞ radiation
- satellite solar energy conversion
- satellite solar power stations
- scatterometers
- submillimeter waves
- whistlers
- microweighing*
- USE **weight measurement**
- microyield strength**
- DEF Stress at which a microstructure (single crystal, for example) exhibits a specified deviation in its stress-strain relationship.
- GS mechanical properties
- . yield strength
- . . **microyield strength**
- RT elastic properties
- ∞ strength
- stresses
- yield point
- micturition*
- USE **urination**
- midair collisions**
- GS collisions
- . **midair collisions**
- . . bird-aircraft collisions
- RT air traffic control
- aircraft accidents
- aircraft hazards
- aircraft safety
- Beacon Collision Avoidance System
- collision avoidance
- crashes
- flight hazards
- flight safety
- pilot error
- threat evaluation
- midaltitude**
- DEF The average of many measurements of altitudes as with satellite instruments for the compiling of planetary maps.
- GS altitude
- . **midaltitude**
- RT flight altitude
- high altitude
- low altitude
- Midas 2 satellite**
- GS artificial satellites
- . Midas satellites
- . . **Midas 2 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 2 satellite**
- Midas 3 satellite**
- GS artificial satellites
- . Midas satellites
- . . **Midas 3 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 3 satellite**
- Midas 4 satellite**
- GS artificial satellites
- . Midas satellites
- . . **Midas 4 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 4 satellite**
- Midas 5 satellite**
- GS artificial satellites
- . Midas satellites
- . . **Midas 5 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 5 satellite**
- Midas 6 satellite**
- GS artificial satellites
- . Midas satellites
- . . **Midas 6 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 6 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 6 satellite**
- Midas 7 satellite**
- GS artificial satellites
- . Midas satellites
- . . **Midas 7 satellite**
- military spacecraft
- . reconnaissance spacecraft
- . . Midas satellites
- . . . **Midas 7 satellite**
- Midas satellites**
- GS artificial satellites
- . **Midas satellites**
- . . Midas 2 satellite
- . . Midas 3 satellite
- . . Midas 4 satellite
- . . Midas 5 satellite
- . . Midas 6 satellite
- . . Midas 7 satellite
- military spacecraft
- . reconnaissance spacecraft
- . . **Midas satellites**
- . . . Midas 2 satellite
- . . . Midas 3 satellite
- . . . Midas 4 satellite
- . . . Midas 5 satellite
- . . . Midas 6 satellite
- . . . Midas 7 satellite
- RT Atlas Agena B launch vehicle
- midcourse guidance**
- GS guidance (motion)
- . **midcourse guidance**
- RT command guidance
- inertial guidance
- injection guidance
- rendezvous guidance
- spacecraft guidance
- terminal guidance
- transearth injection
- translunar injection
- midcourse trajectories**
- GS trajectories
- . **midcourse trajectories**
- RT ascent trajectories
- ballistic trajectories
- coasting flight
- descent trajectories
- parabolic flight
- middle atmosphere**
- DEF The portion of the Earth's atmosphere extending from the troposphere to 100 kilometers.
- GS Earth atmosphere
- . **middle atmosphere**
- . . mesosphere
- . . . mesopause
- . . . stratosphere
- . . . ozonosphere
- . . . stratopause
- RT air
- air pollution
- ∞ atmospheres
- atmospheric chemistry
- atmospheric circulation
- atmospheric composition
- chemosphere
- climatology
- equatorial atmosphere
- free atmosphere
- heterosphere
- homosphere
- lower atmosphere
- midlatitude atmosphere
- tropopause
- upper atmosphere
- zonal flow (meteorology)
- middle ear**
- GS anatomy
- . sense organs
- . . ear
- . . . **middle ear**

middle ear pressure

RT semicircular canals

middle ear pressure

GS pressure
. **middle ear pressure**
RT ear pressure test
eardrums

Middle East

(added December 1995)
GS regions
. **Middle East**
RT Africa
Asia
Europe

midlatitude atmosphere

GS Earth atmosphere
. **midlatitude atmosphere**
environments
. **midlatitude atmosphere**
RT Earth ionosphere
middle atmosphere
sporadic E layer

midlatitudes

USE **temperate regions**

mid-ocean ridges

(added July 1992)
DEF Continuous, seismic, median mountain ranges extending through the North and South Atlantic Oceans, the Indian Ocean and the South Pacific Ocean. They are broad fractured swells with a central rift valley and usually rugged topography. They are 1-3 km in elevation, about 1500 km in width, and over 84,000 km in length. According to the hypothesis of sea floor spreading, the mid-ocean ridges are the source of crustal material.

UF *mid-oceanic ridges*
RT Atlantic Ocean
geological faults
Indian Ocean
ocean bottom
oceanography
Pacific Ocean
∞ ridges
sea floor spreading
seamounts
seismology
submarine hydrothermal vents

mid-oceanic ridges

USE **mid-ocean ridges**

Mie scattering

DEF Any scattering produced by spherical particles without special regard to comparative size of radiation wavelength and particle diameter. Used for Mie theory.

UF *Mie theory*
GS scattering
. wave scattering
. . . electromagnetic scattering
. . . **Mie scattering**
. . . . Rayleigh scattering

Mie theory

USE **Mie scattering**

MiG aircraft

DEF Any of a series of Soviet fighter aircraft, fighter-bombers, interceptors, and air supremacy aircraft, designed by Mikoyan.

GS attack aircraft
. fighter aircraft
. . **MiG aircraft**
single engine aircraft
. **MiG aircraft**
supersonic aircraft
. **MiG aircraft**
RT ∞ aircraft

migration

RT behavior
phenology

waterfowl

Mil aircraft

RT ∞ aircraft

Milankovitch theory

USE **climatology**

military air facilities

UF *aircraft bases*
RT air traffic control
∞ aircraft
aircraft carriers
airports
∞ facilities
∞ fields
hangars
heliports
landing aids
landing mats
navigation aids
stations

∞ military aircraft

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT A-37 aircraft
AH-1G helicopter
AH-1S helicopter
AH-1W helicopter
AH-63 helicopter
AH-64 helicopter
∞ aircraft
aircraft carriers
aircraft survivability
airships
Alpha jet aircraft
antisubmarine warfare aircraft
armed forces
armed forces (foreign)
armed forces (United States)
attack aircraft
attacking (assaulting)
AWACS aircraft
B-1 aircraft
B-2 aircraft
bomber aircraft
C-1A aircraft
cargo aircraft
CH-62 helicopter
CL-600 challenger aircraft
drone aircraft
drone vehicles
E-2 aircraft
E-3A aircraft
E-4A aircraft
fighter aircraft
Firebee 2 target drone aircraft
FV-12A aircraft
gliders
ground effect machines
H-60 Helicopter
Harrier aircraft
helicopters
Jaguar aircraft
jet aircraft
light aircraft
∞ military aviation
military helicopters
MRCA aircraft
nuclear propelled aircraft
observation aircraft
passenger aircraft
pilotless aircraft
reconnaissance aircraft
research aircraft
rotary wing aircraft
S-3 aircraft
short takeoff aircraft
SR-71 aircraft
submersible aircraft
tailless aircraft
tanker aircraft
target drone aircraft
training aircraft
transport aircraft
unmanned aircraft systems
utility aircraft
V-22 aircraft

V/STOL aircraft
vertical takeoff aircraft
weapon systems
X-45 aircraft
YC-14 aircraft
YF-12 aircraft

∞ military aviation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ∞ aeronautics
air law
armed forces
aviation meteorology
bomber aircraft
fighter aircraft
∞ military aircraft
reconnaissance aircraft

military compact reactors

UF *MCR reactors*
GS nuclear reactors
. liquid cooled reactors
. . liquid metal cooled reactors
. . . **military compact reactors**
. nuclear research and test reactors
. . **military compact reactors**

military helicopters

GS V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . **military helicopters**
. . . . AH-1G helicopter
. . . . AH-1S helicopter
. . . . AH-1W helicopter
. . . . AH-63 helicopter
. . . . AH-64 helicopter
. . . . BO-105 helicopter
. . . . CH-3 helicopter
. . . . CH-21 helicopter
. . . . CH-34 helicopter
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . CH-54 helicopter
. . . . CH-62 helicopter
. . . . H-19 helicopter
. . . . H-43 helicopter
. . . . H-53 helicopter
. . . . H-54 helicopter
. . . . H-56 helicopter
. . . . H-60 Helicopter
. . . . HC-3 helicopter
. . . . HH-43 helicopter
. . . . HH-65 helicopter
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-13 helicopter
. . . . OH-23 helicopter
. . . . OH-58 helicopter
. . . . P-531 helicopter
. . . . QH-50 helicopter
. . . . S-67 helicopter
. . . . SA-321 helicopter
. . . . SA-330 helicopter
. . . . SH-3 helicopter
. . . . SH-4 helicopter
. . . . Sikorsky Whirlwind helicopter
. . . . UH-1 helicopter
. . . . UH-2 helicopter
. . . . UH-34 helicopter
. . . . UH-60A helicopter
. . . . UH-61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV-9A aircraft
RT ∞ aircraft
attack aircraft
EH-101 helicopter
light helicopters
∞ military aircraft
reconnaissance aircraft
terrain following

military operations

GS **military operations**
. combat
. . electronic warfare
RT deployment

- military personnel
tactics
tanks (combat vehicles)
- military personnel**
(added June 2004)
DEF Persons serving in any branch of the armed forces; members of a military force.
GS personnel
. **military personnel**
RT military operations
military psychology
police
- military psychiatry*
USE **military psychology**
- military psychology**
UF *military psychiatry*
GS psychology
. **military psychology**
RT aviation psychology
military personnel
psychiatry
psychological effects
psychological tests
psychometrics
space psychology
- military spacecraft**
GS **military spacecraft**
. DMSP satellites
. reconnaissance spacecraft
. . . Inspector satellite
. . . Midas satellites
. . . Midas 2 satellite
. . . Midas 3 satellite
. . . Midas 4 satellite
. . . Midas 5 satellite
. . . Midas 6 satellite
. . . Midas 7 satellite
. . . photo reconnaissance spacecraft
. . . Samos
. Vela satellites
RT aerospace planes
armed forces
artificial satellites
Columbus space station
evasive satellites
manned spacecraft
meteorological satellites
∞ military vehicles
navigation satellites
recoverable spacecraft
rendezvous spacecraft
satellite networks
space stations
space surveillance (spaceborne)
∞ spacecraft
synchronous satellites
unmanned spacecraft
weapon systems
- military technology**
GS technologies
. **military technology**
RT antimissile defense
antiradiation missiles
antisubmarine warfare
armed forces (foreign)
armed forces (United States)
Army-Navy instrumentation program
AWACS aircraft
Ballistic Missile Early Warning System
defense communications system (DCS)
defense industry
defense program
deployment
Fleet Satellite Communication System
interservice data exchange program
laser weapons
logistics over the shore (LOTS)
carrier
missile defense
optical countermeasures
radar homing missiles
Safeguard system
tactics
weapons
- weapons delivery
weapons industry
- ∞ **military vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aeroquatic vehicles
aircraft carriers
ambulances
amphibious vehicles
armed forces
armed forces (foreign)
armed forces (United States)
automobiles
boats
military spacecraft
recovery vehicles
research vehicles
ships
submarines
tanks (combat vehicles)
trucks
underwater vehicles
∞ vehicles
water vehicles
- milk**
RT beverages
∞ food
- Milky Way Galaxy**
DEF The galaxy to which the sun belongs.
GS celestial bodies
. galaxies
. . . spiral galaxies
. . . **Milky Way Galaxy**
RT galactic bulge
local group (astronomy)
massive compact halo objects
Orion nebula
radio sources (astronomy)
solar neighborhood
stars
- millet**
GS farm crops
. grains (food)
. . . **millet**
plants (botany)
. **millet**
RT Earth resources
flour (food)
∞ food
grasses
- millimeter waves**
GS electromagnetic radiation
. radio waves
. . . short wave radiation
. . . microwaves
. . . . **millimeter waves**
RT beam plasma amplifiers
C band
CN emission
cyclotron resonance devices
decimeter waves
electromagnetic noise
extraterrestrial radio waves
extremely high frequencies
frequencies
solar radio emission
submillimeter waves
wavelengths
- ∞ **milling**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT comminution
compounding
- milling (machining)**
GS cutting
. **milling (machining)**
machining
. **milling (machining)**
RT chemical machining
grooving
metal cutting
- planing
- milling (mixing)*
USE **compounding**
- milling machines**
GS tools
. machine tools
. . . **milling machines**
RT grinding machines
∞ machinery
shapers
- millivoltmeters**
GS measuring instruments
. voltmeters
. . . **millivoltmeters**
RT galvanometers
- Mills ratio**
GS ratios
. **Mills ratio**
RT failure
failure analysis
life (durability)
mortality
probability density functions
statistical analysis
- Milne method**
GS analysis (mathematics)
. numerical analysis
. . . approximation
. . . **Milne method**
RT differential equations
∞ methodology
- Milne-Thomson method**
RT incompressible flow
∞ methodology
Navier-Stokes equation
viscous flow
- MIM (semiconductors)**
UF *metal-insulator-metal semiconductors*
GS electronic equipment
. solid state devices
. . . semiconductor devices
. . . **MIM (semiconductors)**
semiconductors (materials)
. **MIM (semiconductors)**
RT SIS (semiconductors)
- MIM diodes**
DEF Junction diodes each consisting of an insulating layer sandwiched between two metallic surface layers and exhibiting a negative differential resistance in its V-1 characteristics conceivably because of stimulated inelastic tunneling of electrons. Used for metal-insulator-metal diodes.
UF *metal-insulator-metal diodes*
GS electronic equipment
. diodes
. . . semiconductor diodes
. . . junction diodes
. . . . **MIM diodes**
. solid state devices
. . . semiconductor devices
. . . junction diodes
. . . . **MIM diodes**
RT electron tunneling
MSM (semiconductors)
negative resistance devices
semiconductor diodes
tunnel diodes
- Mimas**
DEF A satellite of Saturn orbiting at a mean distance of 186,000 kilometers.
GS celestial bodies
. natural satellites
. . . icy satellites
. . . **Mimas**
. . . Saturn satellites
. . . **Mimas**
RT Saturn (planet)
- MIMD (computers)**
DEF A type of parallel processor that is

MIMO (control systems)

essentially two or more individual computers with facilities for interaction and work sharing. Used for multiple instruction multiple data stream.

UF *multiple instruction multiple data stream*

GS data processing equipment

. computers
. . digital computers
. . . parallel computers
. . . . **MIMD (computers)**

RT architecture (computers)
computer design
computer programming
concurrent processing
interprocessor communication
operating systems (computers)
parallel processing (computers)
SIMD (computers)

MIMO (control systems)

(added January 1991)

UF *multiple input multiple output*

RT ∞ control
control stability
control systems design
control theory
feedback control
∞ systems
systems stability

Mindlin plate theory

(added April 1998)

USE **Mindlin plates**

Mindlin plates

(added April 1998)

UF *Mindlin plate theory*

Reissner-Mindlin plates

GS structural members
. plates (structural members)
. . **Mindlin plates**

RT dynamic structural analysis
finite element method
free vibration
plate theory
Reissner theory
shear strain
structural analysis
structural vibration
thick plates

mine detectors

GS warning systems

. **mine detectors**

RT ∞ detectors
warning

Miner rule

USE **Palmgren-Miner rule**

mineral deposits

RT contacts (geology)
dredging
Earth resources
excavation
geology
lunar mining
mineralogy
minerals
mines (excavations)
mining
reserves
strip mining
underwater resources
veins (petrology)

mineral exploration

GS exploration
. **mineral exploration**

RT anthracite
excavation
minerals
mines (excavations)
mining

mineral metabolism

GS metabolism
. **mineral metabolism**

RT body fluids

caloric requirements

endocrine systems

secretions

mineral oils

GS oils

. **mineral oils**

RT lubricating oils

mineralogy

RT chondrule
crystallography
geochemistry
geology
mineral deposits
minerals
petrogenesis
petrology
∞ physical sciences
siderophile elements
submarine hydrothermal vents

minerals

DEF Naturally occurring inorganic elements or compounds having an orderly internal structure and characteristic chemical compositions, crystal forms, and physical properties.

UF *apatites*

ores

GS **minerals**

. akermanite
. amphiboles
. anatase
. aragonite
. asbestos
. barite
. bastnasite
. beryl
. . alexandrite
. bloedite
. brucite
. calcite
. chromites
. cohenite
. cordierite
. cryolite
. dawsonite
. dolomite (mineral)
. euxenite
. fayalite
. feldspars
. . plagioclase
. fluorite
. fluorspar
. garnets
. . gadolinium-gallium garnet
. . yttrium-aluminum garnet
. . yttrium-iron garnet
. gehlenite
. graphite
. . pyrolytic graphite
. gypsum
. hexahedrite
. illite
. ilmenite
. iron ores
. . hematite
. kamacite
. kaolinite
. krep
. limonite
. magnetite
. merwinite
. mica
. . biotite
. . fluorophlogopite
. . muscovite
. monticellite
. montmorillonite
. nepheline
. nephelite
. olivine
. . forsterite
. perovskites
. proustite
. pyrites
. pyrophyllite
. pyroxenes
. . enstatite
. pyrrhotite

. . troilite
. quartz
. . coesite
. . stishovite
. scheelite
. schreibersite
. serpentine
. siderites
. spinel
. spodumene
. talc
. tourmaline
. vermiculite
. wurtzite
. zinblend
RT aluminum silicates
andesite
bauxite
beneficiation
biogeochemistry
bone mineral content
boreholes
calcium silicates
crystallites
diomite
dunite
Earth resources
felsite
fluorosilicates
geology
igneous rocks
impact melts
lava
limestone
lunar soil
mineral deposits
mineral exploration
mineralogy
monazite sands
mullites
∞ nutrients
obsidian
potassium silicates
rocks
rutile
shales
siderophile elements
silicates
sodium silicates
soils
underground acoustics
veins (petrology)
zeolites

∞ mines

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT mines (excavations)
mines (ordnance)

mines (excavations)

UF *quarries*
RT core sampling
drainage
exploitation
exploration
lunar mining
materials handling
mineral deposits
mineral exploration
∞ mines
mining
pits (excavations)
reserves
stratigraphy
strip mining
subsidence
underground explosions
underground storage
underground structures
waste disposal

mines (ordnance)

GS weapons
. **mines (ordnance)**
RT ammunition

∞ mines

miniature electronic equipment
 GS electronic equipment
 . **miniature electronic equipment**
 RT circuits
 ∞ electric equipment
 electronic modules
 ∞ equipment
 microminiaturization
 microminiaturized electronic devices
 micromodules
 miniaturization
 molecular electronics
 printed circuits
 solid state devices
 subminiaturization
 thin films

miniaturization
 GS **miniaturization**
 . microminiaturization
 . subminiaturization
 RT circuits
 miniature electronic equipment
 printed circuits
 printed resistors
 transistors
 wafers

minicomputers
 GS data processing equipment
 . computers
 . . digital computers
 . . . **minicomputers**
 Nova computers
 RT airborne/spaceborne computers
 Atmospheric & Oceanographic Inform Sys
 microcomputers

minima
 GS analysis (mathematics)
 . real variables
 . . extremum values
 . . . **minima**
 Cramer-Rao bounds
 RT cusps (mathematics)
 differential calculus
 maxima
 operations research
 optimization
 penalty function
 range (extremes)
 steepest descent method

minimal surfaces
 DEF Surfaces for which the first variation of the area integral vanish.
 RT boundary value problems
 conformal mapping
 finite element method
 ∞ surfaces

minimax technique
 RT approximation
 curve fitting
 differential games
 game theory
 greedy algorithms
 operations research
 research
 saddle points

minimization
 USE **optimization**

minimum drag
 GS dynamic characteristics
 . drag
 . . **minimum drag**
 RT aircraft performance
 friction drag

minimum entropy method
 DEF Application of entropy in statistical mechanics.
 GS entropy (statistics)
 . **minimum entropy method**

RT ∞ methodology

minimum variance orbit determination
 UF *MINIVAR orbit determination*
 GS computation
 . orbit calculation
 . . **minimum variance orbit determination**
 mechanics (physics)
 . classical mechanics
 . . space mechanics
 . . . orbital mechanics
 **minimum variance orbit determination**
 orbit determination
 . orbit calculation
 . . **minimum variance orbit determination**
 RT statistical analysis

mining
 GS **mining**
 . lunar mining
 . strip mining
 RT anthracite
 clays
 dredging
 energy policy
 excavation
 exploitation
 mineral deposits
 mineral exploration
 mines (excavations)
 underground structures

minitrack optical tracking system
 USE **minitrack system**

minitrack system
 DEF A satellite tracking system consisting of a field of separate antennas and associated receiving equipment interconnected so as to form interferometers which track a transmitting beacon in the payload itself. Used for minitrack optical tracking system and MOTS (tracking system).
 UF *minitrack optical tracking system*
MOTS (tracking system)
 RT Global Tracking Network
 optical tracking
 satellite tracking
 space detection and tracking system
 space surveillance (ground based)
 spacecraft tracking
 STDN (network)
 ∞ systems
 tracking networks
 tracking stations
 ∞ tracks

MINIVAR orbit determination
 USE **minimum variance orbit determination**

Minkowski space
 RT Feynman diagrams
 light-cone expansion
 probability theory
 space-time functions

Minnesota
 GS nations
 . United States
 . . **Minnesota**

minor circle turning flight
 GS turning flight
 . **minor circle turning flight**
 RT aircraft control

maneuvers

Minor Planet 1221
 USE **Amor asteroid**

Minor Planet 2060
 USE **Chiron**

minor planets
 USE **asteroids**

minorities
 RT American Indians
 anthropology
 communities
 culture (social sciences)
 nations
 races (anthropology)
 sociology
 voting

minority carriers
 GS charge carriers
 . **minority carriers**
 RT additives
 bipolar transistors
 carrier injection
 carrier lifetime
 diffusion length
 electron mobility
 electrons
 holes (electron deficiencies)
 semiconductors (materials)

MINOS computer
 GS data processing equipment
 . computers
 . . **MINOS computer**

Minuteman ICBM
 UF *Minuteman missiles*
 GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . **Minuteman ICBM**
 . surface to surface missiles
 . . intercontinental ballistic missiles
 . . . **Minuteman ICBM**
 RT M-55 engine
 M-56 engine
 M-57 engine
 multistage rocket vehicles
 solid propellant rocket engines
 space weapons

Minuteman missiles
 USE **Minuteman ICBM**

miosis
 RT eye (anatomy)
 ophthalmology
 tetrad theory
 vision

Mir space station
 DEF The Soviet space station launched February 20, 1986; its name means peace or world in Russian. It is a manned, modular, permanent, and multi-mission station.
 GS artificial satellites
 . space stations
 . . **Mir space station**
 manned spacecraft
 . **Mir space station**
 Soviet spacecraft
 . **Mir space station**
 stations
 . space stations
 . . **Mir space station**
 RT Granat satellite
 International Space Station
 Kvant modules
 Priroda module
 space bases
 space laboratories
 space station modules
 spacecraft docking

Mira variables

U.S.S.R. space program

Mira Ceti star

USE **Omicron Ceti star**

Mira variables

DEF Long-period (80 to over 600 days) variable stars of red giant or red supergiant type, exemplified by the star Mira Ceti. Used for long period variables.

UF *long period variables*

GS celestial bodies

. stars

. . late stars

. . . cool stars

. . . . **Mira variables**

. Omicron Ceti star

. . . variable stars

. . . **Mira variables**

. . . . Omicron Ceti star

RT asymptotic giant branch stars

carbon stars

M stars

red giant stars

S stars

stellar oscillations

supergiant stars

Mirage 3 aircraft

UF *Dassault Mirage 3 aircraft*

GS attack aircraft

. fighter aircraft

. . Mirage aircraft

. . . **Mirage 3 aircraft**

Dassault aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

jet aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

monoplanes

. Mirage aircraft

. . **Mirage 3 aircraft**

single engine aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

supersonic aircraft

. Mirage aircraft

. . **Mirage 3 aircraft**

tailless aircraft

. **Mirage 3 aircraft**

Mirage aircraft

DEF Collective term for a class of French attack aircraft.

GS attack aircraft

. fighter aircraft

. . **Mirage aircraft**

. . . Mirage 3 aircraft

Dassault aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

jet aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

monoplanes

. **Mirage aircraft**

. . Mirage 3 aircraft

single engine aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

supersonic aircraft

. **Mirage aircraft**

. . Mirage 3 aircraft

Miranda

DEF A satellite of Uranus orbiting at a mean distance of 124,000 kilometers.

GS celestial bodies

. natural satellites

. . Uranus satellites

. . . **Miranda**

RT Uranus (planet)

Miranda satellite

DEF This United Kingdom satellite was launched in 1974 into a sun synchronous, low Earth orbit. Prime objective of the mission was to experiment with satellite attitude control. It

ceased to operate the same year it was launched.

GS artificial satellites

. scientific satellites

. . UK satellites

. . . **Miranda satellite**

. . synchronous satellites

. . **Miranda satellite**

RT attitude control

Miros system

UF *modulating retrodirective optics*

GS modulation

. light modulation

. . **Miros system**

RT optical measuring instruments

∞ systems

mirror fusion

DEF An open-ended configuration which traps low beta plasmas. It is realized by associating two identical magnetic mirrors having the same axis.

RT fusion reactors

magnetic mirrors

nuclear fusion

plasma control

tandem mirrors

thermal barriers (plasma control)

mirror point

RT magnetic mirrors

radiation belts

mirrors

GS **mirrors**

. telescopes

. etalons

. Fresnel reflectors

. honeycomb mirrors

. magnetic mirrors

. . tandem mirrors

. deformable mirrors

. paraboloid mirrors

. rotating mirrors

. segmented mirrors

. solettas

RT Bragg reflectors

Cassegrain optics

circumsolar telescopes

collimators

heliostats

optical coatings

optical equipment

optical materials

optical resonators

∞ optics

reflecting telescopes

reflectors

solar collectors

solar reflectors

specular reflection

telescopes

x ray optics

MIS (semiconductors)

UF *metal insulator semiconductors*

GS electronic equipment

. solid state devices

. . semiconductor devices

. . . **MIS (semiconductors)**

semiconductors (materials)

. **MIS (semiconductors)**

RT SIS (semiconductors)

misalignment

SN (EXCLUDES PSYCHOLOGICAL DISORIENTATION)

UF *misorientation*

RT attitude (inclination)

disorientation

position (location)

mischmetal

(added June 1998)

DEF An alloy consisting of a natural mixture of rare-earth metals; used in electrode materials and hydrogen-storage alloys, as a general alloy addition, and in the production of some aluminum alloys and steels.

GS alloys

. rare earth alloys

. . **mischmetal**

RT alloying

aluminum alloys

cathodic coatings

cerium

desorption

electrode materials

intermetallics

steels

miscibility

USE **solubility**

miscibility gap

RT phase separation (materials)

solubility

space processing

temperature dependence

MISFETs

USE **field effect transistors**

mismatch (electrical)

DEF Condition in which the impedance of a source does not match or equal the impedance of the connected load or transmission line.

RT electrical measurement

impedance measurement

matching

misorientation

USE **misalignment**

MISR (radiometry)

(added May 2007)

DEF A high resolution imaging spectroradiometer aboard the Terra spacecraft that measures the Earth's brightness in 4 spectral bands at 9 different look angles in order to increase the understanding of the impacts of different types of atmospheric particles and clouds on global climate. Launched in August 1999.

UF *Multi-angle Imaging*

Spectroradiometer

GS measuring instruments

. radiation measuring instruments

. . actinometers

. . . radiometers

. . . . spectroradiometers

. **MISR (radiometry)**

. satellite-borne instruments

RT **MISR (radiometry)**

aerosols

albedo

clouds (meteorology)

data products

Earth atmosphere

Earth Observing System (EOS)

reflectance

remote sensing

satellite imagery

satellite observation

Terra spacecraft

terrestrial radiation

miss distance

GS distance

. **miss distance**

RT accuracy

air to surface missiles

missile antennas

GS antennas

. **missile antennas**

missile components

. **missile antennas**

RT aircraft antennas

directional antennas

microwave antennas

missile bodies

UF *missile cases*

GS missile components

. **missile bodies**

RT airframes

axisymmetric bodies

blunt bodies

∞ bodies

- cases (containers)
 - finned bodies
 - rocket engine cases
 - slender bodies
 - streamlined bodies
- missile cases*
USE **missile bodies**
- missile components**
- GS **missile components**
 - . missile antennas
 - . missile bodies
 - RT ∞ components
 - engines
 - fins
 - nose cones
 - warheads
 - wings
- missile configurations**
- GS **missile configurations**
 - . Sandpiper target missile
 - RT aerodynamic configurations
 - aircraft configurations
 - ∞ configurations
 - hammerhead configuration
 - launch vehicle configurations
 - missiles
 - multiengine vehicles
 - Patriot missile
 - propulsion system configurations
 - rocket engines
 - rocket vehicles
- missile construction*
USE **missile structures**
- missile control**
- UF *missile guidance*
missile stabilization
 - RT actuators
 - analog computers
 - attitude control
 - automatic control
 - automatic flight control
 - beam rider guidance
 - ∞ control
 - directional control
 - flight control
 - ground based control
 - homing
 - laser guidance
 - lateral control
 - longitudinal control
 - missiles
 - proportional navigation
 - radar homing missiles
 - radio control
 - remote control
 - rocket engine control
 - spacecraft control
 - star trackers
 - thrust vector control
 - visual control
- missile defense**
- SN (SYSTEMS DESIGNED TO PROTECT MISSILES AGAINST ATTACK)
 - RT antimissile defense
 - antimissile missiles
 - antiradiation missiles
 - ballistic missile decoys
 - ∞ defense
 - defense industry
 - defense program
 - hardening (systems)
 - military technology
 - missiles
 - optical countermeasures
 - reentry decoys
 - Safeguard system
 - weapons delivery
- missile design**
- RT aerospace engineering
 - aircraft design
 - computer aided design
 - ∞ design
 - ∞ development
- engine design
 - flight tests
 - functional design specifications
 - Magnus effect
 - reliability
 - structural design
 - systems engineering
- missile detection**
- GS detection
 - . **missile detection**
 - RT early warning systems
 - electronic warfare
 - identifying
 - target acquisition
 - target recognition
- missile engine cases*
USE **rocket engine cases**
- missile guidance*
USE **missile control**
- missile launchers**
- GS launchers
 - . **missile launchers**
 - . . mobile missile launchers
 - RT ballistic missile submarines
 - catapults
 - ground support equipment
 - gun launchers
 - launch vehicles
 - launching
 - launching sites
 - missiles
 - rocket launchers
 - sea launching
 - weapon systems
- missile ranges**
- SN (EXCLUDES DISTANCE OF MISSILE TRAVEL)
 - GS ranges (facilities)
 - . test ranges
 - . . **missile ranges**
 - test facilities
 - . test ranges
 - . . **missile ranges**
 - RT ballistic ranges
 - downrange
 - hypersonic test apparatus
 - missiles
 - range safety
 - reentry range
- missile signatures**
- GS signatures
 - . **missile signatures**
 - RT detection
 - signature analysis
 - target recognition
- missile silos**
- UF *silos (missile storage)*
 - RT buildings
 - launching sites
 - MX missile
 - ∞ storage
- missile simulators**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT computerized simulation
 - flight simulators
 - mathematical models
 - missiles
 - simulators
 - training simulators
 - wind tunnel models
- missile stabilization*
USE **missile control stabilization**
- missile storage**
- RT ground support equipment
 - mobile missile launchers
 - propellant storage
 - ∞ storage
- underground storage
- missile structures**
- UF *missile construction*
 - RT airframes
 - ∞ structures
 - tail assemblies
- missile systems**
- GS weapon systems
 - . **missile systems**
 - . . Nike X systems
 - . . Safeguard system
 - RT aerospace systems
 - beam rider guidance
 - mobile missile launchers
 - radar homing missiles
 - ∞ systems
- missile tests**
- RT captive tests
 - engine tests
 - flight tests
 - fuel tests
 - ground tests
 - missiles
 - prelaunch tests
 - propellant tests
 - stability tests
 - static tests
 - test firing
 - test vehicles
 - ∞ tests
 - wind tunnel stability tests
- missile tracking**
- GS tracking (position)
 - . **missile tracking**
 - RT infrared tracking
 - laser target designators
 - polystation doppler tracking system
 - range and range rate tracking
 - space detection and tracking system
 - spacecraft tracking
 - tracking networks
 - tracking stations
- missile trajectories**
- GS trajectories
 - . **missile trajectories**
 - RT ascent trajectories
 - ballistic trajectories
 - Cobra Dane (radar)
 - descent trajectories
 - flight mechanics
 - flight paths
 - impact prediction
 - parabolic flight
 - reentry trajectories
 - spinning unguided rocket trajectory
 - underwater trajectories
- missile vibration**
- GS vibration
 - . structural vibration
 - . . **missile vibration**
 - RT bending vibration
 - breathing vibration
 - flutter
 - linear vibration
 - random vibration
 - self induced vibration
 - supersonic flutter
 - torsional vibration
 - transonic flutter
- missiles**
- DEF Any objects thrown, dropped, fired, launched, or otherwise projected with the purpose of striking a target.
 - GS **missiles**
 - . air slew missiles
 - . air to air missiles
 - . . Falcon missile
 - . . Matra missile
 - . . Sidewinder missiles
 - . . Sparrow missiles
 - . . . Sparrow 2 missile
 - . . . Sparrow 3 missile
 - . air to surface missiles

missing mass (astrophysics)

- . . Bullpup missiles
- . . Condor missile
- . . Harpoon missile
- . . Hound Dog missile
- . . Maverick missiles
- . . quail missile
- . . Shrike missile
- . Antelope missile
- . anti-aircraft missiles
- . . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . . Falcon missile
- . . Mauler missile
- . . Nike-Ajax missile
- . . Nike-Hercules missile
- . . Redeye missile
- . . SIAM missiles
- . . Sidewinder missiles
- . . tartar missile
- . . terrier missile
- . anti-missile missiles
- . . Mauler missile
- . . Nike-Zeus missile
- . . Spartan missile
- . . Sprint missile
- . anti-radiation missiles
- . anti-ship missiles
- . ballistic missiles
- . . field army ballistic missiles
- . . intercontinental ballistic missiles
- . . . Atlas ICBM
- Atlas D ICBM
- Atlas E ICBM
- Atlas F ICBM
- . . . Minuteman ICBM
- . . . MX missile
- . . . Titan ICBM
- Titan 1 ICBM
- Titan 2 ICBM
- . . intermediate range ballistic missiles
- . . . Blue Streak missile
- . . . Jupiter missile
- . . . polaris missiles
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . . Pershing missile
- . . Poseidon missiles
- . . short range ballistic missiles
- . . Skybolt missile
- . . Subroc missile
- . . V-2 missile
- . Blue Steel missile
- . Bumblebee project
- . Corvus missile
- . Osprey missile
- . precision guided projectiles
- . radar homing missiles
- . ramjet missiles
- . . Navaho missile
- . . supersonic low altitude missile
- . Sandpiper target missile
- . SS-11 missile
- . surface to air missiles
- . . Blue Goose missile
- . . BOMARC missiles
- . . . BOMARC A missile
- . . . BOMARC B missile
- . . Chaparral missile
- . . Hawk missile
- . . Mauler missile
- . . Nike missiles
- . . . Nike-Ajax missile
- . . . Nike-Hercules missile
- . . . Nike-Zeus missile
- . . Patriot missile
- . . Redeye missile
- . . Sprint missile
- . . Talos missile
- . . tartar missile
- . . terrier missile
- . surface to surface missiles
- . . anti-tank missiles
- . . . Shillelagh missiles
- . . . tow missiles
- . . Corporal missile
- . . cruise missiles
- . . Navaho missile

- . . . Tomahawk missiles
- . . fleet ballistic missiles
- . . . Polaris A1 missile
- . . . Polaris A2 missile
- . . . Polaris A3 missile
- . . . Poseidon missiles
- . . . Subroc missile
- . . intercontinental ballistic missiles
- . . . Atlas ICBM
- Atlas D ICBM
- Atlas E ICBM
- Atlas F ICBM
- . . . Minuteman ICBM
- . . . MX missile
- . . . Titan ICBM
- Titan 1 ICBM
- Titan 2 ICBM
- . . intermediate range ballistic missiles
- . . . Blue Streak missile
- . . . Jupiter missile
- . . . polaris missiles
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . . Lance missile
- . . Mace missiles
- . . Pershing missile
- . . Regulus missile
- . . sergeant missiles
- . . short range ballistic missiles
- . . supersonic low altitude missile
- . . V-1 missile
- . . underwater to surface missiles
- . . Subroc missile
- RT ammunition
- anti-missile defense
- anti-ship warfare
- artillery
- ascent propulsion systems
- auxiliary propulsion
- bombs (ordnance)
- electromagnetic missiles
- flight test vehicles
- ∞ flight vehicles
- ground support equipment
- guidance (motion)
- homing devices
- hypersonic flight
- incendiary ammunition
- launch vehicles
- launching sites
- missile configurations
- missile control
- missile defense
- missile launchers
- missile ranges
- ∞ missile simulators
- missile tests
- multi-engine vehicles
- Nike X systems
- nuclear weapons
- plasma sheaths
- propulsion
- reentry
- reentry vehicles
- rocket catapults
- rocket engines
- rocket propellants
- ∞ rockets
- ∞ SCRAM
- spacecraft launching
- spin stabilization
- stage separation
- supersonic combustion ramjet engines
- supersonic flight
- terminal ballistics
- test vehicles
- torpedoes
- trajectories
- transportation
- ∞ vehicles
- warheads
- weapon systems
- weapons
- ∞ winged vehicles

missing mass (astrophysics)

DEF A problem related to a cluster of galax-

ies in which the mass derived from the dynamical stability of its member galaxies, the dynamical mass, is substantially larger than the mass estimated by the mass-to-luminosity ratio of the visible parts of the galaxies, the visible mass.

- GS cosmology
- . **missing mass (astrophysics)**
- mass
- . **missing mass (astrophysics)**
- RT astronomy
- astrophysics
- dark matter
- dynamic stability
- galactic clusters
- galactic halos
- galactic structure
- large-scale structure of the universe
- mass distribution
- mass to light ratios
- massive compact halo objects
- virial theorem
- weakly interacting massive particles

mission adaptive wings

- GS airfoils
- . wings
- . . **mission adaptive wings**
- RT adaptive control
- F-111 aircraft
- gust alleviators
- variable geometry structures
- variable sweep wings
- wing camber
- wing profiles

mission planning

- GS planning
- . **mission planning**
- RT budgeting
- commerce lab
- critical path method
- estimating
- forecasting
- lessons learned
- management
- management planning
- ∞ missions
- observation scheduling
- ∞ operations
- operations research
- payload integration
- ∞ plans
- predictions
- prelaunch summaries
- programs
- project management
- scheduling
- Ulysses mission

Mission to Planet Earth

(added April 1995)

DEF A NASA initiated program that uses both space and ground based measurement systems to provide the scientific basis for understanding global change.

- UF *MTPE*
- GS programs
- . NASA programs
- . . **Mission to Planet Earth**
- RT climate change
- Earth Observing System (EOS)
- geophysics
- global warming
- ∞ missions
- remote sensing
- scientific visualization

∞ missions

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aborted missions
- asteroid missions
- Astro missions (STS)
- Cassini mission
- Cluster Mission
- Comet Rendezvous Asteroid Flyby Mission
- Earth-Venus trajectories
- expeditions

- flyby missions
 - Galileo spacecraft
 - Grand Tours
 - Heat Capacity Mapping Mission
 - Landsat follow-on missions
 - long duration space flight
 - Mariner Jupiter-Saturn flyby
 - Mariner Jupiter-Uranus flyby
 - Mars missions
 - mission planning
 - Mission to Planet Earth
 - planning
 - programs
 - project planning
 - projects
 - Rosetta mission
 - SOHO Mission
 - Solar Maximum Mission
 - Solar Maximum Mission-A
 - space flight
 - space missions
 - Space Shuttle missions
 - targets
 - Ulysses mission
 - Voyager 1977 mission
- Mississippi**
- GS nations
 - . United States
 - . . **Mississippi**
 - RT Gulf of Mexico
- Mississippi Delta (LA)**
- GS landforms
 - . deltas
 - . . **Mississippi Delta (LA)**
 - RT Louisiana
 - rivers
- Mississippi River (US)**
- GS rivers
 - . **Mississippi River (US)**
 - RT drainage patterns
 - Earth resources
 - floods
 - resources
 - river basins
- Missouri**
- GS nations
 - . United States
 - . . **Missouri**
 - RT Missouri River (US)
 - St Louis-Kansas City Corridor (MO)
- Missouri River (US)**
- GS rivers
 - . **Missouri River (US)**
 - RT Iowa
 - Kansas
 - Missouri
 - Montana
 - Nebraska
 - North Dakota
 - river basins
 - South Dakota
 - United States
 - valleys
- Missouri River Basin (US)**
- GS landforms
 - . structural basins
 - . . river basins
 - . . . **Missouri River Basin (US)**
 - RT rivers
 - watersheds
- mist**
- SN (ATMOSPHERIC WATER)
 - DEF Liquid, usually water in the form of particles suspended in the atmosphere at or near the surface of the Earth; small water droplets floating or falling, approaching the form of rain, and sometimes distinguished from fog as being more transparent or as having particles perceptibly moving downward.
 - GS particles
 - . **mist**
 - RT aerosols
 - dispersions
- fog
- fog dispersal
 - haze
 - haze detection
 - precipitation (meteorology)
- mistuning (turbomachinery)**
- (added July 1991)
 - RT rotating disks
 - ∞ rotor blades
 - rotor blades (turbomachinery)
 - rotors
 - tuning
 - turbomachine blades
 - vibration
- mitochondria**
- GS organelles
 - . **mitochondria**
 - RT cells (biology)
 - cytology
- mitosis**
- GS cytogenesis
 - . **mitosis**
 - RT cell division
 - cells (biology)
 - chromosome aberrations
 - chromosomes
 - cytology
 - cytoplasm
 - mutations
 - physiology
 - reproduction (biology)
- mitra**
- RT fungi
 - plants (botany)
- MIUS**
- USE **Modular Integrated Utility System**
- mixed crystals**
- GS crystals
 - . **mixed crystals**
 - RT powder metallurgy
 - sintering
- mixed flow*
- USE **multiphase flow**
- mixed oxides**
- DEF Mixture of oxides, particularly of radioactive metals.
 - GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **mixed oxides**
 - BSCCO superconductors
 - YBCO superconductors
 - RT high temperature superconductors
 - nuclear fuels
 - plutonium oxides
 - strontium oxides
 - uranium oxides
- mixers**
- SN (EXCLUDES MIXING CIRCUITS)
 - RT admixtures
 - aeration
 - aerosols
 - agitation
 - baffles
 - blowers
 - carburetors
 - coalescing
 - contactors
 - ∞ diffusers
 - ∞ dispersion
 - feeders
 - grinding mills
 - mixing
 - mixtures
 - paddles
 - plows
 - plungers
 - separators
 - shakers
 - sprayers
 - stirring
- tumbling motion
- mixing**
- GS **mixing**
 - . colloidizing
 - . compounding
 - . dissolving
 - . homogenizing
 - . laminar mixing
 - . premixing
 - . signal mixing
 - . suspending (mixing)
 - . turbulent mixing
 - RT aeration
 - agitation
 - blowing
 - chokes
 - diffusion
 - dilution
 - grinding (comminution)
 - jet mixing flow
 - liquid injection
 - metal powder
 - mixers
 - mixing layers (fluids)
 - mixing ratios
 - mixtures
 - premixed flames
 - ∞ separation
 - shaking
 - spraying
 - swirling
 - tangling
 - trapped vortices
 - turbulence
 - vortices
- mixing circuits**
- GS circuits
 - . **mixing circuits**
 - RT frequency converters
 - frequency synthesizers
 - heterodyning
 - preamplifiers
- mixing depth*
- USE **mixing height**
- mixing height**
- DEF The heights of the layer through which the atmosphere is well mixed. The height will vary with diurnal, seasonal, and regional variations. Used for mixing depth.
 - UF *mixing depth*
 - RT air pollution
 - atmospheric circulation
 - convection
 - convection currents
 - vertical air currents
 - wind (meteorology)
 - zonal flow (meteorology)
- mixing layers (fluids)**
- (added September 1988)
 - DEF Fluid layers in which multicomponent mixing occurs.
 - RT advection
 - atmospheric boundary layer
 - atmospheric stratification
 - boundary layers
 - convection
 - Ekman layer
 - jet mixing flow
 - laminar mixing
 - ∞ layers
 - mixing
 - mixing length flow theory
 - shear layers
 - turbulent boundary layer
 - turbulent mixing
 - two fluid models
- mixing length flow theory**
- GS flow theory
 - . **mixing length flow theory**
 - kinetic theory
 - . transport theory
 - . . **mixing length flow theory**
 - RT mixing layers (fluids)
 - shear flow

mixing ratios

∞ theories
turbulence models
turbulent flow
turbulent mixing
vorticity transport hypothesis

mixing ratios

(added September 1993)
GS dimensionless numbers
. **mixing ratios**
ratios
. mass ratios
. . . **mixing ratios**
RT atmospheric composition
atmospheric moisture
gas mixtures
gaseous diffusion
humidity
mixing
moisture content
water vapor

mixtures

UF *blends*
GS **mixtures**
. admixtures
. binary mixtures
. . . binary fluids
. . . eutectics
. . . eutectic alloys
. dispersions
. . . colloids
. . . aerosols
. . . . fog
. . . colloidal propellants
. emulsions
. . . photographic emulsions
. . . . nuclear emulsions
. liquid-gas mixtures
. . . aerosols
. . . . fog
. . . plastisols
. . . smoke
. polymer blends
. sialon
. slurries
. solid suspensions
. solutions
. . . aqueous solutions
. . . gas mixtures
. . . . air
. alveolar air
. compressed air
. expired air
. high temperature air
. liquid air
. . . detonable gas mixtures
. . . photographic emulsions
. . . nuclear emulsions
. . . solid solutions
RT alloys
azeotropes
∞ combination
composite materials
composition (property)
dissolved gases
eutectic composites
formulations
ingredients
mixers
mixing
paste (consistency)
solubility

MJO (meteorology)

(added September 2000)
USE **Madden-Julian Oscillation**

ML-1 nuclear power plant

GS electric power plants
. nuclear power plants
. . . **ML-1 nuclear power plant**
nuclear electric power generation
. nuclear power plants
. . . **ML-1 nuclear power plant**

RT ∞ power plants

MLA

USE **multispectral linear arrays**

MMH (chemistry)

(added February 2001)
USE **monomethylhydrazines**

MMS

USE **multimission modular spacecraft**

mnemonics

RT memory
nomenclatures
symbolic programming
symbols

MNOS

USE **metal-nitride-oxide-silicon**

mobile communication systems

DEF Any configuration of mobile or transportable voice and data communication equipment which allows for communication between combinations of mobile/fixed points with or without the aid of satellites.

GS **mobile communication systems**
. land mobile satellite service
RT communication satellites
Iridium network
MSAT
radio communication
Rayleigh fading

mobile lounges

RT airfield surface movements
airports
ground handling
∞ lounges

mobile missile launchers

GS launchers
. missile launchers
. . . **mobile missile launchers**
RT ballistic missile submarines
missile storage
missile systems
weapon systems

mobile quarantine facility

RT aerospace medicine
evacuating (transportation)
∞ facilities
medical equipment
medical services
physical examinations
physiological tests

Mobile Servicing System (ISS)

(added September 2001)
USE **Space Station Mobile Servicing System**

mobility

SN (EXCLUDES CONSIDERATIONS OF MANNED AND UNMANNED CRAFT)
GS **mobility**
. atomic mobilities
. carrier mobility
. . . electron mobility
. . . hole mobility
. ionic mobility
RT ∞ conductivity
diffusivity
drift rate
Hall effect
kinetic theory
portable equipment
transport properties

MOCVD (vapor deposition)

USE **metalorganic chemical vapor deposition**

modal response

UF *mode shapes*
GS responses
. **modal response**
RT dynamic response

stroking tests

Modcomp II computer

GS data processing equipment
. computers
. . . digital computers
. . . **Modcomp II computer**

Modcomp IV computer

GS data processing equipment
. computers
. . . digital computers
. . . **Modcomp IV computer**

∞ mode

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT failure modes
mode (statistics)
modes

mode (statistics)

RT average
distribution moments
failure modes
mean
median (statistics)
∞ mode
modes
moments
quality control

mode coupling

USE **coupled modes**

mode of vibration

USE **vibration mode**

mode shapes

USE **modal response**

mode transformers

GS transducers
. **mode transformers**
transformers
. **mode transformers**
RT impedance matching
propagation modes
transmission lines
vibration mode
waveguide tuners

model reference adaptive control

DEF This deals with three parameters: an ideal adaptive control system whose response is agreed to be optimum; computer simulation in which both the model system and the actual system are subjected to the same stimulus; and parameters of the actual system which are adjusted to minimize the difference in the outputs of the model and the actual system. Used for MRAC (systems).

UF *MRAC (systems)*
GS automatic control
. adaptive control
. . . **model reference adaptive control**
RT automata theory
autonomy
∞ control
control theory
cybernetics
dynamic control
feedback control
feedforward control
mathematical models
optimal control
self alignment
systems simulation

models

GS **models**
. aircraft models
. astronomical models
. . . density wave model
. . . stellar models
. atmospheric models
. . . Atmospheric General Circulation Models
. . . reference atmospheres
. breadboard models

- . climate models
- . digital elevation models
- . dynamic models
- . electroweak model
- . environment models
- . Gutenberg zone
- . hydrology models
- . Lighthill gas model
- . mathematical models
 - . . analog simulation
 - . . BGK model
 - . . biological models (mathematics)
 - . . digital simulation
 - . . Mandelstam representation
 - . . Petri nets
 - . . Thomas-Fermi model
 - . . turbulence models
 - . . . Baldwin-Lomax turbulence model
 - . . . k-epsilon turbulence model
 - . . . k-omega turbulence model
 - . . Veneziano model
- . nuclear models
- . ocean models
- . quark models
- . quark parton model
- . scale models
- . semispan models
- . spacecraft models
- . standard model (particle physics)
- . static models
- . three dimensional models
- . two dimensional models
- . vector dominance model
- . wind tunnel models
 - . . powered models
- . animal models
- . multiscale models
- . . knockout mice

RT analogs
dummies
layouts
pilot plants
replicas
simulators
test facilities

modems

UF *modulators-demodulators*

GS demodulators
. **modems**
modulators
. **modems**

RT data transmission
peripheral equipment (computers)
phase demodulators
phase modulation
pulse amplitude modulation
pulse communication
pulse duration modulation
pulse frequency modulation
pulse modulation
pulse position modulation

Moderate Resolution Imaging Spectroradiometer
(added June 2003)
USE **MODIS (radiometry)**

moderation (energy absorption)

GS energy absorption
. **moderation (energy absorption)**
. . thermalization (energy absorption)
. . . neutron thermalization

RT ∞ absorption
limiters (fusion reactors)
moderators

moderators

DEF Materials that have a high cross section for slowing down fast neutrons with a minimum of absorption, e.g., heavy water, beryllium, used in reactor cores.

RT beryllium
blankets (fusion reactors)
graphite
heavy water
limiters (fusion reactors)
moderation (energy absorption)
neutron absorbers
nuclear reactors

reactor materials
water

modes

GS **modes**
. axial modes
. ballooning modes
. coupled modes
. failure modes
. laser modes
. modes (standing waves)
. propagation modes
. . whispering gallery modes
. pushbroom sensor modes
. vibration mode
. . uncoupled modes

RT ∞ mode
mode (statistics)
tearing modes (plasmas)

modes (standing waves)

GS modes
. **modes (standing waves)**

RT uncoupled modes
vibration

MODFETS

DEF Heterojunction field effect transistor device structures in which only the larger (Al, Ga)As bandgap is doped with donors while the GaAs layer is left undoped. This results in high electron mobilities due to spatially separated electrons and donors. Used for modulation doped FETs.

UF *modulation doped fets*

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . heterojunction devices
. . . high electron mobility transistors
. . . . **MODFETS**
. . . transistors
. . . field effect transistors
. . . . **MODFETS**
. . . high electron mobility transistors
. . . . **MODFETS**

RT aluminum gallium arsenides
doped crystals
energy gaps (solid state)
gallium arsenides
indium arsenides
ion implantation

modification

USE **revisions**

modified embedded atom method

(added February 1998)

USE **embedded atom method**

MODIS (radiometry)

(added June 2003)

DEF A high resolution spectroradiometer aboard the Terra and Aqua spacecraft designed to gather spectral data in 36 bands in order to increase the understanding of global environmental dynamics and processes. Launched in 1999.

UF *Moderate Resolution Imaging Spectroradiometer*

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . radiometers
. . . spectroradiometers
. . . . **MODIS (radiometry)**

RT Aqua spacecraft
data products
Earth observations (from space)
remote sensing
Terra spacecraft

Modular Integrated Utility System

DEF A joint NASA-HUD concept incorporating various utilities -- electric power plant, water supply, heating and air conditioning, sewage treatment, and waste disposal into a single system having increased efficiency and economy. Use for MIUS.

UF *MIUS*

RT air conditioning
communities
electric power plants
heating
potable water
sewage treatment
 ∞ systems
utilities
waste disposal

modular ratios

GS mechanical properties
. **modular ratios**
ratios
. **modular ratios**

RT composite materials
stress ratio
structural analysis
structural engineering

modularity

RT architecture (computers)
avionics
computer programs
electronic modules
systems engineering

modulated continuous radiation

GS continuous radiation
. **modulated continuous radiation**
electromagnetic radiation
. **modulated continuous radiation**

RT coherent electromagnetic radiation
phase deviation
 ∞ radiation

modulating retrodirective optics

USE **Miros system**

modulation

DEF The variation in the value of some parameter characterizing a periodic oscillation. Specifically, variation of some characteristic of a radio wave, called the carrier wave, in accordance with instantaneous values of another wave, called the modulating wave. Used for carrier modulation.

UF *carrier modulation*

GS **modulation**
. amplitude modulation
. . quadrature amplitude modulation
. frequency modulation
. . feedback frequency modulation
. . FM/PM (modulation)
. . frequency shift keying
. . pulse frequency modulation
. intermodulation
. ionospheric cross modulation
. light modulation
. . Miros system
. ultrasonic light modulation
. phase modulation
. . FM/PM (modulation)
. . phase shift keying
. . . binary phase shift keying
. . . quadrature phase shift keying
. polarization modulation
. pulse modulation
. . pulse amplitude modulation
. . pulse code modulation
. . . delta modulation
. . . differential pulse code modulation
. . pulse frequency modulation
. . pulse time modulation
. . . pulse duration modulation
. . . pulse position modulation
. traveling wave modulation
. velocity modulation

RT carrier frequencies
carrier waves
companding
crystallization
demodulation
demodulators
double sideband transmission
dynamic range
interference factor table
modulators
P.A.C.M. telemetry
pulse frequency modulation telemetry

modulation doping

radio transmission
remodulation
selective fading
telecommunication
wave interaction

modulation doped fets

USE **MODFETS**

modulation doping

DEF The process of doping only the larger bandgap of a heterojunction device with donors, while the other layer is left undoped. Since the electrons and donors are spatially separated, ionized impurity scattering is avoided and extremely high electron mobilities are obtained.

GS doping (materials)

. **modulation doping**

RT additives

donor materials
doped crystals
electron mobility
energy gaps (solid state)
heterojunction devices
heterojunctions
high electron mobility transistors
ion implantation
semiconductor devices
semiconductors (materials)

modulation transfer function

UF *MTF*

GS functions (mathematics)

. transfer functions

. . **modulation transfer function**

RT figure of merit

imaging techniques
optical measurement
optical transfer function

∞ performance

system effectiveness
systems analysis

modulators

DEF Devices to effect the process of modulation.

GS **modulators**

. Bragg cells
. light modulators
. modems

RT amplifiers

amplitude modulation
demodulators
electron tubes
frequency modulation
light modulation
matched filters
modulation
phase modulation
pulse modulation

modulators-demodulators

USE **modems**

modules

DEF 1, Self contained units of a launch vehicle or spacecraft that serve as building blocks for the overall structure. 2, A one package assembly of functionally associated electronic parts, usually a plug-in unit, so arranged as to function as a system or subsystem.

GS **modules**

. airlock modules
. chemical release modules
. electronic modules
. . . micromodules
. local scientific survey module
. payload assist module
. power modules (STS)
. service modules
. . . Multi-Purpose Logistics Modules
. spacecraft docking modules
. spacecraft modules
. . . command modules
. . . command service modules
. . . landing modules
. . . . lunar landing modules
. Lunar Module
. Apollo lunar experiment
module

. LSSM
. Lunar Module 5
. Lunar Module 7
. Altair Lunar Lander
. Mars Excursion Module
. SIM
. space station modules
. Columbus module
. Cupola Module
. Destiny Laboratory Module
. Kibo Japanese Experiment Module
. Kvant modules
. Multi-Purpose Logistics Modules
. Priroda module
. Service Module (ISS)
. Unity connecting module
. Zarya control module

RT circuits

compartments
∞ components
instrument packages
space tugs
spare parts

modulus of elasticity

DEF The ratio of stress (nominal) to corresponding strain below the proportional limit of a material. It is expressed in force per unit area. Used for compliance (elasticity), elastic modulus, and Young modulus.

UF *compliance (elasticity)*

elastic modulus

Young modulus

GS mechanical properties

. elastic properties

. . **modulus of elasticity**

. . . dynamic modulus of elasticity

RT anelasticity

bending
Hookes law
hydroelasticity
nanoindentation
Poisson ratio
proportional limit
∞ rigidity
shear properties
stiffness
stress-strain diagrams

MOEMS

(added December 2005)

USE **microoptoelectromechanical systems**

Mohawk aircraft

USE **OV-1 aircraft**

Mohr circles

USE **fracture mechanics**

Moire effects

RT beat frequencies

birefringence

diffraction

∞ effects

fringe multiplication

interference grating

∞ methodology

Moire fringes

Moire interferometry

photoelastic analysis

Schlieren photography

Moire fringes

DEF The bands which appear in the Moire effect.

RT diffraction patterns

fringe multiplication

interference grating

Moire effects

stress analysis

stress concentration

Moire interferometry

DEF The use of intersecting families of curves as instruments for making precise measurement, the study of indices of refractions, etc. by utilizing the interference patterns.

GS interferometry

. **Moire interferometry**

RT diffraction patterns
holographic interferometry
Moire effects

moisture

GS **moisture**

. atmospheric moisture
. soil moisture

RT humidity

hygral properties
meteorological parameters
meteorology
water
water vapor

moisture content

UF *dampness*

water content

wetness

GS composition (property)

. concentration (composition)

. . **moisture content**

. . . atmospheric moisture

RT

atmospheric composition
chemical properties
humidity
hydrothermal stress analysis
hygroscopicity
lysimeters
mixing ratios
soil moisture
water
water vapor

moisture detectors

USE **moisture meters**

moisture meters

UF *moisture detectors*

GS measuring instruments

. **moisture meters**

. . hygrometers

. . . psychrometers

RT

chemical analysis
humidity
humidity measurement

moisture resistance

RT caulking

coatings

hydrophobicity

hydrothermal stress analysis

hygroscopicity

porosity

∞ resistance

sealing

waterproofing

weatherproofing

Mojave Desert (CA)

GS land

. deserts

. . **Mojave Desert (CA)**

RT

arid lands

California

desertification

remote regions

MOL (orbital laboratories)

USE **manned orbital laboratories**

MOLABS

USE **lunar mobile laboratories**

∞ **moild**

SN

(USE OF A MORE SPECIFIC TERM IS

RECOMMENDED--CONSULT THE TERMS

LISTED BELOW)

RT

Aspergillus

fungi

molds

rhizopus

rust fungi

molдавite

GS rocks

. igneous rocks

. . obsidian

. . . **molдавite**

RT

glass

meteorites

- soils
- molding materials**
 GS **molding materials**
 . sheet molding compounds
 RT binders (materials)
 casting
 clays
 cores
 injection molding
 ∞ materials
 molds
 plasters
 plastics
 resin transfer molding
 sand casting
 sands
 tenite
- Moldova**
(added September 1994)
 GS nations
 . **Moldova**
 RT Europe
- molds**
 SN (EXCLUDES ORGANISMS)
 RT casting
 castings
 dies
 flat patterns
 foundries
 ingots
 injection molding
 mandrels
 melting
 ∞ mold
 molding materials
 organic materials
 ∞ patterns
 preforms
 pressing (forming)
 punches
 resin transfer molding
 sheet molding compounds
 tablets
 templates
- molecular absorption**
 GS energy absorption
 . radiation absorption
 . . **molecular absorption**
 RT ∞ absorption
 atmospheric attenuation
 Beer law
 electromagnetic absorption
 light transmission
- molecular beam epitaxy**
 DEF Ultrahigh vacuum technique for growing very thin epitaxial layers of semiconductor crystals.
 GS growth
 . crystal growth
 . . epitaxy
 . . . **molecular beam epitaxy**
 RT atomic layer epitaxy
 indium aluminum arsenides
- molecular beams**
 GS beams (radiation)
 . particle beams
 . . neutral beams
 . . . **molecular beams**
 RT atomic beams
 atomic clocks
 free molecular flow
 ion beams
 molecules
 rarefied gas dynamics
- molecular biology**
 GS life sciences
 . **molecular biology**
 RT biochemistry
 ∞ biology
 eukaryotes
 gene expression
 genes
 physiochemistry
- prokaryotes
 proteome
 self assembly
- molecular bonds*
 USE **chemical bonds**
- molecular chains**
 RT ∞ aliphatic compounds
 chains
 crystal lattices
 macromolecules
 monomers
 netting (materials/structures)
- molecular clouds**
 DEF Thickest and densest interstellar clouds consisting mainly of molecular hydrogen but also a high concentration of dust grains.
 RT astronomical models
 ∞ clouds
 cosmic dust
 diffuse interstellar bands
 galactic halos
 hydrogen clouds
 infrared cirrus (astronomy)
 interstellar chemistry
 interstellar gas
 interstellar masers
 interstellar matter
 laboratory astrophysics
 methylidyne
 star formation
 Submillimeter Wave Astronomy
 Satellite
- molecular clusters**
(added January 1994)
 GS **molecular clusters**
 . micelles
 RT agglomeration
 atomic clusters
 chemisorption
 clumps
 ∞ clusters
 fullerenes
 metal clusters
 nanoclusters
 nucleation
- molecular collisions**
 GS collisions
 . **molecular collisions**
 particle interactions
 . molecular interactions
 . . **molecular collisions**
 RT atomic collisions
 BGK model
 ∞ interactions
 particle collisions
 rigid rotors (plasma physics)
- molecular diffusion**
 GS diffusion
 . **molecular diffusion**
 RT atmospheric diffusion
 diffusion coefficient
 diffusion waves
 dissociation
 gaseous diffusion
 gaseous self-diffusion
 particle diffusion
 self diffusion (solid state)
 surface diffusion
- molecular dissociation*
 USE **dissociation**
- molecular dynamics**
(added January 1994)
 RT computerized simulation
 crystal structure
 ∞ dynamics
 embedded atom method
 microstructure
 molecular interactions
 ∞ molecular physics
 molecular properties
 molecular trajectories
 physical chemistry
- statistical mechanics
- molecular electronics**
 GS electrophysics
 . **molecular electronics**
 RT adatoms
 DTL integrated circuits
 ∞ electronics
 integrated circuits
 Langmuir-Blodgett films
 large scale integration
 linear integrated circuits
 medium scale integration
 microelectronics
 microminiaturization
 miniature electronic equipment
 monomolecular films
 pi-electrons
 semiconductor devices
 thin films
 TTL integrated circuits
 very large scale integration
- molecular energy levels**
 GS level (quantity)
 . energy levels
 . . **molecular energy levels**
 . . . intermolecular forces
 . . . rotational states
 . . . vibrational states
 molecular properties
 . **molecular energy levels**
 . . intermolecular forces
 . . rotational states
 . . vibrational states
 RT chemical energy
 ∞ energy
 energy of formation
 excimers
 free energy
 heat of solution
 internal energy
 ∞ nuclear energy
- molecular excitation**
 GS excitation
 . **molecular excitation**
 RT atomic excitations
 energy levels
 ionization
 particle collisions
 photoexcitation
 rotational spectra
 rotational states
 vibrational states
- molecular flow**
 SN (FLOW WITH KNUDSEN NUMBERS GREATER THAN 0. 01--FOR SPECIFIC FLOWS IN THIS RANGE USE NARROWER TERMS--FOR DUCTED MOLECULAR FLOW USE KNUDSEN FLOW)
 DEF The flow of gas through a duct under conditions such that the mean free path is greater than the largest dimension of a transverse section of the duct.
 GS fluid flow
 . gas flow
 . . **molecular flow**
 . . . slip flow
 . . . transition flow
 RT BGK model
 boundary layer transition
 continuum flow
 Knudsen flow
 low density flow
 rarefied gas dynamics
 transpiration
- molecular gases**
 GS gases
 . **molecular gases**
 . . polar gases
 . . polyatomic gases
 . . . diatomic gases
 RT association reactions
 gas dynamics
 monatomic gases
 nonpolar gases
 rarefied gases

molecular interactions

- real gases
 - . . Raman spectra
 - . . rotational spectra
 - . . vibrational spectra
 - . . molecular structure
 - . . molecular weight
 - . . low molecular weights
 - molecular interactions**
 - GS particle interactions
 - . **molecular interactions**
 - . . molecular collisions
 - RT association reactions
 - configuration interaction
 - dissociation
 - ∞ interactions
 - intermolecular forces
 - internuclear properties
 - interstellar chemistry
 - ionic reactions
 - Lennard-Jones potential
 - mass flow
 - molecular dynamics
 - ∞ molecular physics
 - molecular properties
 - transport theory
 - molecular ions**
 - GS ions
 - . **molecular ions**
 - . . formyl ions
 - . . hydronium ions
 - . . vanadyl radical
 - RT amino radical
 - electron affinity
 - ∞ molecular physics
 - positive ions
 - molecular orbitals**
 - GS molecular properties
 - . **molecular orbitals**
 - orbitals
 - . **molecular orbitals**
 - wave functions
 - . **molecular orbitals**
 - RT quantum chemistry
 - self consistent fields
 - molecular oscillations**
 - GS molecular properties
 - . **molecular oscillations**
 - oscillations
 - . **molecular oscillations**
 - RT argon lasers
 - carbon dioxide lasers
 - carbon monoxide lasers
 - gas lasers
 - oscillator strengths
 - molecular oscillators**
 - GS oscillators
 - . **molecular oscillators**
 - RT lasers
 - masers
 - oscillator strengths
 - two-wavelength lasers
 - ultraviolet lasers
 - ∞ **molecular physics**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT internuclear properties
 - Mayer problem
 - molecular dynamics
 - molecular interactions
 - molecular ions
 - monatomic molecules
 - ∞ physics
 - ∞ science
 - molecular properties**
 - (added April 2004)
 - DEF Fundamental information regarding molecules such as weight, structure, rotation, vibration, spectra, etc.
 - GS **molecular properties**
 - . molecular energy levels
 - . . intermolecular forces
 - . . rotational states
 - . . vibrational states
 - . molecular orbitals
 - . molecular oscillations
 - . molecular relaxation
 - . molecular rotation
 - . molecular spectra
 - . . electronic spectra
 - molecular pumps**
 - GS pumps
 - . vacuum pumps
 - . . **molecular pumps**
 - vacuum apparatus
 - . vacuum pumps
 - . . **molecular pumps**
 - RT plasma pumping
 - pump seals
 - molecular relaxation**
 - UF *chemical relaxation*
 - vibrational relaxation*
 - GS molecular properties
 - . **molecular relaxation**
 - RT gas flow
 - population inversion
 - ∞ relaxation
 - relaxation (mechanics)
 - relaxation time
 - shock waves
 - thermodynamics
 - vibration damping
 - vibrational spectra
 - molecular rotation**
 - GS gyration
 - . rotation
 - . . **molecular rotation**
 - molecular properties
 - . **molecular rotation**
 - RT microwave spectra
 - Raman spectra
 - rigid rotors (plasma physics)
 - rotational spectra
 - molecular shields**
 - DEF Furlable devices used in space vacuum research to permit deployment and retrieval of instruments and the performance of experiments without contamination.
 - RT contamination
 - high vacuum
 - instrument packages
 - spaceborne experiments
 - molecular sieves*
 - USE **absorbents**
 - molecular spectra**
 - GS molecular properties
 - . **molecular spectra**
 - . . electronic spectra
 - . . Raman spectra
 - . . rotational spectra
 - . . vibrational spectra
 - spectra
 - . **molecular spectra**
 - . . electronic spectra
 - . . Raman spectra
 - . . rotational spectra
 - . . vibrational spectra
 - RT absorption spectra
 - electromagnetic spectra
 - emission spectra
 - energy spectra
 - infrared spectra
 - mass spectra
 - microwave spectra
 - oxygen spectra
 - solar spectra
 - stellar spectra
 - Swan bands
 - ultraviolet spectra
 - Vegard-Kaplan bands
 - visible spectrum
 - molecular spectroscopy**
 - GS spectroscopy
 - . **molecular spectroscopy**
 - . . Raman spectroscopy
 - RT absorption spectra
 - electron spectroscopy
 - emission spectra
 - infrared spectroscopy
 - line spectra
 - microwave spectra
 - optogalvanic spectroscopy
 - rotational spectra
 - spectroscopic analysis
 - ultraviolet spectroscopy
 - vacuum spectroscopy
 - x ray spectroscopy
- molecular structure**
 - GS molecular properties
 - . **molecular structure**
 - RT atomic interactions
 - atomic structure
 - biopolymer denaturation
 - complex compounds
 - configuration interaction
 - coordination number
 - crystal lattices
 - enantiomers
 - hydrogen bonds
 - infrared spectroscopy
 - intermolecular forces
 - intramolecular structures
 - macromolecules
 - molecules
 - monatomic molecules
 - nuclear magnetic resonance
 - nuclear models
 - order-disorder transformations
 - polyatomic molecules
 - polywater
 - self assembly
 - ∞ structures
 - unimolecular structures
 - Wiswesser notations
- molecular theory**
 - RT Lighthill gas model
 - ∞ theories
- molecular trajectories**
 - GS trajectories
 - . **molecular trajectories**
 - RT gas flow
 - molecular dynamics
- molecular weight**
 - DEF The weight of a given molecule expressed in atomic weight units.
 - GS molecular properties
 - . **molecular weight**
 - . . low molecular weights
 - RT macromolecules
 - molecules
 - monatomic molecules
 - polyatomic molecules
 - weight (mass)
- molecules**
 - DEF Aggregates of two or more atoms of a substance that exists as a unit. Used for macromolecules.
 - GS **molecules**
 - . macromolecules
 - . . dendrimers
 - . . monatomic molecules
 - . . polyatomic molecules
 - . . diatomic molecules
 - . . triatomic molecules
 - RT atoms
 - buckminsterfullerene
 - chemical bonds
 - ∞ chemical compounds
 - ions
 - low molecular weights
 - molecular beams
 - molecular structure
 - molecular weight
- moles**
 - GS animals
 - . vertebrates
 - . . mammals

- ... moles
- Moliere formula*
- USE **cosmic ray showers**
secondary cosmic rays
spatial distribution
- Mollier diagram**
- UF *enthalpy-entropy diagrams*
- GS charts
 - . graphs (charts)
 - . . **Mollier diagram**
 - diagrams
 - . **Mollier diagram**
- RT enthalpy
entropy
equations of state
ideal fluids
isentropic
thermodynamics
- mollusks**
- GS animals
 - . invertebrates
 - . . **mollusks**
 - . . . cephalopods
 - . . . octopuses
 - . . . snails
- RT shellfish
- Molniya satellites**
- GS artificial satellites
 - . communication satellites
 - . . **Molniya satellites**
 - . Soviet satellites
 - . . **Molniya satellites**
- RT electric discharges
radio relay systems
satellite networks
telecommunication
television transmission
U.S.S.R. space program
- molten carbonate fuel cells**
(added December 1995)
- GS electric generators
 - . direct power generators
 - . . fuel cells
 - . . . **molten carbonate fuel cells**
 - electrochemical cells
 - . fuel cells
 - . . **molten carbonate fuel cells**
- RT carbonates
molten salt electrolytes
- molten salt electrolytes**
- GS conductors
 - . electrolytes
 - . . **molten salt electrolytes**
- RT molten carbonate fuel cells
- molten salt nuclear reactors**
- UF *MSRE reactors*
- GS nuclear reactors
 - . **molten salt nuclear reactors**
- RT ∞ reactors
- molten salts**
- DEF High temperature inorganic salt or mixtures of salts used for thermal energy storage, heat exchangers, high power electric batteries, heat treatment of alloys, etc.
- RT halides
halites
inorganic compounds
nitrides
salt baths
- ∞ salts
sodium chlorides
- molting**
- RT phenology
shedding
- molybdates**
- GS molybdenum compounds
 - . **molybdates**
 - . . lead molybdates
- molybdenum**
- GS chemical elements
- . **molybdenum**
- metals
- . refractory metals
- . . **molybdenum**
- . transition metals
- . . **molybdenum**
- refractory materials
- . refractory metals
- . . **molybdenum**
- RT molybdenum isotopes
- molybdenum alloys**
- GS alloys
 - . heat resistant alloys
 - . . refractory metal alloys
 - . . . **molybdenum alloys**
 - Rene 41
 - Rene 63
 - Rene 77
 - Rene 95
 - refractory materials
 - . refractory metal alloys
 - . . **molybdenum alloys**
 - . . . Rene 41
 - . . . Rene 63
 - . . . Rene 77
 - . . . Rene 95
- RT Hastelloy (trademark)
mulberry (alloy)
Permalloys (trademark)
stainless steels
- molybdenum carbides**
- GS carbon compounds
 - . carbides
 - . . **molybdenum carbides**
- molybdenum compounds**
- GS **molybdenum compounds**
 - . molybdates
 - . . lead molybdates
 - . molybdenum disulfides
 - . molybdenum oxides
- RT ∞ chemical compounds
 ∞ Group 6B compounds
 ∞ metal compounds
- molybdenum disulfides**
- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . molybdenum sulfides
 - **molybdenum disulfides**
 - molybdenum compounds
 - . **molybdenum disulfides**
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . molybdenum sulfides
 - **molybdenum disulfides**
- molybdenum isotopes**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **molybdenum isotopes**
- RT molybdenum
- molybdenum oxides**
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **molybdenum oxides**
 - molybdenum compounds
 - . **molybdenum oxides**
- molybdenum sulfides**
- GS chalcogenides
 - . sulfides
 - . . inorganic sulfides
 - . . . **molybdenum sulfides**
 - molybdenum disulfides
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **molybdenum sulfides**
 - molybdenum disulfides
- MOM (semiconductors)**
- UF *metal-oxide-metal semiconductors*
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . **MOM (semiconductors)**
 - semiconductors (materials)
 - . **MOM (semiconductors)**
- RT ion implantation
- moment distribution**
- GS distribution (property)
 - . **moment distribution**
- RT angular distribution
force distribution
influence coefficient
loading moments
loads (forces)
mass distribution
method of moments
moments
moments of inertia
pressure distribution
static loads
stress concentration
structural analysis
structural design criteria
- moments**
- GS **moments**
 - . bending moments
 - . dipole moments
 - . . electric moments
 - . . magnetic moments
 - . distribution moments
 - . . mean
 - . . orthogonality
 - . . standard deviation
 - . loading moments
 - . moments of inertia
 - . stability derivatives
 - . . pitching moments
 - . . rolling moments
 - . . yawing moments
 - . torque
- RT method of moments
mode (statistics)
moment distribution
momentum
skewness
torsion
variance (statistics)
- moments of inertia**
- UF *inertia moments*
- GS moments
 - . **moments of inertia**
- RT angular momentum
center of gravity
center of pressure
centroids
equations of motion
Euler equations of motion
inertia
inertia principle
Mach inertia principle
mass
mass distribution
moment distribution
pitching moments
rolling moments
stability derivatives
stress analysis
structural strain
torque
yawing moments
- momentum**
- DEF Quantity of motion.
- GS **momentum**
 - . angular momentum
 - . transverse momentum
- RT classical mechanics
de Broglie wavelengths
- ∞ dynamics
moments
- ∞ motion
motion aftereffects
pendulums

momentum theory

turning flight

momentum energy

USE **kinetic energy**

momentum theory

RT conservation laws
Newton second law
∞ theories

momentum transfer

RT ∞ dynamics
energy transfer
gas-liquid interactions
hydrodynamic ram effect
kinetic theory
kinetics
Prandtl number
transferring

Monaco

GS nations
. **Monaco**
RT Europe

monatomic gases

UF *atomic gases*
GS gases
. **monatomic gases**
RT Chapman-Enskog theory
molecular gases
rare gases
real gases

monatomic molecules

GS molecules
. **monatomic molecules**
RT atoms
chemical bonds
∞ chemical compounds
ions
low molecular weights
∞ molecular physics
molecular structure
molecular weight
positive ions

monaural signals

RT audio equipment
audio frequencies
auditory perception
auditory signals
loudspeakers
microphones
sound transmission

monazite sands

GS phosphorus compounds
. phosphates
. . **monazite sands**
sediments
. sands
. . **monazite sands**
soils
. sands
. . **monazite sands**
RT minerals
sedimentary rocks

Monel (trademark)

GS alloys
. nickel alloys
. . **Monel (trademark)**

Monge-Ampere equation

GS algebra
. nonlinear equations
. . **Monge-Ampere equation**
analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . elliptic differential equations
. **Monge-Ampere equation**
. . nonlinear equations
. . . **Monge-Ampere equation**
RT boundary value problems
∞ equations

Mongolia

GS nations

. Mongolia

RT Asia

monitors

RT aircraft instruments
analyzers
conical scanning
counters
data recorders
∞ detectors
display devices
environmental monitoring
gas detectors
helmet mounted displays
in-flight monitoring
∞ instruments
∞ measurement
measuring instruments
optical scanners
pollution monitoring
radiation measuring instruments
scanning
warning
warning systems

monkeys

GS animals
. vertebrates
. . mammals
. . . primates
. . . . **monkeys**

monochromatic radiation

SN (LIMITED TO ELECTROMAGNETIC RADIATION)
GS electromagnetic radiation
. **monochromatic radiation**
RT beams (radiation)
Brillouin effect
coherent electromagnetic radiation
coherent light
∞ filters
gamma rays
infrared radiation
ionizing radiation
light (visible radiation)
long wave radiation
monochromatization
monochromators
polarized electromagnetic radiation
polarized light
∞ radiation
radio waves
short wave radiation
ultraviolet radiation
x rays

monochromatization

UF *interference monochromatization*
RT monochromatic radiation
particle energy
polarization (waves)

monochromators

GS measuring instruments
. **monochromators**
radiation sources
. **monochromators**
RT comparators
duochromators
goniometers
light sources
monochromatic radiation
optical equipment
optical measuring instruments
photogoniometers
spectrophotometers

monocoque structures

RT ∞ cylinders
shells (structural forms)
stressed-skin structures
∞ structures

monocrystals

USE **single crystals**

monocular vision

GS vision
. **monocular vision**
RT human factors engineering

motion perception

perception

space perception

monocytes

(added August 2004)

DEF Large, phagocytic mononuclear leukocytes produced in the vertebrate bone marrow and released into the blood; contain a large, oval or somewhat indented nucleus surrounded by voluminous cytoplasm and numerous organelles.

GS cells (biology)

. blood cells

. . leukocytes

. . . **monocytes**

RT biocompatibility
blood cell count
bone marrow
cytology
erythrocytes
immune systems

monoethanolamine (MEA)

GS organic compounds
. amines
. . **monoethanolamine (MEA)**

monoids

GS algebra
. group theory
. . homomorphisms
. . . **monoids**

monolithic circuits

USE **integrated circuits**

monomers

DEF Low molecular weight substances consisting of molecules capable of reacting with like or unlike molecules to form a polymer.

RT dibasic compounds

dimers

molecular chains

oligomers

oxetane polymers

∞ polymers

prepolymers

trimers

monomethylhydrazines

(added February 2001)

UF *MMH (chemistry)*

GS hydrazines

. methylhydrazine

. . **monomethylhydrazines**

RT dimethylhydrazines
hydrazine engines
hypergolic rocket propellants
liquid rocket propellants

monomolecular films

UF *Langmuir monolayers*

GS thin films

. **monomolecular films**

. . Langmuir-Blodgett films

RT energy absorption films

∞ films

integrated optics

∞ layers

molecular electronics

self assembly

surface layers

surfactants

thin layer chromatography

monoplanes

GS **monoplanes**
. A-1 aircraft
. A-2 aircraft
. A-3 aircraft
. A-4 aircraft
. A-5 aircraft
. A-6 aircraft
. A-7 aircraft
. A-37 aircraft
. AN-22 aircraft
. AN-24 aircraft
. Argosy MK-1 aircraft
. AVRO 707 aircraft

- . B-26 aircraft
- . B-47 aircraft
- . B-50 aircraft
- . B-52 aircraft
- . B-57 aircraft
- . B-58 aircraft
- . B-66 aircraft
- . B-70 aircraft
- . BAC 111 aircraft
- . Beechcraft 18 aircraft
- . Boeing 707 aircraft
- . Boeing 720 aircraft
- . Boeing 733 aircraft
- . Boeing 737 aircraft
- . Boeing 757 aircraft
- . Boeing 767 aircraft
- . Breguet 940 aircraft
- . Breguet 941 aircraft
- . Breguet 1150 aircraft
- . Buccaneer aircraft
- . C-2 aircraft
- . C-33 aircraft
- . C-35 aircraft
- . C-46 aircraft
- . C-47 aircraft
- . C-54 aircraft
- . C-118 aircraft
- . C-121 aircraft
- . C-123 aircraft
- . C-124 aircraft
- . C-130 aircraft
- . C-131 aircraft
- . C-133 aircraft
- . C-135 aircraft
- . C-140 aircraft
- . C-141 aircraft
- . C-160 aircraft
- . Canberra aircraft
- . Cessna 172 aircraft
- . Cessna 205 aircraft
- . Cessna 210 aircraft
- . Cessna 402B aircraft
- . Cessna L-19 aircraft
- . CL-41 aircraft
- . CL-44 aircraft
- . Comet 4 aircraft
- . CV-340 aircraft
- . CV-440 aircraft
- . CV-880 aircraft
- . CV-990 aircraft
- . D-558 aircraft
- . DC 3 aircraft
- . DC 7 aircraft
- . DC 8 aircraft
- . DH 112 aircraft
- . DH 115 aircraft
- . DH 121 aircraft
- . DH 125 aircraft
- . DHC 2 aircraft
- . DHC 4 aircraft
- . DHC 5 aircraft
- . DO-27 aircraft
- . DO-28 aircraft
- . DO-31 aircraft
- . Electra aircraft
- . F-2 aircraft
- . F-4 aircraft
- . F-5 aircraft
- . F-8 aircraft
- . F-9 aircraft
- . F-17 aircraft
- . F-27 aircraft
- . F-28 transport aircraft
- . F-84 aircraft
- . F-86 aircraft
- . F-89 aircraft
- . F-94 aircraft
- . F-100 aircraft
- . F-102 aircraft
- . F-104 aircraft
- . F-105 aircraft
- . F-106 aircraft
- . FD 2 aircraft
- . G-1 aircraft
- . G-91 aircraft
- . G-95/4 aircraft
- . G-222 aircraft
- . GA-5 aircraft
- . H-126 aircraft
- . HFB-320 aircraft
- . HP-115 aircraft
- . HS-748 aircraft
- . IL-14 aircraft
- . IL-62 aircraft
- . jet provost aircraft
- . Jindivik target aircraft
- . L-29 jet trainer
- . Lockheed model 18 aircraft
- . MH-262 aircraft
- . Mirage aircraft
- . . Mirage 3 aircraft
- . Boeing 717 aircraft
- . Mystere 20 aircraft
- . Nord 1500 aircraft
- . OV-1 aircraft
- . OV-10 aircraft
- . P-3 aircraft
- . P-51 aircraft
- . P-166 aircraft
- . P-308 aircraft
- . P-1127 aircraft
- . P-1154 aircraft
- . PD-808 aircraft
- . S-2 aircraft
- . S-3 aircraft
- . Saab 105 aircraft
- . SC-1 aircraft
- . SC-5 aircraft
- . SC-7 aircraft
- . Scimitar aircraft
- . SE-210 aircraft
- . Shackleton bomber
- . T-2 aircraft
- . T-28 aircraft
- . T-33 aircraft
- . T-37 aircraft
- . T-38 aircraft
- . T-39 aircraft
- . TS-11 aircraft
- . TSR-2 aircraft
- . TU-104 aircraft
- . TU-124 aircraft
- . TU-134 aircraft
- . U-2 aircraft
- . U-10 aircraft
- . Valiant aircraft
- . VC-10 aircraft
- . Victor MK-1 aircraft
- . Viscount aircraft
- . VJ-101 aircraft
- . X-1 aircraft
- . X-2 aircraft
- . X-3 aircraft
- . X-5 aircraft
- . X-13 aircraft
- . X-14 aircraft
- . X-21 aircraft
- . X-21A aircraft
- . X-31 aircraft
- . XC-142 aircraft
- . XV-4 aircraft
- . XV-5 aircraft
- . YS-11 aircraft
- . Z-37 aircraft
- RT aerodynamic configurations
- ∞ aircraft
- airfoils
- biplanes
- cargo aircraft
- gliders
- ∞ low wing aircraft
- seaplanes
- tailless aircraft
- water takeoff and landing aircraft
- wing planforms
- wing profiles
- ∞ winged vehicles
- monopole antennas**
- UF *spike antennas*
- GS antennas
- . omnidirectional antennas
- . . . **monopole antennas**
- . . . whip antennas
- RT antenna design
- dipole antennas
- loop antennas
- monopoles
- ∞ spikes
- monopoles**
- GS **monopoles**
- . magnetic monopoles
- RT ∞ dipoles
- monopole antennas
- multipoles
- ∞ poles
- monopropellants**
- GS propellants
- . rocket propellants
- . . liquid rocket propellants
- . . . **monopropellants**
- RT aircraft fuels
- chemical fuels
- gaseous rocket propellants
- gelled rocket propellants
- metal propellants
- plastic propellants
- propellant decomposition
- slurry propellants
- solid rocket propellants
- monopulse antennas**
- GS antennas
- . **monopulse antennas**
- RT directional antennas
- phased arrays
- waveguide antennas
- monopulse radar**
- GS radar
- . Doppler radar
- . . pulse Doppler radar
- . . . **monopulse radar**
- . pulse radar
- . . pulse Doppler radar
- . . . **monopulse radar**
- RT Doppler radar
- duplexers
- radar tracking
- tracking radar
- monosaccharides**
- GS organic compounds
- . carbohydrates
- . . sugars
- . . . **monosaccharides**
- hexoses
- galactose
- glucose
- pentose
- ribose
- xylose
- monoscopes**
- GS electron tubes
- . vacuum tubes
- . . cathode ray tubes
- . . . **monoscopes**
- television equipment
- . **monoscopes**
- RT camera tubes
- electron beams
- image tubes
- secondary emission
- ∞ test equipment
- monostable multivibrators**
- GS circuits
- . multivibrators
- . . **monostable multivibrators**
- monotectic alloys**
- DEF Metallic composite materials having a dispersed phase of solidification products distributed within a matrix. The dispersed components can be selected to provide characteristics such as superconductivity or lubricity.
- GS alloys
- . **monotectic alloys**
- RT composite materials
- ∞ matrices
- metal matrix composites
- metals
- monotone functions**
- GS functions (mathematics)

monotony

. monotone functions

RT analysis (mathematics)
calculus
real variables

monotony

RT boredom
lethargy
sensory deprivation

monsoons

DEF Seasonal winds caused primarily by the greater annual variation in air temperature over large land surfaces compared to ocean surfaces though other factors like land-relief are important.

GS wind (meteorology)

. monsoons

RT annual variations
atmospheric circulation
ground wind
Madden-Julian Oscillation
precipitation (meteorology)
sea breeze

Montana

GS nations
. United States
. . **Montana**
RT Bighorn Mountains (MT-WY)
Missouri River (US)
Williston Basin (North America)
Yellowstone National Park
(ID-MT-WY)

Monte Carlo method

GS analysis (mathematics)
. numerical analysis
. . **Monte Carlo method**
RT diffusion theory
expectancy hypothesis
game theory
Markov chains
mathematical models
∞ methodology
probability theory
random processes
random walk
renormalization group methods
simulation
statistical analysis
stochastic processes
transport theory

Monterey Bay (CA)

GS bays (topographic features)
. **Monterey Bay (CA)**
RT California
Pacific Ocean

month

DEF The period of the revolution of the Moon around the Earth. The month is designated as sidereal, tropical, anomalistic, draconic, or synodical, according to whether the revolution is relative to the stars, the vernal equinox, the perigee, the ascending node, of the sun. The calendar month, which is a rough approximation of the synodical month. Used for lunation.

UF *lunation*

RT calendars
time
units of measurement

monticellite

GS calcium compounds
. **monticellite**
magnesium compounds
. **monticellite**
minerals
. **monticellite**
silicon compounds
. silicates
. . **monticellite**
RT olivine

montmorillonite

DEF A group of monoclinic silicate clay minerals with widely varying compositions, and characterized by swelling in water.

UF *smectite*
GS aluminum compounds
. aluminum silicates
. . **montmorillonite**
clays

. montmorillonite

minerals
. **montmorillonite**
silicon compounds
. silicates
. . aluminum silicates
. . . **montmorillonite**

RT bentonite

moods

RT emotional factors
emotions
melatonin
psychological effects
psychological factors
sensory feedback

moon

DEF The natural satellite of the Earth.

GS celestial bodies
. natural satellites
. . **moon**

RT Earth-Moon system
light sources
lunar atmosphere
lunar bases
lunar communication
lunar composition
lunar craters
lunar crust
lunar dust
lunar eclipses
lunar environment
lunar evolution
lunar exploration
lunar far side
lunar geology
lunar gravitation
lunar landing sites
lunar limb
lunar luminescence
lunar magnetic fields
lunar maps
lunar occultation
lunar orbits
lunar phases
lunar photography
lunar rays
lunar shadow
lunar soil
lunar temperature
lunar topography
selenography
selenology
terraforming

moon illusion

GS psychological effects
. illusions
. . **moon illusion**
RT optical illusion
sensory feedback

moon-Earth trajectories

GS trajectories
. spacecraft trajectories
. . lunar trajectories
. . . **moon-Earth trajectories**
RT Apollo 5 flight
Apollo 6 flight
Apollo 7 flight
Apollo 8 flight
Apollo 10 flight
Apollo 11 flight
Apollo 12 flight
Apollo 13 flight
Apollo 14 flight
Apollo 15 flight
Apollo 16 flight
Apollo 17 flight
circumlunar trajectories
Earth-Moon trajectories
Goddard Trajectory Determination System
lunar flight

mass drivers
orbital mechanics
reentry trajectories
round trip trajectories
transfer orbits

moonlets

(added July 1989)

GS celestial bodies

. moonlets

RT Jupiter rings
natural satellites
planetary rings
Saturn rings
Uranus rings

moonquakes

GS seismology

. moonquakes

RT lunar geology
lunar tides
planetary quakes
selenology

moons

USE **natural satellites**

mooring

UF *moorings*

RT airports
anchors (fasteners)
autonomous docking
docking
fasteners
∞ joining
materials handling
multiple docking adapters
spacecraft docking

moorings

USE **mooring**

MOPS (propulsion systems)

USE **man operated propulsion systems**

moraines

USE **glacial drift**

morale

RT creativity
disciplining
leadership
motivation
productivity
psychology
recreation

Morehouse comet

GS celestial bodies
. comets
. . **Morehouse comet**
RT solar system

MORL

USE **manned orbital laboratories**

morning

RT daytime
sunrise

Morocco

GS nations
. **Morocco**
RT Africa

morphine

GS bases (chemical)
. alkaloids
. . **morphine**
drugs
. narcotics
. . **morphine**
nitrogen compounds
. alkaloids
. . **morphine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . alkaloids

- **morphine**
- morphological indexes**
 - GS ratios
 - . indexes (ratios)
 - . . **morphological indexes**
- RT morphology
- morphology**
 - GS **morphology**
 - . crystal morphology
 - . geomorphology
 - . isomorphism
 - . lung morphology
 - . polymorphism
- RT anatomy
- ∞ biology
 - differentiation (biology)
 - geology
 - histology
- ∞ mathematics
 - morphological indexes
 - shapes
 - vestibules
- morphotropism*
- USE **isomorphism**
- Morse code**
 - RT ∞ codes
 - communicating
 - keying
 - radio telegraphy
 - telecommunication
- Morse potential**
 - RT diatomic molecules
 - kinetic theory
 - potential energy
- mortality**
 - RT aging (biology)
 - death
 - expiration
 - life span
 - Mills ratio
- mortars (material)**
 - RT admixtures
 - bricks
 - cements
 - ceramics
 - concretes
 - grout
 - masonry
 - plasters
 - refractories
- MOS (Japanese spacecraft)*
- USE **Japanese spacecraft**
- MOS (semiconductors)*
- USE **metal oxide semiconductors**
- mosaics**
 - RT assemblies
 - diffraction
 - focal plane devices
 - photographs
- Moscow**
 - GS cities
 - . **Moscow**
- RT Russian Federation
- U.S.S.R.
- MOSFET*
- USE **field effect transistors**
- MOSS (space stations)*
- USE **space stations**
- Mossbauer effect**
 - RT crystal lattices
 - ∞ effects
 - electromagnetic absorption
 - fluorescence
 - gamma rays
 - laser induced fluorescence
 - resonance scattering
- resonant frequencies
- mosses*
- USE **Bryophytes**
- MOT (orbital telescopes)*
- USE **manned orbital telescopes**
- moths**
 - GS animals
 - . invertebrates
 - . . arthropods
 - . . . insects
 - **moths**
 - silkworms
- RT bollworms
- infestation
- motility*
- USE **locomotion**
- ∞ **motion**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF The act, process or instance of change of position. Also called movement, especially when used in connection with problems involving the motion of one craft relative to another.
 - Used for movement.
 - UF *movement*
 - GS **motion**
 - . proper motion
 - acceleration (physics)
 - attitude (inclination)
 - Brownian movements
 - coning motion
 - displacement
 - domain wall
 - gliding
 - gyration
 - harmonic motion
 - head movement
 - heaving
 - high acceleration
 - immobilization
 - inertia
 - ion motion
 - ionic mobility
 - kinematics
 - libration
 - librational motion
 - momentum
 - nutaton
 - orbits
 - oscillations
 - oscillators
 - particle motion
 - particle trajectories
 - pitch (inclination)
 - rotation
 - Saccadic eye movements
 - solar orbits
 - spacecraft motion
 - spacecraft trajectories
 - stellar motions
 - swarming
 - teetering
 - transit time
 - translational motion
 - tumbling motion
 - turbulence
 - velocity
 - vertical motion
 - vertical motion simulators
 - vibration
 - viscosity
 - yaw
- motion aftereffects**
 - RT equations of motion
 - kinetics
 - momentum
- motion equations*
- USE **equations of motion**
- motion perception**
 - GS perception
 - . **motion perception**
- RT binocular vision
- monocular vision
- visual perception
- motion pictures**
 - UF *cinelfluorography*
 - cineradiography*
 - photographs
 - . **motion pictures**
- RT animation
- chronophotography
- cinematography
- computer animation
- graphic arts
- projectors
- supplements
- video equipment
- video tapes
- motion sickness**
 - DEF The syndrome of pallor, sweating, nausea, and vomiting which is induced by unusual acceleration. Used for air sickness.
 - UF *air sickness*
 - GS sicknesses
 - . **motion sickness**
- RT acceleration stresses (physiology)
- aerospace medicine
- dizziness
- head movement
- nausea
- space adaptation syndrome
- vomiting
- motion sickness drugs**
 - GS drugs
 - . **motion sickness drugs**
- RT pharmacology
- motion simulation**
 - DEF Replication of exact motion or replication of part of a motion to provide the sensation of the motion.
 - GS simulation
 - . **motion simulation**
- RT flight simulation
- flight simulators
- motion simulators
- virtual reality
- motion simulators**
 - GS simulators
 - . **motion simulators**
- RT computerized simulation
- control simulation
- flight simulators
- motion simulation
- space environment simulation
- test facilities
- motion stability**
 - GS dynamic characteristics
 - . dynamic stability
 - . . **motion stability**
 - . . . aerodynamic stability
 - . . . aircraft stability
 - . . . hovering stability
 - . . . attitude stability
 - directional stability
 - gyroscopic stability
 - lateral stability
 - longitudinal stability
 - . . . flow stability
 - boundary layer stability
 - . . . flame stability
 - . . . magnetohydrodynamic stability
 - Weibel instability
 - Goertler instability
 - . . . Taylor instability
 - . . . low speed stability
 - . . . rotary stability
 - . . . gyroscopic stability
 - . . . spacecraft stability
 - stability
 - . dynamic stability
 - . . **motion stability**
 - . . . aerodynamic stability
 - . . . aircraft stability
 - . . . hovering stability
 - . . . attitude stability
 - . . . directional stability

motivation

- gyroscopic stability
- lateral stability
- longitudinal stability
- flow stability
- boundary layer stability
- flame stability
- magnetohydrodynamic stability
- Weibel instability
- Goertler instability
- Taylor instability
- low speed stability
- rotary stability
- gyroscopic stability
- spacecraft stability

RT combustion stability
coning motion
control stability
dynamic tests
roughness
sea keeping
spacecraft motion
stable oscillations
surface stability

motivation

GS **motivation**
. contract incentives

RT ∞ drives
incentives
learning
morale
reinforcement (psychology)
self stimulation
∞ stimuli

motor skills

(added August 2004)
USE **sensorimotor performance**

motor systems (biology)

USE **efferent nervous systems**

motor vehicles

DEF Automotive vehicles that do not run on rails, generally having rubber tires.

GS surface vehicles
. **motor vehicles**
. . . automated mixed traffic vehicles
. . . automobiles
. . . electric automobiles
. . . electric motor vehicles
. . . electric automobiles
. . . tractors
. . . crawler tractors
. . . tracked vehicles
. . . trucks
. . . tank trucks

RT transportation
∞ vehicles

motors

SN (LIMITED TO MACHINES SUPPLIED WITH EXTERNAL ENERGY WHICH IS CONVERTED INTO FORCE AND/OR MOTION--SEE ENGINES FOR MACHINES WITH SELF-CONTAINED POWER SOURCES)

DEF Machines supplied with external energy which is converted into force and/or motion.

GS **motors**
. electric motors
. . asynchronous motors
. . induction motors
. . micromotors
. . piezoelectric motors
. . stepping motors
. . synchronous motors
. . torque motors
. . servomotors

RT apogee boost motors
∞ electric equipment
energy conversion efficiency
engines
∞ generators
hydraulic equipment

stators

MOTS (tracking system)
USE **minitrack system**

mountain inhabitants

GS communities
. inhabitants
. . **mountain inhabitants**
altitude acclimatization
high altitude environments
low temperature environments

RT

mountains

GS landforms
. **mountains**
. . Adirondack Mountains (NY)
. . Alps Mountains (Europe)
. . Andes Mountains (South America)
. . Appalachian Mountains (North America)
. . Bighorn Mountains (MT-WY)
. . Black Hills (SD-WY)
. . Carpathian Mountains (Europe)
. . Cascade Range (CA-OR-WA)
. . Caucasus Mountains (U.S.S.R.)
. . coastal ranges (CA)
. . Great Smoky Mountains (NC-TN)
. . Himalayas
. . Peninsular Ranges (CA)
. . Pyrenees Mountains (Europe)
. . Rocky Mountains (North America)
. . San Juan Mountains (CO)
. . Sierra Nevada Mountains (CA)
. . Wind River Range (WY)
. . Wrangell Mountains (AK)

RT Central Piedmont (US)
cirques (landforms)
cones (volcanoes)
continents
divides (landforms)
formations
gaps (geology)
geomorphology
highlands
Mars volcanoes
massifs
mesas
orography
∞ peaks
peaks (landforms)
piedmonts
Pike's Peak (CO)
∞ ridges
terraces (landforms)
volcanoes
volcanology
watersheds

RT

mounting

GS **mounting**
. rigid mounting

RT assembling
∞ attachment
brackets
∞ joining
suspending (hanging)

mounts

USE **supports**

mouth

GS anatomy
. digestive system
. . **mouth**
. . . lips (anatomy)
. . face (anatomy)
. . **mouth**
. . . lips (anatomy)

RT salivary glands
teeth
tongue

movement

USE **motion**

moving target indicators

DEF Radar devices that employ a technique that enhances the detection and display of moving radar targets by suppressing fixed targets.

Doppler processing is one method of implementation. Used for MTI indicators.

UF *MTI radar*
GS radar
. **moving target indicators**
RT cancellation circuits
coherent radar
Doppler radar
over-the-horizon radar
radar cross sections
radar tracking
target acquisition

Mozambique

GS nations
. **Mozambique**
RT Africa

MPD thrusters

(added April 2001)
USE **magnetoplasmadynamic thrusters**

MPLM (International Space Station)

(added April 2005)
USE **Multi-Purpose Logistics Modules**

MPP (computers)

USE **massively parallel processors**

MR-3 flight

USE **Mercury MR-3 flight**

MRAC (systems)

USE **model reference adaptive control**

MRCA aircraft

UF *multi-role combat aircraft*
Tornado aircraft

RT ∞ aircraft
attack aircraft
fighter aircraft
∞ military aircraft

Mrkos comet

GS celestial bodies
. comets
. . **Mrkos comet**
RT solar system

MSAT

DEF A joint Canada/United States mobile satellite system which is being developed with a voice and data communication link between mobile units and the switched telephone network or between mobile units and other mobile units via satellite. Each country will have a satellite capable of mutual backup. Launch date is planned for 1994.

GS artificial satellites
. communication satellites
. . **MSAT**
RT ground stations
land mobile satellite service
maritime satellites
mobile communication systems
radio communication
radio relay systems
satellite transmission

MSBLS

USE **microwave scanning beam landing system**

MSM (semiconductors)

DEF Semiconductor devices consisting of a semiconductor layer sandwiched between two layers of metal. Used for metal-semiconductor-metal semiconductors.

UF *metal-semiconductor-metal semiconductors*

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **MSM (semiconductors)**

RT MIM diodes
photodiodes
Schottky diodes
semiconductor junctions

SIS (semiconductors)

MSRE reactors
 USE **molten salt nuclear reactors**

*MSS (International Space Station)
 (added September 2001)*
 USE **Space Station Mobile Servicing System**

MTBF
 DEF The mean of the distribution of time (or cycles, miles, events) between successive failure. MTBF is often estimated by dividing the total operating time for like items by the total number of failures encountered. Used for mean time between failures.
 UF *mean time between failures*
 GS time
 . **MTBF**
 RT downtime
 failure analysis
 failure modes
 life (durability)
 rates (per time)
 reliability
 statistical analysis

MTF
 USE **modulation transfer function**

MTFF (space station)
 USE **man tended free flyers**

MTI radar
 USE **moving target indicators**

MTPE
 USE **Mission to Planet Earth**

MUBIS (scanners)
 USE **multiple beam interval scanners**

mucocoeles
 GS cysts
 . **mucocoeles**
 RT ∞ blisters

mucus
 GS body fluids
 . **mucus**
 RT saliva

mud
 GS sediments
 . **mud**
 soils
 . **mud**
 RT alluvium
 clays
 fans (landforms)
 grout
 ocean bottom
 rain erosion
 sludge
 tidal flats

mufflers
 RT acoustic retrofitting
 aircraft noise
 attenuators
 baffles
 damping
 ∞ diffusers
 exhaust systems
 furnaces
 jet aircraft noise
 noise (sound)
 noise reduction
 propeller noise
 rocket engine noise
 silencers
 suppressors

mulberry (alloy)
 GS alloys
 . **mulberry (alloy)**
 RT antimony alloys

molybdenum alloys

mullites
 RT aluminum silicates
 minerals

*Multi-angle Imaging Spectroradiometer
 (added May 2007)*
 USE **MISR (radiometry)**

multi-anode microchannel arrays
 DEF A family of photoelectric, photon counting array detectors being developed for use in instruments on both ground based and spaceborne telescopes.
 GS arrays
 . **multi-anode microchannel arrays**
 RT anodes
 microchannels
 radiation detectors
 spaceborne telescopes
 telescopes
 x ray detectors

multibeam antennas
 DEF Antennas that have the ability to form more than one beam from a single radiating aperture.
 GS antennas
 . **multibeam antennas**
 RT beams (radiation)
 lens antennas
 microwave antennas
 reflector antennas
 satellite antennas
 satellite communication

multiblock grids
 (added May 1995)
 UF *multiple blocked grids*
 GS coordinates
 . computational grids
 . . structured grids (mathematics)
 . . . **multiblock grids**
 RT computational fluid dynamics

multichannel communication
 GS telecommunication
 . **multichannel communication**
 RT code division multiple access
 interference factor table
 multiple access
 radio transmitters
 teleconferencing
 time division multiple access

multichannel plates
 USE **microchannel plates**

multicharged ions
 USE **ions**

multidisciplinary design optimization
 (added January 1995)
 DEF Methodology for the design of complex engineering systems and subsystems in which the synergistic effects of coupling between various interacting disciplines and phenomena are analyzed and exploited at every stage of the design process.
 GS optimization
 . **multidisciplinary design optimization**
 RT aircraft design
 architecture (computers)
 computer aided design
 design analysis
 genetic algorithms
 systems engineering
 Taguchi methods

multidisciplinary research
 (added January 1995)
 DEF Research by combining several (academic) disciplines or methods.
 GS research
 . **multidisciplinary research**
 RT concurrent engineering
 management methods
 operations research

project management
 research management

multiengine vehicles
 RT ∞ aircraft
 B-1 aircraft
 launch vehicles
 light transport aircraft
 missile configurations
 missiles
 multistage rocket vehicles
 recoverable launch vehicles
 rocket vehicles
 ∞ vehicles

multigrid methods
 (added September 1989)
 DEF A numerical technique which attempts to accelerate the convergence of an iterative process by computing corrections to the solution on coarser meshes and propagating these changes to the fine mesh through interpolation.
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **multigrid methods**
 RT computational fluid dynamics
 computational grids
 finite difference theory
 finite element method
 grid generation (mathematics)
 iteration
 iterative solution
 ∞ methodology
 unstructured grids (mathematics)

multilayer insulation
 GS insulation
 . **multilayer insulation**
 interlayers
 . **multilayer insulation**
 RT composite materials
 cryogenic fluid storage
 fabrics
 ∞ foils
 foils (materials)
 laminates
 ∞ layers
 metal foils
 ply orientation
 sandwich structures
 ∞ sheets

multilayer structures
 USE **laminates**

multiloop systems
 USE **cascade control**

multimedia
 (added March 1993)
 UF *hypermedia*
interactive multimedia
intermedia
 RT audio visual equipment
 audio visual material
 computer graphics
 electronic publishing
 graphic arts
 imaging techniques
 information systems
 teleconferencing
 training devices
 video communication
 video data
 video tape recorders
 video tapes
 visual aids
 voice communication

multimission modular spacecraft
 DEF Future spacecraft to be operated in conjunction with the Space Shuttle orbiter vehicle and serviced by its module exchange mechanism. Used for MMS.
 UF *MMS*
 RT BESS (satellite)
 Landsat follow-on missions
 satellite networks

multimode resonators

Solar Maximum Mission

multimode resonators

- GS resonators
 - . multimode resonators
- RT cavity resonators
- magnetrons
- propagation modes

multipactor discharges

- GS electric current
 - . electric discharges
 - . . . multipactor discharges
- RT linear accelerators
- photomultiplier tubes
- secondary emission
- spark gaps

multipath transmission

DEF The process, or condition, in which radiation travels between source and receiver via more than one path. Since there can be only one direct path, some process of reflection, refraction or scattering must be involved.

- GS transmission
 - . electromagnetic wave transmission
 - . . . radio transmission
 - multipath transmission
 - . signal transmission
 - . . . radio transmission
 - multipath transmission
- RT cepstral analysis
- diffraction paths
- Fermat principle
- multistatic radar
- optical paths
- ∞ paths
- radio waves
- Rayleigh fading
- sound transmission
- wave propagation

multiphase flow

- UF *mixed flow*
- GS fluid flow
 - . multiphase flow
 - . . . two phase flow
- RT conical flow
- critical flow
- Crocco-Lee theory
- flow distortion
- flow measurement
- gas flow
- laminar flow
- liquid flow
- mass flow
- orifice flow
- pipe flow
- pressure gradients
- single-phase flow
- solids flow
- steady flow
- steam flow
- subcritical flow
- supercritical flow
- turbulent flow
- uniform flow
- unsteady flow

multiphoton absorption

DEF Ionization and dissociation of a molecule under the action of powerful laser radiation. Laser-flux dependent light intensities emitted by different excited states of the molecule indicate the various absorption processes.

- GS energy absorption
 - . radiation absorption
 - . . . electromagnetic absorption
 - multiphoton absorption
- RT ∞ absorption
- photon absorptiometry

multiple access

DEF The allocation of communication system resources (output) among multiple users by means of power, bandwidth, and power assignment singly or in combination.

- GS telecommunication
 - . multiple access
 - . . . Aloha system

- . . carrier sense multiple access
- . . code division multiple access
- . . demand assignment multiple access
- . . frequency division multiple access
- . . time division multiple access
- transmission
 - . signal transmission
 - . . data transmission
 - . . . multiple access
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - frequency division multiple access
 - time division multiple access
- RT access control
- frequency division multiplexing
- multichannel communication
- packet switching
- pulse communication
- wideband communication

multiple beam interval scanners

- UF *MUBIS (scanners)*
- GS antennas
 - . multiple beam interval scanners
- RT linear arrays
- radar scanning

multiple blocked grids

- USE multiblock grids

multiple docking adapters

- UF *MDA*
- GS adapters
 - . multiple docking adapters
- RT airlock modules
- docking
- mooring
- orbital rendezvous
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn workshops
- Skylab 1
- Skylab 2
- Skylab 3
- Skylab 4
- spacecraft docking

multiple frequency radar

- USE multispectral radar

multiple input multiple output

- USE MIMO (control systems)

multiple instruction multiple data stream

- USE MIMD (computers)

multiple output programs

- GS computer programs
 - . multiple output programs
- RT multiprogramming
- readout
- time sharing

multiple target tracking

(added August 1991)

DEF The process of following movements of several targets simultaneously.

- GS tracking (position)
 - . multiple target tracking
- RT optical tracking
- radar targets
- radar tracking
- target acquisition
- target recognition
- targets
- tracking filters

tracking problem

multiple target trajectory systems

- USE MATTS (systems)

multiplets

- USE fine structure

multiplex transmission

- USE multiplexing

multiplexers

- USE multiplexing

multiplexing

DEF The simultaneous transmission of two or more signals within a single channel. The three basic methods of multiplexing involve the separation of signals by time division, frequency division, and phase division. Used for multiplex transmission and multiplexers.

- UF *multiplex transmission multiplexers*

GS

- transmission
 - . multiplexing
 - . . . code division multiplexing
 - . . . frequency division multiplexing
 - . . . time division multiplexing
 - . . . wavelength division multiplexing

RT

- access control
- carrier frequencies
- code division multiple access
- data transmission
- demultiplexing
- frequency division multiple access
- pulse communication
- radio transmission
- satellite transmission
- signal transmission

multiplication

- GS number theory
 - . multiplication
- RT arithmetic
- computation
- fringe multiplication

multiplier phototubes

- USE photomultiplier tubes

multipliers

DEF Devices which have two or more inputs and whose output is a representation of the product of the quantities represented by the input signals.

- GS multipliers
 - . channel multipliers
- RT Lagrange multipliers
- logic circuits
- photomultiplier tubes

multipolar fields

- RT continuum mechanics
- field theory (physics)
- gravitational fields
- magnetic fields
- multipoles

multipoles

- RT monopoles
- multipolar fields

multiprocessing (computers)

- GS data processing
 - . multiprocessing (computers)
- RT associative processing (computers)
- computers
- concurrent processing
- Connection Machine
- data processing equipment
- distributed memory
- hypercube multiprocessors
- interprocessor communication
- multiprogramming
- parallel programming
- pipelining (computers)
- real time operation
- supercomputers
- time sharing

vector processing (computers)

terrain analysis

RT remote sensing

multiprogramming

- UF *multitasking (computers)*
- GS computer programming
 - . **multiprogramming**
- RT machine-independent programs
 - . multiple output programs
 - . multiprocessing (computers)
 - . pipelining (computers)
- ∞ programming
 - . time sharing

multipropellants

USE **rocket propellants**

Multi-Purpose Logistics Modules

(added March 2005)

DEF Pressurized logistics modules built by the Italian Space Agency ASI for NASA to transport systems and experiment racks, and resupply/stowage items to and from the International Space Station (ISS) in the cargo bay of the Space Shuttle. Also known as MPLM.

- UF *Donatello Logistics Module (ISS)*
- UF *Leonardo Logistics Module (ISS)*
- UF *MPLM (International Space Station)*
- UF *Raffaello Logistics Module (ISS)*
- GS modules
 - . service modules
 - . . **Multi-Purpose Logistics Modules**
 - . space station modules
 - . . **Multi-Purpose Logistics Modules**
 - . spacecraft components
 - . service modules
 - . . **Multi-Purpose Logistics Modules**
- RT cargo
 - . International Space Station
 - . payload delivery (STS)
 - . Space Shuttle payloads
 - . spaceborne experiments
 - . spacecraft docking modules

multiradar tracking

USE **radar networks**

multi-role combat aircraft

USE **MRCAs aircraft**

multiscale models

(added November 2002)

DEF Models or simulations that effectively address phenomena across significantly different scales.

- GS models
 - . **multiscale models**
- RT computerized simulation
 - . mathematical models
 - . scale effect
 - . scale models

multisensor applications

- GS **multisensor applications**
 - . multisensor fusion
- RT enhanced vision
 - . image processing
 - . imaging techniques
 - . intercalibration
 - . pattern recognition
 - . remote sensing
 - . remote sensors

multisensor fusion

(added October 1994)

DEF A combination of data or images from more than one sensor source (or from multispectral sensors) for display as a single image.

- UF *data fusion*
- UF *sensor fusion*
- GS multisensor applications
 - . **multisensor fusion**
- RT data integration
 - . fuzzy systems
 - . imaging techniques
 - . remote sensing
 - . robotics
 - . signal processing

multispectral band cameras

- GS optical equipment
 - . cameras
 - . . **multispectral band cameras**
- photographic equipment
 - . cameras
 - . . **multispectral band cameras**
- RT infrared photography
 - . photography

multispectral band scanners

- GS optical equipment
 - . optical scanners
 - . . **multispectral band scanners**
 - . . . thematic mappers (LANDSAT) scanners
 - . . . optical scanners
 - . . . **multispectral band scanners**
 - . . . thematic mappers (LANDSAT)
- RT band ratioing
 - . change detection
 - . Coastal Zone Color Scanner
 - . Earth observations (from space)
 - . imaging techniques
 - . infrared scanners
 - . ocean color scanner
 - . panoramic scanning
 - . photography
 - . radiometric correction
 - . radiometric resolution
 - . scanning
 - . spaceborne photography
 - . spectral reconnaissance
 - . vegetative index

multispectral linear arrays

DEF Large number of interconnected solid state detectors in a pushbroom mode wherein the forward motion of the vehicle (spacecraft) sweeps the assembly of detectors which are oriented perpendicular to the ground track. Used for MLA.

- UF *MLA*
- GS arrays
 - . antenna arrays
 - . . linear arrays
 - . . . **multispectral linear arrays**
 - . . . electronic equipment
 - . . . solid state devices
 - . . . **multispectral linear arrays**
 - . . . spacecraft instruments
 - . . . satellite instruments
 - . . . **multispectral linear arrays**
- RT ∞ detectors
 - . ∞ sensors

multispectral photography

- GS imagery
 - . photography
 - . . **multispectral photography**
 - . . . infrared photography
 - . . . color infrared photography
 - . . . radar photography
- RT change detection
 - . crop identification
 - . Earth observations (from space)
 - . I2S cameras
 - . image resolution
 - . imaging techniques
 - . spectral reconnaissance

multispectral radar

- UF *dual frequency radar*
- UF *multiple frequency radar*
- GS radar
 - . **multispectral radar**
- RT imagery
 - . imaging techniques
 - . spectral reconnaissance

Multispectral Resource Sampler

DEF An experimental remote sensing instrument for satellites to measure both intensity and polarization at several wavelengths. The first one was launched in the late 1980s.

- GS artificial satellites
 - . **Multispectral Resource Sampler**

multispectral tracking telescopes

- GS telescopes
 - . spectroscopic telescopes
 - . . **multispectral tracking telescopes**
- RT optical measuring instruments
 - . optical tracking
 - . tracking (position)

multistage compressors

USE **turbocompressors**

multistage rocket vehicles

DEF Vehicles having two or more rocket units, each unit firing after the one in back of it has exhausted its propellant. Normally, each unit, or stage, is jettisoned after completing its firing.

- GS rocket vehicles
 - . **multistage rocket vehicles**
 - . . Ablestar launch vehicle
 - . . Antares rocket vehicle
 - . . Argo rocket vehicles
 - . . Astrobee rocket vehicles
 - . . . Astrobee 1500 rocket vehicle
 - . . Athena rocket vehicle
 - . . Atlas launch vehicles
 - . . . Atlas Able 5 launch vehicle
 - . . . Atlas Agena B launch vehicle
 - . . . Atlas Agena launch vehicles
 - . . . Atlas Centaur launch vehicle
 - . . . Atlas SLV-3 launch vehicle
 - . . Berenice rocket vehicle
 - . . Black Knight rocket vehicle
 - . . Blue Scout rocket vehicle
 - . . Diamant launch vehicle
 - . . Eldo launch vehicle
 - . . EXOS sounding rocket
 - . . Jaguar rocket vehicle
 - . . Javelin rocket vehicle
 - . . Juno launch vehicles
 - . . . Juno 1 launch vehicle
 - . . . Juno 2 launch vehicle
 - . . Jupiter C rocket vehicle
 - . . Kappa rocket vehicles
 - . . . Kappa 8 rocket vehicle
 - . . . Kappa 9 rocket vehicle
 - . . Lambda rocket vehicles
 - . . Little Joe 2 launch vehicle
 - . . Nike rocket vehicles
 - . . . Nike-Apache rocket vehicle
 - . . . Nike-Cajun rocket vehicle
 - . . . Nike-Hydac rocket vehicle
 - . . . Nike-Iroquois rocket vehicle
 - . . . Nike-Javelin rocket vehicle
 - . . . Nike-Tomahawk rocket vehicle
 - . . Nova launch vehicles
 - . . Pegasus air-launched booster
 - . . Phoenix sounding rocket
 - . . RAM B launch vehicle
 - . . Rubis rocket vehicle
 - . . Saturn launch vehicles
 - . . . Saturn 1 launch vehicles
 - Saturn 1 SA-1 launch vehicle
 - Saturn 1 SA-10 launch vehicle
 - Saturn 1 SA-2 launch vehicle
 - Saturn 1 SA-3 launch vehicle
 - Saturn 1 SA-4 launch vehicle
 - Saturn 1 SA-5 launch vehicle
 - Saturn 1 SA-6 launch vehicle
 - Saturn 1 SA-7 launch vehicle
 - Saturn 1 SA-8 launch vehicle
 - Saturn 1 SA-9 launch vehicle
 - . . . Saturn 1B launch vehicles
 - . . . Saturn 2 launch vehicles
 - . . . Saturn 5 launch vehicles
 - . . . Saturn D launch vehicle
 - . . Scout launch vehicle
 - . . Skylark rocket vehicle
 - . . Thor launch vehicles
 - . . . Thor Able rocket vehicle
 - . . . Thor Agena launch vehicle
 - . . . Thor Delta launch vehicle
 - . . Titan launch vehicles
 - . . . Titan 3 launch vehicle
 - . . . Titan 4 launch vehicle
 - Titan 4B launch vehicle
 - . . Ares 1 launch vehicle

multistatic radar

- . . vanguard 2 launch vehicle
- . . Vega launch vehicle
- . . WASP sounding rocket
- . . . Ares 1 first stage
- . . . Ares 1 upper stage
- . . Ares 5 cargo launch vehicle
- RT air launching
- expendable stages (spacecraft)
- interim stages (spacecraft)
- launch vehicles
- Minuteman ICBM
- multiengine vehicles
- Navaho missile
- payload mass ratio
- Pershing missile
- piggyback systems
- polaris missiles
- propulsive efficiency
- rocket engines
- SS-11 missile
- stage separation
- Sunblazer space probe
- Talos missile
- terrier missile
- Titan ICBM
- Trailblazer 1 reentry vehicle
- Trailblazer 2 reentry vehicle
- upper stage rocket engines
- ∞ vehicles

multistatic radar

DEF System in which successive lobes of the antenna are sequentially engaged to provide a tracking capability without physical movement of the antenna. Used for bistatic radar.

UF *bistatic radar*

GS radar

- . Doppler radar
- . . **multistatic radar**
- . surveillance radar
- . . **multistatic radar**

RT multipath transmission

- pulse radar
- radar detection
- target recognition

multitasking (computers)

USE **multiprogramming**

multitemporal analysis

USE **temporal resolution**

multivariable control

(added July 1991)

RT ∞ control

- control theory
- feedback control
- linear parameter-varying control
- optimal control

multivariate statistical analysis

GS statistical analysis

- . variance (statistics)
- . . **multivariate statistical analysis**
- . . . bivariate analysis
- . . . covariance
- . . . orthogonality
- . . . regression analysis
- . . . regression coefficients

RT ∞ analyzing

- correlation
- discriminant analysis (statistics)

∞ variance

multivibrators

DEF Two-stage regenerative circuits with two possible states and an abrupt transition characteristic.

GS circuits

- . **multivibrators**
- . . flip-flops
- . . monostable multivibrators

RT amplifiers

- bistable circuits
- logic circuits
- oscillators
- positive feedback
- switching circuits

trigger circuits

muon spin rotation

DEF Particle spin depolarization caused by sensitivity of muon spin to the presence of defects in certain metals.

GS gyration

. rotation

. . **muon spin rotation**

RT charged particles

- hyperfine structure
- muons
- particle diffusion
- particle spin
- precession

muonium

RT electrons

mesons

muons

GS particles

- . elementary particles
- . . bosons
- . . . mesons
- **muons**
- . . fermions
- . . . leptons
- **muons**
- . . hadrons
- . . . mesons
- **muons**
- . . nuclear particles
- . . bosons
- . . . mesons
- **muons**

RT baryons

- charged particles
- electron decay rate
- muon spin rotation

Murchison meteorite

GS celestial bodies

- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- **Murchison meteorite**
- . . . chondrites
- carbonaceous chondrites
- **Murchison meteorite**

Murray meteorite

GS celestial bodies

- . meteorites
- . . stony meteorites
- . . . carbonaceous meteorites
- carbonaceous chondrites
- **Murray meteorite**
- . . . chondrites
- carbonaceous chondrites
- **Murray meteorite**

muscle cells

(added December 2004)

DEF Mature contractile cells, commonly known as myocytes, that form one of three kinds of muscle. The three types of muscle cells are skeletal (muscle fibers), cardiac, and smooth. They are derived from embryonic (precursor) muscle cells called myoblasts.

UF *myocytes*

GS cells (biology)

- . **muscle cells**
- . . muscle fibers

RT muscles

- muscular function
- musculoskeletal system
- myoelectricity
- myosins
- smooth muscle

muscle contraction

(added August 2004)

USE **muscular function**

muscle fibers

(added August 2004)

DEF Large, multinucleate single cells, either cylindrical or prismatic in shape, that form the

basic unit of skeletal muscle tissue. They consist of a soft contractile substance enclosed in a tubular sheath.

UF *skeletal myocytes*

GS cells (biology)

- . muscle cells

- . . **muscle fibers**

RT muscles

- musculoskeletal system
- myosins
- skeletal muscle

muscle relaxants

GS drugs

- . **muscle relaxants**

muscles

GS anatomy

- . musculoskeletal system
- . . **muscles**
- . . . constrictors
- . . . diaphragm (anatomy)
- . . . flexors
- . . . myocardium
- . . . skeletal muscle
- . . . smooth muscle
- . . . tendons

RT aldolase

- ataxia
- congeners
- convulsions
- electrocardiography
- fibrillation
- glucocorticoids
- heart
- hypodynamia
- muscle cells
- muscle fibers
- muscular fatigue
- muscular strength
- muscular tonus
- myoelectric potentials
- myoelectricity
- myoglobin
- myosins
- spasms
- twitching

muscovite

DEF An important mineral of the mica group.

GS aluminum compounds

- . **muscovite**
- . chalcogenides
- . oxides
- . . silicon oxides
- . . . **muscovite**
- . minerals
- . mica
- . . **muscovite**
- . silicon compounds
- . silicon oxides
- . . **muscovite**

muscular fatigue

GS fatigue (biology)

- . **muscular fatigue**

RT muscles

- musculoskeletal system
- stress (physiology)

muscular function

UF *muscle contraction*

GS **muscular function**

- . spasms

RT cramps

∞ functions

- hypodynamia
- hypokinesia
- hypotonia
- mechanograms
- muscle cells
- myosins
- smooth muscle
- twitching

muscular strength

RT muscles

- musculoskeletal system
- skeletal muscle

∞ strength

muscular tonus

- UF *tonus*
- GS **muscular tonus**
 - . hypotonia
- RT exercise physiology
 - muscles

musculoskeletal system

- UF *skeleton*
- GS anatomy
 - . **musculoskeletal system**
 - . . bones
 - . . . femur
 - . . . pelvis
 - . . . scapula
 - . . . skull
 - cranium
 - intracranial cavity
 - mastoids
 - . . . spine
 - vertebrae
 - . . . sternum
 - . . . tibia
 - . . . ulna
 - . . . joints (anatomy)
 - . . . elbow (anatomy)
 - . . . knee (anatomy)
 - . . . wrist
 - . . muscles
 - . . . constrictors
 - . . . diaphragm (anatomy)
 - . . . flexors
 - . . . myocardium
 - . . . skeletal muscle
 - . . . smooth muscle
 - . . . tendons
 - . . cartilage
- RT connective tissue
 - exoskeletons
 - hypokinesia
 - intervertebral disks
 - muscle cells
 - muscle fibers
 - muscular fatigue
 - muscular strength
 - sciatic region
 - striation
- ∞ systems

museums

- RT anthropology
 - artifacts
 - buildings
 - collection
 - histories
 - libraries

mushy zones

- DEF Regions of liquid plus solid phases in alloys that solidify over a range of temperatures. Used for liquid plus solid zones.
- UF *liquid plus solid zones*
- RT casting
 - cooling
 - metallography
 - phase transformations
 - solidification

music

- RT arts
 - octaves

muskegs

- GS landforms
 - . **muskegs**
- RT Arctic regions
 - marshlands
 - soils
 - topography
 - water

Mustang aircraft

- USE **P-51 aircraft**

mutagenesis

- (added June 2000)
- DEF Induction or development of a genetic mutation via a natural environmental mutagen or through the methods of genetic engineering.
- RT deoxyribonucleic acid
 - gene expression
 - genes
 - mutagens
 - mutations
 - radiation effects

mutagens

- DEF Agents that raise the frequency of mutations above the spontaneous rate.
- RT air pollution
 - biochemistry
 - biological evolution
 - cells (biology)
 - chemical analysis
 - genetics
 - mutagenesis
 - mutations

mutations

- RT biological diversity
 - biological evolution
 - cells (biology)
 - chromosome aberrations
 - chromosomes
 - genes
 - genetics
 - mitosis
 - mutagenesis
 - mutagens
 - nucleogenesis
 - oncogenes
 - radiation hazards

MX missile

- DEF United States strategic intercontinental ballistic missile.
- UF *Peacekeeper missile*
- GS missiles
 - . ballistic missiles
 - . . intercontinental ballistic missiles
 - . . . **MX missile**
 - . . surface to surface missiles
 - . . . intercontinental ballistic missiles
 - . . . **MX missile**
- RT missile silos

myelin

- RT fats
 - lipids
 - myelin sheath
 - nerves
 - nervous system
 - neurons

myelin sheath

- (added August 2004)
- DEF The lipid-rich sheath surrounding axons in both the central and peripheral nervous systems. The myelin sheath is an electrical insulator and allows faster and more energetically efficient conduction of impulses. The sheath is formed by the cell membranes of glial cells (schwann cells in the peripheral and oligodendroglia in the central nervous system).
- GS anatomy
 - . nervous system
 - . . nerves
 - . . . **myelin sheath**
- RT axons
 - bioelectricity
 - electrophysiology
 - myelin
 - nerve fibers

Mylar (trademark)

- GS polymeric films
 - . **Mylar (trademark)**
- RT polyethylene terephthalate
 - ∞ polymers

myocardial infarction

- GS diseases
 - . heart diseases
 - . . infarction
 - . . . **myocardial infarction**
- RT arteriosclerosis
 - blood coagulation
 - coronary artery disease
 - hypertension
 - necrosis
 - thrombosis

myocardium

- GS anatomy
 - . circulatory system
 - . . cardiovascular system
 - . . . heart
 - **myocardium**
 - . . musculoskeletal system
 - . . muscles
 - . . . **myocardium**
- RT angina pectoris
 - heart conduction system

myocytes

- (added December 2004)
- USE **muscle cells**

myoelectric potentials

- GS myoelectricity
 - . **myoelectric potentials**
- RT muscles
 - ∞ potential

myoelectricity

- GS **myoelectricity**
 - . myoelectric potentials
- RT electromyography
 - muscle cells
 - muscles

myoglobin

- GS biopolymers
 - . proteins
 - . . **myoglobin**
 - organic compounds
 - . proteins
 - . . **myoglobin**
- RT muscles
 - pigments

myopia

- RT vision

myosins

- (added August 2004)
- DEF A diverse superfamily of proteins that function as translocating proteins. They share the common characteristics of being able to bind actins and hydrolyse MgATP. Myosins generally consist of heavy chains which are involved in locomotion, and light chains which are involved in regulation.
- GS biopolymers
 - . proteins
 - . . **myosins**
 - organic compounds
 - . proteins
 - . . **myosins**
- RT adenosine triphosphate
 - adenosinetriphosphatase
 - muscle cells
 - muscle fibers
 - muscles
 - muscular function

Mystere 20 aircraft

- UF *Dassault Mystere 20 aircraft*
- GS Dassault aircraft
 - . **Mystere 20 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **Mystere 20 aircraft**
 - light aircraft
 - . **Mystere 20 aircraft**
 - monoplanes
 - . **Mystere 20 aircraft**

Mystere 50 aircraft

passenger aircraft
. **Mystere 20 aircraft**
transport aircraft
. **Mystere 20 aircraft**

Mystere 50 aircraft

DEF A tri-engine business jet aircraft (Das-

sault). Used for Dassault Mystere 50 aircraft.

UF *Dassault Mystere 50 aircraft*

GS Dassault aircraft

. **Mystere 50 aircraft**

jet aircraft

. **Mystere 50 aircraft**

passenger aircraft

. **Mystere 50 aircraft**
transport aircraft
. **Mystere 50 aircraft**
RT ∞ aircraft
turbofan engines

N

N electrons

- GS particles
 - . charged particles
 - . . . energetic particles
 - electrons
 - **N electrons**
 - corpuscular radiation
 - energetic particles
 - electrons
 - **N electrons**
 - elementary particles
 - fermions
 - leptons
 - electrons
 - **N electrons**
- RT beta particles

N-156 aircraft

- USE **F-5 aircraft**

NA-300 aircraft

- USE **OV-10 aircraft**

nacelle wing configurations

- (added August 1998)
- USE **wing nacelle configurations**

nacelles

- RT aerodynamic configurations
 - air intakes
 - airframes
 - cowlings
 - ducted bodies
 - engine inlets
 - external store separation
 - external stores
 - external tanks
 - fairings
 - housings
 - nose inlets
 - perforated shells
 - Pods (external stores)
 - protuberances
 - shells (structural forms)
 - wing-fuselage stores

Naiad

- (added January 1996)

DEF A natural satellite of Neptune orbiting at a mean distance of 48,000 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Naiad**
- RT Neptune (planet)

naked singularities

DEF Singularities in spacetime that will be visible and communicable to the outside world, i.e., singularities that are not shielded by an event horizon from infinity.

- GS analysis (mathematics)
 - . complex variables
 - . . singularity (mathematics)
 - . . . **naked singularities**

- RT astrophysics
 - black holes (astronomy)
 - cosmology
 - degenerate matter
 - event horizon
 - gravitational collapse
 - points (mathematics)
 - relativity
 - space-time functions
 - theoretical physics
 - white holes (astronomy)

nakhlites

- (added August 1991)

DEF Achondritic stony meteorites consisting of a holocrystalline aggregate of diopside (75 percent) and olivine.

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . achondrites
 - **nakhlites**

- RT chassignites
- shergottites

SNC meteorites

NAMC aircraft

- USE **Nihon aircraft**

Namibia

- UF *South West Africa*
- RT Africa
 - nations
 - Republic of South Africa

naming

- GS **naming**
 - . norms
- RT nomenclatures
 - specifications
 - standardization

nanoclusters

- (added December 2006)

DEF Groups of well-ordered, uniform nanoparticles arranged in technologically useful shapes, often displaying optical, electronic, and chemical properties of interest.

- GS nanostructures (devices)
 - . **nanoclusters**
- RT metal clusters
 - molecular clusters
 - nanocrystals
 - nanofabrication
 - nanotechnology

nanocomposites

- (added December 2000)

- GS composite materials
 - . **nanocomposites**
- RT aluminum oxides
 - ceramic matrix composites
 - grain size
 - nanocrystals
 - nanostructure (characteristics)
 - particulate reinforced composites
 - polymer matrix composites
 - silicon carbides
 - silicon nitrides

nanocrystalline materials

- (added October 1997)

USE **nanocrystals**

nanocrystalline structure

- (added October 1997)

USE **nanostructure (characteristics)**

nanocrystals

- (added October 1997)

- UF *nanocrystalline materials*
- GS crystals
 - . **nanocrystals**
- RT crystal structure
 - grain size
 - microcrystals
 - nanoclusters
 - nanocomposites
 - nanoparticles
 - nanorods
 - nanostructure (characteristics)

nanofabrication

- (added January 2002)

DEF Process of, and techniques for, creating nanoscale structures and devices.

- UF *nanofabrication*
- GS fabrication
 - . **nanofabrication**
- RT atomic force microscopy
 - electron beams
 - lithography
 - nanoclusters
 - nanorods
 - nanostructures (devices)
 - nanotechnology
 - nanowires
 - quantum electronics
 - scanning tunneling microscopy
 - self assembly

nanointentation

- (added October 2001)

DEF A method for determining various mechanical properties of materials on a very small scale by observing an indentation made with a nanoscale diamond probe at a selected rate and load. Force-displacement curves derived from the indentation reflect a material's response to deformation, from which properties such as hardness and modulus of elasticity can be determined.

- GS indentation
 - . **nanointentation**
- RT atomic force microscopy
 - hardness tests
 - Knoop hardness
- ∞ materials tests
 - mechanical properties
 - microhardness
 - modulus of elasticity
 - nanotechnology

nanoparticles

- (added March 2002)

DEF Ultra fine particles with dimensions in the range of 1 to 100 nanometers.

- GS particles
 - . **nanoparticles**
- RT fullerenes
 - nanocrystals
 - nanostructure (characteristics)
 - nanostructure growth
 - nanotechnology
 - nanotubes
 - thin films

nanorods

- (added December 2006)

DEF Elongated nanoscale objects that may be synthesized from metals or semiconducting materials, each of their dimensions ranging from 1-100 nm.

- GS nanostructures (devices)
 - . **nanorods**
- RT nanocrystals
 - nanofabrication
 - nanotechnology
 - nanotubes
 - nanowires

nanosatellites

- (added October 1998)

DEF Satellites with a total mass smaller than 10 kg incorporating miniaturized electronic and mechanical systems.

- UF *nanosats*
- GS artificial satellites
 - . **nanosatellites**
- RT microelectromechanical systems
 - microminiaturization
 - microminiaturized electronic devices
 - microsatellites
 - satellite constellations
 - satellite design
 - small satellite technology
 - small scientific satellites

nanosats

- (added October 1998)

USE **nanosatellites**

nanostructure (characteristics)

- (added October 1997)

- UF *nanocrystalline structure*
- GS microstructure
 - . **nanostructure (characteristics)**
- RT carbon nanotubes
 - ∞ characteristics
 - crystal structure
 - dendrimers
 - grain size
 - micelles
 - nanocomposites
 - nanocrystals
 - nanoparticles
 - nanostructure growth
 - nanotechnology
 - nanotubes
 - self assembly

nanostructure growth

semiconductors (materials)

nanostructure fabrication
(added January 2002)
USE **nanofabrication**

nanostructure growth
(added September 2001)

DEF The progressive formation of nano-scale material structures by various means including catalytic formation, laser ablation, chemical vapor deposition, and plasma deposition.

GS growth
. **nanostructure growth**

RT crystal growth
fullerenes
laser ablation
laser deposition
nanoparticles
nanostructure (characteristics)
nanostructures (devices)
nanotechnology
nanotubes
nanowires
vapor deposition

nanostructures (devices)
(added October 1997)

GS **nanostructures (devices)**
. nanotubes
. quantum dots
. . carbon nanotubes
. nanowires
. . quantum wires
. graphene
. nanoclusters
. nanorods
. single electron transistors

RT adatoms
 ∞ devices
nanofabrication
nanostructure growth
nanotechnology
quantum electronics
semiconductor devices

nanotechnology
(added June 2000)

DEF The creation of functional materials, devices, and systems through control of matter on the nanometer-length scale; exploitation of novel phenomena and properties at the nanometer scale.

GS technologies
. **nanotechnology**

RT adatoms
carbon nanotube based memory
graphene
lab-on-a-chip devices
microelectromechanical systems
microelectronics
nanoclusters
nanofabrication
nanoindentation
nanoparticles
nanorods
nanostructure (characteristics)
nanostructure growth
nanostructures (devices)
nanotubes
nanowires
quantum dots
quantum electronics
quantum wires
resonant tunneling diodes
self assembly
single electron transistors

nanotubes
(added June 2000)

DEF Nanostructures having a closed, tubular morphology that can be single-walled or multi-walled. The structures are believed to be defect free, leading to high strength despite their low density; and can be either electrically conductive or semiconductive, depending on their helicity.

UF *nanotubules*
GS nanostructures (devices)

. **nanotubes**
. . carbon nanotubes
RT fullerenes
graphite
nanoparticles
nanorods
nanostructure (characteristics)
nanostructure growth
nanotechnology
 ∞ tubes

nanotubules
(added June 2000)
USE **nanotubes**

nanowires
(added March 2005)

DEF Wire structures with thickness measured in nanometers (below 1 micron or $1 \times 10^{(exp -6)}$ meters in thickness).

GS nanostructures (devices)

. **nanowires**
. . quantum wires
RT nanofabrication
nanorods
nanostructure growth
nanotechnology
quantum electronics

naphthalene
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **naphthalene**
. hydrocarbons
. . cyclic hydrocarbons
. . . **naphthalene**

naphthenes
GS organic compounds
. cyclic compounds
. . cyclic hydrocarbons
. . . **naphthenes**
. hydrocarbons
. . cyclic hydrocarbons
. . . **naphthenes**

nap-of-the-earth navigation
DEF Low altitude flight of helicopters during night or day utilizing electronic means for detection and recognition of landmarks and targets. Used for NOE navigation.

UF *NOE navigation*
GS navigation
. air navigation
. . **nap-of-the-earth navigation**
. . . terrain following

RT helicopters
image processing
low altitude
night flights (aircraft)
night vision
target recognition
terrain analysis

nappes
USE **folds (geology)**

narcolepsy
GS diseases
. **narcolepsy**

narcosis
DEF A state of profound stupor, produced by the toxic effect of certain substances; in diluent gas narcosis, by excessive partial pressure of the diluent.
GS unconsciousness
. **narcosis**
RT physiology
 ∞ poisoning

narcotics
GS drugs
. **narcotics**
. . morphine
RT pentobarbital
phenobarbital

psychotropic drugs

narrowband
DEF A description of frequency measurement whose frequency band of energy is smaller relative to the rest of the band.
GS bandwidth
. **narrowband**
RT ∞ bands
broadband
frequencies

NASA Communication Network
USE **NASCOM network**

NASA End-to-End Data System
USE **needs (data system)**

NASA Interactive Planning System

UF *NIPS (system)*
RT computer programs
Earth resources
management methods
NASA programs
project planning
resource allocation
resources management
 ∞ systems

NASA programs

GS programs
. **NASA programs**
. . ACEE program
. . Assess program
. . ATLIT project
. . DAST program
. . NASA space programs
. . . Apollo applications program
. . . Apollo project
. . . Bioastronautical Orbital Space System
. . . Centaur project
. . . Earth & Ocean Physics Applications Program
. . . Earth Resources Program
. . . Earth Resources Survey Program
. SEASAT program
. . . Echo project
. . . Galileo project
. . . Gemini project
. . . Helios Project
. . . Jupiter project
. . . Magellan project (NASA)
. . . Mariner program
. Mariner Venus-Mercury 1973
. Mariner-Mercury 1973
. . . Mars 69 project
. . . Mars 71 project
. . . Mercury project
. . . National Launch Vehicle Program
. . . NEW MOONS project
. . . Nimbus project
. . . OPEN Project
. . . Pioneer project
. . . Project SETI
. . . Ranger project
. Agena B Ranger Program
. . . Constellation program
. . . Mars Surveyor 98 Program
. . . New Horizons mission
. . . Rover project
. . . SAIL project
. . . Saturn project
. . . Scout project
. . . Skylab program
. . . Starprobe mission
. . . Surveyor project
. . . Synchronous Communications Satellite Proj
. Tektite project
. . . TIROS project
. . . Titan project
. . . Vanguard project
. . . Viking Mars program
. . . Voyager project
. . . Mission to Planet Earth
. . . National Aerospace Plane Program
. . . quiet engine program
. . . supersonic cruise aircraft research

- .. TACT program
- .. Terminal Configured Vehicle Program
- .. Tilt Rotor Research Aircraft Program
- RT Advanced Launch System (STS)
- AgRISTARS project
- Apollo extension system
- Canadian space program
- Committee on Space Research
- Communications Technology Satellite
- Earth Resources Information System
- GARP Atlantic Tropical Experiment
- geographic applications program
- Global Atmospheric Research Program
- grants
- Gravity Probe B
- Landsat satellites
- leasing
- NASA Interactive Planning System
- NASTRAN
- NOESS
- OSS-1 payload
- payload deployment & retrieval system
- Quasat
- Questol aircraft
- ∞ research projects
- rotor systems research aircraft
- SEASAT satellites
- single stage to orbit vehicles
- space programs
- space transportation system
- Spacelab
- SPHINX
- Starsite program
- StormSat satellite
- Synchronous Earth Observatory satellite
- technology utilization
- Transit navigation system
- university program
- NASA space programs**
- GS programs
 - . NASA programs
 - .. **NASA space programs**
 - ... Apollo applications program
 - ... Apollo project
 - ... Bioastronautical Orbital Space System
 - ... Centaur project
 - ... Earth & Ocean Physics Applications Program
 - ... Earth Resources Program
 - ... Earth Resources Survey Program
 - ... SEASAT program
 - ... Echo project
 - ... Galileo project
 - ... Gemini project
 - ... Helios Project
 - ... Jupiter project
 - ... Magellan project (NASA)
 - ... Mariner program
 - ... Mariner Venus-Mercury 1973
 - ... Mariner-Mercury 1973
 - ... Mars 69 project
 - ... Mars 71 project
 - ... Mercury project
 - ... National Launch Vehicle Program
 - ... NEW MOONS project
 - ... Nimbus project
 - ... OPEN Project
 - ... Pioneer project
 - ... Project SETI
 - ... Ranger project
 - ... Agena B Ranger Program
 - ... Constellation program
 - ... Mars Surveyor 98 Program
 - ... New Horizons mission
 - ... Rover project
 - ... SAIL project
 - ... Saturn project
 - ... Scout project
 - ... Skylab program
 - ... Starprobe mission
 - ... Surveyor project
 - ... Synchronous Communications Satellite Proj
 - ... Tektite project
 - ... TIROS project
 - ... Titan project
 - ... Vanguard project
 - ... Viking Mars program
 - ... Voyager project
- RT Advanced Launch System (STS)
- Cassini mission
- Cluster Mission
- Comet Rendezvous Asteroid Flyby Mission
- Deep Space 1 Mission
- International Space Year
- Kepler mission
- manned Mars missions
- Mars sample return missions
- Mars Surveyor 2001 Mission
- Next Generation Space Telescope project
- Space Station Freedom
- NASA Structural Analysis program*
- USE **NASTRAN**
- NASCOM network**
- UF *NASA Communication Network*
- GS communicating
 - . point to point communication
 - .. **NASCOM network**
 - networks
 - . communication networks
 - .. **NASCOM network**
- RT Fleet Satellite Communication System
- Global Tracking Network
- radio communication
- telecommunication
- NASTRAN**
- UF *NASA Structural Analysis program*
- GS computer programs
 - . applications programs (computers)
 - .. **NASTRAN**
- RT bending moments
- computer techniques
- dynamic loads
- finite element method
- matrix methods
- NASA programs
- stress analysis
- structural analysis
- National Aerospace Plane Program**
- GS programs
 - . NASA programs
 - .. **National Aerospace Plane Program**
- RT aerospace planes
- hypersonic vehicles
- transatmospheric vehicles
- X-30 vehicle
- National Airspace System**
- RT air traffic control
- aircraft safety
- airports
- airspace
- National Airspace Utilization System
- National Aviation System
- National Airspace Utilization System**
- RT air law
- air navigation
- air traffic
- air traffic control
- aircraft approach spacing
- airspace
- collision avoidance
- flight paths
- flight plans
- flight rules
- National Airspace System
- ∞ systems
- National Aviation System**
- RT air traffic
- air traffic control
- air transportation
- aircraft approach spacing
- flight rules
- landing aids
- National Airspace System
- ∞ systems
- traffic control
- National Launch Vehicle Program**
- GS programs
 - . NASA programs
 - .. NASA space programs
 - ... **National Launch Vehicle Program**
 - . space programs
 - .. NASA space programs
 - ... **National Launch Vehicle Program**
- RT launch vehicles
- launchers
- launching
- launching sites
- National Oceanic Satellite System**
- DEF Joint NASA (Goddard)-DOD venture.
- RT artificial satellites
- maritime satellites
- ∞ systems
- National Operational Environmental Sat Sys*
- USE **NOESS**
- national parks**
- DEF Areas of scenic beauty or historical importance preserved and maintained by a national government for the enjoyment of the public.
- GS land
 - . parks

National Severe Storms Project

. . **national parks**

- . . . Yellowstone National Park (ID-MT-WY)

National Polar-orbiting Operational Environmental Satellite System (added April 2009)

USE **NPOESS**

National Severe Storms Project

- RT meteorology
- tornadoes
- warning systems

nations

GS **nations**

- . Afghanistan
- . Albania
- . Algeria
- . Andorra
- . Angola
- . Antigua and Barbuda
- . Argentina
- . Armenia
- . Australia
- . Austria
- . Azerbaijan
- . Bahamas
- . Bahrain
- . Bangladesh
- . Barbados
- . Belarus
- . Belgium
- . Belize
- . Benin
- . Bhutan
- . Bolivia
- . Botswana
- . Brazil
- . Brunei
- . Bulgaria
- . Burkina
- . Burma
- . Burundi
- . Cambodia
- . Cameroon
- . Canada
 - . . Alberta
 - . . British Columbia
 - . . Manitoba
 - . . New Brunswick
 - . . Newfoundland
 - . . Northwest Territories
 - . . Nova Scotia
 - . . Ontario
 - . . Prince Edward Island
 - . . Quebec
 - . . Saskatchewan
 - . . Yukon Territory
- . Cape Verde
- . Central African Republic
- . Chad
- . Chile
- . China
- . Colombia
- . Congo (Brazzaville)
- . Costa Rica
- . Cote d'Ivoire
- . Croatia
- . Cuba
- . Cyprus
- . Czech Republic
- . Czechoslovakia
- . Denmark
- . Djibouti
- . Dominica
- . Dominican Republic
- . East Germany
- . Ecuador
- . Egypt
- . El Salvador
- . Estonia
- . Ethiopia
- . Finland
- . France
 - . . French Guiana
 - . . Guadeloupe
 - . . Martinique
- . Gabon
- . Gambia

- . Georgia (Eurasia)
- . Germany
- . Ghana
- . Greece
- . Grenada
- . Guatemala
- . Guinea
- . Guyana
- . Haiti
- . Honduras
- . Hungary
- . Iceland
- . India
- . Indonesia
- . Iran
- . Iraq
- . Ireland
- . Israel
- . Italy
- . Jamaica
- . Japan
- . Jordan
- . Kazakhstan
- . Kenya
- . Kuwait
- . Kyrgyzstan
- . Laos
- . Latvia
- . Lebanon
- . Lesotho
- . Liberia
- . Libya
- . Liechtenstein
- . Lithuania
- . Luxembourg
- . Madagascar
- . Malawi
- . Malaysia
- . Maldive Islands
- . Mali
- . Malta
- . Mauritania
- . Mauritius
- . Mexico
- . Moldova
- . Monaco
- . Mongolia
- . Morocco
- . Mozambique
- . Nepal
- . Netherlands
- . New Zealand
- . Nicaragua
- . Niger
- . Nigeria
- . North Korea
- . Norway
- . Oman
- . Pakistan
- . Panama
- . Papua New Guinea
- . Paraguay
- . Peru
- . Philippines
- . Poland
- . Portugal
 - . . Azores
- . Qatar
- . Republic of South Africa
- . Romania
- . Russian Federation
- . Rwanda
- . San Marino
- . Saudi Arabia
- . Senegal
- . Seychelles
- . Sierra Leone
- . Sikkim
- . Singapore
- . Slovakia
- . Somalia
- . South Korea
- . Southern Yemen
- . Spain
 - . . Canary Islands
- . Sri Lanka
- . Sudan
- . Surinam
- . Swaziland

- . Sweden
- . Switzerland
- . Syria
- . Taiwan
- . Tajikistan
- . Tanzania
- . Thailand
- . Tibet
- . Togo
- . Trinidad and Tobago
- . Tunisia
- . Turkey
- . Turkmenistan
- . U.S.S.R.
- . Uganda
- . Ukraine
- . United Arab Emirates
- . United Kingdom
 - . . England
 - . . Gibraltar
 - . . Northern Ireland
 - . . Scotland
 - . . Wales
- . United States
 - . . Alabama
 - . . Alaska
 - . . Arizona
 - . . Arkansas
 - . . California
 - . . Colorado
 - . . Connecticut
 - . . Delaware
 - . . District of Columbia
 - . . Florida
 - . . Georgia
 - . . Guam
 - . . Hawaii
 - . . Idaho
 - . . Illinois
 - . . Indiana
 - . . Iowa
 - . . Kansas
 - . . Kentucky
 - . . Louisiana
 - . . Maine
 - . . Maryland
 - . . Massachusetts
 - . . Michigan
 - . . Minnesota
 - . . Mississippi
 - . . Missouri
 - . . Montana
 - . . Nebraska
 - . . Nevada
 - . . New Hampshire
 - . . New Jersey
 - . . New Mexico
 - . . New York
 - . . North Carolina
 - . . North Dakota
 - . . Ohio
 - . . Oklahoma
 - . . Oregon
 - . . Pennsylvania
 - . . Puerto Rico
 - . . Rhode Island
 - . . South Carolina
 - . . South Dakota
 - . . Tennessee
 - . . Texas
 - . . Utah
 - . . Vermont
 - . . Virgin Islands
 - . . Virginia
 - . . Washington
 - . . West Virginia
 - . . Wisconsin
 - . . Wyoming
- . Bosnia and Herzegovina
- . Democratic Republic of Congo
- . Serbska Republic
- . Uruguay
- . Uzbekistan
- . Vatican City
- . Venezuela
- . Vietnam
- . West Germany
- . Yemen
- . Yugoslavia

. Zambia
 . Zimbabwe
 RT Africa
 Asia
 cities
 Commonwealth of Independent States
 communities
 demography
 developing nations
 Europe
 federations
 Hong Kong
 international law
 minorities
 Namibia
 politics
 regimes
 Spanish Sahara
 United Nations

NATO 3B satellite

GS artificial satellites
 . communication satellites
 . . Communications Technology Satellite
 . . . **NATO 3B satellite**

natural convection

USE **free convection**

natural frequencies

USE **resonant frequencies**

natural gas

DEF (A) Hydrocarbons that exist as a gas or vapor at ordinary pressures and temperatures. Methane is the most important, but ethane, propane, or others may be present. (B) Gaseous hydrocarbons trapped in the zone of ground water saturation under pressure from, and partially dissolved in, underlying water or petroleum.

GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . fossil fuels
 **natural gas**
 liquefied natural gas
 . gaseous fuels
 . . **natural gas**
 . . . liquefied natural gas
 gases
 . flammable gases
 . . gaseous fuels
 . . . **natural gas**
 liquefied natural gas
 geophysical fluids
 . **natural gas**
 . . liquefied natural gas
 organic compounds
 . hydrocarbons
 . . **natural gas**
 . . . liquefied natural gas
 resources
 . Earth resources
 . . fossil fuels
 . . . **natural gas**
 liquefied natural gas
 RT methane
 natural gas exploration
 oil fields
 petroleum products

natural gas exploration

DEF Searching the geological features to identify locations for stimulating wells for recovery of natural gas.

GS exploration
 . **natural gas exploration**
 RT drilling
 methane
 natural gas
 oil exploration
 photogeology

natural language (computers)

DEF A computer language whose rules reflect and describe current rather than prescribed

usage. The language is often loose and ambiguous in interpretation.

GS languages
 . programming languages
 . . **natural language (computers)**
 RT computer programming context
 data processing
 knowledge representation

natural language processing

(added September 1993)

RT artificial intelligence
 expert systems
 human-computer interface
 information analysis
 knowledge based systems
 linguistics
 machine translation
 parsing algorithms
 semantics
 syntax

natural lasers

USE **lasers**

natural satellites

SN (EXCLUDES PLANETS)

UF *Dactyl*

moons

planetary satellites

GS celestial bodies
 . **natural satellites**
 . . icy satellites
 . . . Ariel
 . . . Callisto
 . . . Dione
 . . . Enceladus
 . . . Europa
 . . . Ganymede
 . . . Hyperion
 . . . Iapetus
 . . . Mimas
 . . . Rhea (astronomy)
 . . . Tethys
 . . . Titania
 . . Jupiter satellites
 . . . Adrastea
 . . . Amalthea
 . . . Carme
 . . . Elara
 . . . Galilean satellites
 . . . Callisto
 . . . Europa
 . . . Ganymede
 . . . Io
 . . . Himalia
 . . . Leda
 . . . Lysithea
 . . . Metis
 . . . Pasiphae
 . . . Sinope
 . . . Thebe
 . . Mars satellites
 . . . Deimos
 . . . Phobos
 . . moon
 . . Neptune satellites
 . . . Galatea
 . . . Larissa
 . . . Naiad
 . . . Nereid
 . . . Proteus
 . . . Triton
 . . Pluto satellites
 . . . Charon
 . . . Hydra
 . . . Nix
 . . Saturn satellites
 . . . Calypso
 . . . Dione
 . . . Enceladus
 . . . Epimetheus
 . . . Helene
 . . . Hyperion
 . . . Iapetus
 . . . Janus
 . . . Mimas
 . . . Pandora
 . . . Phoebe

. . . Prometheus
 . . . Rhea (astronomy)
 . . . Teleso
 . . . Tethys
 . . . Titan
 . . Uranus satellites
 . . . Ariel
 . . . Cordelia
 . . . Miranda
 . . . Oberon
 . . . Puck
 . . . Titania
 . . . Umbriel
 RT artificial satellites
 Cyrillid meteoroids
 Earth-Moon system
 meteoroids
 moonlets
 planets
 Roche limit
 satellite atmospheres
 satellite surfaces
 ∞ satellites
 Saturn rings
 solar system
 tektites
 Uranus rings

nausea

DEF A feeling of discomfort in the region of the stomach, with aversion to food and a tendency to vomit.

GS signs and symptoms

. **nausea**

RT antiemetics and antinauseants
 motion sickness
 vomiting

nautical charts

DEF Charts and maps of oceans, coasts and harbors now compiled from satellite data for precision and correction of local errors.

GS charts

. **nautical charts**

RT navigation aids
 navigation satellites
 surface navigation

Navaho missile

GS missiles

. ramjet missiles

. . **Navaho missile**

. surface to surface missiles

. . cruise missiles

. . . **Navaho missile**

RT liquid propellant rocket engines
 multistage rocket vehicles
 ramjet engines

Navier-Stokes equation

DEF The equation of motion for a viscous fluid.

GS equations of motion

. **Navier-Stokes equation**

flow equations

. **Navier-Stokes equation**

RT Burger equation
 computational fluid dynamics
 direct numerical simulation

∞ equations

flow theory

incompressible flow

incompressible fluids

large eddy simulation

Milne-Thomson method

Newtonian fluids

Oseen approximation

Reynolds averaging

Reynolds equation

Reynolds stress

viscous flow

viscous fluids

navigation

DEF The practice or art of directing the movement of a craft from one point to another. Navigation usually implies the presence of a human, a navigator, aboard the craft.

GS **navigation**

. air navigation

navigation aids

- . . all-weather air navigation
- . . area navigation
- . . nap-of-the-earth navigation
- . . . terrain following
- . autonomous navigation
- . celestial navigation
- . . Astroguide Navigation System
- . . astronavigation
- . dead reckoning
- . digital navigation
- . Doppler navigation
- . hybrid navigation systems
- . inertial navigation
 - . . Astroguide Navigation System
 - . . gimballess inertial navigation
 - . . Omega Navigation System
- . polar navigation
- . radar navigation
- . radio navigation
 - . . hyperbolic navigation
 - . . . Decca navigation
 - . . . LORAC navigation system
 - . . . loran
 - loran C
 - loran D
 - Shoran
 - . . Tacan
 - . . VHF omnirange navigation
- . space navigation
 - . . interplanetary navigation
 - . proportional navigation
 - . surface navigation
- RT automatic flight control
- azimuth
- bay ice
- declination
- distance measuring equipment
- ∞ fixing
- flight control
- flight paths
- Global Positioning System
- guidance (motion)
- gyroscopic coupling
- homing devices
- latitude measurement
- locomotion
- longitude measurement
- orbital position estimation
- plotting
- position (location)
- position errors
- positioning
- star trackers
- stationkeeping
- ∞ systems
- triangulation

navigation aids

- GS **navigation aids**
 - . beacons
 - . . airport beacons
 - . . . discrete address beacon system
 - . . radar beacons
 - . . . discrete address beacon system
 - . . radio beacons
 - . . . omnidirectional radio ranges
 - self calibrating omnirange
 - . . radio direction finders
 - . Light Airborne Multipurpose System
 - . microwave scanning beam landing system
 - . navigation instruments
 - . . attitude indicators
 - . . . gyro horizons
 - . . compasses
 - . . . gyrocompasses
 - . . . magnetic compasses
 - . . . solar compasses
 - . . radio direction finders
 - . TERCOM

RT ∞ aids

- air navigation
- air traffic control
- aircraft equipment
- aircraft instruments
- aircraft safety
- airports
- all-weather air navigation
- altimeters

- approach indicators
- automatic flight control
- automatic pilots
- automatic traffic advisory and resolution
- autonomous navigation
- buoys
- charts
- Decca navigation
- display devices
- distance measuring equipment
- echo sounding
- flight control
- flight management systems
- flight paths
- gyrostabilizers
- head-up displays
- heliports
- homing devices
- hybrid navigation systems
- inertial navigation
- Kalman filters
- landing aids
- laser range finders
- LORAC navigation system
- loran
- loran C
- loran D
- maps
- ∞ mars
- military air facilities
- nautical charts
- plotters
- position indicators
- radio navigation
- range finders
- reduced order filters
- reference stars
- sextants
- Shoran
- solar sensors
- sonar
- star trackers
- surface navigation
- Tacan
- VHF omnirange navigation
- weather

navigation instruments

- GS navigation aids
 - . **navigation instruments**
 - . . attitude indicators
 - . . . gyro horizons
 - . . compasses
 - . . . gyrocompasses
 - . . . magnetic compasses
 - . . . solar compasses
 - . . radio direction finders
- RT aircraft equipment
 - aircraft instruments
 - altimeters
 - autonomous navigation
 - boresight error
 - flight control
 - flight instruments
 - gimballess inertial navigation
 - horizon scanners
 - hybrid navigation systems
 - inertial platforms
 - ∞ instruments
 - Kalman-Schmidt filtering
 - laser range finders
 - Light Airborne Multipurpose System
 - LORAC navigation system
 - loran
 - measuring instruments
 - position indicators
 - radar
 - solar sensors
 - star trackers
 - TERCOM

navigation satellites

- GS artificial satellites
 - . **navigation satellites**
 - . . Aerosat satellites
 - . . Explorer 22 satellite
 - . . navigation technology satellites
 - . . NAVSTAR satellites

- . . Nova satellites
- . . Refsat
- . . Transit Attitude Control satellite
- . . Transit satellites
- RT active satellites
 - ATS
 - geodetic satellites
 - LOCATES system
 - meteorological satellites
 - military spacecraft
 - nautical charts
 - passive satellites
 - satellite navigation systems
 - satellite networks
 - synchronous satellites
 - Transit navigation system

navigation technology satellites

- DEF Class of navigation satellites utilizing the global positioning system as well as a precise frequency and timing system. Used for NTS.
- UF *NTS*
- GS artificial satellites
 - . navigation satellites
 - . . **navigation technology satellites**
- RT NAVSTAR satellites

navigators

- GS personnel
 - . **navigators**
- RT flight crews
 - flying personnel

Navion aircraft

- GS **Navion aircraft**
 - . G-1 aircraft
- RT ∞ aircraft

Navion G-1 aircraft

- USE **G-1 aircraft**

Navion Rangemaster aircraft

- USE **G-1 aircraft**

NAVSTAR satellites

- GS artificial satellites
 - . navigation satellites
 - . . **NAVSTAR satellites**
- RT active satellites
 - ATS
 - geodetic satellites
 - INMARSAT satellites
 - navigation technology satellites
 - Refsat
 - satellite networks

navy

- GS armed forces
 - . **navy**
- RT aircraft carriers
 - ballistic missile submarines
 - Fleet Satellite Communication System
 - nuclear powered ships
 - ships
 - submarines
 - trident submarine
- ∞ vessels

N-body problem

- USE **many body problem**

NC-130 aircraft

- USE **C-130 aircraft**

NDM semiconductor devices

- SN (NEGATIVE DIFFERENTIAL MOBILITY SEMICONDUCTOR DEVICES)
- UF *negative diff mobility semiconductors*
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . **NDM semiconductor devices**
- RT conduction bands
 - ∞ devices
 - diffusivity
 - electron mobility

- ionic mobility
- NDVI (*remote sensing*)
(added June 2001)
- USE **normalized difference vegetation index**
- Near Earth Asteroid Rendezvous Mission**
(added March 1996)
- GS space missions
. asteroid missions
. . **Near Earth Asteroid Rendezvous Mission**
. flyby missions
. . **Near Earth Asteroid Rendezvous Mission**
- RT Comet Rendezvous Asteroid Flyby Mission
Earth orbits
EROS asteroid
near Earth objects
rendezvous trajectories
Rosetta mission
- near Earth objects**
(added November 2001)
- DEF Asteroids, meteoroids, or short-period comets having trajectories that intersect the orbit of Earth or that are within 0.3 Astronomical Units (AU) of Earth. Asteroids and comets with perihelion distance less than 1.3 AU.
- UF *NEO (astronomy)*
- GS celestial bodies
. **near Earth objects**
- RT asteroid collisions
asteroids
cometary collisions
comets
Earth orbital environments
meteorite collisions
meteorites
Near Earth Asteroid Rendezvous Mission
space debris
- near fields**
- GS electromagnetic fields
. **near fields**
- RT antenna radiation patterns
antennas
electromagnetic radiation
far fields
laser arrays
radio equipment
sidelobes
- near infrared radiation**
- SN (0.75 TO 3 MICRONS)
- GS electromagnetic radiation
. infrared radiation
. . **near infrared radiation**
- RT far infrared radiation
infrared photometry
light (visible radiation)
- ∞ radiation
radiative heat transfer
radiative transfer
terrestrial radiation
thermal radiation
- near ultraviolet radiation**
- SN (2000 TO 4000 ANGSTROMS)
- GS electromagnetic radiation
. ultraviolet radiation
. . **near ultraviolet radiation**
- RT far ultraviolet radiation
light (visible radiation)
- ∞ radiation
- near wakes**
- GS wakes
. **near wakes**
- nearshore water**
- GS water
. **nearshore water**
. . coastal water
- RT marine environments
oceans
sea water
- vadose water
water depth
wetlands
- Nebraska**
- GS nations
. United States
. . **Nebraska**
- RT Missouri River (US)
Sand Hills Region (NE)
- nebulae**
- DEF Clouds of interstellar gas and dust, seen either as a luminous patch of light or a dark cloud against a bright background. The term nebula was coined to describe objects that appeared fuzzy when viewed through early telescopes.
- GS celestial bodies
. **nebulae**
. . Cassiopeia A
. . Crab nebula
. . Gum nebula
. . H I regions
. . H II regions
. . Herbig-Haro objects
. . Orion nebula
. . planetary nebulae
. . reflection nebulae
. . solar nebula
- RT galaxies
interstellar matter
irregular galaxies
Maffei galaxies
Magellanic clouds
North Polar Spur (astronomy)
Ophiuchi clouds
Opik theory
solar corona
star formation
supernovae
- neck (anatomy)**
- GS anatomy
. **neck (anatomy)**
- RT vertebrae
- necrosis**
(added October 2000)
- DEF One of the two mechanisms by which cell death occurs (the other being the physiological process of APOPTOSIS). A pathological process caused by the progressive degradative action of enzymes that is generally associated with severe cellular trauma. It is characterized by mitochondrial swelling, nuclear flocculation, uncontrolled cell lysis, and ultimately cell death. In general, cell or tissue death caused by disease or injury.
- UF *pathological cell death*
- GS pathological effects
. **necrosis**
- RT apoptosis
cells (biology)
cytology
death
diseases
hypoxia
injuries
myocardial infarction
pathology
tissues (biology)
- needle bearings**
- GS bearings
. antifriction bearings
. . roller bearings
. . . **needle bearings**
- RT ball bearings
- needles**
- RT dendritic crystals
sewing
single crystals
surgical instruments
- needs (data system)**
- UF *NASA End-to-End Data System*
- GS data systems
. **needs (data system)**
- end-to-end data systems
. **needs (data system)**
- RT data acquisition
data processing
satellite instruments
∞ systems
VSAT (network)
- neel temperature**
- GS temperature
. **neel temperature**
- RT antiferromagnetism
magnetic permeability
phase transformations
specific heat
thermal expansion
- negative conductance**
- RT avalanche diodes
gallium arsenides
Gunn effect
tunnel diodes
- negative diff mobility semiconductors*
- USE **NDM semiconductor devices**
- negative electron affinity**
- GS affinity
. **negative electron affinity**
- RT electron affinity
electron emission
gallium arsenides
photoelectric emission
semiconductors (materials)
- negative feedback**
- DEF Feedback which results in decreasing the amplification. Used for degenerative feedback.
- UF *degenerative feedback*
- GS feedback
. **negative feedback**
- RT automatic control
damping
degeneration
feedback control
nonlinear feedback
oscillators
transfer functions
- negative ions**
- DEF Ions singly or in groups which acquire negative charges by gaining one or more electrons.
- GS ions
. **negative ions**
. . anions
- RT free radicals
ionic mobility
nitrogen ions
oxygen ions
plasma physics
- negative matter**
(added August 1991)
- SN (NOT ANTIMATTER)
- DEF A hypothetical form of matter whose active-gravitational, passive-gravitational, inertial, and rest mass are opposite in sign to normal, positive matter. Negative matter is not antimatter.
- GS matter (physics)
. **negative matter**
- RT antimatter
condensed matter physics
extraterrestrial matter
mass
- negative matter propulsion**
(added August 1991)
- GS propulsion
. spacecraft propulsion
. . **negative matter propulsion**
- RT interplanetary flight
interstellar travel
matter-antimatter propulsion
rocket engines
- negative resistance circuits**
- GS circuits

negative resistance devices

. negative resistance circuits

- RT ∞ resistance
- resonant tunneling diodes
- tunnel diodes

negative resistance devices

- GS **negative resistance devices**
- . resonant tunneling diodes
- RT aluminum gallium arsenides
- gallium arsenides
- Gunn diodes
- Gunn effect
- MIM diodes
- negatrons
- parametric amplifiers
- Ramsauer effect
- ∞ resistance
- resonant tunneling

negatrons

- DEF Negative electrons. Sometimes shortened to negatons.
- GS particles
- . charged particles
- . . . energetic particles
- . . . electrons
- **negatrons**
- . corpuscular radiation
- . . energetic particles
- . . . electrons
- **negatrons**
- . elementary particles
- . . fermions
- . . . leptons
- electrons
- **negatrons**
- RT negative resistance devices

Nembutal (trademark)

- GS drugs
- . **Nembutal (trademark)**
- ketones
- . **Nembutal (trademark)**
- sodium compounds
- . **Nembutal (trademark)**
- RT pentobarbital sodium

Nemesis (star)

- UF *solar companion star*
- GS celestial bodies
- . stars
- . . double stars
- . . . binary stars
- companion stars
- **Nemesis (star)**
- RT dwarf stars
- extinction
- Oort cloud
- solar neighborhood
- stellar orbits
- stellar systems

NEO (astronomy)

- (added November 2001)
- USE **near Earth objects**

neodymium

- GS chemical elements
- . rare earth elements
- . . **neodymium**
- metals
- . rare earth elements
- . . **neodymium**
- RT didymium

neodymium alloys

- GS alloys
- . rare earth alloys
- . . **neodymium alloys**

neodymium compounds

- GS rare earth compounds
- . **neodymium compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

neodymium isotopes

- GS chemical elements
- . nuclides
- . . isotopes

. . . neodymium isotopes

- . rare earth elements
- . . **neodymium isotopes**
- metals
- . rare earth elements
- . . **neodymium isotopes**

neodymium lasers

- GS stimulated emission devices
- . lasers
- . . **neodymium lasers**
- RT coherent light
- glass lasers
- optical pumping
- rare earth elements

neon

- GS chemical elements
- . rare gases
- . . **neon**
- . . . liquid neon
- . . . neon isotopes
- gases
- . rare gases
- . . **neon**
- . . . liquid neon
- . . . neon isotopes

neon 19

- USE **neon isotopes**

neon isotopes

- UF *neon 19*
- GS chemical elements
- . nuclides
- . . isotopes
- . . . **neon isotopes**
- . rare gases
- . . neon
- . . . **neon isotopes**
- gases
- . rare gases
- . . neon
- . . . **neon isotopes**

neopentane

- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkanes
- pentanes
- **neopentane**

neoplasms

- GS diseases
- . tumors
- . . **neoplasms**
- . . . cancer
- leukemias
- RT carcinogens
- cysts
- metastasis
- tumor suppressor genes
- tumor suppressor proteins

neoprenes

- USE **chloroprene resins**

neotectonics

- (added May 2002)
- DEF Study of the most recent crustal movements and structures of the Earth or other terrestrial planets.
- GS geology
- . tectonics
- . . **neotectonics**
- RT Earth movements
- plates (tectonics)
- sea floor spreading
- structural properties (geology)
- subduction (geology)

neovascularization

- (added June 2004)
- USE **angiogenesis**

Nepal

- GS nations
- . **Nepal**

RT Asia

nephelanalysis

- DEF A type of analysis using satellite cloud pictures to study the relationship between cloud formation and storm systems.
- RT Alpine meteorology
- anvil clouds
- Atmospheric Cloud Physics Lab (SpaceLab)
- cap clouds
- chemical analysis
- cirrocumulus clouds
- cirrostratus clouds
- cloud cover
- cloud physics
- clouds (meteorology)
- convection clouds
- meteorological instruments
- meteorology
- nephelometers
- precipitation (meteorology)
- synoptic measurement
- synoptic meteorology
- weather forecasting

nepheline

- GS aluminum compounds
- . **nepheline**
- minerals
- . **nepheline**
- potassium compounds
- . **nepheline**
- silicon compounds
- . silicates
- . . **nepheline**
- sodium compounds
- . **nepheline**
- RT nephelite

nephelite

- GS aluminum compounds
- . **nephelite**
- chalcogenides
- . oxides
- . . silicon oxides
- . . . **nephelite**
- minerals
- . **nephelite**
- silicon compounds
- . silicon oxides
- . . **nephelite**
- RT nepheline

nephelometers

- DEF General name for instruments which measure, at more than one angle, the scattering function of particles suspended in a medium. Instruments for chemical analysis by measuring the light scattering properties of a suspension.
- GS measuring instruments
- . optical measuring instruments
- . . **nephelometers**
- optical equipment
- . optical measuring instruments
- . . **nephelometers**
- RT nephelanalysis
- optical measurement
- photometers

nephritis

- GS diseases
- . kidney diseases
- . . **nephritis**
- RT bacterial diseases

Neptune (planet)

- GS celestial bodies
- . planets
- . . gas giant planets
- . . . **Neptune (planet)**
- RT Galatea
- Larissa
- Naiad
- Neptune atmosphere
- Neptune satellites
- Nereid
- Proteus
- Triton

Voyager 2 spacecraft

Neptune atmosphere

DEF The atmosphere of the planet Neptune which is primarily composed of hydrogen and methane.

- GS environments
 - . extraterrestrial environments
 - . . . planetary environments
 - planetary atmospheres
 - **Neptune atmosphere**
- RT aerospace environments
 - ∞ atmospheres
 - gas giant planets
 - hydrogen
 - methane
 - Neptune (planet)
 - planetary ionospheres
 - Triton

Neptune satellites

(added August 1989)

- GS celestial bodies
 - . natural satellites
 - . . . **Neptune satellites**
 - Galatea
 - Larissa
 - Naiad
 - Nereid
 - Proteus
 - Triton
- RT Neptune (planet)

neptunium

- GS chemical elements
 - . actinide series
 - . . . transuranium elements
 - **neptunium**
 - neptunium isotopes
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - **neptunium**
 - neptunium isotopes
- metals
 - . actinide series
 - . . transuranium elements
 - . . . **neptunium**
 - neptunium isotopes

neptunium compounds

- GS actinide series compounds
 - . **neptunium compounds**
- RT ∞ chemical compounds
 - ∞ metal compounds

neptunium isotopes

- GS chemical elements
 - . actinide series
 - . . transuranium elements
 - . . . neptunium
 - **neptunium isotopes**
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - transuranium elements
 - neptunium
 - **neptunium isotopes**
- metals
 - . actinide series
 - . . transuranium elements
 - . . . neptunium
 - **neptunium isotopes**

Nereid

(added August 1989)

- GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Nereid**
- RT Neptune (planet)

Nernst generators

USE **thermomagnetic cooling**

Nernst heat theorem

USE **Nernst-Ettingshausen effect**

Nernst-Ettingshausen effect

UF *Nernst heat theorem*

- GS galvanomagnetic effects
 - . **Nernst-Ettingshausen effect**
- RT ∞ effects
 - temperature effects
 - thermomagnetic effects

NERVA (engine)

USE **nuclear engine for rocket vehicles**

nerve fibers

(added August 2004)

DEF Slender processes of neurons, including the axons and their glial envelopes (myelin sheath). Nerve fibers conduct nerve impulses to and from the central nervous system.

- GS anatomy
 - . nervous system
 - . . nerves
 - . . . **nerve fibers**
- RT axons
 - electrophysiology
 - myelin sheath
 - neurons

nerves

- GS anatomy
 - . nervous system
 - . . **nerves**
 - . . . ganglia
 - . . . myelin sheath
 - . . . nerve fibers
 - . . . oculomotor nerves
- RT carotid sinus body
 - carotid sinus reflex
 - dendrites
 - His bundle
 - myelin
 - neuritis
 - neurons
 - sciatic region
 - synapses

nervous system

- UF *vasomotor nervous system*
- GS anatomy
 - . **nervous system**
 - . . afferent nervous systems
 - . . autonomic nervous system
 - . . . sympathetic nervous system
 - . . central nervous system
 - . . . brain
 - brain stem
 - cerebellum
 - cerebral ventricles
 - cerebrum
 - cerebral cortex
 - occipital lobes
 - diencephalon
 - hypothalamus
 - pineal gland
 - thalamus
 - hippocampus
 - spinal cord
 - . . efferent nervous systems
 - . . nerves
 - . . . ganglia
 - . . . myelin sheath
 - . . . nerve fibers
 - . . . oculomotor nerves
 - . . peripheral nervous system
- RT dendrites
 - electrophysiology
 - homeostasis
 - myelin
 - neurasthenia
 - neuritis
 - neuroglia
 - neurons
 - neuropsychiatry
 - neurotransmitters
 - proprioceptors
 - psychopharmacology
 - sense organs
 - synapses
- ∞ systems

Netherlands

- UF *Holland*
- GS nations
 - . **Netherlands**

- RT Astronomical Netherlands Satellite
 - Europe
 - Netherlands space program
 - Surinam

Netherlands space program

(added March 1989)

- GS programs
 - . space programs
 - . . European space programs
 - . . . **Netherlands space program**
- RT Astronomical Netherlands Satellite
 - Infrared Astronomy Satellite
 - Netherlands

∞ nets

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED -- CONSULT THE TERMS LISTED BELOW)
- RT coordinates
 - distribution functions
 - geodetic coordinates
 - graph theory
 - Kirchhoff law of networks
 - netting (materials/structures)
 - networks
 - Petri nets
 - structured grids (mathematics)
 - superposition (mathematics)
 - topology
 - trees (mathematics)

netting (materials/structures)

(added July 1995)

- RT camouflage
 - coverings
 - crosslinking
 - crystal growth
 - fibers
 - filament winding
 - laminates
 - molecular chains
- ∞ nets
 - parachute fabrics
 - webs (sheets)

network analysis

- UF *Tellegen theory*
- GS **network analysis**
 - . critical path method
 - . sneak circuit analysis
- RT ∞ analyzing
 - circuits
 - data flow analysis
 - distributed parameter systems
 - duality principle
 - electric terminals
 - equivalent circuits
 - Foster theory
 - gyrators
 - hydraulic equipment
 - insertion
 - Kirchhoff law of networks
 - LC circuits
- ∞ paths
 - RC circuits
 - RL circuits
 - RLC circuits
 - signal flow graphs
 - superposition (mathematics)

network control

- DEF The management of acquisition, routing, and switching primarily in satellite communication.
- RT communication networks
 - communication satellites
 - computer networks
- ∞ control
 - local area networks
 - packet switching
 - satellite networks
 - transmission efficiency

network synthesis

- UF *Tellegen theory*
- RT communication theory
 - equivalent circuits
 - hydraulic equipment
 - Kirchhoff law of networks
 - LC circuits

networks

- networks
- RC circuits
- Richards theorem
- RL circuits
- RLC circuits
- superposition (mathematics)
- switching theory
- ∞ synthesis
- topology

networks

- GS **networks**
 - . belief networks
 - . communication networks
 - . . . Aloha system
 - . . . Deep Space Network
 - . . . internets
 - ARPA computer network
 - World Wide Web
 - . . . Iridium network
 - . . . local area networks
 - . . . NASCOM network
 - . . . VSAT (network)
 - . . . wide area networks
 - . computer networks
 - . . . internets
 - ARPA computer network
 - World Wide Web
 - . . . client server systems
 - . . . local area networks
 - . . . wide area networks
 - . defense communications system (DCS)
 - . electric networks
 - . iterative networks
 - . neural nets
 - . Orion (radio interferometry network)
 - . Petri nets
 - . quadrupole networks
 - . satellite networks
 - . . . Argos system
 - . . . satellite constellations
 - Constellation-X
 - Iridium network
 - VSAT (network)
 - . tracking networks
 - . . . Deep Space Network
 - . . . Global Tracking Network
 - . . . manned space flight network
 - . . . MATTs (systems)
 - . . . polystation doppler tracking system
 - . . . radar networks
 - . . . space detection and tracking system
 - . . . Space Flight Tracking and Data Network
 - . . . STDN (network)
- RT data links
- educational television
- gravimetry
- ground stations
- information systems
- ∞ nets
- network synthesis
- protocol (computers)
- telecommunication

Neumann problem

- GS analysis (mathematics)
 - . real variables
 - . . **Neumann problem**
- boundary value problems
- . **Neumann problem**
- RT differential equations
- partial differential equations
- ∞ problems

neural nets

- GS networks
- . **neural nets**
- RT associative memory
- backpropagation (artificial intelligence)
- belief networks
- cybernetics
- evolvable hardware
- Gabor filters
- genetic algorithms
- logic circuits

- membership functions

neurasthenia

- GS diseases
- . **neurasthenia**
- RT nervous system

neuristors

- GS electronic equipment
- . solid state devices
- . . semiconductor devices
- . . . **neuristors**
- RT bionics

neuritis

- GS diseases
- . **neuritis**
- RT nerves
- nervous system

neuroblasts

- GS cells (biology)
- . neurons
- . . **neuroblasts**
- RT embryology

neuroglia

- GS tissues (biology)
- . **neuroglia**
- RT brain
- cells (biology)
- ganglia
- nervous system
- spinal cord

neurology

- DEF The study of the anatomy, physiology, and pathology of the nervous system. Used for neuroscience.
- UF *neuroscience*
- GS medical science
- . **neurology**
- RT brain
- chemical defense
- electrophysiology
- life sciences
- neuropsychiatry
- thresholds (perception)

neuromuscular transmission

- RT acetylcholine
- bioelectricity
- cholinesterase
- neurotransmitters
- peripheral nervous system
- synapses

neuron transmission

- USE **bioelectricity**

neurons

- GS cells (biology)
- . **neurons**
- . . axons
- . . dendrites
- . . neuroblasts
- RT blood-brain barrier
- myelin
- nerve fibers
- nerves
- nervous system
- synapses
- syncoders

neurophysiology

- GS physiology
- . **neurophysiology**
- RT dopamine
- ganglia
- information processing (biology)
- ion channels (biology)
- ontogeny
- psychotropic drugs
- ∞ science

neuropsychiatry

- GS medical science
- . psychiatry
- . . **neuropsychiatry**
- RT human behavior
- ∞ medicine

- mental health
- nervous system
- neurology
- psychotherapy

neuroscience

- USE **neurology**

neuroses

- GS **neuroses**
- . neurotic depression
- RT fear
- fear of flying
- psychoses

neurospora

- GS plants (botany)
- . fungi
- . . **neurospora**
- RT genetics

neurotic depression

- GS neuroses
- . **neurotic depression**
- RT ∞ depression
- psychotic depression

neurotransmitters

- DEF Chemical substances secreted by the terminal ends of axons, which stimulate a muscle fiber contraction or an impulse in other neurons.

- GS **neurotransmitters**
- . acetylcholine
- . vasopressins
- RT angiotensins
- axons
- catecholamine
- cells (biology)
- dopamine
- epinephrine
- nervous system
- neuromuscular transmission
- norepinephrine
- synapses

neurotropism

- GS tropism
- . **neurotropism**

neutral atmospheres

- RT ∞ atmospheres
- neutral gases

neutral atoms

- DEF Atoms in which the number of electrons surrounding the nucleus equals the number of protons in the nucleus resulting in no net electric charge.

- GS atoms
- . **neutral atoms**
- RT atomic beams
- charge distribution
- ∞ elements
- H I regions
- neutral beams
- neutral gases

neutral beams

- GS beams (radiation)
- . particle beams
- . . **neutral beams**
- . . . molecular beams
- . . . neutron beams
- RT atomic beams
- beam injection
- beam neutralization
- neutral atoms
- particles
- pion beams

neutral buoyancy simulation

- GS environmental tests
- . underwater tests
- . . **neutral buoyancy simulation**
- simulation
- . environment simulation
- . . space environment simulation
- . . . weightlessness simulation
- **neutral buoyancy simulation**

- RT buoyancy
space simulators
weightlessness
- neutral currents**
DEF Weak interaction currents that carry zero electric charge.
RT current distribution
gravitational collapse
neutral particles
neutrinos
neutron stars
particle interactions
stellar evolution
- neutral gases**
DEF In astronomy, gas clouds of some nebulae which have not been ionized by hot stars.
GS gases
. **neutral gases**
RT cosmic gases
H I regions
hydrogen clouds
interplanetary gas
interstellar gas
ionized gases
neutral atmospheres
neutral atoms
plasmas (physics)
- neutral particles**
GS particles
. **neutral particles**
. . gravitinos
. . neutrons
. . . cold neutrons
. . . fast neutrons
. . . photoneutrons
. . . solar neutrons
. . . thermal neutrons
RT electron recombination
neutral currents
- neutral sheets**
RT atmospheric physics
charged particles
Earth magnetosphere
particle motion
plasma physics
∞ sheets
- neutralizers**
RT additives
∞ agents
buffers (chemistry)
dischargers
inhibitors
preservatives
retardants
stabilizers (agents)
suppressors
- neutrino beams**
DEF Organized collections of neutrinos traveling outward from the source.
GS beams (radiation)
. particle beams
. . **neutrino beams**
- neutrinos**
DEF Subatomic particles of zero, or near zero, rest mass, having no electric charge, postulated by Fermi (1934) in order to explain apparent contradictions to the law of conservation of energy in beta particle emission.
GS particles
. elementary particles
. . fermions
. . . leptons
. . . . **neutrinos**
. . . . solar neutrinos
RT antineutrinos
dark matter
gravitinos
neutral currents
- neutron absorbers**
GS absorbers (materials)
. **neutron absorbers**
- RT control rods
moderators
poisoning (reaction inhibition)
radiation absorption
radiation shielding
- neutron activation analysis**
GS activation analysis
. **neutron activation analysis**
chemical tests
. chemical analysis
. . **neutron activation analysis**
RT mass spectrometers
microanalysis
qualitative analysis
quantitative analysis
spectroscopic analysis
- neutron beams**
GS beams (radiation)
. particle beams
. . neutron beams
. . . **neutron beams**
nuclear radiation
. **neutron beams**
RT atomic beams
particles
pion beams
proton beams
- neutron counters**
UF *neutron detectors*
GS measuring instruments
. counters
. . radiation counters
. . . **neutron counters**
. . . . neutron spectrometers
. radiation measuring instruments
. . radiation counters
. . . **neutron counters**
. . . . neutron spectrometers
RT dosimeters
Geiger counters
ionization chambers
proportional counters
scintillation counters
spark chambers
- neutron cross sections**
RT absorption cross sections
∞ cross sections
nuclear particles
scattering cross sections
stopping power
- neutron decay**
GS decay
. particle decay
. . **neutron decay**
RT hot atoms
- neutron detectors*
USE **neutron counters**
- neutron diffraction**
GS diffraction
. **neutron diffraction**
RT crystallography
- neutron distribution**
GS distribution (property)
. **neutron distribution**
RT nuclear particles
- neutron emission**
GS decay
. radioactive decay
. . **neutron emission**
emission
. particle emission
. . **neutron emission**
nuclear reactions
. radioactive decay
. . **neutron emission**
RT neutrons
- selection rules (nuclear physics)
- neutron flux*
USE **flux (rate)**
- neutron flux density**
SN (LIMITED TO NEUTRON EMISSION OR DETECTION RATE PER UNIT AREA)
DEF A measure of the intensity of neutron radiation within a given range of neutron energies; the product of the neutron density and velocity, measured in neutrons per square meter-second or neutrons per square centimeter-second.
GS rates (per time)
. flux density
. . radiant flux density
. . . particle flux density
. . . . **neutron flux density**
RT high flux isotope reactors
irradiance
nuclear fission
radiance
radiancy
radiation shielding
solar neutrons
- neutron irradiation**
GS irradiation
. **neutron irradiation**
RT ion irradiation
neutron transmutation doping
transmutation
- neutron physics**
RT ∞ physics
∞ science
- neutron radiography**
DEF Nondestructive testing and inspection utilizing neutron beams from nuclear reactors, particle accelerators, and/or radioisotopes. Imagery displaying structural defects utilizes neutron image recorders or screens.
GS imagery
. radiography
. . **neutron radiography**
nondestructive tests
. **neutron radiography**
RT ∞ materials tests
- neutron scattering**
UF *Legendre code*
GS nuclear reactions
. nuclear scattering
. . **neutron scattering**
scattering
. nuclear scattering
. . **neutron scattering**
RT elementary particles
nuclear particles
resonance scattering
- neutron sources**
GS radiation sources
. **neutron sources**
RT linear accelerators
nuclear fuels
nuclear research and test reactors
particle accelerators
spent fuels
- neutron spectra**
GS spectra
. energy spectra
. . **neutron spectra**
- neutron spectrometers**
UF *triple axis spectrometers*
GS measuring instruments
. counters
. . radiation counters
. . . neutron counters
. . . . **neutron spectrometers**
. radiation measuring instruments
. . radiation counters
. . . neutron counters
. . . . **neutron spectrometers**
spectrometers

neutron stars

- . . **neutron spectrometers**
- neutron stars**
 - GS (EXCLUDES TRACKS OF PARTICLES EMANATING FROM A NUCLEAR COLLISION)
 - GS celestial bodies
 - . stars
 - . . **neutron stars**
 - . . . magnetars
 - . . . pulsars
 - . . . soft gamma repeaters
 - RT degenerate matter
 - gravitational binding energy
 - gravitational lenses
 - neutral currents
 - starquakes
 - supernova remnants
 - x ray binaries
 - x ray stars
- neutron thermalization**
 - GS energy absorption
 - . moderation (energy absorption)
 - . . thermalization (energy absorption)
 - . . . **neutron thermalization**
- neutron transmutation*
 - USE **nuclear reactions**
- neutron transmutation doping**
 - (added June 2003)
 - DEF A doping technique for creating impurity isotopes from the host atoms of a material through the use of thermal neutron irradiation and subsequent radioactive decay
 - GS doping (materials)
 - . **neutron transmutation doping**
 - RT additives
 - doped crystals
 - neutron irradiation
 - transmutation
- neutrons**
 - DEF Subatomic particles with no electric charge, and with a mass of 1. 67482 times 10 to the minus 24 gram.
 - GS particles
 - . elementary particles
 - . . fermions
 - . . . **neutrons**
 - cold neutrons
 - fast neutrons
 - photoneutrons
 - solar neutrons
 - thermal neutrons
 - . neutral particles
 - . . **neutrons**
 - . . . cold neutrons
 - . . . fast neutrons
 - . . . photoneutrons
 - . . . solar neutrons
 - . . . thermal neutrons
 - RT baryons
 - chain reactions (nuclear physics)
 - charged particles
 - corpussular radiation
 - cosmic rays
 - neutron emission
 - nuclear radiation
 - nuclei (nuclear physics)
 - nucleon potential
 - nucleons
 - radiation effects
 - radiation shielding
- neutrophils**
 - (added August 2004)
 - DEF Granular leukocytes having a nucleus with three to five lobes connected by slender threads of chromatin, and cytoplasm containing fine inconspicuous granules and stainable by neutral dyes.
 - GS cells (biology)
 - . blood cells
 - . . leukocytes
 - . . . **neutrophils**
 - RT chromatin
 - cytoplasm
- immune systems
- Nevada**
 - GS nations
 - . United States
 - . . **Nevada**
 - RT Great Basin (US)
 - Lake Tahoe (CA-NV)
 - Pyramid Lake (NV)
 - Southern California
- New Brunswick**
 - GS nations
 - . Canada
 - . . **New Brunswick**
- New England (US)**
 - GS regions
 - . **New England (US)**
 - RT United States
- New Guinea (island)**
 - GS landforms
 - . islands
 - . . Pacific islands
 - . . . **New Guinea (island)**
 - RT Papua New Guinea
 - Torres Strait
- New Hampshire**
 - GS nations
 - . United States
 - . . **New Hampshire**
 - RT St Lawrence Valley (North America)
- New Haven (CT)**
 - GS cities
 - . **New Haven (CT)**
 - RT Connecticut
- New Horizons mission**
 - (added January 2006)
 - DEF Flyby mission to study the composition, geology, and morphology of Pluto and its moon Charon; search for rings and additional satellites around Pluto; and to conduct similar investigations of one or more Kuiper Belt Objects.
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **New Horizons mission**
 - . . space programs
 - . . . NASA space programs
 - . . . **New Horizons mission**
 - space missions
 - . flyby missions
 - . . **New Horizons mission**
 - RT asteroid missions
 - Charon
 - Kuiper belt
 - Pluto (planet)
 - space exploration
- New Jersey**
 - GS nations
 - . United States
 - . . **New Jersey**
 - RT Delaware Bay (US)
 - Delaware River Basin (US)
 - Hudson River (NY-NJ)
- New Mexico**
 - GS nations
 - . United States
 - . . **New Mexico**
 - RT Colorado Plateau (US)
 - Rio Grande (North America)
- NEW MOONS project**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **NEW MOONS project**
 - . projects
 - . . **NEW MOONS project**
 - . . space programs
 - . . . NASA space programs
 - . . . **NEW MOONS project**
 - RT nuclear propulsion
- structural weight
- weight analysis
- New York**
 - GS nations
 - . United States
 - . . **New York**
 - RT Adirondack Mountains (NY)
 - Delaware River Basin (US)
 - Hudson River (NY-NJ)
 - Lake Champlain Basin (NY-VT)
 - Long Island (NY)
 - New York City (NY)
 - St Lawrence Valley (North America)
 - Susquehanna River Basin (MD-NY-PA)
- New York City (NY)**
 - GS cities
 - . **New York City (NY)**
 - RT New York
- New Zealand**
 - GS landforms
 - . islands
 - . . Pacific islands
 - . . . **New Zealand**
 - nations
 - . **New Zealand**
 - RT New Zealand space program
- New Zealand space program**
 - (added June 1989)
 - GS programs
 - . space programs
 - . . **New Zealand space program**
 - RT New Zealand
- Newfoundland**
 - GS landforms
 - . islands
 - . . **Newfoundland**
 - nations
 - . Canada
 - . . **Newfoundland**
- news**
 - RT documentation
- news media**
 - RT data acquisition
 - information
 - Internet resources
 - ∞ journals
- newton**
 - DEF The unit of force in the SI system; that force which gives to a mass of 1 kilogram an acceleration of 1 meter per second squared.
 - RT ∞ force
 - kinetics
 - Newtonian fluids
 - nonNewtonian fluids
- Newton methods**
 - GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **Newton methods**
 - Newton-Raphson method
 - . . . iteration
 - . . . **Newton methods**
 - Newton-Raphson method
 - RT iterative solution
 - problem solving
 - roots of equations
- Newton pressure law**
 - GS laws
 - . **Newton pressure law**
 - RT compressible flow
 - laminar flow
 - Newtonian fluids
 - Prandtl-Meyer expansion
 - pressure
 - pressure distribution
- Newton second law**
 - GS kinetics
 - . **Newton second law**
 - laws

. **Newton second law**
 RT conservation
 momentum theory
Newton Theory
 GS kinetics
 . **Newton Theory**
 theoretical physics
 . **Newton Theory**
 RT conservation laws
 Newtonian fluids
 nonNewtonian fluids
 nonrelativistic mechanics
 ∞ theories
Newton-Busemann law
 GS laws
 . **Newton-Busemann law**
Newtonian fluids
 RT anisotropic fluids
 ∞ fluids
 Navier-Stokes equation
 newton
 Newton pressure law
 Newton Theory
 nonNewtonian fluids
 stress-strain-time relations
 viscous fluids
Newton-Raphson method
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . Newton methods
 **Newton-Raphson method**
 . . iteration
 . . . Newton methods
 **Newton-Raphson method**
 RT ∞ methodology
Next Generation Space Telescope project
 (added December 1999)
 DEF Project in the NASA Origins program with the goal of developing a spaceborne observatory to succeed the Hubble Space Telescope after 2005. The telescope is foreseen to have an aperture of 8 meters and be optimized for near infrared wavelengths (0. 6-10+ microns) in order to enable the exploration of the most remote high redshift universe.
 UF *NGST project*
 GS programs
 . projects
 . . **Next Generation Space Telescope project**
 RT astronomical observatories
 infrared telescopes
 James Webb Space Telescope
 NASA space programs
 spaceborne telescopes
NGST project
 (added December 1999)
 USE **Next Generation Space Telescope project**

Nicaragua
 GS nations
 . **Nicaragua**
 RT Central America
Nichrome (trademark)
 GS alloys
 . nickel alloys
 . . **Nichrome (trademark)**
nickel
 GS chemical elements
 . **nickel**
 . . nickel isotopes
 metals
 . transition metals
 . . **nickel**
 . . . nickel isotopes
 RT constantan
nickel alloys
 GS alloys
 . **nickel alloys**

. . Astroloy (trademark)
 . . Hastelloy (trademark)
 . . Inconel (trademark)
 . . kamacite
 . . Monel (trademark)
 . . Nichrome (trademark)
 . . nitinol alloys
 . . Rene 41
 . . Rene 63
 . . Rene 77
 . . Rene 95
 . . Udimet alloys
 . . Waspaloy
 RT aluminides
 gold alloys
 heat resistant alloys
 nickel aluminides
 nimonic alloys
 Permalloys (trademark)
 shape memory alloys
 silicon alloys
 stainless steels
 sulfidation
nickel aluminides
 (added June 1997)
 GS aluminum compounds
 . aluminides
 . . **nickel aluminides**
 nickel compounds
 . **nickel aluminides**
 RT intermetallics
 nickel alloys
nickel cadmium batteries
 DEF Alkaline storage batteries in which the positive active material is nickel oxide and the negative contains cadmium.
 UF *cadmium nickel batteries*
 GS electrochemical cells
 . electric batteries
 . . storage batteries
 . . . **nickel cadmium batteries**
 RT dry cells
 silver cadmium batteries
nickel coatings
 GS coatings
 . metal coatings
 . . **nickel coatings**
 RT corrosion prevention
 metal films
 protective coatings
nickel compounds
 GS **nickel compounds**
 . cohenite
 . nickel aluminides
 . nickel fluorides
 . nickel oxides
 . schreibersite
 RT ∞ chemical compounds
 ∞ Group 8 compounds
 ∞ metal compounds
nickel fluorides
 GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides
 **nickel fluorides**
 . halides
 . . fluorides
 . . . metal fluorides
 **nickel fluorides**
 . . metal halides
 . . . metal fluorides
 **nickel fluorides**
 nickel compounds
 . **nickel fluorides**
nickel hydrogen batteries
 GS electrochemical cells
 . electric batteries
 . . storage batteries
 . . . **nickel hydrogen batteries**
 RT energy storage
 hydrogen-based energy

spacecraft power supplies
nickel iron batteries
 DEF Alkaline-type electric cells using potassium hydroxide as the electrolyte and anodes of steel wool substrate with active iron material and cathodes of nickel plated steel wool substrate with active nickel material.
 GS electrochemical cells
 . electric batteries
 . . **nickel iron batteries**
 RT lead acid batteries
 nickel zinc batteries
 storage batteries
nickel isotopes
 GS chemical elements
 . nickel
 . . **nickel isotopes**
 . nuclides
 . . isotopes
 . . . **nickel isotopes**
 metals
 . transition metals
 . . nickel
 . . . **nickel isotopes**
nickel oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **nickel oxides**
 nickel compounds
 . **nickel oxides**
nickel plate
 GS plating
 . **nickel plate**
 RT electroplating
 gold coatings
nickel steels
 DEF Steels containing nickel as a main alloying element.
 GS alloys
 . iron alloys
 . . steels
 . . . **nickel steels**
 RT stainless steels
nickel zinc batteries
 UF *zinc nickel batteries*
 GS electric generators
 . direct power generators
 . . primary batteries
 . . . dry cells
 **nickel zinc batteries**
 electrochemical cells
 . electric batteries
 . . primary batteries
 . . . dry cells
 **nickel zinc batteries**
 . . storage batteries
 . . . **nickel zinc batteries**
 RT nickel iron batteries
nicotinamide
 GS bases (chemical)
 . alkaloids
 . . **nicotinamide**
 nitrogen compounds
 . alkaloids
 . . **nicotinamide**
 . amides
 . . **nicotinamide**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **nicotinamide**
 vitamins
 . **nicotinamide**
nicotine
 GS bases (chemical)
 . alkaloids
 . . **nicotine**
 nitrogen compounds
 . alkaloids
 . . **nicotine**

nicotinic acid

organic compounds
. cyclic compounds
. heterocyclic compounds
. . . alkaloids
. . . . **nicotine**
RT tobacco

nicotinic acid

GS acids
. carboxylic acids
. . . **nicotinic acid**
organic compounds
. carboxylic acids
. . . **nicotinic acid**
. cyclic compounds
. heterocyclic compounds
. . . **nicotinic acid**
vitamins
. **nicotinic acid**

Niger

GS nations
. **Niger**
RT Africa

Nigeria

GS nations
. **Nigeria**
RT Africa

night

RT darkening
darkness
daytime
diurnal variations
evening
shadows
sky brightness
twilight glow

night airglow

USE **nightglow**

night E layer

USE **E region**
night sky

night F layer

USE **F region**
night sky

night flights (aircraft)

RT ∞ aircraft
approach control
blind landing
darkness
flight instruments
instrument approach
instrument landing systems
nap-of-the-earth navigation
radar
radio beacons
visibility

night sky

UF *night E layer*
night F layer
GS sky
. **night sky**
RT airglow
auroras
gegenschein
nightglow
sky brightness
twilight glow
zodiacal light

night vision

GS vision
. **night vision**
RT dark adaptation
enhanced vision
image intensifiers
light adaptation
microchannels
nap-of-the-earth navigation

nightglow

UF *night airglow*
GS atmospheric radiation
. sky radiation

. . airglow
. . . **nightglow**
electromagnetic radiation
. light (visible radiation)
. . sky radiation
. . . airglow
. . . . **nightglow**
RT biometeorology
night sky
radio auroras
sky brightness

nigotrons

GS electron tubes
. vacuum tubes
. . microwave tubes
. . . magnetrons
. . . . **nigotrons**
microwave equipment
. microwave oscillators
. . magnetrons
. . . **nigotrons**
. microwave tubes
. . magnetrons
. . . **nigotrons**
oscillators
. microwave oscillators
. . magnetrons
. . . **nigotrons**

Nihon aircraft

UF *NAMC aircraft*
GS **Nihon aircraft**
. YS-11 aircraft
RT ∞ aircraft

Nihon YS-11 aircraft

USE **YS-11 aircraft**

Nike booster rocket engines

GS engines
. rocket engines
. . booster rocket engines
. . . **Nike booster rocket engines**
. . solid propellant rocket engines
. . . **Nike booster rocket engines**
RT ∞ Nike rockets

Nike missiles

GS missiles
. surface to air missiles
. . **Nike missiles**
. . . Nike-Ajax missile
. . . Nike-Hercules missile
. . . Nike-Zeus missile
RT antiaircraft missiles
antimissile missiles
∞ Nike rockets
Sentinel system

Nike project

GS programs
. projects
. . **Nike project**
RT ∞ Nike rockets

Nike rocket vehicles

GS rocket vehicles
. multistage rocket vehicles
. . **Nike rocket vehicles**
. . . Nike-Apache rocket vehicle
. . . Nike-Cajun rocket vehicle
. . . Nike-Hydac rocket vehicle
. . . Nike-Iroquois rocket vehicle
. . . Nike-Javelin rocket vehicle
. . . Nike-Tomahawk rocket vehicle
RT ∞ Nike rockets
∞ vehicles

∞ Nike rockets

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT Nike booster rocket engines
Nike missiles
Nike project
Nike rocket vehicles

Nike X systems

GS weapon systems
. missile systems

. . **Nike X systems**
RT antimissile missiles
missiles
surface to air missiles
∞ systems

Nike-Ajax missile

GS missiles
. antiaircraft missiles
. . **Nike-Ajax missile**
. surface to air missiles
. . Nike missiles
. . . **Nike-Ajax missile**
RT Argo rocket vehicles
EXOS sounding rocket
liquid propellant rocket engines
solid propellant rocket engines
Trailblazer 1 reentry vehicle

Nike-Apache rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Apache rocket vehicle**
RT solid propellant rocket engines

Nike-Cajun rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Cajun rocket vehicle**
RT Cajun rocket vehicle
solid propellant rocket engines

Nike-Hercules missile

GS missiles
. antiaircraft missiles
. . **Nike-Hercules missile**
. surface to air missiles
. . Nike missiles
. . . **Nike-Hercules missile**
RT solid propellant rocket engines

Nike-Hydac rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Hydac rocket vehicle**
RT ∞ vehicles

Nike-Iroquois rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Iroquois rocket vehicle**
RT ∞ vehicles

Nike-Javelin rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Javelin rocket vehicle**
RT solid propellant rocket engines
sounding rockets

Nike-Tomahawk rocket vehicle

GS rocket vehicles
. multistage rocket vehicles
. . Nike rocket vehicles
. . . **Nike-Tomahawk rocket vehicle**
RT solid propellant rocket engines

Nike-Zeus missile

UF *Zeus missile*
GS missiles
. antimissile missiles
. . **Nike-Zeus missile**
. surface to air missiles
. . Nike missiles
. . . **Nike-Zeus missile**
RT solid propellant rocket engines
Spartan missile
Sprint missile

nimbostratus clouds

UF *nimbus clouds*
GS clouds (meteorology)
. **nimbostratus clouds**
RT cumulonimbus clouds
precipitation (meteorology)

- stratus clouds
- Nimbus 1 satellite**
 GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 1 satellite**
 RT cloud photography
 Thor Agena launch vehicle
- Nimbus 2 satellite**
 GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 2 satellite**
 RT cloud photography
 Thor Agena launch vehicle
- Nimbus 3 satellite**
 GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 3 satellite**
- Nimbus 4 satellite**
 GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 4 satellite**
- Nimbus 5 satellite**
 GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 5 satellite**
- Nimbus 6 satellite**
 GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 6 satellite**
- Nimbus 7 satellite**
 DEF One in a series of meteorological satellites.
 GS artificial satellites
 . meteorological satellites
 . . Nimbus satellites
 . . . **Nimbus 7 satellite**
 RT Total Ozone Mapping Spectrometer
- nimbus clouds*
 USE **nimbostratus clouds**
- Nimbus project**
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Nimbus project**
 . projects
 . . **Nimbus project**
 . space programs
 . . NASA space programs
 . . . **Nimbus project**
 RT cloud photography
 meteorological satellites
 satellite observation
- Nimbus satellites**
 GS artificial satellites
 . meteorological satellites
 . . **Nimbus satellites**
 . . . Nimbus 1 satellite
 . . . Nimbus 2 satellite
 . . . Nimbus 3 satellite
 . . . Nimbus 4 satellite
 . . . Nimbus 5 satellite
 . . . Nimbus 6 satellite
 . . . Nimbus 7 satellite
 RT cloud photography
 ESSA satellites
 infrared photography
 satellite observation
 Thor Agena launch vehicle
- nimonic alloys**
 GS alloys
 . heat resistant alloys
 . . **nimonic alloys**
 RT iron alloys
- nickel alloys
- NIMPHE (engine)*
 USE **hydrazine engines**
- Nimrod accelerator**
 GS particle accelerators
 . **Nimrod accelerator**
 RT ∞ accelerators
- niobates**
 GS niobium compounds
 . **niobates**
 . . lithium niobates
 RT euxenite
 oxides
 ∞ oxygen compounds
- niobium**
 UF *columbium*
 GS chemical elements
 . **niobium**
 . . niobium isotopes
 . . . niobium 95
 metals
 . refractory metals
 . . **niobium**
 . . . niobium isotopes
 niobium 95
 . transition metals
 . . **niobium**
 . . . niobium isotopes
 niobium 95
 refractory materials
 . refractory metals
 . . **niobium**
 . . . niobium isotopes
 niobium 95
- niobium 95**
 GS chemical elements
 . niobium
 . . niobium isotopes
 . . . **niobium 95**
 . nuclides
 . . isotopes
 . . . niobium isotopes
 **niobium 95**
 . . . radioactive isotopes
 **niobium 95**
 metals
 . refractory metals
 . . niobium
 . . . niobium isotopes
 **niobium 95**
 . transition metals
 . . niobium
 . . . niobium isotopes
 **niobium 95**
 refractory materials
 . refractory metals
 . . niobium
 . . . niobium isotopes
 **niobium 95**
- niobium alloys**
 GS alloys
 . heat resistant alloys
 . . refractory metal alloys
 . . . **niobium alloys**
 refractory materials
 . refractory metal alloys
 . . **niobium alloys**
 RT hafnium alloys
- niobium carbides**
 GS carbon compounds
 . carbides
 . . **niobium carbides**
 niobium compounds
 . **niobium carbides**
- niobium compounds**
 GS **niobium compounds**
 . niobates
 . . lithium niobates
 . niobium carbides
 . niobium iodides
 . niobium oxides
 . niobium stannides
- RT ∞ chemical compounds
 ∞ Group 5B compounds
 ∞ metal compounds
- niobium iodides**
 GS halogen compounds
 . halides
 . . metal halides
 . . . **niobium iodides**
 . iodine compounds
 . . iodides
 . . . **niobium iodides**
 niobium compounds
 . **niobium iodides**
- niobium isotopes**
 GS chemical elements
 . niobium
 . . **niobium isotopes**
 . . . niobium 95
 . nuclides
 . . isotopes
 . . . **niobium isotopes**
 niobium 95
 metals
 . refractory metals
 . . niobium
 . . . **niobium isotopes**
 niobium 95
 . transition metals
 . . niobium
 . . . **niobium isotopes**
 niobium 95
 refractory materials
 . refractory metals
 . . niobium
 . . . **niobium isotopes**
 niobium 95
- niobium oxides**
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **niobium oxides**
 niobium compounds
 . **niobium oxides**
- niobium stannides**
 GS niobium compounds
 . **niobium stannides**
 tin compounds
 . stannides
 . . **niobium stannides**
- NIPS (system)*
 USE **NASA Interactive Planning System**
- nitinol alloys**
 DEF Shape memory alloys of titanium and nickel.
 GS alloys
 . nickel alloys
 . . **nitinol alloys**
 . shape memory alloys
 . . **nitinol alloys**
 . titanium alloys
 . . **nitinol alloys**
 ferroelastic materials
 . shape memory alloys
 . . **nitinol alloys**
- nitramine propellants**
 GS propellants
 . rocket propellants
 . . **nitramine propellants**
 . solid propellants
 . . **nitramine propellants**
 RT oxidizers
- nitrasol explosives**
 GS explosives
 . **nitrasol explosives**
 propellants
 . **nitrasol explosives**
- nitrate esters**
 GS esters
 . **nitrate esters**
 . . isopropyl nitrate
 . . propyl nitrate

nitrates

nitrogen compounds

. **nitrate esters**

. . isopropyl nitrate

. . propyl nitrate

nitrates

GS nitrogen compounds

. **nitrates**

. . dinitrates

. . inorganic nitrates

. . . ammonium nitrates

. . . hydrazine nitrate

. . . potassium nitrates

. . . silver nitrates

. . . sodium nitrates

. . methyl nitrate

. . organic nitrates

. . . cellulose nitrate

. . . nitroforms

. . . . hydrazine nitroform

. . . nitroglycerin

. . . PETN

nitration

GS chemical reactions

. **nitration**

RT denitrogenation

nitric acid

GS acids

. **nitric acid**

nitrogen compounds

. **nitric acid**

RT nitrous acid

nitric oxide

GS chalcogenides

. oxides

. . nitrogen oxides

. . . **nitric oxide**

nitrogen compounds

. nitrogen oxides

. . **nitric oxide**

RT nitrosyls

nitrides

GS nitrogen compounds

. **nitrides**

. . boron nitrides

. . metal nitrides

. . . aluminum nitrides

. . . beryllium nitrides

. . . gallium nitrides

. . . tantalum nitrides

. . . titanium nitrides

. . . zirconium nitrides

. . carbon nitrides

. . oxynitrides

. . silicon nitrides

RT ceramic nuclear fuels

molten salts

nitriding

GS chemical reactions

. **nitriding**

hardening (materials)

. **nitriding**

heat treatment

. **nitriding**

nitriles

GS nitrogen compounds

. **nitriles**

. . acetonitrile

. . acrylonitriles

. . . polyacrylonitrile

. . malononitrile

. . phosphonitriles

. . succinonitrile

organic compounds

. **nitriles**

. . acetonitrile

. . acrylonitriles

. . . polyacrylonitrile

. . malononitrile

. . phosphonitriles

. . succinonitrile

RT cyano compounds

nitrites

GS nitrogen compounds

. **nitrites**

nitro compounds

GS nitrogen compounds

. **nitro compounds**

. . nitrobenzenes

. . . trinitrotoluene

. . nitroglycerin

. . nitroguanidine

. . nitromethane

. . nitropropane

. . picrates

. . . ammonium picrates

. . polybutadiene tetranitramine

. . tetryl

. . trinitro compounds

RT ∞ chemical compounds

nitroamines

GS nitrogen compounds

. **nitroamines**

organic compounds

. amines

. . **nitroamines**

nitrobacter

GS microorganisms

. bacteria

. . **nitrobacter**

nitrobenzenes

GS nitrogen compounds

. nitro compounds

. . **nitrobenzenes**

. . . trinitrotoluene

nitrocellulose

USE **cellulose nitrate**

nitrofluoramines

GS halogen compounds

. fluorine compounds

. . fluoro compounds

. . . fluorine organic compounds

. . . . fluoroamines

. **nitrofluoramines**

nitrogen compounds

. **nitrofluoramines**

organic compounds

. amines

. . fluoroamines

. . . **nitrofluoramines**

. . fluorine organic compounds

. . fluoroamines

. . . **nitrofluoramines**

nitroformates

GS formates

. **nitroformates**

nitrogen compounds

. **nitroformates**

nitroforms

GS esters

. organic nitrates

. . **nitroforms**

. . . hydrazine nitroform

nitrogen compounds

. nitrates

. . organic nitrates

. . . **nitroforms**

. . . . hydrazine nitroform

nitrogen

GS chemical elements

. **nitrogen**

. . liquid nitrogen

. . nitrogen isotopes

. . . nitrogen 15

. . . nitrogen 16

. . solid nitrogen

gases

. **nitrogen**

. . liquid nitrogen

. . nitrogen isotopes

. . . nitrogen 15

. . . nitrogen 16

. . solid nitrogen

RT Kjeldahl method

nitrogen atoms

nitrogen ions

nitrogen lasers

nitrogenation

nitrolysis

reaction bonding

sialon

Vegard-Kaplan bands

Wolf-Rayet stars

nitrogen 15

GS chemical elements

. nitrogen

. . nitrogen isotopes

. . . **nitrogen 15**

. . nuclides

. . isotopes

. . . nitrogen isotopes

. . . . **nitrogen 15**

gases

. nitrogen

. . nitrogen isotopes

. . . **nitrogen 15**

nitrogen 16

GS chemical elements

. nitrogen

. . nitrogen isotopes

. . . **nitrogen 16**

. . nuclides

. . isotopes

. . . nitrogen isotopes

. . . . **nitrogen 16**

. . . . radioactive isotopes

. . . . **nitrogen 16**

gases

. nitrogen

. . nitrogen isotopes

. . . **nitrogen 16**

nitrogen atoms

GS atoms

. **nitrogen atoms**

RT nitrogen

nitrogen compounds

GS **nitrogen compounds**

. alkaloids

. . atropine

. . betaines

. . caffeine

. . colchicine

. . ergotamine

. . hyoscine

. . lysergine

. . morphine

. . nicotinamide

. . nicotine

. . pilocarpine

. . reserpine

. . strychnine

. . tropanyl compounds

. . amides

. . acetanilide

. . acetazolamide

. . carbamides

. . cyanamides

. . formhydroxamic acid

. . nicotinamide

. . oxamic acids

. . polyimides

. . . bismaleimide

. . . Kapton (trademark)

. . succinimides

. . ureas

. . . difluorourea

. . . thioureas

. . . thiuronium

. . ammonia

. . liquid ammonia

. . azides (inorganic)

. . hydrogen azides

. . sodium azides

. . azides (organic)

. . sodium azides

. . triaminoguanidinium azide

. . azo compounds

- . . HMX
- . . RDX
- . cyano compounds
- . . cyanamides
- . . cyanoacetylene
- . . isocyanates
- . . . diisocyanates
- . . . fulminates
- . folic acid
- . hydrazinium compounds
- . hydrazoic acid
- . hydrazones
- . hydrocyanic acid
- . imides
- . . bismaleimide
- . . phthalimides
- . . succinimides
- . imines
- . nitrate esters
- . . isopropyl nitrate
- . . propyl nitrate
- . nitrates
- . . dinitrates
- . . inorganic nitrates
- . . . ammonium nitrates
- . . . hydrazine nitrate
- . . . potassium nitrates
- . . . silver nitrates
- . . . sodium nitrates
- . . methyl nitrate
- . . organic nitrates
- . . . cellulose nitrate
- . . . nitroforms
- hydrazine nitroform
- . . . nitroglycerin
- . . . PETN
- . nitric acid
- . nitrides
- . . boron nitrides
- . . metal nitrides
- . . . aluminum nitrides
- . . . beryllium nitrides
- . . . gallium nitrides
- . . . tantalum nitrides
- . . . titanium nitrides
- . . . zirconium nitrides
- . carbon nitrides
- . oxynitrides
- . . silicon nitrides
- . nitrites
- . nitro compounds
- . . nitrobenzenes
- . . trinitrotoluene
- . . nitroglycerin
- . . nitroguanidine
- . . nitromethane
- . . nitropropane
- . . picrates
- . . . ammonium picrates
- . . polybutadiene tetranitramine
- . . tetryl
- . . trinitro compounds
- . nitroamines
- . nitrofluoramines
- . nitroformates
- . nitrogen fluorides
- . nitrogen hydrides
- . . amino radical
- . nitrogen oxides
- . . nitric oxide
- . . nitrogen dioxide
- . . nitrogen tetroxide
- . . nitrous oxides
- . nitrogen polymers
- . . polyacrylonitrile
- . . polybenzimidazole
- . . polybutadiene tetranitramine
- . . Pyrrones (trademark)
- . nitrosamine
- . nitroso compounds
- . nitrosyls
- . . . nitrosyl chlorides
- . nitroxychlorides
- . nitryl chlorides
- . nitryl fluorides
- . quinoline
- . thiazine (trademark)
- . thymine
- . trinitramine
- . . tryptophan
- . uracil
- . xanthines
- . . caffeine
- . . guanines
- . . uric acid
- . nitriles
- . . acetonitrile
- . . acrylonitriles
- . . . polyacrylonitrile
- . . malononitrile
- . . phosphonitriles
- . . succinonitrile
- RT ∞ chemical compounds
- ∞ Group 5A compounds
- phosphazene
- nitrogen dioxide**
- GS chalcogenides
- . oxides
- . . nitrogen oxides
- . . . **nitrogen dioxide**
- nitrogen compounds
- . nitrogen oxides
- . . **nitrogen dioxide**
- nitrogen fixation*
- USE **nitrogenation**
- nitrogen fluorides**
- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **nitrogen fluorides**
- . . halides
- . . fluorides
- . . . **nitrogen fluorides**
- nitrogen compounds
- . **nitrogen fluorides**
- nitrogen hydrides**
- GS hydrogen compounds
- . hydrides
- . . **nitrogen hydrides**
- . . . amino radical
- nitrogen compounds
- . **nitrogen hydrides**
- . . amino radical
- RT ammonia
- hydrazoic acid
- nitrogen ions**
- GS ions
- . **nitrogen ions**
- RT negative ions
- nitrogen
- nitrogen isotopes**
- GS chemical elements
- . nitrogen
- . . **nitrogen isotopes**
- . . . nitrogen 15
- . . . nitrogen 16
- . nuclides
- . . isotopes
- . . . **nitrogen isotopes**
- nitrogen 15
- nitrogen 16
- gases
- . nitrogen
- . . **nitrogen isotopes**
- . . . nitrogen 15
- . . . nitrogen 16
- nitrogen lasers**
- DEF Stimulated emission devices in which the nitrogen molecule is the lasing medium.
- GS stimulated emission devices
- . lasers
- . . gas lasers
- . . . **nitrogen lasers**
- RT lasing
- nitrogen
- population inversion
- pulsed lasers
- ultraviolet lasers
- nitrogen metabolism**
- GS metabolism
- . **nitrogen metabolism**
- RT biochemistry
- ∞ biology
- enzymology
- hydrogen metabolism
- nutrition
- nitrogen oxides**
- GS chalcogenides
- . oxides
- . . **nitrogen oxides**
- . . . nitric oxide
- . . . nitrogen dioxide
- . . . nitrogen tetroxide
- . . nitrous oxides
- nitrogen compounds
- . **nitrogen oxides**
- . . nitric oxide
- . . nitrogen dioxide
- . . nitrogen tetroxide
- . . nitrous oxides
- RT nitrosyls
- nitrous acid
- photochemical oxidants
- nitrogen plasma**
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **nitrogen plasma**
- . . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **nitrogen plasma**
- nitrogen polymers**
- GS nitrogen compounds
- . **nitrogen polymers**
- . . polyacrylonitrile
- . . polybenzimidazole
- . . polybutadiene tetranitramine
- . . Pyrrones (trademark)
- RT ∞ polymers
- nitrogen tetroxide**
- GS chalcogenides
- . oxides
- . . nitrogen oxides
- . . . **nitrogen tetroxide**
- nitrogen compounds
- . nitrogen oxides
- . . **nitrogen tetroxide**
- RT liquid rocket propellants
- rocket oxidizers
- nitrogenation**
- UF *nitrogen fixation*
- GS chemical reactions
- . **nitrogenation**
- RT leguminous plants
- lightning
- nitrogen
- nitroglycerin**
- GS esters
- . organic nitrates
- . . **nitroglycerin**
- nitrogen compounds
- . nitrates
- . . organic nitrates
- . . . **nitroglycerin**
- . . nitro compounds
- . . . **nitroglycerin**
- RT double base propellants
- double base rocket propellants
- dynamite
- explosives
- glycerides
- glycerols
- nitroguanidine**
- UF *HBNQ*
- GS nitrogen compounds
- . nitro compounds
- . . **nitroguanidine**
- RT explosives

nitrolysis

solid propellants

nitrolysis

- GS chemical reactions
 - . **nitrolysis**
 - decomposition
 - . **nitrolysis**
- RT cracking (chemical engineering)
nitrogen

nitromethane

- GS nitrogen compounds
 - . nitro compounds
 - . . **nitromethane**
- RT BSX
explosives

nitronium compounds

- GS **nitronium compounds**
 - . nitronium perchlorate
- RT ∞ chemical compounds

nitronium perchlorate

- GS halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **nitronium perchlorate**
- nitronium compounds
 - . **nitronium perchlorate**
- RT rocket oxidizers

nitropropane

- GS nitrogen compounds
 - . nitro compounds
 - . . **nitropropane**
- organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkanes
 - **nitropropane**
- RT propane

nitrosamine

- GS nitrogen compounds
 - . **nitrosamine**
- organic compounds
 - . amines
 - . . **nitrosamine**

nitroso compounds

- GS nitrogen compounds
 - . **nitroso compounds**
 - . . nitrosyls
 - . . . nitrosyl chlorides
- RT ∞ chemical compounds
 - organic compounds

nitrosyl chlorides

- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **nitrosyl chlorides**
- halides
 - . . chlorides
 - . . . **nitrosyl chlorides**
- nitrosyls
 - . . **nitrosyl chlorides**
- nitrogen compounds
 - . nitroso compounds
 - . . nitrosyls
 - . . . **nitrosyl chlorides**

nitrosyls

- GS halogen compounds
 - . **nitrosyls**
 - . . nitrosyl chlorides
- nitrogen compounds
 - . nitroso compounds
 - . . **nitrosyls**
 - . . . nitrosyl chlorides
- RT amines
 - esters
 - halides
 - nitric oxide
 - nitrogen oxides

nitrous acid

- RT air pollution
 - atmospheric chemistry
 - nitric acid

nitrogen oxides
reaction kinetics

nitrous oxides

- GS chalcogenides
 - . oxides
 - . . nitrogen oxides
 - . . . **nitrous oxides**
- nitrogen compounds
 - . nitrogen oxides
 - . . **nitrous oxides**

nitroxyl chlorides

- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **nitroxyl chlorides**
- halides
 - . . chlorides
 - . . . **nitroxyl chlorides**
- nitrogen compounds
 - . **nitroxyl chlorides**

nitryl chlorides

- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **nitryl chlorides**
- halides
 - . . chlorides
 - . . . **nitryl chlorides**
- nitrogen compounds
 - . **nitryl chlorides**

nitryl fluorides

- GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **nitryl fluorides**
- halides
 - . . fluorides
 - . . . **nitryl fluorides**
- nitrogen compounds
 - . **nitryl fluorides**

Nix

- (added September 2006)
- DEF Natural satellite of Pluto discovered May 2005.
- GS celestial bodies
 - . natural satellites
 - . . Pluto satellites
 - . . . **Nix**
- RT Hydra
Pluto (planet)

NMR

USE **nuclear magnetic resonance**

n-n junctions

- GS semiconductor junctions
 - . **n-n junctions**

NOAA 2 satellite

- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 2 satellite**

NOAA 3 satellite

- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 3 satellite**

NOAA 4 satellite

- DEF One of a series of meteorological satellites launched by NASA for the National Oceanic and Atmospheric Administration.
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 4 satellite**

NOAA 5 satellite

- DEF One of a series of environmental satellites launched by NASA for the National Oceanic and Atmospheric Administration for the sensing and recording of atmospheric, hydrological, and oceanographic environmental data.
- GS artificial satellites

. meteorological satellites
. . NOAA satellites
. . . **NOAA 5 satellite**

NOAA 6 satellite

- DEF Designation for a NOAA meteorological satellite conforming to the TIROS N configuration.
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 6 satellite**
- TIROS satellites
 - . . . TIROS N series satellites
 - **NOAA 6 satellite**
- RT Advanced Very High Resolution Radiometer

NOAA 7 satellite

- DEF Designation for the seventh NOAA meteorological satellite conforming to the TIROS N configuration.
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 7 satellite**
- RT Advanced Very High Resolution Radiometer
TIROS N series satellites

NOAA 8 satellite

- UF *NOAA E*
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 8 satellite**
- RT Advanced Very High Resolution Radiometer
SarSat

NOAA 9 satellite

- (added July 1990)
- UF *NOAA F satellite*
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 9 satellite**

NOAA 10 satellite

- (added July 1990)
- UF *NOAA G satellite*
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 10 satellite**

NOAA 11 satellite

- (added May 1997)
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 11 satellite**
- RT Advanced Very High Resolution Radiometer
Solar Backscatter UV Spectrometer

NOAA 12 satellite

- (added May 1997)
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 12 satellite**
- RT Advanced Very High Resolution Radiometer
microwave sounding

NOAA 14 satellite

- (added May 1997)
- GS artificial satellites
 - . meteorological satellites
 - . . NOAA satellites
 - . . . **NOAA 14 satellite**
- RT Solar Backscatter UV Spectrometer

NOAA 19 satellite

- (added April 2009)
- UF *NOAA-N Prime Environmental Satellite*
- GS artificial satellites
 - . meteorological satellites

. . . NOAA satellites
 . . . **NOAA 19 satellite**
 RT Advanced Microwave Sounding Unit
 atmospheric sounding
 environmental monitoring
 remote sensing
 satellite observation
 satellite sounding
 weather forecasting

NOAA E
 USE **NOAA 8 satellite**

NOAA F satellite
 USE **NOAA 9 satellite**

NOAA G satellite
 USE **NOAA 10 satellite**

NOAA satellites

GS artificial satellites
 . meteorological satellites
 . . . **NOAA satellites**
 . . . NOAA 2 satellite
 . . . NOAA 3 satellite
 . . . NOAA 4 satellite
 . . . NOAA 5 satellite
 . . . NOAA 6 satellite
 . . . NOAA 7 satellite
 . . . NOAA 8 satellite
 . . . NOAA 9 satellite
 . . . NOAA 10 satellite
 . . . NOAA 11 satellite
 . . . NOAA 12 satellite
 . . . NOAA 14 satellite
 . . . NOAA 19 satellite
 RT Advanced Microwave Sounding Unit
 SMS 1
 SMS 2

NOAA-N Prime Environmental Satellite
 (added April 2009)
 USE **NOAA 19 satellite**

nobelium

GS chemical elements
 . actinide series
 . . transuranium elements
 . . . **nobelium**
 . nuclides
 . . isotopes
 . . . radioactive isotopes
 transuranium elements
 **nobelium**
 metals
 . actinide series
 . . transuranium elements
 . . . **nobelium**
 RT nobelium isotopes

nobelium isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **nobelium isotopes**
 RT nobelium

noble gases

USE **rare gases**

noble metals

UF *precious metals*
 GS metals
 . **noble metals**
 . . gold
 . . . gold isotopes
 gold 198
 . . ruthenium
 . . . ruthenium isotopes
 . . silver
 . . . silver isotopes
 RT ∞ Group 1B compounds

noctilucent

USE **luminescence**

noctilucent clouds

DEF Clouds of unknown composition which occur at great heights, 75 to 90 kilometers. They resemble thin cirrus clouds, but usually with a bluish or silverish color, although sometimes

orange to red, standing out against a dark night sky. Sometimes called luminous clouds.

GS clouds (meteorology)
 . **noctilucent clouds**
 RT luminescence

nocturnal variations

GS variations
 . magnetic variations
 . . **nocturnal variations**
 . . periodic variations
 . . . **nocturnal variations**
 RT diurnal variations
 geomagnetic micropulsations
 geomagnetic pulsations

nodes (standing waves)

DEF Points, lines, or surfaces in standing waves where some characteristic of the wave field has essentially zero amplitude.

RT antinodes
 harmonics
 resonant frequencies
 standing waves
 vibration
 wavelengths
 ∞ waves

nodules

RT leguminous plants
 particles
 spheres
 spherulites

NOE navigation

USE **nap-of-the-earth navigation**

NOESS

SN (NATIONAL OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM)
 DEF The acronym for the National Operational Environmental Satellite System. This term is no longer in use. Used for National Operational Environmental Sat Sys.

UF *National Operational Environmental Sat Sys*
 RT meteorological satellites
 meteorology
 NASA programs
 observation
 ∞ systems

∞ noise

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Any undesired signal (electrical or acoustic) that tends to interfere with the reception, interpretation, or processing of the desired signal.

RT background noise
 continuous noise
 effective perceived noise levels
 electromagnetic noise
 hum
 information theory
 noise (sound)
 noise injuries
 noise propagation
 noise spectra
 random noise
 signal to noise ratios
 spatial filtering
 white noise

noise (sound)

UF *noise hazards*
 GS elastic waves
 . sound waves
 . . **noise (sound)**
 . . . aircraft noise
 blade slap noise
 jet aircraft noise
 propeller noise
 sonic booms
 . . . engine noise
 rocket engine noise
 . . . flow noise
 . . . thermal noise
 aerodynamic noise
 blade slap noise

. propeller noise
 screech tones

RT acoustics
 aeolian tones
 aircraft hazards
 ambience
 auditory stimuli
 auditory tasks
 background noise
 echoes
 effective perceived noise levels
 flight hazards
 human factors engineering
 hypersonic shock
 jet blast effects
 loudness
 loudness
 mufflers
 ∞ noise
 noise measurement
 noise spectra
 operational hazards
 random noise
 random vibration
 reverberation
 shock waves
 sound pressure
 underwater acoustics
 white noise

noise attenuation

USE **noise reduction**

noise elimination

USE **noise reduction**

noise generators

RT electromagnetic noise
 ∞ generators
 radio frequency interference
 random noise
 sound generators
 sound propagation

noise hazards

USE **hazards noise (sound)**

noise injuries

GS injuries
 . **noise injuries**
 RT ear protectors
 ∞ noise

noise intensity

RT aircraft noise
 auditory stimuli
 effective perceived noise levels
 electromagnetic noise
 ∞ intensity
 propeller noise
 psychoacoustics
 sirens
 sound intensity

noise measurement

GS acoustic measurement
 . **noise measurement**
 RT aerodynamic noise
 aircraft noise
 background noise
 jet aircraft noise
 loudness
 ∞ measurement
 noise (sound)
 propeller noise
 sound intensity

noise meters

SN (LIMITED TO ACOUSTIC NOISE)
 GS measuring instruments
 . **noise meters**
 RT acoustic measurement
 field intensity meters
 pressure measurement

noise pollution

DEF Objectional or harmful levels of noise.
 GS pollution
 . **noise pollution**
 RT acoustics

noise prediction

audio frequencies
environment effects
environment pollution
environmental quality
human reactions
human tolerances
physiological effects
physiological factors
sound waves

noise prediction

DEF Estimation of intensity and frequencies based on analyses of probable oscillation of vibration producing components.

GS predictions
. **noise prediction**
. . noise prediction (aircraft)
RT Ffowcs Williams-Hawkins equation

noise prediction (aircraft)

DEF Estimating or forecasting of aircraft noise. Used for aircraft noise prediction.

UF *aircraft noise prediction*
GS predictions
. noise prediction
. . **noise prediction (aircraft)**
RT aeroacoustics
∞ aircraft
aircraft noise
computational aeroacoustics
estimates
Ffowcs Williams-Hawkins equation
forecasting
propeller noise
sound waves

noise propagation

RT acoustics
coherence coefficient
continuous noise
far fields
∞ noise
signal to noise ratios
sound propagation

noise reduction

UF *noise attenuation*
noise elimination
noise suppressors
RT acoustic attenuation
acoustic ducts
acoustic retrofitting
acoustics
aerodynamic noise
aircraft noise
coaxial nozzles
ear protectors
echo suppressors
effective perceived noise levels
electrical grounding
electromagnetic interference
electromagnetic noise
flight rules
grazing flow
Helmholtz resonators
interference immunity
isolators
jet aircraft noise
loudness
mufflers
propeller noise
quiet engine program
∞ reduction
shock wave attenuation
silence
squelch circuits
suppressors
synchrophasing
vibration isolators

noise spectra

GS spectra
. **noise spectra**
RT acoustic frequencies
background noise
channel noise
electromagnetic compatibility
electromagnetic noise
electromagnetic spectra
∞ noise

noise (sound)
radiation spectra
random noise
random signals
shock spectra
signal to noise ratios
white noise

noise storms

GS storms
. **noise storms**
RT cosmic noise
electromagnetic noise
ionospheric storms
magnetic storms
radio frequency interference
solar storms

noise suppressors

USE **noise reduction**

noise temperature

GS temperature
. **noise temperature**
RT electromagnetic noise
electron energy
electron states
temperature measurement
thermal noise

noise threshold

RT auditory fatigue
auditory perception
background noise
signal to noise ratios
∞ thresholds

noise tolerance

RT hazards
human tolerances
tolerances (physiology)

Nomad launch vehicle

GS launch vehicles
. **Nomad launch vehicle**
rocket vehicles
. single stage rocket vehicles
. . **Nomad launch vehicle**
RT Atlas launch vehicles
liquid propellant rocket engines

nomenclatures

RT definition
descriptions
dictionaries
mnemonics
naming
semantics
symbols
terminology
thesauri

nominal values

USE **approximation**

nomograms

USE **nomographs**

nomographs

DEF On charts or graphs, lines of constant value of given quantities with respect to either space or time. Used for isopleths and nomograms.

UF *isopleths*
nomograms
GS analysis (mathematics)
. numerical analysis
. . **nomographs**
RT charts
graphs (charts)

nonadiabatic conditions

DEF In thermodynamics, changes in volume, temperature, flow, etc., accompanied by a transfer of heat.

GS conditions
. **nonadiabatic conditions**
RT energy transfer
heat transfer
nonisothermal processes

thermodynamics

nonadiabatic processes

USE **heat transfer**

nonadiabatic theory

RT adiabatic equations
charged particles
energy dissipation
ionization cross sections
magnetic disturbances
∞ theories
wave propagation

nonanes

GS organic compounds
. hydrocarbons
. . aliphatic hydrocarbons
. . . alkanes
. . . . **nonanes**

nonaqueous electrolytes

GS conductors
. electrolytes
. . **nonaqueous electrolytes**
RT electric batteries
∞ electric cells
electrochemistry
electrolytic cells
primary batteries
storage batteries
wet cells

noncondensable gases

GS gases
. **noncondensable gases**
RT critical temperature
gas-liquid interactions
liquefaction

nonconductors

USE **electrical insulation**

nonconservative forces

RT conservation
conservation equations
conservation laws
continuity equation
∞ force

nondestructive tests

DEF Testing that does not alter the material under test in a permanent manner or introduce any permanent changes to the material properties and structure.

UF *flaw detection*
GS **nondestructive tests**
. neutron radiography
RT acoustic emission
acoustic imaging
adhesion tests
chemical tests
destructive tests
electronic equipment tests
engine tests
ground penetrating radar
hardness tests
high temperature tests
infrared inspection
inspection
load tests
low temperature tests
∞ materials tests
nonintrusive measurement
photoacoustic microscopy
preventive maintenance
quality control
radiography
reliability
SH waves
shearography
static tests
structural health monitoring
∞ tests
thermography
tolerances (mechanics)
ultrasonic flaw detection
ultrasonic spectroscopy
ultrasonic tests

- x ray inspection
- nonelectrolytes**
RT electrolytes
- nonequilibrium conditions**
GS conditions
. **nonequilibrium conditions**
RT ∞ equilibrium
unsteady state
- nonequilibrium drag*
USE **friction drag**
- nonequilibrium flow**
GS fluid flow
. gas flow
. . . **nonequilibrium flow**
RT equilibrium flow
 ∞ fluids
heat transmission
oscillating flow
quasi-steady states
unsteady flow
- nonequilibrium ionization**
GS ionization
. **nonequilibrium ionization**
- nonequilibrium plasmas**
GS particles
. charged particles
. . . energetic particles
. . . plasmas (physics)
. . . . **nonequilibrium plasmas**
. corpuscular radiation
. . . energetic particles
. . . plasmas (physics)
. . . . **nonequilibrium plasmas**
RT magnetohydrodynamic stability
nonuniform plasmas
plasma composition
plasma potentials
plasma radiation
plasma sheaths
rotating plasmas
- nonequilibrium radiation**
GS electromagnetic radiation
. **nonequilibrium radiation**
RT nonthermal radiation
shock wave propagation
- nonequilibrium thermodynamics**
GS thermodynamics
. **nonequilibrium thermodynamics**
RT irreversible processes
- nonEuclidian geometry*
USE **differential geometry**
- nonferrous metals**
GS metals
. **nonferrous metals**
RT chemical elements
conductors
 ∞ metallurgy
- nonflammable materials**
RT asbestos
fireproofing
 ∞ inorganic materials
Kevlar (trademark)
 ∞ materials
oxides
refractory materials
- nongray atmospheres**
RT ∞ atmospheres
black body radiation
emissivity
gray gas
planetary atmospheres
- nongray gas**
GS gases
. **nongray gas**
RT ∞ atmospheres
black body radiation
emissivity
heat transfer
- spectral emission
thermal radiation
thermodynamics
- nonholonomic equations**
GS analysis (mathematics)
. complex variables
. . . **nonholonomic equations**
RT analytic functions
 ∞ equations
- nonhomogeneity*
USE **inhomogeneity**
- noninvasive measurement**
(added September 1992)
UF *non-intrusive measurement*
RT flow measurement
laser doppler velocimeters
 ∞ measurement
nondestructive tests
optical measurement
pressure sensitive paints
temperature measurement
temperature sensitive paints
- non-intrusive measurement*
USE **noninvasive measurement**
- nonisentropicity**
GS isentropic processes
. **nonisentropicity**
RT entropy
 ∞ processes
- nonisothermal processes**
DEF In thermodynamics, compression or expansion of substances at nonuniform temperatures.
RT energy transfer
heat transfer
nonadiabatic conditions
pressure effects
 ∞ processes
temperature gradients
thermodynamics
- nonisotropic plates*
USE **anisotropic plates**
- nonisotropy*
USE **anisotropy**
- nonlifting vehicles*
USE **ballistic vehicles**
- nonlinear equations**
GS algebra
. **nonlinear equations**
. . cubic equations
. . Duffing differential equation
. . Monge-Ampere equation
. . nonlinear evolution equations
. . quadratic equations
. . quartic equations
analysis (mathematics)
. real variables
. . **nonlinear equations**
. . . cubic equations
. . . Duffing differential equation
. . . Monge-Ampere equation
. . . nonlinear evolution equations
. . . quadratic equations
. . . quartic equations
RT Born-Infeld theory
differential equations
 ∞ equations
field theory (algebra)
integral equations
polynomials
roots of equations
- nonlinear evolution equations**
GS algebra
. nonlinear equations
. . **nonlinear evolution equations**
analysis (mathematics)
. real variables
. . nonlinear equations
. . . **nonlinear evolution equations**
RT difference equations
- ∞ equations
- nonlinear feedback**
GS feedback
. **nonlinear feedback**
RT feedback amplifiers
feedback control
negative feedback
positive feedback
sensory feedback
transfer functions
- nonlinear filters**
RT electric filters
electromagnetic wave filters
 ∞ filters
linear filters
- nonlinear optics**
DEF Study of the interaction of radiation with matter in which certain variables describing the response of the matter are not proportional to variables describing the radiation.
RT birefringence
chromophores
electromagnetic radiation
electro-optical effect
four-wave mixing
geometrical optics
gradient index optics
optical bistability
 ∞ optics
quantum dots
quantum optics
quantum wires
Raman spectra
Sagnac effect
- nonlinear programming**
DEF An optimization problem in which any or all of the following are nonlinear in the variables: (A) the objective functions, (B) the defining relationships among the variables, the plant description, (C) the constraints.
GS optimization
. mathematical programming
. . **nonlinear programming**
research
. **nonlinear programming**
RT ∞ applications of mathematics
constraints
formalism
linear programming
operations research
 ∞ programming
- nonlinear systems**
SN (DYNAMIC SYSTEMS HAVING NONLINEAR RESPONSES)
RT attractors (mathematics)
chaos
control equipment
distributed parameter systems
dynamic programming
dynamical systems
linear systems
strange attractors
 ∞ systems
tracking problem
uncertain systems
- nonlinearity**
UF *quasilinearity*
RT differential equations
functions (mathematics)
linearity
magnetic amplifiers
variability
Volterra equations
- nonNewtonian flow**
DEF The rate of flow of a material that is not proportional to the degree of force applied.
GS fluid flow
. **nonNewtonian flow**
RT liquid flow
steady flow
thixotropy
unsteady flow
viscoelasticity

nonNewtonian fluids

viscoplasticity

nonNewtonian fluids

DEF Fluids that exhibit a viscosity which varies with changing shear stress or shear rate.

RT colloids
∞ fluids
 gelatins
 gels
 newton
 Newton Theory
 Newtonian fluids
 rheology
 shear thinning
 viscoelasticity
 viscoplasticity
 viscous fluids

nonohmic effect

RT barrier layers
 contact resistance
∞ effects
 space charge

nonoscillatory action

GS oscillations
 . **nonoscillatory action**
RT oscillation dampers
 oscillators
 vibration damping

nonparametric statistics

GS statistical analysis
 . **nonparametric statistics**
RT ∞ statistics

nonpoint sources

DEF Undetermined or general areas from which pollutants, contaminants, and/or other unwanted materials or wastes enter the environment.

RT contaminants
 contamination
 diffusion
 environments
 gases
 liquids
 particles
∞ points
 poisons
 pollution
 public health
 radioactive wastes
∞ sources
 toxicology
 wastes

nonpolar gases

GS gases
 . **nonpolar gases**
RT molecular gases
 rare gases

nonreflection

USE **energy absorption**

nonrelativistic electrons

USE **electrons**

nonrelativistic mechanics

RT Newton Theory
 relativity

nonresonance

RT microwave resonance
 transmission lines
 traveling waves

nonrigidity

USE **flexibility**

nonspherical optics

USE **aspheric optics**

nonstabilized oscillation

GS oscillations
 . **nonstabilized oscillation**
RT oscillation dampers
 oscillators
 pilot induced oscillation
 stable oscillations

vibration damping

nonsynchronization

RT deviation
 incoherence
∞ interference
 nonuniformity

nonthermal emission

USE **nonthermal radiation**

nonthermal radiation

UF *nonthermal emission*
GS electromagnetic radiation
 . **nonthermal radiation**
 . . cyclotron radiation
 . . . ion cyclotron radiation
 . . . synchrotron radiation
RT galactic radiation
 magnetic fields
 nonequilibrium radiation
∞ radiation
 radio waves
 thermal radiation

nonuniform flow

GS fluid flow
 . **nonuniform flow**
RT flow characteristics
 gas flow
 turbulent flow
 uniform flow
 unsteady flow

nonuniform magnetic fields

GS magnetic fields
 . **nonuniform magnetic fields**
RT diffraction radiation
 lines of force
 magnetic anomalies
 magnetic mirrors

nonuniform plasmas

GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **nonuniform plasmas**
 . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **nonuniform plasmas**
RT Kelvin-Helmholtz instability
 low density research
 magnetohydrodynamic stability
 nonequilibrium plasmas
 plasma composition
 plasma oscillations
 plasma waves
 rarefied plasmas

nonuniformity

RT flexibility
 inhomogeneity
 irregularities
 nonsynchronization
 oscillations
 turbulence

nonviscous flow

USE **inviscid flow**

noon

DEF The instant at which a time reference is over the upper branch of the reference meridian.

RT daytime
 zenith

Nord 262 aircraft

USE **MH-262 aircraft**

Nord 1500 aircraft

UF *Griffon aircraft*
GS jet aircraft
 . **Nord 1500 aircraft**
 monoplanes
 . **Nord 1500 aircraft**
 Nord aircraft
 . **Nord 1500 aircraft**
 research vehicles
 . research aircraft

. . **Nord 1500 aircraft**

 supersonic aircraft

 . **Nord 1500 aircraft**

RT ∞ aircraft

Nord aircraft

GS **Nord aircraft**
 . C-160 aircraft
 . MH-262 aircraft
 . Nord 1500 aircraft
RT ∞ aircraft

norepinephrine

DEF Precursor of epinephrine that is secreted by the adrenal medulla and is a widespread central and autonomic neurotransmitter. Norepinephrine is the principal transmitter of most postganglionic sympathetic fibers and of the diffuse projection system in the brain arising from the locus ceruleus. It is also found in plants and is used pharmacologically as a sympathomimetic.

GS drugs
 . stimulants
 . . **norepinephrine**
 organic compounds
 . amines
 . . catecholamine
 . . . **norepinephrine**
RT dopamine
 neurotransmitters

norleucine

GS acids
 . amino acids
 . . leucine
 . . . **norleucine**
 organic compounds
 . amino acids
 . . leucine
 . . . **norleucine**

normal density functions

UF *Gaussian distributions*
 normal distributions
GS functions (mathematics)
 . probability density functions
 . . **normal density functions**
 statistical analysis
 . probability density functions
 . . **normal density functions**
RT continuity (mathematics)
 discrete functions
 histograms

normal distributions

USE **normal density functions**

normal force distribution

USE **force distribution**

normal shock waves

GS elastic waves
 . shock waves
 . . **normal shock waves**
RT longitudinal waves
 magnetohydrodynamic waves
 oblique shock waves
 plane waves
 shock layers

normality

RT asymptotic properties
 average
 mean
 median (statistics)
 norms
 statistical tests

normalized difference vegetation index

(added June 2001)

DEF A transformation of satellite-based measurements computed as the ratio of reflectance in the red and near-infrared portions of the spectrum. Reflectance in the red region decreases with increasing chlorophyll content of the plant canopy, while reflectance in the infrared increases with increasing wet plant biomass. The index value represents greenness, density, and vigor of vegetation.

- UF *NDVI (remote sensing)*
 GS ratios
 . indexes (ratios)
 . . vegetative index
 . . . **normalized difference vegetation index**
- RT crop vigor
 image classification
 remote sensing
 satellite imagery
 vegetation
- ∞ **normalizing**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT normalizing (heat treatment)
 normalizing (statistics)
 regularity
- normalizing (heat treatment)**
- GS heat treatment
 . **normalizing (heat treatment)**
- RT annealing
 hardening (materials)
 laser annealing
- ∞ normalizing
 tempering
- normalizing (statistics)**
- RT evaluation
 ∞ normalizing
 quality control
 ratings
 renormalization group methods
- norms**
- GS naming
 . **norms**
- RT average
 ethics
 median (statistics)
 normality
 psychometrics
 value
- North America**
- GS continents
 . **North America**
- RT Appalachian Mountains (North America)
 Canada
 Central America
 Lower California (Mexico)
 Mexico
 tundra
 United States
 Williston Basin (North America)
- North American aircraft**
- GS **North American aircraft**
 . A-2 aircraft
 . A-5 aircraft
 . B-1 aircraft
 . B-70 aircraft
 . F-86 aircraft
 . F-100 aircraft
 . OV-10 aircraft
 . P-51 aircraft
 . T-2 aircraft
 . T-28 aircraft
 . T-39 aircraft
 . X-15 aircraft
- RT ∞ aircraft
- North Atlantic Treaty Organization (NATO)**
- GS organizations
 . **North Atlantic Treaty Organization (NATO)**
- RT European Union
 international cooperation
- North Carolina**
- GS nations
 . United States
 . . **North Carolina**
- RT Cape Hatteras (NC)
 Great Smoky Mountains (NC-TN)
 Outer Banks (NC)
- Sand Hills Region (GA-NC-SC)
- North Dakota**
- GS nations
 . United States
 . . **North Dakota**
- RT Missouri River (US)
 Williston Basin (North America)
- North Korea**
- UF *Democratic Peoples Republic of Korea*
- GS nations
 . **North Korea**
- RT Asia
 ∞ Korea
 South Korea
- North Polar Spur (astronomy)**
- DEF One of the largest sources of diffuse radio emission outside the galactic plane. The Spur, a ridge of enhanced emission, may be the remnant of the shells of supernovae which exploded over 100,000 years ago.
- GS electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . galactic radio waves
 **North Polar Spur (astronomy)**
 extraterrestrial radiation
 . extraterrestrial radio waves
 . . galactic radio waves
 . . . **North Polar Spur (astronomy)**
 . galactic radiation
 . . galactic radio waves
 . . . **North Polar Spur (astronomy)**
- RT nebulae
 supernova remnants
 x ray spectra
- North Sea**
- GS seas
 . **North Sea**
- RT English Channel
- North Vietnam*
 USE **Vietnam**
- Northern Hemisphere**
- GS **Northern Hemisphere**
 . Arctic regions
 . . subarctic regions
- RT ∞ hemispheres
 northern sky
 Southern Hemisphere
- Northern Ireland**
(added November 1989)
- GS nations
 . United Kingdom
 . . **Northern Ireland**
- RT Europe
- northern sky**
- DEF That part of the sky visible from the northern hemisphere.
- RT astronomical catalogs
 astronomical coordinates
 astronomical observatories
 Northern Hemisphere
 sky surveys (astronomy)
 Southern sky
- Northrop aircraft**
- GS **Northrop aircraft**
 . A-9 aircraft
 . F-5 aircraft
 . F-18 aircraft
 . F-20 aircraft
 . F-89 aircraft
 . T-38 aircraft
 . X-21 aircraft
 . X-21A aircraft
- RT ∞ aircraft
- Northwest Territories**
- GS nations
 . Canada
- . . **Northwest Territories**
- Norton County achondrite**
- GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . achondrites
 **Norton County achondrite**
- Norway**
- GS nations
 . **Norway**
- RT Europe
 fiords
 Norwegian space program
 Scandinavia
- Norwegian space program**
(added August 1990)
- GS programs
 . space programs
 . . European space programs
 . . . **Norwegian space program**
- RT Norway
- ∞ **nose**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT nose (anatomy)
 noses (forebodies)
- nose (anatomy)**
- GS anatomy
 . face (anatomy)
 . . **nose (anatomy)**
 . respiratory system
 . . **nose (anatomy)**
- RT head (anatomy)
 ∞ nose
 paranasal sinuses
 sinuses
- nose caps*
 USE **nose cones**
- nose cones**
- DEF The cone shaped leading ends of rocket vehicles, consisting (a) of chambers in which satellites, instruments, animals, plants, or auxiliary equipment may be carried, and (b) of outer surfaces built to withstand high temperatures generated by aerodynamic heating. Used for nose caps.
- UF *nose caps*
 GS cones
 . **nose cones**
 . . ablative nose cones
 . . rocket nose cones
 forebodies
 . noses (forebodies)
 . . **nose cones**
 . . . ablative nose cones
 . . . rocket nose cones
- RT ablative materials
 aeroshells
 blunt bodies
- ∞ caps
 circular cones
 half cones
 missile components
 ogives
 reentry shielding
 reentry vehicles
 spacecraft components
 spacecraft shielding
 spherical caps
 warheads
- nose fins**
- GS fins
 . **nose fins**
- RT control surfaces
 finned bodies
 noses (forebodies)
 vanes
- nose inlets**
- GS intake systems
 . **nose inlets**
- RT air intakes

nose tips

- annular ducts
- bypass ratio
- ducted bodies
- ducts
- hypersonic inlets
- inlet airframe configurations
- nacelles
- noses (forebodies)
- scoops
- side inlets
- supersonic inlets
- ∞ water intakes

nose tips

DEF The foremost, sharp points of bombs, rockets, missiles, and other symmetrical bodies.

GS tips

- . **nose tips**

RT aerodynamic configurations
airfoil profiles
noses (forebodies)

nose wheels

GS wheels

- . vehicle wheels
- . . . **nose wheels**

RT brakes (for arresting motion)
landing gear

noses (forebodies)

GS forebodies

- . **noses (forebodies)**
- . . . nose cones
- . . . ablative nose cones
- . . . rocket nose cones

RT aircraft structures

∞ nose

- nose fins
- nose inlets
- nose tips

Nostoc

GS plants (botany)

- . algae
- . . blue green algae
- . . . **Nostoc**
- . thermophilic plants
- . . blue green algae
- . . . **Nostoc**

notation

USE **coding**

notch sensitivity

GS mechanical properties

- . toughness
- . . **notch sensitivity**
- sensitivity
- . **notch sensitivity**

RT Charpy impact test
fatigue (materials)
impact strength
impact tests

notch strength

GS mechanical properties

- . **notch strength**

RT brittleness
ductility
fatigue tests
impact tests

∞ strength

- stress concentration
- stress intensity factors

notch tests

UF *notched metals*

GS **notch tests**

- . Charpy impact test

RT brittleness
crack opening displacement
drop tests
fatigue tests
hardness
impact tests
stress concentration

∞ tests

notched metals

USE **notch tests**

notches

RT crack opening displacement
passageways
V grooves

Nova computers

DEF A series of minicomputers built by Data General.

GS data processing equipment

- . computers
- . . digital computers
- . . . minicomputers
- **Nova computers**

Nova Laser System

DEF Laser fusion system utilizing large neodymium glass lasers for irradiating DT pellets.

GS stimulated emission devices

- . lasers
- . . high power lasers
- . . . **Nova Laser System**

RT laser fusion
laser outputs
Shiva laser system

∞ systems

Nova launch vehicles

GS launch vehicles

- . **Nova launch vehicles**
- rocket vehicles
- . multistage rocket vehicles
- . . **Nova launch vehicles**

RT F-1 rocket engine
J-2 engine
liquid propellant rocket engines
M-1 engine

∞ vehicles

Nova satellites

DEF A second generation Navy navigation satellite which replaces the transit satellites.

GS artificial satellites

- . navigation satellites
- . . **Nova satellites**

RT Discos (satellite attitude control)
Transit navigation system

Nova Scotia

GS nations

- . Canada
- . . **Nova Scotia**

novae

GS celestial bodies

- . stars
- . . variable stars
- . . . **novae**
- dwarf novae
- Hercules nova

RT cataclysmic variables
shock waves
stellar mass
stellar mass ejection
supernovae
symbiotic stars

novocain

GS drugs

- . anesthetics
- . . **novocain**

nowcasting

DEF A self contained short period meteorological forecast for the immediate future covering a period of up to six hours.

GS meteorology

- . weather forecasting
- . . **nowcasting**
- predictions
- . forecasting
- . . weather forecasting
- . . . **nowcasting**

RT aviation meteorology

hindcasting

noxious materials

USE **contaminants**

Nozomi Mars Orbiter

(added August 1998)

DEF A Japanese Mars mission spacecraft designed to study the Martian upper atmosphere and its interaction with the solar wind, and to develop technologies for use in future planetary missions. Specifically, instruments on the spacecraft enable the measurement of the structure, composition and dynamics of the ionosphere; aeronomy effects of the solar wind; the escape of atmospheric constituents; the intrinsic magnetic field; and dust in the upper atmosphere and in-orbit around Mars.

UF *Planet-B spacecraft*

GS interplanetary spacecraft

- . Mars probes
- . . **Nozomi Mars Orbiter**
- Japanese spacecraft
- . **Nozomi Mars Orbiter**
- unmanned spacecraft
- . space probes
- . . Mars probes
- . . . **Nozomi Mars Orbiter**

RT aeronomy
Deimos
Phobos
planetary atmospheres
solar planetary interactions

nozzle coefficient

USE **nozzle flow**

nozzle design

RT aerospace engines

∞ design

- engine design
- ∞ nozzles

nozzle efficiency

DEF The efficiency with which a nozzle converts potential energy into kinetic energy, commonly expressed as the ratio of the actual change in kinetic energy to the ideal change at the given pressure ratio.

GS efficiency

- . **nozzle efficiency**

RT ∞ nozzles

- power efficiency
- propulsive efficiency
- thermodynamic efficiency

nozzle flow

UF *nozzle coefficient*

GS fluid flow

- . internal flow
- . . **nozzle flow**

RT aerothermochemistry
annular flow
choked flow
corner flow
discharge coefficient
exhaust gases
exhaust nozzles
fissionable materials
flow geometry
flow noise
fluid injection
injectors
jet flow
outlet flow
pneumatic probes
screech tones
supersonic jet flow
transonic flow

nozzle geometry

GS geometry

- . **nozzle geometry**

RT coaxial nozzles
conical nozzles
convergent nozzles
convergent-divergent nozzles
discharge coefficient
divergent nozzles
mass flow factors

nuclear devices

. nuclear deformation

nuclear devices

DEF Devices whose explosive potency is derived from nuclear fission of atoms of fissionable material with the consequent conversion of part of their mass into energy.

GS explosive devices

. nuclear devices

RT ∞ devices
fission weapons
thermonuclear explosions
warheads

nuclear electric power generation

UF *nuclear power generation*

GS **nuclear electric power generation**

. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . SNAP 1
. . . SNAP 3
. . . SNAP 7
. . . SNAP 9A
. . . SNAP 11
. . . SNAP 13
. . . SNAP 15
. . . SNAP 17
. . . SNAP 19
. . . SNAP 21
. . . SNAP 23
. . . SNAP 27
. . . SNAP 29
. . . SNAP 50
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . . SNAP 50
. . . space power unit reactors
. nuclear power plants
. . Enrico Fermi atomic power plant
. . Hallam Nuclear Power Facility
. . ML-1 nuclear power plant
. nuclear power reactors
. . KIWI reactors
. . . KIWI B reactors
. . . . KIWI B-1 Reactor
. . . . KIWI B-4 Reactor
. . Pathfinder nuclear reactor
. . plutonium recycle test reactor
. . space power reactors
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . . SNAP 50
. . . space power unit reactors
. . Tory 2 reactor
. . Tory 2-A reactor
. . Tory 2-C reactor
. . thermonuclear power generation
RT electric generators
∞ nuclear energy

nuclear electric propulsion

GS propulsion
. nuclear propulsion
. . **nuclear electric propulsion**
RT electric propulsion
electrothermal engines
fusion propulsion
ion propulsion
marine propulsion
plasma propulsion
spacecraft propulsion

nuclear emulsions

DEF Very thick photographic emulsions used in the study of cosmic rays and other energetic particles. The paths of the particles through the thick emulsions are recorded in three dimensions.

GS mixtures
. dispersions
. . emulsions
. . . photographic emulsions
. . . . **nuclear emulsions**
. . . solutions
. . . photographic emulsions
. . . . **nuclear emulsions**
RT dosimeters
radiation counters
radiation measuring instruments

∞ nuclear energy

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF All forms of energy released in the course of a nuclear fission or a nuclear transformation.

UF *atomic energy*
RT annular core pulse reactors
atomic theory
chemical energy
energy policy
energy storage
molecular energy levels
nuclear chemistry
nuclear electric power generation
nuclear fission
nuclear fuels
nuclear fusion
nuclear heat
nuclear physics
nuclear propulsion
nuclear reactors
nuclear research
nuclear warfare
nuclear weapons
nucleonics
spent fuels

nuclear engine for rocket vehicles

UF *NERVA (engine)*
GS engines
. rocket engines
. . **nuclear engine for rocket vehicles**
RT booster rocket engines
KIWI reactors
NRX reactors
Phoebus nuclear reactor
Rover project
sustainer rocket engines
∞ vehicles
water cooled reactors

nuclear explosion effect

RT ∞ effects
fallout
radiation effects
radiation hazards

nuclear explosions

UF *atomic explosions*
GS explosions
. **nuclear explosions**
. . thermonuclear explosions
RT aerial explosions
artificial radiation belts
civil defense
cratering
fallout
∞ fireballs
Fishbowl Operation
high energy interactions
radiation hazards
underground explosions
underwater explosions
Vela satellites

nuclear fission

GS nuclear reactions
. **nuclear fission**
. . chain reactions (nuclear physics)
RT critical experiments
critical mass
decay
fissile fuels
fission products
fusion reactors

fusion-fission hybrid reactors
high energy interactions
neutron flux density
∞ nuclear energy
radioactive decay
radioactive materials
subcritical mass

nuclear fuel burnup

GS combustion
. fuel combustion
. . **nuclear fuel burnup**
RT critical mass
reactor physics
reactor technology

nuclear fuel elements

UF *fuel elements (nuclear reactors)*
RT annular core pulse reactors
∞ elements
fuels
plutonium alloys
reactor cores
reactor materials
uranium alloys
uranium carbides

nuclear fuel reprocessing

DEF Periodic chemical, physical, and metallurgical treatment of materials used as fuel elements in nuclear reactors to recover and purify residual fissionable and fertile materials.

GS reclamation
. materials recovery
. . **nuclear fuel reprocessing**
RT nuclear fuels
∞ processing
∞ recovery
recycling
spent fuels

nuclear fuels

DEF Fissionable materials of reasonable long life, used or usable in producing energy in a nuclear reactor. Used for reactor fuels.

UF *reactor fuels*
GS fuels
. **nuclear fuels**
. . ceramic nuclear fuels
. . fissile fuels
. . fissionium
. . spent fuels
RT annular core pulse reactors
deuterium
energy policy
fission
fissionable materials
fuel capsules
fuel production
inertial fusion (reactor)
mixed oxides
neutron sources
∞ nuclear energy
nuclear fuel reprocessing
pellets
plutonium
plutonium alloys
plutonium compounds
reactor cores
reactor materials
reactor startup tests
sol-gel processes
thorium
thorium alloys
thorium compounds
tritium
uranium
uranium 233
uranium 235
uranium 238
uranium alloys
uranium carbides
uranium compounds
uranium oxides

nuclear fusion

UF *nucleosynthesis*
GS nuclear reactions
. thermonuclear reactions
. . **nuclear fusion**

. . . controlled fusion
 RT collisional plasmas
 degenerate matter
 dense plasmas
 deuterium irradiation
 ∞ fusion
 fusion propulsion
 fusion reactors
 fusion weapons
 fusion-fission hybrid reactors
 high energy interactions
 irradiation
 magnetic mirrors
 mirror fusion
 ∞ nuclear energy
 plasma focus
 railgun accelerators
 star formation
 stellar interiors
 stellar physics
 ∞ synthesis
 tokamak devices

nuclear gyroscopes
 GS gyroscopes
 . **nuclear gyroscopes**

nuclear heat
 GS heat
 . **nuclear heat**
 RT ∞ nuclear energy

nuclear interactions
 GS nuclear reactions
 . **nuclear interactions**
 . . nuclear capture
 . . . electron capture
 . . spin-orbit interactions
 . . . electron capture
 . . weak interactions (field theory)
 particle interactions
 . **nuclear interactions**
 . . nuclear capture
 . . . electron capture
 . . spin-orbit interactions
 . . . electron capture
 . . weak interactions (field theory)
 RT collision parameters
 elementary particles
 high energy interactions
 ∞ interactions
 strong interactions (field theory)

nuclear isobars
 RT chemical elements
 ∞ isobars
 isotopes
 nuclei (nuclear physics)
 nuclides

nuclear lightbulb engines
 GS engines
 . rocket engines
 . . nuclear rocket engines
 . . . **nuclear lightbulb engines**
 RT gaseous fission reactors

nuclear magnetic resonance
 UF *knight shift*
NMR
 GS resonance
 . magnetic resonance
 . . **nuclear magnetic resonance**
 . . . proton magnetic resonance
 . . . proton resonance
 RT magnetic signals
 magnetometers
 molecular structure
 paramagnetic resonance
 particle spin
 Planck's constant
 spin resonance
 spin-lattice relaxation

nuclear medicine
 DEF That branch of medicine dealing with the effect of radiation such as x rays, gamma rays, and energetic particles on the body and with the prevention and cure of physiological

injuries resulting from such radiation. Used for radiation medicine.
 UF *radiation medicine*
 GS medical science
 . **nuclear medicine**
 . . radiobiology
 RT antiradiation drugs
 health physics
 ∞ radiation
 radiopathology

nuclear meteorology
 GS meteorology
 . **nuclear meteorology**
 RT fallout

nuclear models
 GS models
 . **nuclear models**
 RT atomic structure
 energy levels
 molecular structure
 quark parton model

nuclear particles
 GS particles
 . **nuclear particles**
 . . antiparticles
 . . . antineutrinos
 . . . antinucleons
 . . . antiprotons
 . . . positrons
 . . beta particles
 . . bosons
 . . . alpha particles
 . . . Higgs bosons
 . . . mesons
 eta-mesons
 hyperons
 xi hyperons
 kaons
 meson resonance
 X mesons
 . . . muons
 omega-mesons
 . . . pions
 vector mesons
 rho-mesons
 sigma-mesons
 . . photons
 . . . xi hyperons
 . . nucleons
 . . photoelectrons
 RT corpuscular radiation
 cosmic rays
 elementary particles
 fission products
 gamma ray bursts
 neutron cross sections
 neutron distribution
 neutron scattering
 nuclear astrophysics
 nucleon potential
 nucleon-nucleon scattering
 particle accelerators
 particle tracks
 photoneutrons
 pi-electrons
 positron annihilation
 proton resonance
 protons

nuclear physics
 GS **nuclear physics**
 . nuclear astrophysics
 . reactor physics
 RT atomic structure
 current algebra
 electromagnetic absorption
 field theory (physics)
 health physics
 ∞ nuclear energy
 nucleonics
 parity
 particle spin
 ∞ physics
 quantum theory
 ∞ science

theoretical physics

nuclear potential
 GS potential energy
 . **nuclear potential**
 RT nucleon potential

nuclear power generation
 USE **nuclear electric power generation**

nuclear power plants
 GS electric power plants
 . **nuclear power plants**
 . . Enrico Fermi atomic power plant
 . . Hallam Nuclear Power Facility
 . . ML-1 nuclear power plant
 nuclear electric power generation
 . **nuclear power plants**
 . . Enrico Fermi atomic power plant
 . . Hallam Nuclear Power Facility
 . . ML-1 nuclear power plant
 RT plasma core reactors

nuclear power reactors
 GS nuclear electric power generation
 . **nuclear power reactors**
 . . KIWI reactors
 . . . KIWI B reactors
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 . . Pathfinder nuclear reactor
 . . plutonium recycle test reactor
 . . space power reactors
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 50
 . . . space power unit reactors
 . . Tory 2 reactor
 . . Tory 2-A reactor
 . . Tory 2-C reactor
 nuclear reactors
 . **nuclear power reactors**
 . . KIWI reactors
 . . . KIWI B reactors
 KIWI B-1 Reactor
 KIWI B-4 Reactor
 . . Pathfinder nuclear reactor
 . . plutonium recycle test reactor
 . . space power reactors
 . . . fission electric cells
 SNAP 2
 SNAP 4
 SNAP 8
 SNAP 10A
 . . . SNAP 50
 . . . space power unit reactors
 . . Tory 2 reactor
 . . Tory 2-A reactor
 . . Tory 2-C reactor
 RT boiling water reactors
 breeder reactors
 fast nuclear reactors
 fast oxide reactors
 high temperature gas cooled reactors
 liquid metal fast breeder reactors
 power reactors
 pressurized water reactors
 SNAP
 sodium graphite reactors

nuclear powered ships
 GS surface vehicles
 . **nuclear powered ships**
 . . Savannah nuclear ship
 water vehicles
 . ships
 . . **nuclear powered ships**
 . . . Savannah nuclear ship
 RT aircraft carriers
 cargo ships
 navy
 submarines

nuclear propelled aircraft
 RT ∞ aircraft
 ∞ military aircraft

nuclear propulsion

research aircraft

nuclear propulsion

UF *chemonuclear propulsion*
thermonuclear propulsion

GS propulsion

. **nuclear propulsion**

. . fusion propulsion

. . nuclear electric propulsion

RT aircraft engines

gaseous fission reactors

high temperature nuclear reactors

high temperature propellants

magnetic nozzles

marine propulsion

matter-antimatter propulsion

mercury ion engines

NEW MOONS project

∞ nuclear energy

Rover project

Savannah nuclear ship

spacecraft propulsion

trident submarine

underwater propulsion

nuclear pumped lasers

DEF Lasers in which the excitation is supplied by a nuclear reactor as a high flux source or by the kinetic energy of the fission fragments only.

GS stimulated emission devices

. lasers

. . **nuclear pumped lasers**

RT optical pumping

optical resonance

nuclear pumping

DEF Laser-like pumping produced by electrons generated in nuclear reactions or, in general, by beams of charged particles.

RT electron pumping

energy transfer

fission products

gas lasers

lasers

optical pumping

population inversion

∞ pumping

stimulated emission

stimulated emission devices

nuclear quadrupole resonance

GS resonance

. **nuclear quadrupole resonance**

RT energy levels

quadrupoles

nuclear radiation

DEF Corpuscular emissions, such as alpha and beta particles, or electromagnetic radiation, such as gamma rays, originating in the nucleus of the atom.

GS **nuclear radiation**

. beta particles

. fast neutrons

. gamma ray beams

. gamma rays

. . gamma ray bursts

. neutron beams

. photoneutrons

. post-blast nuclear radiation

. spallation

. thermal neutrons

RT alpha particles

bremsstrahlung

Cerenkov radiation

corpuscular radiation

electromagnetic radiation

electron pumping

electron radiation

electrons

elementary particles

emission spectra

fission products

gamma ray absorption

health physics

high energy interactions

ionizing radiation

irradiation

neutrons

particle production

photons

∞ radiation

radiation effects

radiation hazards

radioactive contaminants

radioactive decay

radioactive materials

radioactivity

radiobiology

radiochemistry

Vela satellites

nuclear radiation spectroscopy

GS spectroscopy

. **nuclear radiation spectroscopy**

RT mass spectroscopy

spectroscopic analysis

vacuum spectroscopy

nuclear ramjet engines

GS engines

. rocket engines

. . **nuclear ramjet engines**

RT Pluto reactors

∞ rockets

supersonic low altitude missile

nuclear reactions

UF *neutron transmutation*

GS **nuclear reactions**

. nuclear fission

. . chain reactions (nuclear physics)

. nuclear interactions

. . nuclear capture

. . . electron capture

. . . spin-orbit interactions

. . . electron capture

. . weak interactions (field theory)

. nuclear scattering

. . neutron scattering

. . resonance scattering

. nuclear transformations

. . transmutation

. photonuclear reactions

. proton scattering

. proton-proton reactions

. radioactive decay

. . alpha decay

. . neutron emission

. spallation

. thermonuclear reactions

. . nuclear fusion

. . . controlled fusion

RT Bragg curve

Compton effect

critical experiments

critical mass

electron scattering

emission

half life

high energy interactions

inhour equation

∞ interactions

internal conversion

pair production

particle interactions

particle production

photoneutrons

poisoning (reaction inhibition)

pomerons

radiation absorption

radiogenic materials

∞ reaction

reaction kinetics

reactivity

solar neutrinos

strong interactions (field theory)

subcritical mass

nuclear reactor control

RT confinement

∞ control

control rods

∞ reaction control

reactor safety

nuclear reactors

DEF Apparatus in which nuclear fission may

be sustained in a self supporting chain reaction.

GS **nuclear reactors**

. annular core pulse reactors

. Astron thermonuclear reactor

. breeder reactors

. . Experimental Breeder Reactor 1

. . Experimental Breeder Reactor 2

. . light water breeder reactors

. . liquid metal fast breeder reactors

. engineering test reactors

. fast nuclear reactors

. . Experimental Breeder Reactor 1

. . Experimental Breeder Reactor 2

. . fast oxide reactors

. . fast test reactors

. . gas cooled fast reactors

. . liquid metal fast breeder reactors

. fusion reactors

. . heliotrons

. . spheromaks

. . stellarators

. fusion-fission hybrid reactors

. gas cooled reactors

. . experimental gas cooled reactors

. . gas cooled fast reactors

. . high temperature nuclear reactors

. . . high temperature gas cooled

reactors

. . KIWI reactors

. . . KIWI B reactors

. . . . KIWI B-1 Reactor

. . . . KIWI B-4 Reactor

. . Tory 2 reactor

. . Tory 2-A reactor

. . Tory 2-C reactor

. gaseous fission reactors

. Hanford reactors

. high flux isotope reactors

. liquid cooled reactors

. . liquid metal cooled reactors

. . . advanced sodium cooled reactor

. . . Experimental Breeder Reactor 1

. . . Experimental Breeder Reactor 2

. . . Lithium Cooled Reactor

Experiment

. . . Los Alamos Molten Plutonium

Reactor

. . . military compact reactors

. . . sodium graphite reactors

. . . sodium reactor experiment

. . organic cooled reactors

. . . experimental organic cooled

reactors

. . water cooled reactors

. . . boiling water reactors

. . . . experimental boiling water

reactors

. . . . Halden Boiling Water Reactor

. . . . Los Alamos Water Boiler

Reactor

. . . . Pathfinder nuclear reactor

. . . . Spert reactors

. . . heavy water reactors

. . . . heavy water components test

reactors

. . . . plutonium recycle test reactor

. . . . zero power reactor 2

. . . light water reactors

. . . NRX reactors

. . . Plum Brook Reactor

. . . pressurized water reactors

. . . . spectral shift control reactor

. . . swimming pool reactors

. . . zero power reactors

. . . . zero power reactor 2

. . . . zero power reactor 3

. . . . zero power reactor 6

. . . . zero power reactor 9

. molten salt nuclear reactors

. nuclear power reactors

. . KIWI reactors

. . . KIWI B reactors

. . . . KIWI B-1 Reactor

. . . . KIWI B-4 Reactor

. . Pathfinder nuclear reactor

. . plutonium recycle test reactor

. . space power reactors

. . . fission electric cells

. . . . SNAP 2

- SNAP 4
 - SNAP 8
 - SNAP 10A
 - SNAP 50
 - . . . space power unit reactors
 - . . . Tory 2 reactor
 - . . . Tory 2-A reactor
 - . . . Tory 2-C reactor
 - . . nuclear research and test reactors
 - . . . advanced test reactors
 - . . . experimental boiling water reactors
 - . . . Experimental Breeder Reactor 1
 - . . . Experimental Breeder Reactor 2
 - . . . experimental gas cooled reactors
 - . . . experimental organic cooled reactors
 - . . . Health Physics Research Reactor
 - . . . heavy water components test reactors
 - . . . HERO Reactor
 - . . . high temperature nuclear reactors
 - . . . high temperature gas cooled reactors
 - . . . Janus Reactor
 - . . . KIWI reactors
 - KIWI B reactors
 - KIWI B-1 Reactor
 - KIWI B-4 Reactor
 - . . . Livermore Pool Type Reactor
 - . . . Los Alamos Molten Plutonium Reactor
 - . . . military compact reactors
 - . . . NRX reactors
 - . . . Plum Brook Reactor
 - . . . plutonium recycle test reactor
 - . . . sodium reactor experiment
 - . . . Spert reactors
 - . . . Tory 2 reactor
 - . . . Tory 2-A reactor
 - . . . Tory 2-C reactor
 - . . . Tower Shielding Reactor 2
 - . . . zero power reactor 2
 - . . . zero power reactor 3
 - . . . zero power reactor 6
 - . . . zero power reactor 9
 - . . . organic moderated reactors
 - . . . experimental organic cooled reactors
 - . . . pebble bed reactors
 - . . . Phoebus nuclear reactor
 - . . . plasma core reactors
 - . . . Pluto reactors
 - . . . thermal reactors
 - . . . tokamak devices
 - Joint European Torus
 - . . . water moderated reactors
 - . . . experimental boiling water reactors
 - . . . heavy water components test reactors
 - . . . plutonium recycle test reactor
 - RT closed cycles
 - control rods
 - coolants
 - fissile fuels
 - high flux beam reactors
 - inhour equation
 - loss of coolant
 - moderators
 - ∞ nuclear energy
 - ∞ piles
 - radiation shielding
 - reactor cores
 - reactor design
 - reactor materials
 - reactor physics
 - reactor safety
 - reactor startup tests
 - reactor technology
 - ∞ reactors
 - Rover project
 - thermal neutrons
 - thermal pollution
- nuclear relaxation**
- RT relaxation (mechanics)
- nuclear research**
- GS research
 - . . **nuclear research**
- RT high energy interactions
 - laboratories
 - ∞ nuclear energy
 - plasma core reactors
 - radiochemistry
- nuclear research and test reactors**
- DEF A class of nuclear reactors used to do research into nuclear physics, reactor materials and design, and nuclear medicine.
 - UF *materials testing reactors*
 - nuclear test reactors*
 - physical constants testing reactor*
 - GS nuclear reactors
 - . **nuclear research and test reactors**
 - . . advanced test reactors
 - . . experimental boiling water reactors
 - . . . Experimental Breeder Reactor 1
 - . . . Experimental Breeder Reactor 2
 - . . . experimental gas cooled reactors
 - . . . experimental organic cooled reactors
 - . . . Health Physics Research Reactor
 - . . . heavy water components test reactors
 - . . . HERO Reactor
 - . . . high temperature nuclear reactors
 - . . . high temperature gas cooled reactors
 - . . . Janus Reactor
 - . . . KIWI reactors
 - KIWI B reactors
 - KIWI B-1 Reactor
 - KIWI B-4 Reactor
 - . . . Livermore Pool Type Reactor
 - . . . Los Alamos Molten Plutonium Reactor
 - . . . military compact reactors
 - . . . NRX reactors
 - . . . Plum Brook Reactor
 - . . . plutonium recycle test reactor
 - . . . sodium reactor experiment
 - . . . Spert reactors
 - . . . Tory 2 reactor
 - . . . Tory 2-A reactor
 - . . . Tory 2-C reactor
 - . . . Tower Shielding Reactor 2
 - . . . zero power reactor 2
 - . . . zero power reactor 3
 - . . . zero power reactor 6
 - . . . zero power reactor 9
 - . . . RT boiling water reactors
 - . . . neutron sources
 - . . . reactor design
 - . . . reactor technology
 - . . . ∞ reactors
 - . . . Transient Reactor Test Facility
- nuclear rocket engines**
- DEF Rocket engines in which nuclear reactors are used as power sources or as sources of thermal energy. Used for thermionic reactors.
 - UF *thermionic reactors*
 - GS engines
 - . . rocket engines
 - . . . **nuclear rocket engines**
 - nuclear lightbulb engines
 - RT booster rocket engines
 - fusion propulsion
 - ion engines
 - magnetic nozzles
 - mercury ion engines
 - Phoebus nuclear reactor
 - Pluto reactors
 - restartable rocket engines
 - ∞ rockets
 - sustainer rocket engines
- nuclear scattering**
- SN (SCATTERING CAUSED BY NUCLEUS AND NOT BY ORBITAL ELECTRONS)
 - GS nuclear reactions
 - . **nuclear scattering**
 - . . neutron scattering
 - . . resonance scattering
 - scattering
 - . **nuclear scattering**
 - . . neutron scattering
 - . . resonance scattering
- RT angular distribution
 - backscattering
 - coherent scattering
 - elastic scattering
 - electron scattering
 - forward scattering
 - incoherent scattering
 - inelastic scattering
 - Mandelstam representation
- nuclear shielding*
- USE **radiation shielding**
- nuclear spin**
- GS spin
 - . . particle spin
 - . . . **nuclear spin**
 - RT electron spin
 - energy levels
 - Kondo effect
 - magnetic resonance
 - Overhauser effect
 - quantum numbers
 - quantum theory
 - yrast state
- nuclear structure**
- RT energy levels
 - even-even nuclei
 - odd-odd nuclei
- nuclear test reactors*
- USE **nuclear research and test reactors**
- nuclear transformations**
- GS nuclear reactions
 - . **nuclear transformations**
 - . . transmutation
- nuclear vulnerability**
- DEF The resistance of structures or materials to nuclear radiation or explosions.
 - GS vulnerability
 - . **nuclear vulnerability**
 - RT penetration
 - radiation effects
 - thermonuclear explosions
- nuclear warfare**
- GS warfare
 - . **nuclear warfare**
 - RT civil defense
 - hardening (systems)
 - ∞ nuclear energy
- nuclear warheads**
- GS weapons
 - . warheads
 - . . **nuclear warheads**
- nuclear wastes*
- USE **radioactive wastes**
- nuclear weapons**
- GS weapons
 - . **nuclear weapons**
 - . . fission weapons
 - . . fusion weapons
 - RT bombs (ordnance)
 - explosives
 - missiles
 - ∞ nuclear energy
 - projectiles
 - ∞ rockets
 - space weapons
 - torpedoes
 - warheads
 - weapon systems
 - weapons delivery
- nuclease**
- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **nuclease**
 - organic compounds
 - . proteins
 - . . enzymes

nucleate boiling

. . . nuclease

nucleate boiling
GS phase transformations
. vaporizing
. boiling
. . . **nucleate boiling**
. . . . Leidenfrost phenomenon
RT film boiling
heat transfer
heat transfer coefficients
nucleation

nucleation
GS **nucleation**
. cloud seeding
RT accumulations
Aitken nuclei
atomic clusters
condensation nuclei
condensing
crystal growth
crystallization
drop size
∞ formation
grain formation
heat treatment
ice nuclei
initiation
inoculation
jet condensers
metal clusters
molecular clusters
nucleate boiling
∞ nuclei
recrystallization
supercooling

∞ **nuclei**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT active galactic nuclei
Aitken nuclei
charged particles
chromosomes
condensation nuclei
ice nuclei
nucleation
nuclei (cytology)
nuclei (nuclear physics)
nucleogenesis
odd-odd nuclei

nuclei (cytology)
GS organelles
. **nuclei (cytology)**
RT cells (biology)
cytology
cytoplasm
genetics
∞ nuclei

nuclei (nuclear physics)
DEF The positively charged cores of atoms with which are associated practically the whole mass of each atom but only a minute part of its volume.
GS particles
. charged particles
. energetic particles
. . . **nuclei (nuclear physics)**
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei
. . . . tritons
. corpuscular radiation
. energetic particles
. . . **nuclei (nuclear physics)**
. . . . alpha particles
. . . . deuterons
. . . . even-even nuclei
. . . . heavy nuclei
. . . . hypernuclei
. . . . odd-even nuclei
. . . . odd-odd nuclei

. . . . tritons
RT atoms
corpuscular radiation
cosmic rays
elementary particles
ions
isotopes
neutrons
nuclear isobars
∞ nuclei
nucleons
∞ physics
protons
yrast state

nucleic acid denaturation
USE **biopolymer denaturation**

nucleic acids
GS acids
. **nucleic acids**
. . deoxyribonucleic acid
. . . complementary DNA
. . ribonucleic acids
biopolymers
. **nucleic acids**
. . deoxyribonucleic acid
. . . complementary DNA
. . ribonucleic acids
organic compounds
. **nucleic acids**
. . deoxyribonucleic acid
. . . complementary DNA
. . ribonucleic acids
RT biopolymer denaturation
guanosines
proteins
uridylic acid

nucleogenesis
RT genetics
mutations
∞ nuclei

nucleon potential
RT neutrons
nuclear particles
nuclear potential
∞ potential
protons
∞ radiation

nucleonics
RT ∞ electronics
∞ nuclear energy
nuclear physics
technologies

nucleon-nucleon interactions
GS particle interactions
. elementary particle interactions
. . **nucleon-nucleon interactions**
RT charged particles
∞ interactions

nucleon-nucleon scattering
GS scattering
. **nucleon-nucleon scattering**
RT nuclear particles
particle collisions
Pomeranchuk theorem

nucleons
DEF In the classification of subatomic particles according to mass, the second heaviest type of particles; their mass is intermediate between that of the meson and the hyperon.
GS particles
. elementary particles
. . **nucleons**
. nuclear particles
. . **nucleons**
RT alpha particles
antinucleons
baryons
charged particles
fast neutrons
hyperons
neutrons
nuclei (nuclear physics)

protons
vector dominance model

nucleophiles
GS electron attachment
. **nucleophiles**

nucleosides
GS organic compounds
. carbohydrates
. . glucosides
. . . **nucleosides**
. . . . adenines
. . . . guanosines
RT ribose
thymidine

nucleosynthesis
USE **nuclear fusion**

nucleotides
GS organic compounds
. **nucleotides**
. . adenines
. . adenosines
. . . adenosine diphosphate
. . . adenosine monophosphate
. . . adenosine triphosphate
. . . cyclic AMP
. . oligonucleotides
. . polynucleotides
. . pyridine nucleotides
. . uridylic acid
RT biopolymers
proteins

nuclides
DEF Individual atoms of a given atomic number Z and mass number A.
GS chemical elements
. **nuclides**
. isotopes
. . . aluminum isotopes
. . . . aluminum 26
. . . . aluminum 27
. . . antimony isotopes
. . . argon isotopes
. . . arsenic isotopes
. . . barium isotopes
. . . beryllium isotopes
. . . . beryllium 7
. . . . beryllium 9
. . . . beryllium 10
. . . bismuth isotopes
. . . boron isotopes
. . . . boron 10
. . . bromine isotopes
. . . cadmium isotopes
. . . calcium isotopes
. . . carbon isotopes
. . . . carbon 12
. . . . carbon 13
. . . . carbon 14
. . . cerium isotopes
. . . . cerium 137
. . . . cerium 144
. . . cesium isotopes
. . . . cesium 133
. . . . cesium 134
. . . . cesium 137
. . . . cesium 144
. . . cesium vapor
. . . chromium isotopes
. . . cobalt isotopes
. . . . cobalt 58
. . . . cobalt 60
. . . dysprosium isotopes
. . . erbium isotopes
. . . europium isotopes
. . . fluorine isotopes
. . . gadolinium isotopes
. . . gallium isotopes
. . . germanium isotopes
. . . gold isotopes
. . . . gold 198
. . . hafnium isotopes
. . . helium isotopes
. . . holmium isotopes
. . . hydrogen isotopes
. . . . deuterium

- ... hydrogen 4
- ... metallic hydrogen
- ... tritium
- ... iodine isotopes
- ... iodine 125
- ... iodine 131
- ... iodine 132
- ... iridium isotopes
- ... iron isotopes
- ... iron 57
- ... iron 58
- ... iron 59
- ... krypton isotopes
- ... krypton 85
- ... lanthanum isotopes
- ... lead isotopes
- ... lithium isotopes
- ... lutetium
- ... lutetium isotopes
- ... magnesium isotopes
- ... manganese isotopes
- ... mercury isotopes
- ... molybdenum isotopes
- ... neodymium isotopes
- ... neon isotopes
- ... nickel isotopes
- ... niobium isotopes
- ... niobium 95
- ... nitrogen isotopes
- ... nitrogen 15
- ... nitrogen 16
- ... nobelium isotopes
- ... osmium isotopes
- ... oxygen isotopes
- ... oxygen 17
- ... oxygen 18
- ... palladium isotopes
- ... phosphorus isotopes
- ... phosphorus 32
- ... platinum isotopes
- ... polonium isotopes
- ... polonium 208
- ... polonium 209
- ... polonium 210
- ... potassium isotopes
- ... potassium 38
- ... potassium 39
- ... potassium 40
- ... praseodymium isotopes
- ... promethium isotopes
- ... protactinium isotopes
- ... radioactive isotopes
- ... astatine isotopes
- ... beryllium 7
- ... beryllium 9
- ... beryllium 10
- ... carbon 14
- ... cerium 137
- ... cerium 144
- ... cesium 134
- ... cesium 137
- ... cesium 144
- ... cobalt 58
- ... cobalt 60
- ... copper isotopes
- ... gold 198
- ... indium isotopes
- ... iodine 125
- ... iodine 131
- ... iodine 132
- ... iron 59
- ... krypton 85
- ... niobium 95
- ... nitrogen 16
- ... phosphorus 32
- ... polonium 208
- ... polonium 209
- ... polonium 210
- ... potassium 38
- ... potassium 40
- ... rubidium 86
- ... sodium 22
- ... sodium 24
- ... strontium 85
- ... strontium 88
- ... strontium 89
- ... strontium 90
- ... transuranium elements
- ... americium

- ... americium isotopes
- ... americium 241
- ... berkelium
- ... californium
- ... californium isotopes
- ... curium
- ... curium isotopes
- ... curium 242
- ... curium 244
- ... einsteinium
- ... fermium
- ... lawrencium
- ... mendelevium
- ... neptunium
- ... neptunium isotopes
- ... nobelium
- ... plutonium
- ... plutonium isotopes
- ... plutonium 238
- ... plutonium 239
- ... plutonium 240
- ... plutonium 241
- ... plutonium 244
- ... sergenium
- ... tritium
- ... uranium 232
- ... uranium 233
- ... uranium 238
- ... xenon 133
- ... xenon 135
- ... zirconium 95
- ... radium isotopes
- ... radium 226
- ... radon isotopes
- ... rhenium isotopes
- ... rhodium isotopes
- ... rubidium isotopes
- ... rubidium 86
- ... ruthenium isotopes
- ... samarium isotopes
- ... scandium isotopes
- ... selenium isotopes
- ... silicon isotopes
- ... silver isotopes
- ... sodium isotopes
- ... sodium 22
- ... sodium 24
- ... strontium isotopes
- ... strontium 85
- ... strontium 87
- ... strontium 89
- ... strontium 90
- ... sulfur isotopes
- ... tantalum isotopes
- ... technetium isotopes
- ... tellurium
- ... tellurium isotopes
- ... terbium isotopes
- ... thallium isotopes
- ... thorium isotopes
- ... thulium isotopes
- ... tin isotopes
- ... titanium isotopes
- ... tungsten isotopes
- ... uranium isotopes
- ... uranium 232
- ... uranium 233
- ... uranium 234
- ... uranium 235
- ... uranium 238
- ... vanadium isotopes
- ... xenon isotopes
- ... xenon 129
- ... xenon 133
- ... xenon 135
- ... ytterbium isotopes
- ... yttrium isotopes
- ... zinc isotopes
- ... zirconium isotopes
- ... zirconium 95

RT isotopic enrichment
nuclear isobars
particle mass

null hypothesis

- GS hypotheses
- ... **null hypothesis**
- RT confidence limits
- degrees of freedom

- significance
- statistical tests

null zones

- GS regions
- ... **null zones**
- RT diffraction patterns
- field theory (physics)
- ∞ force
- interferometry
- radiation distribution
- speckle interferometry
- very long base interferometry

number theory

- GS **number theory**
- ... addition theorem
- ... arithmetic
- ... double precision arithmetic
- ... fixed point arithmetic
- ... floating point arithmetic
- ... congruences
- ... diophantine equation
- ... dividing (mathematics)
- ... exponents
- ... induction (mathematics)
- ... integers
- ... multiplication
- ... subtraction
- RT addition
- combinatorial analysis
- decimals
- digits
- ∞ division
- enumeration
- Fibonacci numbers
- functions (mathematics)
- ∞ induction
- infinity
- ∞ mathematics
- ∞ numbers
- quaternions
- subgroups
- ∞ theories
- uniqueness theorem

∞ **numbers**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT alphanumeric characters
- Biot number
- complex numbers
- coordination number
- counting
- Damkohler number
- decimals
- digits
- dimensionless numbers
- double precision arithmetic
- Fibonacci numbers
- integers
- number theory
- quantum numbers
- random numbers
- real numbers

numerical analysis

DEF Study of approximation methods using arithmetic techniques for the solution of mathematical problems.

- GS analysis (mathematics)
- ... **numerical analysis**
- ... approximation
- ... Born approximation
- ... Born-Oppenheimer approximation
- ... Chebyshev approximation
- ... Eddington approximation
- ... essentially non-oscillatory schemes
- ... finite difference theory
- ... finite difference time domain method
- ... finite element method
- ... Hartree approximation
- ... least squares method
- ... mean square values
- ... Milne method
- ... multigrid methods
- ... Newton methods

numerical aperture

- Newton-Raphson method
- . . . boundary element method
- . . . discretization (mathematics)
- . . . numerical differentiation
- . . . Oseen approximation
- . . . Pade approximation
- . . . particle in cell technique
- . . . Pohlhausen method
- . . . predictor-corrector methods
- . . . Rayleigh-Ritz method
- . . . relaxation method (mathematics)
- . . . Reynolds averaging
- . . . Ritz averaging method
- . . . Schwartz method
- . . . Sommerfeld approximation
- . . . TVD schemes
- . . . upwind schemes (mathematics)
- . . . vortex in cell technique
- . . . Trefftz method
- . . . computational mechanics
- . . . meshfree methods
- . . . boundary integral method
- . . . computational astrophysics
- . . . computational chemistry
- . . . computational electromagnetics
- . . . computational fluid dynamics
- . . . difference equations
- . . . error analysis
- . . . finite volume method
- . . . Godunov method
- . . . flux difference splitting
- . . . flux vector splitting
- . . . Glimm method
- . . . Graeff calculus
- . . . interpolation
- . . . iteration
- . . . conjugate gradient method
- . . . iterative solution
- . . . Newton methods
- . . . Newton-Raphson method
- . . . predictor-corrector methods
- . . . Monte Carlo method
- . . . nomographs
- . . . numerical integration
- . . . Runge-Kutta method
- . . . computational aeroacoustics
- . . . direct numerical simulation
- . . . space-time CE/SE method
- . . . truncation errors
- RT adjoints
- algorithms
- alternating direction implicit methods
- ∞ analyzing
- ∞ applications of mathematics
- asymptotes
- computational grids
- computer programming
- Crank-Nicholson method
- differential equations
- ill-conditioned problems (mathematics)
- ill-posed problems (mathematics)
- isoparametric finite elements
- linear programming
- mathematical tables
- ∞ mathematics
- method of moments
- significance
- spatial marching
- time marching
- trajectory analysis

numerical aperture

(added January 1995)

DEF The sine of the vertex angle of the largest cone of meridional rays that can enter or leave an optical system or element, multiplied by the refractive index of the medium in which the vertex of the cone is located. Generally measured with respect to an object or image point, and will vary as that point is moved.

- GS openings
 - . apertures
 - . . . **numerical aperture**
- RT fiber optics
- geometrical optics
- lenses
- optical coupling
- optical fibers

- optical properties
- resolution
- numerical control**
- UF *computerized control*
- GS automatic control
 - . **numerical control**
- RT ∞ automation
 - ∞ control
 - computer programs
 - control systems design
 - digital command systems
 - digital techniques
 - electric control
 - interactive control
 - machine tools
 - production engineering
 - sequential control
 - standardization

- numerical data bases**
- GS data bases
 - . **numerical data bases**
- RT information retrieval
- on-line systems

- numerical differentiation**
- DEF Approximate estimation of a derivative of a function by numerical techniques.
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **numerical differentiation**
 - . . . real variables
 - . . **numerical differentiation**
- RT algorithms
 - computer techniques
 - differential calculus
 - differential equations
 - estimating
 - functions (mathematics)
- ∞ theories

- numerical flow visualization**
- GS flow visualization
 - . **numerical flow visualization**
 - information analysis
 - . scientific visualization
 - . . **numerical flow visualization**
- RT computational fluid dynamics
- computerized simulation
- flow distribution
- hydraulic analogies

- numerical integration**
- UF *Cowell method*
- GS analysis (mathematics)
 - . numerical analysis
 - . . **numerical integration**
 - . . . Runge-Kutta method
 - . . . real variables
 - . . . measure and integration
 - . . . **numerical integration**
 - Runge-Kutta method
- RT differential equations
- digital integrators
- integral calculus

- numerical stability**
- GS stability
 - . **numerical stability**
- RT approximation
- backward differencing
- difference equations
- differential equations
- ill-conditioned problems (mathematics)
- ill-posed problems (mathematics)
- strange attractors

- numerical weather forecasting**
- GS meteorology
 - . weather forecasting
 - . . **numerical weather forecasting**
 - predictions
 - . forecasting
 - . . weather forecasting
 - . . . **numerical weather forecasting**
- RT Atmospheric General Circulation
- Models

- atmospheric models
- aviation meteorology
- computerized simulation
- long range weather forecasting
- mathematical models
- statistical weather forecasting

nunataks

- GS landforms
 - . islands
 - . . **nunataks**
- RT Arctic regions
- rocks
- sea ice

Nusselt number

DEF A number expressing the ratio of convective to conductive heat transfer between a solid boundary and a moving fluid, defined as h/k where h is the heat transfer coefficient, l is the characteristic length, and k is the thermal conductivity of the fluid. (Named after Wilhelm Nusselt, German engineer.)

- GS dimensionless numbers
 - . **Nusselt number**
 - . ratios
 - . **Nusselt number**
- RT Brinkman number
- convective heat transfer
- heat transfer
- Prandtl number
- Schmidt number

nutaton

DEF The oscillation of the axis of any rotating body, as a gyroscope rotor. Specifically, in astronomy, irregularities in the precessional motion of the equinoxes because of varying positions of the moon and, to a lesser extent, of other celestial bodies with respect to the ecliptic. Used for nutational oscillation.

- UF *nutational oscillation*
- GS **nutaton**
 - . Chandler wobble
- RT actuation
 - coning motion
 - displacement
- ∞ dynamics
 - Earth orientation
 - kinematics
 - libration
 - librational motion
- ∞ motion
 - perturbation
 - polar wandering (geology)
 - precession
 - rotation
 - vibration

nutaton dampers

- RT control moment gyroscopes
- ∞ dampers
 - oscillation dampers
 - spacecraft stability

nutational oscillation

USE **nutaton**

∞ nutrients

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aquaculture
 - caloric requirements
 - carbohydrates
 - eutrophication
 - fats
 - fatty acids
 - fishes
 - life support systems
 - lipid metabolism
 - lipids
 - minerals
 - nutrition
 - nutritional requirements
 - proteins
 - trace elements
 - vitamins

nutrition

- RT biochemistry

- broths
- caloric requirements
- diets
- ∞ food
- metabolism
- nitrogen metabolism
- ∞ nutrients
- nutritional requirements
- space flight feeding

nutritional requirements

- GS **nutritional requirements**
 - . caloric requirements
- RT atrophy
- ∞ nutrients
- nutrition
- space flight feeding
- synthetic food

nuts (fasteners)

- GS fasteners
 - . **nuts (fasteners)**
- RT anchors (fasteners)
 - bolts
 - holders
 - screws

- threads

nuts (fruits)

- RT angiosperms
 - orchards
 - seeds

Nylon (trademark)

- GS fibers
 - . synthetic fibers
 - . . **Nylon (trademark)**
 - plastics
 - . synthetic resins
 - . . thermosetting resins
 - . . . furan resins
 - polyamide resins
 - **Nylon (trademark)**
 - resins
 - . synthetic resins
 - . . thermosetting resins
 - . . . furan resins
 - polyamide resins
 - **Nylon (trademark)**
- RT polymeric films

- ∞ polymers

nylon resins

- USE **polyamide resins**

Nyquist diagram

- GS diagrams
 - . **Nyquist diagram**
- RT control stability
 - transfer functions

Nyquist frequencies

- GS frequencies
 - . **Nyquist frequencies**
- RT linear receivers

nystagmus

- DEF An involuntary oscillation of the eye-balls, especially occurring as a result of eye fixations and stimulations of the inner ear during rotation of the body.

- GS eye movements
 - . **nystagmus**
 - . . vestibular nystagmus
- RT electronystagmography
 - eye (anatomy)

O

O ring seals

- GS seals (stoppers)
 - . **O ring seals**
- RT gaskets
 - glands (seals)
 - hermetic seals
 - labyrinth seals
 - ∞ rings
 - Space Shuttle Boosters

O stars

- GS celestial bodies
 - . stars
 - . . . early stars
 - . . . hot stars
 - **O stars**
- RT blue stars
 - Population I stars
 - Wolf-Rayet stars

Oak Ridge isochronous cyclotron

- UF *ORIC cyclotron*
- GS particle accelerators
 - . cyclotrons
 - . . **Oak Ridge isochronous cyclotron**

OAO

- UF *Orbiting Astronomical Observatory S-18 satellite*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **OAO**
 - OAO 1
 - OAO 2
 - OAO 3
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **OAO**
 - OAO 1
 - OAO 2
 - OAO 3
- RT Agena B rocket vehicle
 - Atlas launch vehicles
 - HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - manned orbital telescopes

OAO 1

- UF *OAO-A*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 1**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OAO
 - **OAO 1**
- RT Atlas Centaur launch vehicle

OAO 2

- UF *OAO-A2*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 2**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . OAO
 - **OAO 2**
- RT Atlas Centaur launch vehicle

OAO 3

- UF *Copernicus spacecraft OAO-C*
- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . OAO
 - **OAO 3**
 - observatories

- . astronomical observatories
- . . astronomical satellites
- . . . OAO
- **OAO 3**

OAO-A

- USE **OAO 1**

OAO-A2

- USE **OAO 2**

OAO-C

- USE **OAO 3**

oases

- RT aquifers
 - arid lands
 - desertification
 - deserts
 - potable water
 - springs (water)
 - vegetation
 - wells

oats

- GS farm crops
 - . grains (food)
 - . . **oats**
 - plants (botany)
 - . **oats**
- RT agriculture
 - botany
 - crop growth
 - crop vigor
 - curing
 - Earth resources
 - ∞ food
 - grasses
 - irrigation
 - seeds

Oberon

- DEF A satellite of Uranus orbiting at a mean distance of 587,000 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Oberon**
- RT Uranus (planet)

obesity

- RT body fluids
 - body measurement (biology)
 - body size (biology)
 - body volume (biology)
 - body weight
 - metabolism

object programs

- GS computer programs
 - . **object programs**

object-oriented programming

- (added October 1991)*
- DEF The use of a programming language consisting of a sequence of commands directed at objects.
- GS computer programming
 - . **object-oriented programming**
- RT Ada (programming language)
 - C++ (programming language)
 - Java (programming language)
 - software development tools
 - software engineering

oblate spheroids

- DEF Ellipsoids of revolution, the shorter axis of which is the axis of revolution.
- GS geometry
 - . Euclidean geometry
 - . . analytic geometry
 - . . . spheroids
 - **oblate spheroids**
- RT ellipticity
 - fineness ratio
 - flattening
 - geodesy
 - geoids

- prolate spheroids
- shapes
- solar oblateness

oblique coordinates

- DEF Magnitudes defining a point relative to two intersecting nonperpendicular lines, called axes.
- GS coordinates
 - . **oblique coordinates**
- RT Cartesian coordinates

oblique shock waves

- DEF Shock waves attached to the bow and tail of an aerodynamic vehicle moving faster than the speed of sound. The sides of the oblique shock waves form the Mach cone.
- GS elastic waves
 - . shock waves
 - . . **oblique shock waves**
- RT magneto hydrodynamic waves
 - normal shock waves
 - shock layers
 - supersonic compressors

oblique wings

- GS airfoils
 - . wings
 - . . **oblique wings**
- RT aerodynamic configurations
 - aircraft parts
 - aircraft structures
 - drone aircraft
 - pilotless aircraft
 - remotely piloted vehicles
 - wing planforms

obliqueness

- DEF The state of being neither perpendicular nor horizontal.
- RT angles (geometry)
 - incident radiation

obscuration

- USE **occultation**

observability (systems)

- DEF The property of a system for which observations of the output variables always is sufficient to determine the initial values of all state variables.
- RT boundary value problems
 - control theory
 - dependent variables
 - feedback control
 - independent variables
 - observation
 - parameter identification
 - state vectors
 - system identification
 - ∞ systems
 - systems analysis
 - systems engineering

observation

- GS **observation**
 - . Earth observations (from space)
 - . . satellite observation
 - . . radio observation
 - . . sky surveys (astronomy)
 - . . space observations (from Earth)
 - . . visual observation
- RT counting
 - data acquisition
 - detection
 - evaluation
 - examination
 - forest fire detection
 - NOESS
 - observability (systems)
 - ∞ performance
 - reconnaissance
 - surveillance

observation aircraft

- GS **observation aircraft**
 - . Cessna L-19 aircraft
 - . OH-4 helicopter
 - . OH-5 helicopter

- . OH-6 helicopter
- . OV-1 aircraft
- . OV-10 aircraft
- RT ∞ aircraft
 - antisubmarine warfare aircraft
 - arc clouds
 - balloons
 - flying platforms
 - gliders
 - HS-801 aircraft
 - light aircraft
 - light helicopters
 - ∞ military aircraft
 - reconnaissance aircraft
 - utility aircraft
 - weather reconnaissance aircraft

observation scheduling
(added November 2002)

DEF The development of chronologies and observational plans for remote-sensing satellites, astronomical and planetary observatories, and other observational platforms.

GS scheduling

- . **observation scheduling**

RT astronomical observatories

- Earth observations (from space)
- mission planning
- remote sensing
- space observations (from Earth)

observatories

GS **observatories**

- . astronomical observatories
- . . . astronomical satellites
- . . . Astronomical Netherlands Satellite
- . . . Gamma Ray Observatory
- . . . Ginga satellite
- . . . HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - HEAO 4
- . . . Hubble Space Telescope
- . . . Infrared Astronomy Satellite
- . . . Infrared Space Observatory (ISO)
- . . . IUE
- . . . Large Deployable Reflector
- . . . Magellan ultraviolet astronomy satellite
- . . . OAO
 - OAO 1
 - OAO 2
 - OAO 3
- . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
- . . . Quasat
- . . . SAS
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
- . . . Constellation-X
- . . . Fermi Gamma-ray Space Telescope
- . . . James Webb Space Telescope
- . . . Kepler mission
- . . . LISA (observatory)
- . . . Space Infrared Telescope Facility
- . . . Spartan satellites
- . . . Submillimeter Wave Astronomy Satellite
- . . . Swift observatory
- . . . Tenma satellite
- . . . Wide-field Infrared Survey Explorer
- . . . X Ray Astrophysics Facility
- . . . XMM-Newton telescope
- . . Astroplane

- . . ROSAT mission
- . . SOFIA (airborne observatory)
- . . solar observatories
 - . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - . . . Pinhole Occulter Facility
 - . . . STEREO (observatory)
 - . . . European Southern Observatory
 - . . . LIGO (observatory)
 - geophysical observatories
 - . . . OGO
 - EGO
 - OGO-3
 - OGO-5
 - OGO-A
 - POGO
 - OGO-4
 - OGO-6
 - OGO-C
 - . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - CLARREO (observatory)
 - Glory Mission satellite
 - Jodrell Bank Observatory
 - Kuiper Airborne Observatory
 - lunar observatories
- RT artificial satellites

obsidian

GS rocks

- . igneous rocks
- . . **obsidian**
 - . . . moldavite

RT glass

- minerals
- powder (particles)
- pumice
- silicon dioxide
- soils

obsidian glass

GS glass

- . **obsidian glass**

obstacle avoidance

DEF The use of sensors utilizing laser triangulation as means of preventing collisions, especially in the operation of roving vehicles on planetary surfaces.

RT aircraft maneuvers

- evasive actions
- tactics
- terrain following
- vulnerability

obstacles

USE **barriers**

obstructing

USE **blocking**

occipital lobes

GS anatomy

- . nervous system
 - . . central nervous system
 - . . . brain
 - cerebrum
 - **occipital lobes**

occlusion

DEF Specifically, the trapping of undissolved gas in a solid during solidification.

RT degassing

- gas-metal interactions
- gas-solid interfaces
- solidification

occultation

DEF The disappearance of a body behind another body of larger apparent size. Used for obscuration.

UF *obscuration*

GS **occultation**

- . lunar occultation
- . . solar eclipses
- . radio occultation
- . stellar occultation

RT ∞ conjunction

- eclipses
- extinguishing
- Pinhole Occulter Facility

∞ transit

occupation

RT industrial safety

- personnel
- work

occupational diseases

GS diseases

- . **occupational diseases**

RT anemias

- carbon monoxide poisoning
- cataracts
- emphysema
- hazards
- health physics
- lead poisoning
- leukemias
- operational hazards
- public health
- pulmonary lesions
- radiation hazards
- toxic hazards
- tumors

occurrences

RT events

ocean bottom

RT beds (geology)

- continental shelves
- core sampling
- cratons
- deep water
- geology
- marine chemistry
- mid-ocean ridges
- mud
- oceanography
- sea floor spreading
- seamounts
- sediments
- sludge
- submarine hydrothermal vents
- underwater resources

ocean color scanner

DEF A multispectral scanning radiometer which is geared to observe ocean features such as chlorophyll, sediments, and topography in the invisible and thermal ranges of radiation.

GS scanners

- . **ocean color scanner**
 - . . Coastal Zone Color Scanner
 - . . Sea-viewing Wide Field-of-view Sensor

RT chlorophylls

- coastal water
- colorimetry
- multispectral band scanners
- ocean data acquisitions systems
- oceanographic parameters
- oceanography
- photomapping
- remote sensors
- water color

ocean currents

GS circulation

- . water circulation
- . . water currents

ocean data acquisitions systems

- . . . **ocean currents**
- coastal currents
- el Nino
- Gulf Stream
- Lomonosov current
- RT core sampling
- ∞ currents
- fluid flow
- frontal waves
- gyres
- hydrography
- Kelvin waves
- littoral drift
- littoral transport
- ocean dynamics
- oceanography
- oceans
- pressure ice
- salinity
- Spitsbergen (Norway)
- thermohaline circulation
- tidal waves
- tide powered generators
- tide powered machines
- tidepower
- tides
- TOPEX
- upwelling water
- waterwave energy conversion
- waterwave powered machines
- ocean data acquisitions systems**
- UF *ocean data platforms*
- ocean data stations*
- ODAS
- RT Argos system
- automatic weather stations
- buoys
- Coastal Zone Color Scanner
- ∞ data
- data acquisition
- ground stations
- instrument packages
- meteorological parameters
- ocean color scanner
- oceanographic parameters
- ships
- transoceanic systems
- underwater research laboratories
- weather stations
- ocean data platforms*
- USE **ocean data acquisitions systems**
- ocean data stations*
- USE **ocean data acquisitions systems**
- ocean dynamics**
- DEF The study of the controlling forces in different ocean phenomena.
- RT air water interactions
- dynamic characteristics
- ∞ dynamics
- fluid dynamics
- hydrodynamics
- ocean currents
- ocean models
- ocean surface
- oceanography
- QuikSCAT satellite
- thermohaline circulation
- water waves
- ocean floor spreading*
- USE **sea floor spreading**
- ocean models**
- GS models
- . **ocean models**
- RT air water interactions
- atmospheric models
- climate models
- dynamic models
- marine environments
- mathematical models
- ocean dynamics
- oceanography
- Sargasso Sea
- sea roughness

- sea states
- ocean surface**
- RT Earth surface
- fluid flow
- hydrography
- ocean dynamics
- oceanographic parameters
- oceanography
- polynyas
- Sargasso Sea
- sea level
- sea roughness
- sea states
- sea surface temperature
- sea truth
- sea water
- Sea-viewing Wide Field-of-view Sensor
- storm surges
- ∞ surfaces
- tidal waves
- tide powered generators
- tide powered machines
- tidepower
- tides
- TOPEX
- waterwave energy conversion
- waterwave powered machines
- ocean temperature**
- DEF Surface or subsurface temperature of an entire or specific region of an ocean.
- GS oceanographic parameters
- . **ocean temperature**
- . . sea surface temperature
- temperature
- . water temperature
- . . **ocean temperature**
- . . . sea surface temperature
- RT el Nino
- oceanography
- oceans
- offshore energy sources
- sea states
- sea truth
- sea water
- seas
- solar sea power plants
- surface temperature
- temperature distribution
- temperature gradients
- thermal pollution
- thermohaline circulation
- ocean thermal energy conversion**
- GS energy conversion
- . **ocean thermal energy conversion**
- RT ∞ conversion
- ∞ energy sources
- geothermal energy conversion
- geothermal technology
- renewable energy
- solar sea power plants
- temperature
- oceanographic parameters**
- GS **oceanographic parameters**
- . ocean temperature
- . . sea surface temperature
- RT Atmospheric & Oceanographic Inform Sys
- Coastal Zone Color Scanner
- hindcasting
- integrated global ocean station systems
- meteorological parameters
- ocean color scanner
- ocean data acquisitions systems
- ocean surface
- salinity
- sea states
- oceanography**
- DEF The science that deals with the study and exploration of seas and oceans.
- RT artificial harbors
- Atmospheric & Oceanographic Inform Sys
- bathymeters

- bay ice
- breakwaters
- coastal currents
- Coastal Zone Color Scanner
- core sampling
- deep scattering layers
- deep water
- deepwater terminals
- Earth & Ocean Physics Applications Program
- Earth planetary structure
- Earth resources
- Earth sciences
- environmental monitoring
- EROS (satellites)
- estuaries
- fjords
- frontal waves
- GARP Atlantic Tropical Experiment
- geography
- geology
- geophysics
- gyres
- harbors
- hydroclimatology
- hydrography
- hydrology
- ice floes
- ice mapping
- isthmuses
- Landsat satellites
- marine biology
- marine environments
- marine meteorology
- marine resources
- marine technology
- marshlands
- meteorology
- mid-ocean ridges
- ocean bottom
- ocean color scanner
- ocean currents
- ocean dynamics
- ocean models
- ocean surface
- ocean temperature
- oceans
- offshore docking
- offshore platforms
- oil slicks
- pelagic zone
- ∞ physical sciences
- red tide
- reefs
- Sargasso Sea
- ∞ science
- sea grasses
- sea ice
- sea level
- sea roughness
- sea states
- sea surface temperature
- sea water
- seas
- SEASAT 1
- SEASAT program
- SEASAT satellites
- SEASAT-B satellite
- seaweeds
- shallow water
- shipyards
- shoals
- shorelines
- storm surges
- submarine hydrothermal vents
- tanker terminals
- thermoclines
- tidal waves
- tide powered generators
- tidepower
- tides
- TOPEX
- topography
- underwater research laboratories
- underwater resources
- water circulation
- water currents
- waterfowl
- waterwave energy

waterwave energy conversion
wetlands

oceans

DEF The continuous salt water bodies that surround the continents and fill the Earth's great depressions.

GS **oceans**
. Antarctic Ocean
. Arctic Ocean
. Atlantic Ocean
. extraterrestrial oceans
. Indian Ocean
. Pacific Ocean

RT coastal currents
coastal water
coasts
deep water
Earth hydrosphere
geography
keys (islands)
marine resources
nearshore water
ocean currents
ocean temperature
oceanography
seas
seaweeds
shallow water
shoals
shorelines
sounds (topographic features)
thermal pollution
tidal flats
tide powered generators
water color
water depth
water resources
waterwave energy conversion

Octahedral Research Satellites

USE **Environmental Research Satellites**

octahedrite

USE **anatase**

octahedrons

GS geometry
. Euclidean geometry
. . . polyhedrons
. . . . **octahedrons**

∞ **octane**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT antiknock additives
octanes

octane number

RT gasoline

octanes

SN (ACYCLIC HYDROCARBONS)
GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . . alkanes
. **octanes**

RT antiknock additives
∞ octane

octaves

DEF The intervals between two frequencies having the ratio 1:2.

GS range (extremes)
. frequency ranges
. . . **octaves**

RT acoustics
music

octets

GS valence
. **octets**
RT atomic structure
chemical bonds

octoates

GS esters

. **octoates**

octol (explosive)

GS explosives
. **octol (explosive)**

octopuses

GS animals
. invertebrates
. . . mollusks
. . . . cephalopods
. **octopuses**

ocular circulation

GS circulation
. blood circulation
. . **ocular circulation**

oculogravic illusions

GS psychological effects
. illusions
. . **oculogravic illusions**

RT gravireceptors
otolith organs
vertical perception

oculometers

GS measuring instruments
. optical measuring instruments
. . **oculometers**
optical equipment
. optical measuring instruments
. . **oculometers**

RT eye movements
∞ instruments
optical tracking

oculomotor nerves

GS anatomy
. nervous system
. . nerves
. . . **oculomotor nerves**
. sense organs
. . eye (anatomy)
. . . **oculomotor nerves**
RT vision

ODAS

USE **ocean data acquisitions systems**

odd-even nuclei

GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-even nuclei**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-even nuclei**
RT even-even nuclei
odd-odd nuclei

odd-odd nuclei

GS particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-odd nuclei**
. corpuscular radiation
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **odd-odd nuclei**
RT even-even nuclei
nuclear structure
∞ nuclei
odd-even nuclei

Odessa meteorite

GS celestial bodies
. meteorites
. . iron meteorites
. . . **Odessa meteorite**

odors

RT air pollution
combustion products
exhaust gases

gases

offgassing

DEF The relative high mass loss characteristic of many nonmetallic materials upon initial vacuum exposure.

RT degassing
vacuum
vacuum effects

office automation

RT ∞ automation
man machine systems
word processing

Office of Space & Terrestri Applic Payloads

USE **OSTA-1 payload**
OSTA-2 payload
OSTA-3 payload

off-on control

DEF Flicker control, especially as applied to rockets. Used for bang-bang control.

UF *bang-bang control*
GS automatic control
. **off-on control**

RT ∞ control
control equipment
control theory
proportional control
servocontrol
solenoid valves

offshore docking

GS maneuvers
. docking
. . **offshore docking**
RT artificial harbors
cargo ships
deepwater terminals
marine technology
marine transportation
oceanography
ship terminals
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

offshore energy sources

RT crude oil
deepwater terminals
drilling
energy technology
marine technology
ocean temperature
oil exploration
oil fields
sea breeze
seepage

offshore platforms

RT artificial harbors
cargo ships
deepwater terminals
marine technology
oceanography
∞ platforms
tanker ships
tanker terminals
∞ tankers
terminal facilities
transportation

offshore reactor sites

GS sites
. **offshore reactor sites**
RT reactor design
reactor safety
reactor technology

ogee shape

remote regions

OFT
USE **Space Transportation System flights**

OFT 1
USE **Space Transportation System 1 flight**

OFT 2
USE **Space Transportation System 2 flight**

OFT 3
USE **Space Transportation System 3 flight**

OFT 4
USE **Space Transportation System 4 flight**

ogee shape
GS shapes
 . **ogee shape**
RT variable sweep wings

ogee wings
USE **variable sweep wings**

ogives
DEF Bodies of revolution formed by rotating a circular arc about an axis that intersects the arc; the shape of these bodies; also noses of projectiles or the like so shaped.
RT bodies of revolution
 ellipsoids
 fairings
 nose cones
 spheres
 streamlined bodies
 symmetrical bodies

OGO
UF *Orbiting Geophysical Observatory*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
 observatories
 . geophysical observatories
 . . . **OGO**
 . . . EGO
 . . . OGO-3
 . . . OGO-5
 . . . OGO-A
 . . . POGO
 OGO-4
 OGO-6
 OGO-C
RT Gamma Ray Observatory

OGO-3
UF *OGO-B*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 . . . **OGO-3**
 observatories
 . geophysical observatories
 . . . **OGO**
 . . . **OGO-3**
RT Thor Agena launch vehicle

OGO-4
UF *OGO-D*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 POGO
 **OGO-4**
 observatories
 . geophysical observatories
 . . . **OGO**

. . . POGO
 **OGO-4**
RT geodesy

OGO-5
UF *OGO-E*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 **OGO-5**
 observatories
 . geophysical observatories
 . . . **OGO**
 **OGO-5**
RT geodesy

OGO-6
UF *OGO-F*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 POGO
 **OGO-6**
 observatories
 . geophysical observatories
 . . . **OGO**
 POGO
 **OGO-6**

OGO-A
UF *S-49 satellite*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 **OGO-A**
 observatories
 . geophysical observatories
 . . . **OGO**
 **OGO-A**
RT Atlas Agena launch vehicles

OGO-B
USE **OGO-3**

OGO-C
UF *S-50 satellite*
GS artificial satellites
 . geophysical satellites
 . . . **OGO**
 POGO
 **OGO-C**
 observatories
 . geophysical observatories
 . . . **OGO**
 POGO
 **OGO-C**

OGO-D
USE **OGO-4**

OGO-E
USE **OGO-5**

OGO-F
USE **OGO-6**

OH-4 helicopter
UF *HO-4 helicopter*
GS Bell aircraft
 . **OH-4 helicopter**
 light aircraft
 . light helicopters
 . . . **OH-4 helicopter**
 observation aircraft
 . **OH-4 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . light helicopters
 **OH-4 helicopter**
 military helicopters
 **OH-4 helicopter**

OH-5 helicopter
UF *FH-1100 helicopter*
 HO-5 helicopter
GS Fairchild-Hiller aircraft
 . **OH-5 helicopter**
 Hiller aircraft
 . **OH-5 helicopter**

light aircraft
 . light helicopters
 . . . **OH-5 helicopter**
 observation aircraft
 . **OH-5 helicopter**
 passenger aircraft
 . **OH-5 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . light helicopters
 **OH-5 helicopter**
 military helicopters
 **OH-5 helicopter**
RT rigid rotor helicopters

OH-6 helicopter
UF *HO-6 helicopter*
 LOH helicopter
GS Hughes aircraft
 . **OH-6 helicopter**
 light aircraft
 . light helicopters
 . . . **OH-6 helicopter**
 observation aircraft
 . **OH-6 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . light helicopters
 **OH-6 helicopter**
 military helicopters
 **OH-6 helicopter**

OH-13 helicopter
UF *H-13 helicopter*
 Sioux helicopter
 UH-13 helicopter
GS Bell aircraft
 . **OH-13 helicopter**
 light aircraft
 . **OH-13 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . military helicopters
 **OH-13 helicopter**

OH-23 helicopter
UF *H-23 helicopter*
 Raven helicopter
 UH-12 helicopter
GS Fairchild-Hiller aircraft
 . **OH-23 helicopter**
 light aircraft
 . **OH-23 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . military helicopters
 **OH-23 helicopter**

OH-58 helicopter
GS light aircraft
 . light helicopters
 . . . **OH-58 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . . helicopters
 . . . light helicopters
 **OH-58 helicopter**
 military helicopters
 **OH-58 helicopter**

Ohio
GS nations
 . United States
 . . . **Ohio**
RT Ohio River (US)
 Wabash River Basin (IL-IN-OH)

Ohio River (US)
GS rivers
 . **Ohio River (US)**
RT Illinois
 Indiana
 Kentucky
 Ohio
 Pennsylvania

- West Virginia
- ohmic dissipation**
 UF *Joule heating*
 GS dissipation
 . **ohmic dissipation**
 RT Joule-Thomson effect
 levitation melting
 losses
- ohmmeters**
 DEF Direct-reading instruments for measuring electrical resistance. They are provided with a scale, usually graduated in either ohms, megohms, or both. If the scale is graduated in megohms, the instrument is usually called a megohmmeter.
 GS measuring instruments
 . **ohmmeters**
 RT electrical conductivity meters
 electrical impedance
 electrical measurement
 electrical resistance
 resistance thermometers
 transconductance
 Wheatstone bridges
- Ohms law**
 DEF The current in an electric circuit is inversely proportional to the resistance of the circuit and is directly proportional to the electromotive force in the circuit. Ohm's law applies, strictly speaking, only to linear constant-current circuits.
 GS circuits
 . **Ohms law**
 laws
 . **Ohms law**
 RT ∞ conductivity
 electric current
 electrical resistance
 electricity
 electromotive forces
 transconductance
 volt-ampere characteristics
- Ohzora satellite*
 USE **EXOS-C satellite**
- oil additives**
 GS additives
 . **oil additives**
- oil exploration**
 GS exploration
 . **oil exploration**
 RT crude oil
 drilling
 energy policy
 geology
 natural gas exploration
 offshore energy sources
 tar sands
 underwater resources
- oil fields**
 DEF Surface boundary of an area from which petroleum is obtained; may correspond to an oil pool or may be circumscribed by political or legal limits.
 GS resources
 . Earth resources
 . . **oil fields**
 RT crude oil
 drilling
 methane
 natural gas
 offshore energy sources
 oils
 tar sands
- oil pollution**
 GS pollution
 . environment pollution
 . . water pollution
 . . . **oil pollution**
 RT coastal ecology
 environmental cleanup
- wetlands
- oil recovery**
 RT energy technology
 reclamation
 ∞ recovery
 reuse
- oil slicks**
 UF *slicks*
 RT dumping
 environment pollution
 environmental cleanup
 oceanography
 pollution
 spilling
 water pollution
- oils**
 GS **oils**
 . castor oil
 . crude oil
 . fuel oils
 . lubricating oils
 . mineral oils
 . shale oil
 RT energy policy
 fats
 fuels
 greases
 hydraulic fluids
 kerogen
 lipid metabolism
 lubricants
 oil fields
 petroleum products
 pitch (material)
 retort processing
 tar sands
- Okazaki-Levy-Rudenko comet**
 (added May 1991)
 GS celestial bodies
 . comets
 . . **Okazaki-Levy-Rudenko comet**
- Okhansk meteorite**
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . chondrites
 **Okhansk meteorite**
 RT iron meteorites
- Oklahoma**
 GS nations
 . United States
 . . **Oklahoma**
 RT Lake Texoma (OK-TX)
- olefins*
 USE **alkenes**
- oleic acid**
 GS acids
 . carboxylic acids
 . . fatty acids
 . . . **oleic acid**
 organic compounds
 . carboxylic acids
 . . fatty acids
 . . . **oleic acid**
- olfactory perception**
 UF *smell*
 GS perception
 . sensory perception
 . . **olfactory perception**
 RT chemoreceptors
 sense organs
- oligomers**
 (added January 1990)
 GS **oligomers**
 . dimers
 . trimers
 RT monomers
 polymer chemistry
 polymerization
- ∞ polymers
- oligonucleotides**
 (added August 2004)
 DEF Polymers made up of a few (2-20) nucleotides. In molecular genetics, they refer to a short sequence synthesized to match a region where a mutation is known to occur, and then used as a probe.
 GS biopolymers
 . **oligonucleotides**
 organic compounds
 . nucleotides
 . . **oligonucleotides**
 RT adenosines
 polymerase chain reaction
 ∞ polymers
- olivine**
 GS minerals
 . **olivine**
 . . forsterite
 RT dunite
 igneous rocks
 monticellite
 peridotite
 regolith
 rocks
 soils
- Oman**
 GS nations
 . **Oman**
- OMCVD (vapor deposition)*
 USE **metalorganic chemical vapor deposition**
- OME*
 USE **Orbit Maneuvering Engine (Space Shuttle)**
- Omega Navigation System**
 DEF A very long distance navigation system operating at approximately 10 kHz (kilohertz), in which hyperbolic lines of position are determined by measurement of the difference in travel time of continuous wave signals from two transmitters separated by 5000 nmi (nautical miles) to 6000 nmi (9000 km {kilometers} to 11000 km) or in which changes in distances from the transmitters are measured by counting RF (radio frequency) wavelengths in the space of lanes as the vehicle moves from a known position, the lanes being counted by phase comparison with a stable oscillator aboard the vehicle.
 GS navigation
 . **Omega Navigation System**
 RT air navigation
 ∞ systems
- omega-mesons**
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 **omega-mesons**
 . . fermions
 . . . baryons
 **omega-mesons**
 . . hadrons
 . . . baryons
 **omega-mesons**
 . . mesons
 **omega-mesons**
 . . nuclear particles
 . . bosons
 . . . mesons
 **omega-mesons**
 RT charged particles
 eta-mesons
- omegatrons**
 GS particle accelerators
 . cyclotrons
 . . **omegatrons**
- Omicron Ceti star**
 UF *Mira Ceti star*
 GS celestial bodies

omnidirectional antennas

- . stars
- . . . giant stars
- **Omicron Ceti star**
- . . . late stars
- cool stars
- Mira variables
- **Omicron Ceti star**
- . . . variable stars
- Mira variables
- **Omicron Ceti star**

omnidirectional antennas

GS antennas

- . **omnidirectional antennas**
- . . . monopole antennas
- . . . whip antennas
- . . . turnstile antennas

RT dipole antennas
directional antennas
microwave antennas
radio antennas

omnidirectional radio ranges

GS navigation aids

- . beacons
- . . . radio beacons
- **omnidirectional radio ranges**
- self calibrating omnirange

radio equipment

- . radio transmitters
- . . . radio beacons
- **omnidirectional radio ranges**
- self calibrating omnirange

transmitters

- . radio transmitters
- . . . radio beacons
- **omnidirectional radio ranges**
- self calibrating omnirange

RT distance measuring equipment
radio navigation
solar compasses

Omnipol HC-3 helicopter
USE **HC-3 helicopter**

Omnipol L-29 aircraft
USE **L-29 jet trainer**

Omnipol Z-37 aircraft
USE **Z-37 aircraft**

omnirange navigation
USE **VHF omnirange navigation**

onboard computers
USE **airborne/spaceborne computers**

onboard data processing

DEF Processing of acquired data aboard an aircraft, satellite, etc., rather than transmission to ground stations for processing.

GS data processing

- . **onboard data processing**

RT airborne/spaceborne computers

∞ data

- flight management systems
- image processing
- microprocessors
- real time operation
- signal processing

onboard equipment

GS **onboard equipment**

- . airborne equipment
- . . . airborne/spaceborne computers
- . . . Light Airborne Multipurpose System
- . . . TERCOM
- . . . airborne lasers
- . . . aircraft equipment
- . . . bombing equipment
- . . . ejection seats
- flying ejection seats
- . . . TERCOM
- . . . spacecraft equipment
- . . . spacecraft electronic equipment

RT airborne surveillance radar

∞ aircraft

- bubble technique
- crew procedures (preflight)

∞ equipment

- flight instruments
- flight operations
- flight safety
- heating equipment
- life support systems
- lighting equipment
- radar equipment
- radio equipment
- spacecraft instruments
- stowage (onboard equipment)
- survival equipment
- telecommunication

∞ test equipment

- training devices

oncogenes

(added July 2002)

DEF Genes that have the potential of turning any normal cell into one that is cancerous.

UF *cancer genes*
transforming genes

GS genes

- . **oncogenes**

RT cancer
gene expression
mutations

one dimensional flow

GS fluid flow

- . **one dimensional flow**

RT annular flow
axial flow
core flow
flow geometry
Hugoniot equation of state
three dimensional flow
two dimensional flow

one-phase flow
USE **single-phase flow**

anisotropy
USE **anisotropy**

on-line programming

GS computer programming

- . **on-line programming**

on-line systems

DEF Systems where the input data enters the computer directly from the point of origin and/or in which output data is transmitted directly to where it is used.

RT client server systems
computer programs
computer techniques
data management
data processing
information retrieval
information systems
integrated library systems
numerical data bases

∞ systems

- web services
- websites

Onsager phenomenological coefficient

GS coefficients

- . **Onsager phenomenological coefficient**

RT flux density
plasmas (physics)
statistical mechanics
variational principles

Onsager relationship

RT ∞ equilibrium
irreversible processes
thermodynamics

Ontario

GS nations

- . Canada
- . . **Ontario**

ontogenesis
USE **ontogeny**

ontogeny

UF *ontogenesis*

RT biogeny
evolution (development)
growth
neurophysiology

oocytes
USE **gametocytes**

Oort cloud

DEF A region of millions of comets between 30,000 and 100,000 A.U. from the sun. Comets are perturbed out of the Oort cloud by passing stars and fall into the inner solar system. The Oort cloud was named after the Dutch astronomer, Jan Hendrik Oort.

RT ∞ clouds

- comet nuclei
- comets
- Hale-Bopp comet
- Kuiper belt
- Nemesis (star)
- solar system
- trans-Neptunian objects

opacifiers

GS additives

- . **opacifiers**

RT ∞ agents
fillers

opacity

DEF Of an optical path, the reciprocal of transmission.

GS electromagnetic properties

- . optical properties
- . . . **opacity**

RT absorptance
absorptivity
acoustics
atmospheric optics
attenuation coefficients
clarity
density (mass/volume)
electromagnetic absorption
haze
Kramers-Kronig formula
light (visible radiation)
light transmission
refractivity
translucence
transmission efficiency
transmissivity
transparence
turbidity
underwater optics
visibility

opalescence

RT iridescence
optical properties

open channel flow

GS fluid flow

- . internal flow
- . . channel flow
- . . . **open channel flow**
- . . liquid flow
- . . . **open channel flow**

RT cavity flow
laminar flow
meanders
pipe flow
turbulent flow
water flow

open circuit voltage

DEF The steady state or equilibrium potential of an electrode in absence of external current flow to or from the electrode.

GS potential energy

- . electric potential
- . . **open circuit voltage**

RT bias
capacitance
electrical properties
electrical resistivity
electromotive forces
energy conversion efficiency
overvoltage

∞ potential

power gain
short circuit currents
solar cells
static electricity
volt-ampere characteristics

open clusters

GS celestial bodies
. star clusters
. . . **open clusters**
. . . Pleiades cluster
. . . Praesepe star clusters
RT Population I stars

OPEN Project

DEF A former NASA project now absorbed by the International Solar Terrestrial Physics Project. It proposed a simultaneous study of plasmas in the Earth's magnetosphere and neighborhood using the following four instrumented spacecraft: interplanetary physics laboratory (IPL), geomagnetic tail laboratory (GTL), polar plasma laboratory (PPL), and equatorial magnetosphere laboratory (EML). Used for Origin of Plasmas in Earth Neighborhood.

UF *Origin of Plasmas in Earth Neighborhood*

GS programs
. NASA programs
. . . NASA space programs
. . . **OPEN Project**
. projects
. . . **OPEN Project**
. space programs
. . . NASA space programs
. . . **OPEN Project**

RT Earth atmosphere
Earth magnetosphere
plasma diagnostics
plasma physics
plasma sphere
satellite-borne instruments
space plasmas

open source licensing (computers)

(added April 2002)

DEF An arrangement between a software developer and the public that enables public access to a computer program's source code for the purpose of facilitating continued and efficient software development.

GS licensing
. **open source licensing (computers)**

RT computer programming
intellectual property
operating systems (computers)
software engineering
source programs

openings

UF *cut-outs*
GS **openings**
. apertures
. . . irises (mechanical apertures)
. . . numerical aperture
. . . synthetic apertures
. ports (openings)
. slits
RT annular ducts
cavities
cracks
curtains
doors
duct geometry
ducts
egress
exhaust nozzles
exhaust systems
gaps
gates (openings)
ingress (spacecraft passageway)
inlet nozzles
intake systems
orifices
outlets
passageways
perforated plates
pipe nozzles
slots

vents
windows (apertures)

operating costs

DEF The price for operating a system exclusive of the cost of the system itself.

GS costs
. **operating costs**
RT airline operations
economic analysis
energy policy
maintenance
production costs
systems analysis

operating systems (computers)

DEF Computer programs for expediting, controlling and/or recording computer use by other programs. Used for executive systems (computers).

UF *executive systems (computers)*
GS computer programs
. computer systems programs
. . . **operating systems (computers)**
. . . disk operating system (DOS)
. . . UNIX (operating system)
RT assembler routines
compilers
computer information security
computer systems design
input/output routines
MIMD (computers)
open source licensing (computers)
 ∞ routines
SIMD (computers)
 ∞ systems
windows (computer programs)

operating temperature

GS temperature
. **operating temperature**
RT ambient temperature
combustion temperature
high temperature superconductors
room temperature
wall temperature

operational amplifiers

GS amplifiers
. **operational amplifiers**
RT amplifier design
analog circuits
analog computers
differential amplifiers
feedback amplifiers
linear integrated circuits
transistor amplifiers

operational calculus

RT ∞ applications of mathematics
calculus
calculus of variations
differential equations
Fourier analysis
integral calculus
linear equations

operational hazards

GS hazards
. **operational hazards**
RT air piracy
aircraft hazards
cumulative damage
flight hazards
meteoroid hazards
noise (sound)
occupational diseases
radiation hazards

operational problems

RT airline operations
 ∞ operations
 ∞ problems
systems engineering

 ∞ **operations**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT air drop operations
air traffic control

airline operations
chemical engineering
chemical reactions
clinical medicine
deployment
Fishbowl Operation
loading operations
mechanization
mission planning
operational problems
operations research
orifices
preflight operations
premature operation
production engineering
programs
projects
rescue operations
sequencing
strategy
surgery
systems engineering

operations research

GS optimization
. **operations research**
RT ∞ applications of mathematics
computer systems simulation
computerized simulation
constraints
control systems design
critical path method
decision theory
Delphi method (forecasting)
dynamic programming
experiment design
forecasting
functions (mathematics)
game theory
group technology (manufacturing)
information theory
Lagrange multipliers
linear prediction
linear programming
management
management methods
management planning
mathematical models
mathematical programming
matrix management
minima
minimax technique
mission planning
multidisciplinary research
nonlinear programming
 ∞ operations
 ∞ paths
pattern method (forecasting)
probability theory
probe method (forecasting)
profile method (forecasting)
project planning
quality control
queueing theory
rand project
Rayleigh distribution
research and development
research management
risk
saddle points (game theory)
sequencing
simulation
statistical analysis
stochastic processes
strategy
 ∞ synthesis
synthesis (chemistry)
systems analysis
systems engineering
systems management
systems simulation
traveling salesman problem
urban development
war games

operator performance

GS human performance
. **operator performance**
RT astronaut performance

operators

computer systems performance
mental performance
∞ performance
pilot performance
psychomotor performance
situational awareness

∞ operators

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT operators (mathematics)
operators (personnel)
reactor cores

operators (mathematics)

UF *differential operators*
Fredholm operators
GS **operators (mathematics)**
. Bergman operator
. linear operators
RT functions (mathematics)
integral transformations
Laplace transformation
matrix theory
∞ operators
perturbation theory
S matrix theory

operators (personnel)

GS personnel
. **operators (personnel)**
. . . pilots (personnel)
. . . aircraft pilots
. . . test pilots
RT ∞ operators

Ophiuchi clouds

DEF Dense concentrations of interstellar gas near the stars Rho Ophiuchi and Zeta Ophiuchi.
RT cloud physics
∞ clouds
interstellar gas
interstellar matter
nebulae

ophthalmodynamometry

RT blood pressure
eye (anatomy)
vision

ophthalmology

GS medical science
. **ophthalmology**
RT electrophysiology
eye (anatomy)
eye diseases
eye examinations
miosis
vestibular nystagmus

Opik theory

RT nebulae
Orion constellation
Orion nebula
supernovae
∞ theories

optical absorption

USE **electromagnetic absorption**
light transmission

optical activity

DEF Ability to rotate the plane of vibration of polarized light to the right or left.
RT biochemistry
carbohydrates
chromophores
∞ optics
organic chemistry
polarimetry
polarized light
stereochemistry

optical amplifiers

USE **light amplifiers**

optical bistability

DEF A property of certain materials in which a nonlinear response is exhibited when under

the influence of an external driving coherent light, thereby allowing these materials to behave like optical switches.

GS electromagnetic properties
. optical properties
. . **optical bistability**
RT four-wave mixing
hysteresis
integrated optics
light transmission
nonlinear optics
optical data storage materials
optical equipment
optical measuring instruments
optical memory (data storage)
optical switching
optical waveguides
switching circuits

optical coatings

(added June 2005)
DEF Coatings applied to the surface of an optical element.
GS coatings
. **optical coatings**
. . birefringent coatings
RT antireflection coatings
coating
electromagnetic scattering
glass
lenses
light scattering
metal coatings
mirrors
optical equipment
optical materials
protective coatings
telescopes

optical communication

UF *laser communication*
light communication
optical signals
GS telecommunication
. communication
. . **optical communication**
. . . free-space optical communication
RT dye lasers
ground-air-ground communication
high power lasers
interplanetary communication
lasers
lunar communication
optical fibers
∞ optics
polarization modulation
quantum communication
satellite communication
space communication
spacecraft communication
tunable lasers
visual signals
wireless communication

optical computers

DEF Computers which use light rather than electricity for all or part of their operation. They perform multiple tasks in parallel as opposed to electronic computers which would perform those tasks sequentially. Such increased processing capability makes them suited for aerospace problems which involve systems that have a large number of degrees of freedom, i.e., large space structures, pattern recognition activity, and robotics.
GS data processing equipment
. computers
. . **optical computers**
RT coherent light
computer design
electro-optics
free-space optical interconnects
optical data processing
optical equipment
optical interconnects
optical memory (data storage)

optical control

(added September 1993)
DEF The control of light sensitive devices

by means optical radiation.

RT automatic control
cascade control
∞ control
control equipment
controllers
electric control
electronic control
electro-optics
feedback control
optical equipment
remote control

optical correction procedure

GS correction
. **optical correction procedure**
procedures
. **optical correction procedure**
RT adaptive optics
adjusting
anisoplanatism
errors
honeycomb mirrors
instrument errors
lens design
∞ optics
photographic measurement
photographs
position errors
seeing (astronomy)
segmented mirrors
self focusing

optical correlators

(added March 1990)
GS correlators
. **optical correlators**
RT image correlators
optical data processing

optical countermeasures

DEF Equipment for exploiting the vulnerability of laser guided weapon systems.
GS countermeasures
. **optical countermeasures**
RT air defense
antimissile defense
deception
electronic countermeasures
military technology
missile defense
optical radar
∞ optics
space surveillance (spaceborne)
stealth technology

optical coupling

GS coupling
. electromagnetic coupling
. . **optical coupling**
RT couples
cross coupling
cross polarization
laser arrays
laser mode locking
light transmission
microwave coupling
numerical aperture
∞ optics
phase locked systems
polarization (waves)

optical data processing

GS data processing
. **optical data processing**
RT character recognition
∞ data
data acquisition
data processing equipment
gray scale
image classification
image processing
lasers
light modulators
light valves
. optical computers
optical correlators
optical disks
optical relay systems
∞ optics

- photonics
 - ∞ processing
 - readers
 - scanners
 - tomography
- optical data storage materials**
 - GS optical materials
 - . **optical data storage materials**
 - RT ∞ data
 - data recording
 - data storage
 - laser applications
 - optical bistability
 - optical memory (data storage)
 - ∞ optics
 - photographic film
 - video disks
- optical density**
 - DEF The image intensity or density in terms of, or measured by, a reflectance densitometer.
 - RT ∞ density
 - microdensitometers
 - ∞ optics
 - translucence
 - transmittance
 - transparence
 - turbidity
 - underwater optics
- optical depolarization**
 - RT light (visible radiation)
 - ∞ optics
 - polarized light
- optical depth*
 - USE **optical thickness**
- optical disks**
 - UF *compact disk read-only memory devices*
 - GS computer components
 - . computer storage devices
 - . . **optical disks**
 - RT CD-ROM
 - data storage
 - laser applications
 - optical data processing
 - optical equipment
 - optical memory (data storage)
 - video disks
- optical emission*
 - USE **light emission**
- optical emission spectroscopy**
 - GS spectroscopy
 - . **optical emission spectroscopy**
 - . . laser spectroscopy
 - . . . optogalvanic spectroscopy
 - RT auroral spectroscopy
 - electron spectroscopy
 - emission spectra
 - light (visible radiation)
 - ∞ optics
- optical equipment**
 - GS **optical equipment**
 - . binoculars
 - . cameras
 - . . Baker-Nunn camera
 - . . ballistic cameras
 - . . CCD cameras
 - . . Delft camera
 - . . diffraction limited cameras
 - . . faint object camera
 - . . high speed cameras
 - . . . framing cameras
 - . . digital cameras
 - . . I2S cameras
 - . . Lallemand cameras
 - . . multispectral band cameras
 - . . panoramic cameras
 - . . pinhole cameras
 - . . Schmidt cameras
 - . . streak cameras
 - . . television cameras
 - . collimators
 - . endoscopes
 - . eyepieces
 - . heliometers
 - . . pyroheliometers
 - . . image converters
 - . . . telescopes
 - . . image tubes
 - . . . thermicons
 - . laser doppler velocimeters
 - . optical gyroscopes
 - . optical measuring instruments
 - . . cathetometers
 - . . diffractometers
 - . . Ebert spectrometers
 - . . ellipsometers
 - . . etalons
 - . . geodimeters
 - . . haploscopes
 - . . infrared spectrometers
 - . . . filter wheel infrared spectrometers
 - . . . light scattering meters
 - . . microdensitometers
 - . . nephelometers
 - . . oculometers
 - . . optical pyrometers
 - . . optical range finders
 - . . . laser range finders
 - . . photogoniometers
 - . . photometers
 - . . . electrophotometers
 - . . . ultraviolet spectrometers
 - high dispersion spectrographs
 - Total Ozone Mapping Spectrometer
 - . . quantum well infrared photodetectors
 - . . . ultraviolet spectrophotometers
 - . . polarimeters
 - . . reflectometers
 - . . . microwave reflectometers
 - . . refractometers
 - . . sextants
 - . . spectrophotometers
 - . . . infrared spectrophotometers
 - . . . ultraviolet spectrophotometers
 - . . transits
 - . . . theodolites
 - cinetheodolites
 - . . transmissometers
 - . optical microscopes
 - . . optical scanners
 - . . . flying spot scanners
 - . . multispectral band scanners
 - . . . thematic mappers (LANDSAT)
 - . periscopes
 - . . photographic rectifiers
 - . . polariscopes
 - . . . Senarmont polariscopes
 - . . prisms
 - . . scatter plates (optics)
 - . . spectroheliographs
 - . . stroboscopes
 - . . . wide angle lenses
 - RT absorption spectroscopy
 - acoustic microscopes
 - circumsolar telescopes
 - densitometers
 - Fabry-Perot spectrometers
 - geometrical optics
 - horizon scanners
 - infrared interferometers
 - infrared scanners
 - interferometers
 - lenses
 - . look angles (electronics)
 - . Mach-Zehnder interferometers
 - microchannels
 - microscopes
 - mirrors
 - monochromators
 - optical bistability
 - optical coatings
 - optical computers
 - optical control
 - optical disks
 - ∞ optics
 - optogalvanic spectroscopy
 - photographic equipment
 - radio telescopes
 - reflecting telescopes
 - . refracting telescopes
 - reticles
 - Scanner project
 - scanners
 - spectrometers
 - telescopes
 - tripods
 - video equipment
 - optical fibers**
 - GS fibers
 - . **optical fibers**
 - . . scintillating fibers
 - optical materials
 - . **optical fibers**
 - . . scintillating fibers
 - waveguides
 - . optical waveguides
 - . . **optical fibers**
 - . . . scintillating fibers
 - RT Bragg gratings
 - communication cables
 - fiber lasers
 - fiber optics
 - fly by light control
 - glass fibers
 - numerical aperture
 - optical communication
 - plastic fibers
 - transmission lines
 - optical filters**
 - GS electromagnetic wave filters
 - . **optical filters**
 - . . birefringent filters
 - . . infrared filters
 - . . ultraviolet filters
 - RT adaptive filters
 - apodization
 - bandpass filters
 - bandstop filters
 - Bragg gratings
 - diaphragms (mechanics)
 - didymium
 - electric filters
 - filtergrams
 - ∞ filters
 - ∞ gratings
 - gratings (spectra)
 - high pass filters
 - lenses
 - low pass filters
 - optical relay systems
 - ∞ optics
 - photographic equipment
 - photographic film
 - Rowland circles
 - sunglasses
 - transmission
 - tunable filters
 - optical flow (image analysis)**
 - (added May 1993)
 - RT computer vision
 - image analysis
 - image processing
 - ∞ optics
 - scene analysis
 - three dimensional motion
 - optical generators*
 - USE **laser cavities**
 - optical gyroscopes**
 - GS gyroscopes
 - . **optical gyroscopes**
 - optical equipment
 - . **optical gyroscopes**
 - RT laser gyroscopes
 - ∞ optics
 - Sagnac effect
 - optical heterodyning**
 - GS heterodyning
 - . **optical heterodyning**
 - RT Doppler effect
 - light modulation

optical illusion

∞ optics

optical illusion

- GS psychological effects
 - . illusions
 - . . . **optical illusion**
 - . . . elevator illusion
- RT moon illusion

∞ optics

optical images

USE **images**

optical interconnects

(added June 1998)

- GS **optical interconnects**
 - . free-space optical interconnects
- RT connectors
 - electric connectors
 - integrated optics
 - optical computers
 - optical switching
 - optoelectronic devices
 - photonics

optical maser modulation

USE **light modulation**

optical masers

USE **lasers**

optical materials

(added September 1988)

- GS **optical materials**
 - . glass fibers
 - . optical data storage materials
 - . optical fibers
 - . . . scintillating fibers
- RT aspheric optics
- chromophores
- glass
- infrared windows
- lenses
- ∞ materials
 - materials selection
 - mirrors
 - optical coatings
 - windows (apertures)

optical measurement

SN (MEASUREMENTS OF OPTICAL PROPERTIES, QUANTITIES OR CONDITIONS)

- GS **optical measurement**
 - . colorimetry
 - . optometry
 - . photometry
 - . . . astronomical photometry
 - . . . stellar spectrophotometry
 - . . . electrophotometry
 - . . . infrared photometry
 - . . . spectrophotometry
 - . . . stellar spectrophotometry
 - . . . telephotometry
 - . . . ultraviolet photometry
 - . . . visual photometry
 - . polarimetry
 - . . . astronomical polarimetry

- RT chemical analysis
- collimators
- densitometers
- diffractometers
- electro-optical photography
- ellipsometry
- emissivity
- etalons
- Faraday effect
- gamma ray spectrometers
- geodimeters
- geometrical optics
- grazing incidence
- in situ measurement
- infrared interferometers
- interferometers
- light (visible radiation)
- ∞ measurement
 - microdensitometers
 - modulation transfer function
 - nephelometers
 - nonintrusive measurement
- ∞ optics

- phase contrast
- photographic measurement
- photometers
- photothermal deflection spectroscopy
- polarimeters
- pressure sensitive paints
- ray tracing
- reflectance
- reflectometers
- refractometers
- Ronchi test
- spectral signatures
- spectrometers
- spectrophotometers
- stroboscopes

optical measuring instruments

SN (INSTRUMENTS UTILIZING OPTICAL PRINCIPLES FOR MEASUREMENT)

UF *optical sensors*

GS measuring instruments

. **optical measuring instruments**

- . . cathetometers
- . . diffractometers
- . . Ebert spectrometers
- . . ellipsometers
- . . etalons
- . . geodimeters
- . . haploscopes
- . . infrared spectrometers
- . . . filter wheel infrared spectrometers
- . . light scattering meters
- . . microdensitometers
- . . nephelometers
- . . oculometers
- . . optical pyrometers
- . . optical range finders
- . . . laser range finders
- . . photogoniometers
- . . photometers
- . . . electrophotometers
- . . . ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . . quantum well infrared photodetectors
- . . . ultraviolet spectrophotometers
- . . polarimeters
- . . reflectometers
- . . . microwave reflectometers
- . . refractometers
- . . sextants
- . . spectrophotometers
- . . . infrared spectrophotometers
- . . . ultraviolet spectrophotometers
- . . transits
- . . . theodolites
- cinetheodolites
- . . . transmissometers
- optical equipment
 - . **optical measuring instruments**
 - . . cathetometers
 - . . diffractometers
 - . . Ebert spectrometers
 - . . ellipsometers
 - . . etalons
 - . . geodimeters
 - . . haploscopes
 - . . infrared spectrometers
 - . . . filter wheel infrared spectrometers
 - . . light scattering meters
 - . . microdensitometers
 - . . nephelometers
 - . . oculometers
 - . . optical pyrometers
 - . . optical range finders
 - . . . laser range finders
 - . . photogoniometers
 - . . photometers
 - . . . electrophotometers
 - . . . ultraviolet spectrometers
 - high dispersion spectrographs
 - Total Ozone Mapping Spectrometer
 - . . . quantum well infrared photodetectors
 - . . . ultraviolet spectrophotometers
 - . . polarimeters
 - . . reflectometers

- . . . microwave reflectometers
- . . refractometers
- . . sextants
- . . spectrophotometers
- . . . infrared spectrophotometers
- . . . ultraviolet spectrophotometers
- . . transits
- . . . theodolites
- cinetheodolites
- . . transmissometers

- RT absorption spectroscopy
- cinespectrographs
- colorimetry
- densitometers
- Fabry-Perot spectrometers
- faint object camera
- goniometers
- guidance sensors
- infrared interferometers
- interferometers
- laser doppler velocimeters
- Mach-Zehnder interferometers
- microscopes
- Miros system
- monochromators
- multispectral tracking telescopes
- optical bistability
- ∞ optics
 - optogalvanic spectroscopy
 - periscopes
 - polarimetry
 - polariscopes
 - radiation measuring instruments
 - reflecting telescopes
 - refracting telescopes
 - self focusing
 - Senarmont polariscopes
 - solar instruments
 - telephotometry
 - telescopes

optical memory (data storage)

- GS memory (computers)
 - . **optical memory (data storage)**
- RT associative memory
- CD-ROM
- coherent light
- computer storage devices
- ∞ data
 - holography
 - lasers
 - optical bistability
 - optical computers
 - optical data storage materials
 - optical disks
- ∞ optics
 - video disks

optical MEMS

(added December 2005)

USE **microoptoelectromechanical systems**

optical methods

USE **optics**

optical microscopes

- GS microscopes
 - . **optical microscopes**
 - optical equipment
 - . **optical microscopes**
- RT electron microscopes
- ∞ optics

optical modulation

USE **light modulation**

optical paths

- DEF Lines of sight or the paths followed by rays of light through optical systems.
- RT diffraction paths
- geometrical optics
- holographic optical elements
- multipath transmission
- ∞ optics
- ∞ paths
 - phase contrast
 - photon beams
 - Sagnac effect
 - underwater optics

- Voigt effect
- wave dispersion
- optical polarization**
 - RT circular polarization
 - linear polarization
 - optical properties
 - ∞ optics
 - ∞ polarization
 - polarization modulation
 - polarized light
 - polarizers
 - polarography
- optical properties**
 - SN (INCLUDES PROPERTIES AND EFFECTS OF VISIBLE, INFRARED AND ULTRAVIOLET ELECTROMAGNETIC WAVES)
 - GS electromagnetic properties
 - . **optical properties**
 - . . . absorptance
 - . . . absorptivity
 - . . . birefringence
 - . . . Kerr electrooptical effect
 - . . . brightness
 - . . . sky brightness
 - . . . brightness distribution
 - . . . color
 - . . . iridescence
 - . . . stellar color
 - . . . water color
 - . . . dichroism
 - . . . luminosity
 - . . . stellar luminosity
 - . . . opacity
 - . . . optical bistability
 - . . . optical reflection
 - . . . phosphorescence
 - . . . photoconductivity
 - . . . photoviscoelasticity
 - . . . radiance
 - . . . reflectance
 - . . . bidirectional reflectance
 - . . . spectral reflectance
 - . . . refractivity
 - . . . photorefractivity
 - . . . stigmatism
 - . . . translucence
 - . . . transmissivity
 - . . . transmittance
 - . . . transparency
 - . . . turbidity
 - RT acousto-optics
 - albedo
 - birefringent filters
 - clarity
 - coefficients
 - coherent radiation
 - cross polarization
 - darkness
 - diffraction
 - electrical properties
 - electromagnetic absorption
 - emittance
 - excitons
 - Faraday effect
 - geometrical optics
 - glare
 - glass
 - gradient index optics
 - haze
 - infrared absorption
 - isotropy
 - Kerr magneto-optical effect
 - light (visible radiation)
 - light transmission
 - lumens
 - luminance
 - lunar albedo
 - metallic glasses
 - numerical aperture
 - opalescence
 - optical polarization
 - ∞ optics
 - ∞ orientation
 - photoelectricity
 - photons
 - phototropism
 - physical optics
 - ∞ physical properties
 - polarization (waves)
 - ∞ properties
 - ∞ solid state physics
 - surface properties
 - thermochromatic materials
 - thermodynamic properties
 - visibility
 - wave dispersion
- optical pumping**
 - GS **optical pumping**
 - . laser pumping
 - RT electron pumping
 - electron-hole drops
 - excimer lasers
 - fiber lasers
 - gamma ray lasers
 - glass lasers
 - HCN lasers
 - krypton fluoride lasers
 - laser cooling
 - laser propulsion
 - lasers
 - maser pumping
 - metal vapor lasers
 - neodymium lasers
 - nuclear pumped lasers
 - nuclear pumping
 - ∞ optics
 - pulse repetition rate
 - ∞ pumping
 - rare gas-halide lasers
 - solar-pumped lasers
 - stimulated emission
 - stimulated emission devices
- optical pyrometers**
 - DEF Devices for measuring the temperature of an incandescent radiating body by comparing its brightness for a selected wavelength interval within the visible spectrum with that of a standard source; a monochromatic radiation pyrometer.
 - GS measuring instruments
 - . optical measuring instruments
 - . . **optical pyrometers**
 - . temperature measuring instruments
 - . . **optical pyrometers**
 - optical equipment
 - . optical measuring instruments
 - . . **optical pyrometers**
 - RT ∞ optics
 - radiation pyrometers
- optical radar**
 - UF *laser radar*
 - lidar*
 - GS radar
 - . **optical radar**
 - . . differential absorption lidar
 - RT infrared radar
 - laser altimeters
 - laser applications
 - optical countermeasures
 - ∞ optics
 - over-the-horizon radar
 - radar detection
- optical range finders**
 - GS measuring instruments
 - . distance measuring equipment
 - . . range finders
 - . . . **optical range finders**
 - laser range finders
 - . optical measuring instruments
 - . . **optical range finders**
 - . . . laser range finders
 - optical equipment
 - . optical measuring instruments
 - . . **optical range finders**
 - . . . laser range finders
 - RT lunar ranging
 - ∞ optics
- optical reflection**
 - GS electromagnetic properties
 - . optical properties
 - . . **optical reflection**
 - reflection
 - ∞ **optical reflection**
 - antireflection coatings
 - electromagnetic absorption
 - geometrical optics
 - incident radiation
 - infrared reflection
 - light transmission
 - ∞ optics
 - reflectance
 - reflected waves
 - spread reflection
- optical relay systems**
 - DEF Systems using photocouplers in which the output device is a light sensitive switch that provides the same on and off operations as the contacts of a relay.
 - RT electro-optics
 - imaging techniques
 - laser applications
 - optical data processing
 - optical filters
 - optical resonators
 - optical switching
 - ∞ optics
 - pattern recognition
 - ∞ systems
- optical resonance**
 - GS emission
 - . light emission
 - . . luminescence
 - . . . **optical resonance**
 - resonance
 - . **optical resonance**
 - nuclear pumped lasers
 - RT ∞ optics
 - plasma radiation
 - plasma spectra
 - resonance lines
 - spectrum analysis
- optical resonators**
 - GS resonators
 - . **optical resonators**
 - RT field mode theory
 - laser modes
 - laser outputs
 - lasers
 - light modulation
 - mirrors
 - optical relay systems
 - ∞ optics
- optical satellite tracking program**
 - RT ∞ optics
 - satellite tracking
- optical scanners**
 - DEF A light source and phototube combined as a single unit for scanning moving strips of paper or other materials in photoelectric side-register control systems.
 - GS optical equipment
 - . **optical scanners**
 - . . flying spot scanners
 - . . multispectral band scanners
 - . . . thematic mappers (LANDSAT)
 - scanners
 - . **optical scanners**
 - . . flying spot scanners
 - . . multispectral band scanners
 - . . . thematic mappers (LANDSAT)
 - RT character recognition
 - data acquisition
 - monitors
 - ∞ optics
 - photon beams
 - readers
 - television cameras
- optical sensors*
- USE **optical measuring instruments**
- optical signals*
- USE **optical communication**
- optical slant range**
 - DEF The horizontal distance in a homogeneous atmosphere for which the attenuation is

optical switching

the same as that actually encountered along the true oblique path.

- GS distance
- . **optical slant range**
- RT ∞ optics
- radar range

optical spectrum

- USE **light (visible radiation) spectra**

optical switching

- UF *electro-optical switching*
- optoelectronic switching*
- photonic switching*
- GS switching
- . **optical switching**
- RT acousto-optics
- asynchronous transfer mode
- electro-optics
- free-space optical interconnects
- integrated optics
- light modulation
- magneto-optics
- optical bistability
- optical interconnects
- optical relay systems
- optoelectronic devices
- photonics
- semiconductor lasers
- switching circuits

optical thickness

DEF A measure of the cumulative attenuation of electromagnetic radiation in transit through a medium. In calculations of the transfer of radiant energy, the mass of a given absorbing or emitting material lying in a vertical column of unit cross sectional area and extending between two specific levels. Used for optical depth.

- UF *optical depth*
- RT antireflection coatings
- Fermat principle
- ∞ optics
- refractivity
- thickness

optical tracking

- UF *visual tracking*
- GS tracking (position)
- . **optical tracking**
- RT ballistic cameras
- boresight error
- boresights
- compensatory tracking
- Global Tracking Network
- infrared tracking
- minitrack system
- multiple target tracking
- multispectral tracking telescopes
- oculometers
- ∞ optics
- photographic tracking
- range and range rate tracking
- space detection and tracking system
- spacecraft tracking
- STDN (network)
- visual observation

optical transfer function

- UF *OTF*
- GS functions (mathematics)
- . transfer functions
- . . **optical transfer function**
- RT adaptive optics
- cost analysis
- figure of merit
- imaging techniques
- modulation transfer function
- ∞ optics
- ∞ performance
- spaceborne telescopes
- system effectiveness
- systems analysis
- systems engineering
- telescopes

optical transition

- RT electron transitions
- emission spectra

- Franck-Condon principle
- lasing
- luminescence
- ∞ optics

optical waveguides

DEF Any device or component that guides optical energy.

- GS waveguides
- . **optical waveguides**
- . . optical fibers
- . . . scintillating fibers
- RT corrugated waveguides
- dielectric waveguides
- integrated optics
- laser outputs
- light beams
- light transmission
- optical bistability
- ∞ optics
- photonics
- photorefractivity
- waveguide lasers

∞ optics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF Branch of physical science concerned with the transmission, generation, manipulation, and detection of electromagnetic radiation in the wavelength range from vacuum ultraviolet to the far infrared.

- UF *optical methods*
- RT acousto-optics
- adaptive optics
- angular resolution
- aspheric optics
- asphericity
- astigmatism
- atmospheric optics
- atom optics
- Cassegrain optics
- caustics (optics)
- chromophores
- crystal optics
- defocusing
- diffraction patterns
- diffraction propagation
- diffraction optics
- electron optics
- electro-optical effect
- electro-optical photography
- electro-optics
- fiber optics
- foci
- Fresnel lenses
- geometrical optics
- gradient index optics
- Huygens principle
- images
- imaging techniques
- integrated optics
- ion optics
- laser cavities
- lasers
- lens design
- lenses
- light (visible radiation)
- light amplifiers
- light emission
- light modulation
- magneto-optics
- mirrors
- nonlinear optics
- optical activity
- optical communication
- optical correction procedure
- optical countermeasures
- optical coupling
- optical data processing
- optical data storage materials
- optical density
- optical depolarization
- optical emission spectroscopy
- optical equipment
- optical filters
- optical flow (image analysis)
- optical gyroscopes
- optical heterodyning

- optical illusion
- optical measurement
- optical measuring instruments
- optical memory (data storage)
- optical microscopes
- optical paths
- optical polarization
- optical properties
- optical pumping
- optical pyrometers
- optical radar
- optical range finders
- optical reflection
- optical relay systems
- optical resonance
- optical resonators
- optical satellite tracking program
- optical scanners
- optical slant range
- optical thickness
- optical tracking
- optical transfer function
- optical transition
- optical waveguides
- parallax
- photics
- photoelastic analysis
- physical optics
- prefocusing
- quantum optics
- reflection
- resolution
- scatter plates (optics)
- ∞ science
- Snells law
- spectroscopy
- squeezed states (quantum theory)
- Starlab
- underwater optics
- x ray optics

optimal control

- UF *optimum control*
- GS automatic control
- . **optimal control**
- . . H-2 control
- . . H-infinity control
- . . linear quadratic Gaussian control
- . . time optimal control
- optimization
- . **optimal control**
- . . H-2 control
- . . H-infinity control
- . . linear quadratic Gaussian control
- . . time optimal control
- RT adaptive control
- ∞ control
- control systems design
- control theory
- differential games
- feedback control
- feedforward control
- genetic algorithms
- inventory controls
- Kalman-Schmidt filtering
- linear quadratic regulator
- model reference adaptive control
- multivariable control
- parameter identification
- pursuit-evasion games
- tracking problem
- trajectory control
- zero sum games

optimization

DEF The procedure used in the design of a system to maximize or minimize some performance index. May entail the selection of a component, a principle of operation, or a technique.

- UF *minimization*
- reduction (mathematics)*
- GS **optimization**
- . flight optimization
- . genetic algorithms
- . linear quadratic regulator
- . . linear quadratic Gaussian control
- . mathematical programming
- . . dynamic programming

- . . linear programming
- . . nonlinear programming
- . . quadratic programming
- . multidisciplinary design optimization
- . operations research
- . optimal control
 - . . H-2 control
 - . . H-infinity control
 - . . linear quadratic Gaussian control
 - . . time optimal control
- . design optimization
- . simplex method
- . trajectory optimization
- . shape optimization

RT ∞ applications of mathematics
backpropagation (artificial intelligence)
Bellman theory
Bolza problems
constraints
correlation

∞ design
design analysis
differential calculus
efficiency
extremum values
games
gradients
greedy algorithms
Hessian matrices
Kalman filters
Kalman-Schmidt filtering
Lagrange multipliers
least squares method
maxima
minima
parameter identification
penalty function
planning
pontryagin principle
quality control
range (extremes)

∞ reduction
scheduling
sensitivity analysis
simulated annealing
static models
steepest descent method
stopping
system identification
Taguchi methods
trajectory control
Wiener filtering

optimum control

USE **optimal control**

optimum thrust programming

USE **thrust programming**

options

RT alternatives
contracts
selection
site selection
subcontracts

optoelectronic devices

DEF Electronic devices combining optic and electric ports.

GS **optoelectronic devices**

- . light emitting diodes
- . photodiodes
- . phototransistors

RT electro-optics
fiber optics
free-space optical interconnects
integrated circuits
integrated optics
microoptoelectromechanical systems
optical interconnects
optical switching
photonics

optoelectronic switching

USE **optical switching**

optogalvanic spectroscopy

DEF A method of obtaining absorption spectra of atomic and molecular species in flames and electrical discharges by measuring

voltage and current changes upon laser irradiation.

GS spectroscopy
. absorption spectroscopy
. . **optogalvanic spectroscopy**
. optical emission spectroscopy
. . laser spectroscopy
. . . **optogalvanic spectroscopy**
utilization
. laser applications
. . laser spectroscopy
. . . **optogalvanic spectroscopy**

RT flame spectroscopy
Fraunhofer lines
gas spectroscopy
infrared spectroscopy
molecular spectroscopy
optical equipment
optical measuring instruments
Raman spectroscopy
ultraviolet spectroscopy
volt-ampere characteristics

optometry

GS optical measurement
. **optometry**

RT anastigmatism
blindness
eye (anatomy)
haplosopes

∞ measurement
medical science
vision

oral hygiene

GS hygiene
. **oral hygiene**

RT cleanliness
dentistry
health
public health
teeth
tooth diseases

oratory

USE **public speaking**

ORBIS

UF *orbiting radio beacon ionospheric sounder*

GS artificial satellites
. scientific satellites
. . **ORBIS**
. . . ORBIS CAL satellite

RT ionospheric propagation
ionospheric sounding
radio beacons

ORBIS CAL satellite

GS artificial satellites
. gravity gradient satellites
. . **ORBIS CAL satellite**
. scientific satellites
. . ORBIS
. . . **ORBIS CAL satellite**

RT ionospheric propagation
ionospheric sounding
radio beacons

orbit calculation

UF *satellite orbit calculation*

GS computation
. **orbit calculation**
. . minimum variance orbit
determination
. . orbital position estimation
orbit determination
. **orbit calculation**
. . minimum variance orbit
determination
. . orbital position estimation

RT flight mechanics
Goddard Trajectory Determination System
orbital elements
orbital mechanics
orbital resonances (celestial mechanics)

quadratures

orbit decay

RT aerodynamic drag
atmospheric entry
flight mechanics
orbital mechanics
satellite lifetime
spacecraft breakup

orbit determination

(added December 1998)

GS **orbit determination**
. airborne range and orbit
determination
. orbit calculation
. . minimum variance orbit
determination
. . orbital position estimation

RT Global Positioning System
position errors
satellite tracking
space navigation
spacecraft control
spacecraft position indicators

orbit equations

USE **orbital mechanics**

orbit insertion

(added January 1991)

DEF The process by which a spacecraft enters into a desired orbit around a celestial body.

GS insertion
. **orbit insertion**

RT ascent trajectories
orbital maneuvers
orbital mechanics
payload delivery (STS)
satellite orbits
spacecraft launching
spacecraft maneuvers
spacecraft orbits
transfer orbits

Orbit Maneuvering Engine (Space Shuttle)

UF *OME*

GS engines
. rocket engines
. . microrocket engines
. . . **Orbit Maneuvering Engine (Space Shuttle)**

RT Aeromaneuvering Orbit to Orbit Shuttle
orbital maneuvers
space shuttles

orbit perturbation

UF *evection*

GS perturbation
. **orbit perturbation**
. . satellite perturbation

RT drift rate
long term effects
lunar effects
orbital elements
orbital mechanics
orbital resonances (celestial mechanics)
perturbation theory
Schach effect
vinti theory

orbit spectrum utilization

DEF Telecommunication techniques in spectrum conservation for reducing user costs.

RT communication satellites
frequency assignment
radio relay systems
satellite orbits
systems engineering
television systems

orbit transfer vehicles

DEF Concept of propulsive (velocity producing) rockets or stages for use with crew transfer modules, manned sortie modules, or other payloads. Used for OTV.

orbital assembly

UF *OTV*
GS **orbit transfer vehicles**
. Aeromaneuvering Orbit to Orbit Shuttle
RT Inertial Upper Stage
orbital maneuvering vehicles
orbital servicing
payload delivery (STS)
payload deployment & retrieval system
payload retrieval (STS)
space shuttles
space transportation
space tugs
∞ spacecraft
∞ vehicles

orbital assembly
UF *construction in space*
spacecraft orbital assembly
GS assembling
. **orbital assembly**
RT Crew Equipment Translation Aid (ISS)
expandable structures
inflatable spacecraft
self erecting devices
space erectable structures
Space Operations Center (NASA)
Space Station Mobile Servicing System
space station modules
space station structures
spacecraft modules
spacecraft structures

orbital breakup
USE **spacecraft breakup**

orbital elements
DEF A set of seven parameters defining the orbit of a body attracted by a central, inverse square force.
RT apsides
∞ elements
orbit calculation
orbit perturbation
orbits
perihelions
perturbation theory

Orbital Flight Test 1 (shuttle)
USE **Space Transportation System 1 flight**

Orbital Flight Test 2 (shuttle)
USE **Space Transportation System 2 flight**

Orbital Flight Test 3 (shuttle)
USE **Space Transportation System 3 flight**

Orbital Flight Test 4 (shuttle)
USE **Space Transportation System 4 flight**

orbital flight tests (shuttle)
USE **Space Transportation System flights**

orbital launching
SN (LAUNCHING FROM AN ORBIT--EXCLUDES LAUNCHING INTO ORBIT FROM GROUND)
GS launching
. rocket launching
. . **orbital launching**
RT interplanetary trajectories
lunar launch
payload delivery (STS)
spacecraft launching
transfer orbits

orbital lifetime
DEF The predicted lifetime of a satellite in orbit, usually based on such criteria as solar flux density, atmospheric density, the lessening of the eccentricity of elliptical orbits, or the gravitational effects of the sun or the moon.
RT attitude control

Earth orbits two body problem

orbital maneuvering vehicles
RT orbit transfer vehicles
orbital servicing
power modules (STS)
remotely piloted vehicles
∞ spacecraft

orbital maneuvers
GS maneuvers
. **orbital maneuvers**
. . . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT formation flying
orbit insertion
Orbit Maneuvering Engine (Space Shuttle)
space navigation
space shuttles

orbital mechanics
UF *orbit equations*
GS mechanics (physics)
. classical mechanics
. . space mechanics
. . . **orbital mechanics**
. . . . Kepler laws
. . . . minimum variance orbit determination
RT Aeromaneuvering Orbit to Orbit Shuttle
apsides
astrodynamics
celestial mechanics
circular orbits
drift rate
Earth orbital rendezvous
Earth orbits
Earth-Mars trajectories
Earth-Mercury trajectories
Earth-Moon system
elliptical orbits
equatorial orbits
flight mechanics
flight optimization
Goddard Trajectory Determination System
Hansen lunar theory
Hill lunar theory
Hill method
interplanetary trajectories
interplanetary transfer orbits
Lagrangian equilibrium points
lunar orbital rendezvous
lunar orbits
many body problem
moon-Earth trajectories
orbit calculation
orbit decay
orbit insertion
orbit perturbation
orbital resonances (celestial mechanics)
orbits
parking orbits
perturbation
planetary landing
Poynting-Robertson effect
quadratures
rendezvous
rendezvous trajectories
retrograde orbits
round trip trajectories
satellite orbits
satellite perturbation
space navigation
spacecraft orbits
stationkeeping
swingby technique
thrust programming
trajectory analysis
transearth injection
transfer orbits
translunar injection
twenty-four hour orbits

orbital motion
USE **orbits**

orbital position estimation
GS computation
. orbit calculation
. . **orbital position estimation**
estimating
. **orbital position estimation**
orbit determination
. orbit calculation
. . **orbital position estimation**
RT celestial sphere
Goddard Trajectory Determination System
navigation
∞ orientation
position (location)
position errors
∞ range
satellite orbits
spacecraft orbits
spacecraft position indicators
state estimation

orbital rendezvous
UF *satellite rendezvous*
GS maneuvers
. orbital maneuvers
. . **orbital rendezvous**
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
rendezvous
. space rendezvous
. . **orbital rendezvous**
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous
RT Atlas launch vehicles
autonomous docking
multiple docking adapters
payload retrieval (STS)
rendezvous guidance
rendezvous spacecraft
rendezvous trajectories
spacecraft docking
spacecraft trajectories
tethering

orbital resonances (celestial mechanics)
DEF Systems of two or more satellites (including planets) that orbit the same primary and whose orbital mean motions are in a ratio of small whole numbers.

GS resonance
. **orbital resonances (celestial mechanics)**
RT astrodynamics
celestial mechanics
gravitational effects
libration
librational motion
orbit calculation
orbit perturbation
orbital mechanics
oscillations
planetary orbits
planetary systems
satellite orbits
solar orbits

orbital servicing
DEF The replenishing of propellants, pressurants, coolants, and the replacement of modules and experiments, during some phase of a spacecraft flight to extend the mission and lifetime, or change the payloads.

UF *satellite repair*
RT Columbus space station
large space structures
man tended free flyers
manned maneuvering units
orbit transfer vehicles
orbital maneuvering vehicles
payload transfer
Space Operations Center (NASA)
space platforms
Space Shuttle payloads
Space Station Freedom

- space stations
 - space transportation system
 - space tugs
 - telerobotics
- orbital shots**
- RT ∞ shot
 - spacecraft launching
- orbital simulators*
- USE **space simulators**
- orbital space tests**
- RT CRRES (satellite)
 - environmental tests
 - large space structures
 - space mechanics
 - space stations
 - structural analysis
 - ∞ tests
- Orbital Test Satellite (ESA)*
- USE **OTS (ESA)**
- orbital transfer*
- USE **transfer orbits**
- orbital velocity**
- DEF The average velocity at which an Earth satellite or other orbiting body travel around its primary. The velocity of such a body at any given point in its orbit, i.e., orbital velocity at the apogee is less than at the perigee.
 - GS rates (per time)
 - . **orbital velocity**
 - velocity
 - . **orbital velocity**
 - RT angular velocity
 - escape velocity
 - ∞ hypervelocity
 - velocity errors
- orbital workers**
- GS personnel
 - . flying personnel
 - . . . astronauts
 - . . . **orbital workers**
 - RT astronaut locomotion
 - extravehicular activity
 - space maintenance
 - space tools
 - work capacity
- orbital workshops**
- GS artificial satellites
 - . **orbital workshops**
 - . . Saturn workshops
 - . . . Saturn 1 workshop
 - . . . Saturn 5 workshop
 - . . Skylab 1
 - . . Skylab 2
 - . . Skylab 3
 - . . Skylab 4
 - manned spacecraft
 - . **orbital workshops**
 - . . Saturn workshops
 - . . . Saturn 1 workshop
 - . . . Saturn 5 workshop
 - . . Skylab 1
 - . . Skylab 2
 - . . Skylab 3
 - . . Skylab 4
 - RT Apollo extension system
 - containerless melts
 - manned orbital laboratories
 - Skylab program
 - space laboratories
 - space processing
 - space stations
- orbitals**
- GS **orbitals**
 - . electron orbitals
 - . molecular orbitals
 - . Slater orbitals
 - RT Jahn-Teller effect
 - orbits
- Schwarzschild metric
- Orbiting Astronomical Observatory*
- USE **OAO**
- Orbiting Carbon Observatory (OCO)**
- (added April 2009)
- DEF Observatory and related mission designed to make precise, time-dependent global measurements of atmospheric carbon dioxide from an Earth orbiting satellite. On February 24, 2009, OCO failed to reach orbit.
- GS artificial satellites
 - . scientific satellites
 - . . **Orbiting Carbon Observatory (OCO)**
 - RT atmospheric composition
 - carbon dioxide concentration
 - climate change
 - environmental monitoring
 - greenhouse effect
 - remote sensing
- orbiting dipoles**
- GS electric charge
 - . electric dipoles
 - . . **orbiting dipoles**
 - RT communication equipment
 - ∞ dipoles
- Orbiting Frog Otolith**
- GS artificial satellites
 - . biosatellites
 - . . **Orbiting Frog Otolith**
 - spaceborne experiments
 - . **Orbiting Frog Otolith**
 - RT biological effects
 - biometrics
 - biotelemetry
 - instrument packages
 - international cooperation
 - Italian space program
 - otolith organs
- Orbiting Geophysical Observatory*
- USE **OGO**
- orbiting lunar stations**
- GS artificial satellites
 - . lunar satellites
 - . . **orbiting lunar stations**
 - . space stations
 - . . **orbiting lunar stations**
 - lunar spacecraft
 - . lunar satellites
 - . . **orbiting lunar stations**
 - stations
 - . space stations
 - . . **orbiting lunar stations**
 - RT lunar bases
 - ∞ spacecraft
- orbiting radio beacon ionospheric sounder*
- USE **ORBIS**
- Orbiting Solar Observatory*
- USE **OSO**
- orbitrons**
- RT electron clouds
 - electron tubes
 - ionization gages
 - space charge
 - vacuum gages
- orbits**
- DEF The paths of bodies or particles under the influence of a gravitational or other force. Used for orbital motion and periodic orbits.
 - UF *orbital motion*
 - periodic orbits*
 - GS **orbits**
 - . circular orbits
 - . . stationary orbits
 - . Earth orbits
 - . . geosynchronous orbits
 - . . low Earth orbits
 - . . twenty-four hour orbits
 - . eccentric orbits
 - . elliptical orbits
- . . transfer orbits
 - . . . interplanetary transfer orbits
 - . equatorial orbits
 - . . stationary orbits
 - . lunar orbits
 - . planetary orbits
 - . retrograde orbits
 - . solar orbits
 - . spacecraft orbits
 - . . satellite orbits
 - . . . geosynchronous orbits
 - . . . parking orbits
 - . . . stationary orbits
 - . . . twenty-four hour orbits
 - . transfer orbits
 - . . interplanetary transfer orbits
 - . polar orbits
 - . stellar orbits
 - . Trojan orbits
- RT airborne range and orbit determination
- apexes
 - aphelions
 - apogees
 - artificial satellites
 - astrodynamics
 - celestial bodies
 - celestial mechanics
 - ∞ conjunction
 - Earth-Venus trajectories
 - ephemerides
 - flight optimization
 - flight paths
 - four body problem
 - ground tracks
 - ∞ inclination
 - interplanetary flight
 - lunar flight
 - many body problem
 - ∞ motion
 - orbital elements
 - orbital mechanics
 - orbitals
 - ∞ paths
 - perigees
 - perihelions
 - quadratures
 - Roche limit
 - satellite ground tracks
 - Schwarzschild metric
 - space flight
 - space navigation
 - spacecraft guidance
 - stationkeeping
 - suborbital flight
 - three body problem
 - trajectories
 - two body problem
- orchards**
- RT agriculture
 - blight
 - citrus trees
 - crop growth
 - crop vigor
 - ∞ crops
 - curing
 - farm crops
 - ∞ food
 - frost damage
 - fruits
 - irrigation
 - nuts (fruits)
 - plants (botany)
 - rural land use
 - silviculture
 - trees (plants)
- order-disorder transformations**
- RT antiphase boundaries
 - atomic structure
 - cluster variation method
 - crystal defects
 - crystal lattices
 - crystal structure
 - crystallography
 - holes (electron deficiencies)
 - metallography
 - microstructure

ordnance

molecular structure
phase transformations
solid solutions
∞ transformations

ordnance

RT air to surface missiles
ammunition
armor
ballistics
explosives
ground support equipment
pyrotechnics
tanks (combat vehicles)
trajectories
warfare
weapon systems
weapons

Oregon

GS nations
. United States
. . **Oregon**
RT Cascade Range (CA-OR-WA)
Columbia River Basin (ID-OR-WA)

ores

USE **minerals**

organ culturing

(added August 2004)

DEF The growth of animal organs in vitro.
GS culture techniques
. **organ culturing**
RT cell culturing
clone cells
culture media
cultured cells
microbiology
tissue culturing
tissue engineering

organ weight

GS weight (mass)
. **organ weight**

organelles

GS **organelles**
. chloroplasts
. endoplasmic reticulum
. . sarcoplasmic reticulum
. lysosomes
. mitochondria
. nuclei (cytology)
. plastids
. ribosomes
RT cells (biology)
cytology
cytoplasm

organic aluminum compounds

GS aluminum compounds
. **organic aluminum compounds**
organometallic compounds
. **organic aluminum compounds**
RT ∞ chemical compounds
∞ metal compounds

organic boron compounds

GS boron compounds
. **organic boron compounds**
organic compounds
. **organic boron compounds**
RT ∞ chemical compounds

organic charge transfer salts

DEF Organic compounds exhibiting temperature-dependent electrical, magnetic, and heat transfer properties.
GS organic compounds
. **organic charge transfer salts**
RT charge transfer devices
organic superconductors
∞ salts
semiconductors (materials)

organic chemistry

DEF The study of the composition, properties, structure, and reactions of carbon-based compounds, specifically hydrocarbons and their

derivatives, and normally excluding carbon oxides, metallic carbonates, carbides, and carbon-sulfur and carbon-nitrogen compounds.

RT biochemistry
∞ chemistry
cracking (chemical engineering)
cyclic compounds
Diels-Alder reactions
histochemical analysis
methoxy systems
optical activity
physiochemistry

organic compounds

GS organic compounds

. acetyl compounds
. . acetylacetone
. . acetylsalicylic acid
. amino acids
. . alanine
. . . phenylalanine
. . aspartic acid
. . cysteine
. . dopa
. . folic acid
. . glutamic acid
. . glutamine
. . glycine
. . hippuric acid
. . histidine
. . leucine
. . . norleucine
. . lysine
. . melanoidin
. . methionine
. . thyroxine
. . tryptophan
. . tyrosine
. carbohydrates
. . citric acid
. . glucosides
. . . nucleosides
. . . . adenines
. . . . guanosines
. . polysaccharides
. . cellulose
. . . Fortisan (trademark)
. . chitin
. . dextrans
. . . glyco gens
. . . starches
. . sugars
. . . dextrans
. . . inositols
. . . lactose
. . . mannitol
. . . monosaccharides
. . . sucrose
. . . . hexoses
. galactose
. glucose
. pentose
. ribose
. xylose
RT carboxylic acids
. acrylic acid
. . alanine
. . . phenylalanine
. . aspartic acid
. . citric acid
. . dicarboxylic acids
. . fatty acids
. . . acetic acid
. . . . ethylenediaminetetraacetic acids
. . . . iodoacetic acid
. . . acetylsalicylic acid
. . . benziic acid
. . . benzoic acid
. . . lipolic acid
. . . oleic acid
. . . palmitic acid
. . . propionic acid
. . . sebacic acid
. . . valeric acid
. . . . abscisic acid
. . . . folic acid
. . formhydroxamic acid
. . formic acid
. . Hexogenes (trademark)

. . lactic acid
. . lysine
. . nicotinic acid
. . oxalic acid
. . oxamic acids
. . tryptophan
. . choline
. . coenzymes
. . . adenosine diphosphate
. . . adenosine triphosphate
. . . cyclic AMP
. . . glutathione
. . . thiamine
. . cyclic compounds
. . cyclic hydrocarbons
. . . anthracene
. . . benzene
. . . chlorobenzenes
. . . . colchicine
. . . . cyclobutane
. . . . cyclohexane
. . . . cyclopropane
. . . . durene
. . . . indene
. . . . menthol
. . . naphthalene
. . . naphthenes
. . . polycyclic aromatic hydrocarbons
. . . heterocyclic compounds
. . . . acriflavine
. . . . adenosines
. adenosine diphosphate
. adenosine monophosphate
. adenosine triphosphate
. cyclic AMP
. . . . alkaloids
. atropine
. betaines
. caffeine
. colchicine
. ergotamine
. hyoscine
. lysergine
. morphine
. nicotinamide
. nicotine
. pilocarpine
. reserpine
. strychnine
. tropyil compounds
. . . . anisole
. . . . ascorbic acid
. . . . azines
. cyanurates
. cyanuric acid
. meclizine
. methylene blue
. phenothiazines
. . . . azoles
. acetazolamide
. oxazole
. pyrroles
. carbazoles
. azulene
. bioflavonoids
. biotin
. carnitine
. cyanocobalamin
. cytidylic acid
. dimenhydrinate
. endrin
. ethylene oxide
. folic acid
. furans
. tetrahydrofuran
. guanethidine
. HMX
. nicotinic acid
. phthalocyanin
. phylloquinone
. piperidine
. promethazine
. purines
. adenines
. xanthines
. caffeine
. guanines
. uric acid
. pyridines

. . . pyridoxine
 . . . pyrimidines
 alloxan
 thymidine
 thymine
 uracil
 . . . indoles
 . . . RDX
 . . . retinene
 . . . riboflavin
 . . . tetracyclines
 . . . tetrazoles
 . . . thiamine
 . . . thiazine (trademark)
 . . . thiophenes
 . . . tocopherol
 . . . trimethadione
 . . . tryptamines
 tryptophan
 melatonin
 serotonin
 . . . imidazoles
 . . . rhodamine
 . diethyl compounds
 . diethyl ether
 . diethyl hydrogen phosphite (DEHP)
 . dimethyl compounds
 . dimethylhydrazines
 . fluorine organic compounds
 . fluoroamines
 . . . nitrofluoroamines
 . . . trifluoroamine oxide
 . fluorocarbons
 . fluorohydrocarbons
 . . carbon tetrafluoride
 . . chlorofluoromethane
 . . polytetrafluoroethylene
 . . . teflon (trademark)
 . fluoropolymers
 . . polytetrafluoroethylene
 . . . teflon (trademark)
 . . KEL-F
 . . polyvinyl fluoride
 . perfluoroalkane
 . perfluoroguanidine
 . hydrocarbons
 . aliphatic hydrocarbons
 . . alkanes
 butanes
 cetane
 ethane
 heptanes
 methane
 nitropropane
 nonanes
 octanes
 paraffins
 ceresin
 pentanes
 neopentane
 propane
 . . alkenes
 butenes
 ethylene
 vinylidene
 hexenes
 propylene
 trienes
 . . alkynes
 acetylene
 oxyacetylene
 . . dienes
 butadiene
 heptadiene
 hexadiene
 polybutadiene
 . . carotenoids
 . . carotene
 . . cubane
 . . cyanoacetylene
 . . cyclic hydrocarbons
 . . . anthracene
 . . . benzene
 . . . chlorobenzenes
 . . . colchicine
 . . . cyclobutane
 . . . cyclohexane
 . . . cyclopropane
 . . . durene
 . . . indene
 . . . menthol
 . . . naphthalene
 . . . naphthenes
 . . . polycyclic aromatic hydrocarbons
 . . diphenyl compounds
 . . . diphenyl hydantoin
 . . fluorohydrocarbons
 . . . carbon tetrafluoride
 . . . chlorofluoromethane
 . . . polytetrafluoroethylene
 teflon (trademark)
 . . mesitylene
 . . methylene
 . . methylidyne
 . . natural gas
 . . . liquefied natural gas
 . . phenanthrene
 . . pyrenes
 . . quinoxalines
 . . stilbene
 . . toluene
 . . triphenyls
 . . xylene
 . kerogen
 . lead organic compounds
 . . lead acetates
 . lipids
 . . calciferol
 . . castor oil
 . . fats
 . . lipoproteins
 . . phylloquinone
 . . retinene
 . . steroids
 . . . cholesterol
 . . . corticosteroids
 aldosterone
 hydroxycorticosteroid
 cortisone
 glucocorticoids
 . . . estrogens
 . . prostaglandins
 . . tocopherol
 . nucleic acids
 . . deoxyribonucleic acid
 . . . complementary DNA
 . . ribonucleic acids
 . nucleotides
 . . adenines
 . . adenosines
 . . . adenosine diphosphate
 . . . adenosine monophosphate
 . . . adenosine triphosphate
 . . cyclic AMP
 . . . oligonucleotides
 . . polynucleotides
 . . pyridine nucleotides
 . . uridylic acid
 . organic boron compounds
 . organic charge transfer salts
 . organic germanium compounds
 . organic liquids
 . organic lithium compounds
 . organic peroxides
 . organic phosphorus compounds
 . . phosphazene
 . . phosphene
 . . phosphonitriles
 . . uridylic acid
 . organic silicon compounds
 . . triphenyl silicon
 . organic sulfur compounds
 . organic tin compounds
 . pentanone
 . peptides
 . . polypeptides
 . . . angiotensins
 . . . glutathione
 . . . hypertensin
 . . vasopressins
 . polynuclear organic compounds
 . propargyl groups
 . proteins
 . . albumins
 . . aspartates
 . . calmodulin
 . . elastin
 . . enzymes
 . . . aldolase
 . . . amidase
 . . . carbonic anhydrase
 . . . catalase
 . . . cholinesterase
 . . . cytochromes
 . . . dehydrogenases
 . . . hexokinase
 . . . lysozyme
 . . . nuclease
 . . . oxidase
 . . . papain
 . . . pepsin
 . . . phosphatases
 . . . protease
 . . . renin
 . . . thrombin
 . . . trypsin
 . . . fibrin
 . . globulins
 . . . fibrinogen
 . . . gamma globulin
 . . . hemoglobin
 . . . carboxyhemoglobin
 . . . oxyhemoglobin
 . . . keratins
 . . lipoproteins
 . . luminescent proteins
 . . melanin
 . . myoglobin
 . . myosins
 . . osteocalcin
 . . phytochrome
 . . proteinoids
 . . prothrombin
 . . protoproteins
 . . tumor suppressor proteins
 . nitriles
 . quinoline
 . quinones
 . volatile organic compounds
 . . acetonitrile
 . . acrylonitriles
 . . . polyacrylonitrile
 . . malononitrile
 . . phosphonitriles
 . . succinonitrile
 . ethylene compounds
 . . chloroethylene
 . . . trichloroethylene
 . . ethoxy ethylene
 . . ethylene dihydrazine
 . . ethylenediamine
 . . ethylenediaminetetraacetic acids
 . . succinonitrile
 . amines
 . . aminophylline
 . . amphetamines
 . . . methamphetamine
 . . aniline
 . . catecholamine
 . . . epinephrine
 . . . norepinephrine
 . . cysteamine
 . . diamines
 . . . ethylenediamine
 . . . guanidines
 guanethidine
 triaminoguanidinium azide
 . . difluorourea
 . . dimenhydrinate
 . . dimethylhydrazines
 . . diphenyl hydantoin
 . . ergotamine
 . . fluoroamines
 . . . nitrofluoroamines
 . . . trifluoroamine oxide
 . . gallamine triethiodide
 . . hexamethylenetetramine
 . . histidine
 . . hydroxylamine sulfate
 . . hyoscine
 . . . mecamlamine
 . . melamine
 . . methylene diamine
 . . monoethanolamine (MEA)
 . . nitroamines
 . . nitrosamine
 . . promethazine

organic coolants

- . . tetrafluorohydrazine
- . . tetryl
- . . thiuronium
- . . trinitramine
- . . tryptamines
- . . . melatonin
- . . . serotonin
- . . acetylcholine
- RT alcohols
- aldehydes
- ∞ aliphatic compounds
- alkyl compounds
- ∞ aromatic compounds
- ∞ chemical compounds
- chemical evolution
- esters
- ethers
- hydroxyl compounds
- metabolites
- methoxy systems
- methyl compounds
- nitroso compounds
- organic superconductors
- organic wastes (fuel conversion)
- organometallic compounds
- ∞ salts

organic coolants

- GS coolants
- . **organic coolants**

organic cooled reactors

- UF *orgel reactor*
- GS nuclear reactors
- . liquid cooled reactors
- . . **organic cooled reactors**
- . . . experimental organic cooled reactors
- RT reactor design
- reactor technology

organic fluorine compounds

USE **fluorine organic compounds**

organic germanium compounds

- GS germanium compounds
- . **organic germanium compounds**
- organic compounds
- . **organic germanium compounds**
- organometallic compounds
- . **organic germanium compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

organic lasers

- GS stimulated emission devices
- . lasers
- . . **organic lasers**
- . . . dye lasers
- RT carbon dioxide lasers
- carbon lasers
- chemical lasers
- gas lasers
- infrared lasers
- liquid lasers

organic liquids

- GS liquids
- . **organic liquids**
- organic compounds
- . **organic liquids**
- RT pyruvates
- xanthic acids

organic lithium compounds

- GS lithium compounds
- . **organic lithium compounds**
- organic compounds
- . **organic lithium compounds**
- organometallic compounds
- . **organic lithium compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

organic materials

- GS **organic materials**
- . peat
- RT biodegradability
- carbonaceous materials
- cork (materials)

- cotton fibers
- elastomers
- linen
- ∞ materials
- molds
- paper (material)
- phase change materials
- plastics
- ∞ polymers
- rosin
- rubber
- silk
- thermochromatic materials
- wood
- wool

organic moderated reactors

- GS nuclear reactors
- . **organic moderated reactors**
- . . experimental organic cooled reactors

organic nitrates

- GS esters
- . **organic nitrates**
- . . cellulose nitrate
- . . nitroforms
- . . . hydrazine nitroform
- . . nitroglycerin
- . . PETN
- nitrogen compounds
- . nitrates
- . . **organic nitrates**
- . . . cellulose nitrate
- . . . nitroforms
- hydrazine nitroform
- . . . nitroglycerin
- . . . PETN

organic peroxides

DEF Organic compounds containing radical groups combined with oxides in which two atoms of oxygen are linked together, e.g., diethyl peroxide.

- GS chalcogenides
- . oxides
- . . anhydrides
- . . . peroxides
- **organic peroxides**
- organic compounds
- . **organic peroxides**
- RT air pollution
- hydrocarbons
- inorganic peroxides

organic phosphorus compounds

- GS organic compounds
- . **organic phosphorus compounds**
- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid
- phosphorus compounds
- . **organic phosphorus compounds**
- . . phosphazene
- . . phosphene
- . . phosphonitriles
- . . uridylic acid
- RT ∞ chemical compounds

organic semiconductors

- GS semiconductors (materials)
- . **organic semiconductors**
- RT ∞ chemical compounds
- conducting polymers
- conductors
- organic superconductors
- semiconductor devices

organic silicon compounds

- GS organic compounds
- . **organic silicon compounds**
- . . triphenyl silicon
- silicon compounds
- . **organic silicon compounds**
- . . triphenyl silicon

RT ∞ chemical compounds

organic solids

- DEF Solid materials composed of organic materials.
- GS solids
- . **organic solids**
- RT astronomical spectroscopy
- cosmic dust
- dissolved organic matter
- planetary atmospheres

organic sulfur compounds

- GS organic compounds
- . **organic sulfur compounds**
- sulfur compounds
- . **organic sulfur compounds**
- RT ∞ chemical compounds

organic superconductors

(added May 1991)

- GS conductors
- . superconductors (materials)
- . . **organic superconductors**
- RT organic charge transfer salts
- organic compounds
- organic semiconductors

organic tin compounds

- GS organic compounds
- . **organic tin compounds**
- organometallic compounds
- . **organic tin compounds**
- tin compounds
- . **organic tin compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

organic wastes (fuel conversion)

- RT ∞ conversion
- energy conversion
- garbage
- human wastes
- metabolic wastes
- organic compounds
- residues
- sewage
- sludge
- wastes

organisms

- RT animals
- biomass
- carbon cycle
- deep scattering layers
- plants (botany)

organizations

- UF *associations*
- GS **organizations**
- . European Space Agency
- . federations
- . . bureaus (organizations)
- . ISRO
- . North Atlantic Treaty Organization (NATO)
- . World Meteorological Organization
- RT teams
- United Nations

organizing

- RT personnel
- unionization

organometallic compounds

- UF *metalloorganic compounds*
- GS **organometallic compounds**
- . chlorophylls
- . ferrocenes
- . . alkylferrocene
- . hemoglobin
- . . carboxyhemoglobin
- . . oxyhemoglobin
- . organic aluminum compounds
- . organic germanium compounds
- . organic lithium compounds
- . organic tin compounds
- . porphines
- RT alkoxides
- chelates

∞ chemical compounds
 ∞ metal compounds
 metalloids
 metalorganic chemical vapor
 deposition
 organic compounds
 synthetic metals
 tetrabutyls

organometallic polymers
 UF *metalloxiloxane polymers*
metalloxane polymers
 RT dendrimers
 polycarbosilanes
 ∞ polymers
 polysilanes

organometallic vapor deposition
 USE **metalorganic chemical vapor deposition**

organs
 SN (FOR SPECIFIC ORGANS, ORGAN SUBSTRUCTURES AND ORGAN SYSTEMS SEE ANATOMY)
 GS **organs**
 . viscera
 RT anatomy
 cells (biology)
 circulatory system
 digestive system
 gastrointestinal system
 genitourinary system
 glands (anatomy)
 respiratory system
 sense organs
 tissue engineering
 tissues (biology)

OR-gates
 USE **gates (circuits)**

orgel reactor
 USE **organic cooled reactors**

Orgueil meteorite
 GS celestial bodies
 . meteorites
 . . stony meteorites
 . . . carbonaceous meteorites
 carbonaceous chondrites
 **Orgueil meteorite**
 chondrites
 carbonaceous chondrites
 **Orgueil meteorite**

ORIC cyclotron
 USE **Oak Ridge isochronous cyclotron**

∞ **orientation**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT alignment
 attitude (inclination)
 azimuth
 bearing (direction)
 Bragg angle
 collimation
 crystallography
 directivity
 education
 fiber orientation
 field strength
 horizontal orientation
 instrument orientation
 isotropy
 optical properties
 orbital position estimation
 ply orientation
 polarization (spin alignment)
 polarization (waves)
 position (location)
 positioning
 sound localization
 vertical orientation
 vertical perception
 visual perception

orifice flow
 GS fluid flow
 . **orifice flow**

RT choked flow
 critical flow
 ∞ flow
 gas flow
 grazing flow
 laminar flow
 liquid flow
 multiphase flow
 orifices
 pipe flow
 pressure gradients
 single-phase flow
 steady flow
 steam flow
 subcritical flow
 supercritical flow
 turbulent flow
 unsteady flow

orifices
 RT annular ducts
 apertures
 cavities
 chokes (fuel systems)
 chokes (restrictions)
 ducts
 flow measurement
 flowmeters
 gaps
 injectors
 ∞ nozzles
 openings
 ∞ operations
 orifice flow
 ports (openings)
 spray nozzles
 throats
 Venturi tubes

Origin of Plasmas in Earth Neighborhood
 USE **OPEN Project**

∞ **origins**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT causes
 coordinates
 derivation
 graphs (charts)
 meteorite parent bodies
 petrogenesis

Orion (radio interferometry network)
 DEF An operational radio interferometry observational network.
 GS networks
 . **Orion (radio interferometry network)**
 RT radio interferometers
 radio receivers
 tracking networks

Orion aircraft
 USE **P-3 aircraft**

Orion constellation
 GS constellations
 . **Orion constellation**
 RT Opik theory
 Orion nebula
 Sigma Orionis

Orion crew vehicle
(added November 2006)
 USE **Crew Exploration Vehicle**

Orion nebula
 DEF An H 11 region about 500 pc distant and barely visible to the naked eye in the center of Orion's sword.
 GS celestial bodies
 . nebulae
 . . **Orion nebula**
 hydrogen clouds
 . **Orion nebula**
 RT astrophysics
 Cassiopeia A
 Crab nebula
 galaxies
 Gum nebula

interstellar gas
 interstellar matter
 irregular galaxies
 Magellanic clouds
 Milky Way Galaxy
 Opik theory
 Orion constellation
 planetary nebulae
 stellar coronas
 supernovae

Orionid meteoroids
 GS celestial bodies
 . meteoroid showers
 . . **Orionid meteoroids**
 . meteoroids
 . . **Orionid meteoroids**
 RT Aquarid meteoroids

Orlicz space
 RT set theory

ornithopter aircraft
 USE **research aircraft**

Ornstein-Uhlenbeck process
 RT ∞ processes

orographic clouds
 USE **cap clouds**

orography
 GS geography
 . **orography**
 geology
 . **orography**
 RT cones (volcanoes)
 geomorphology
 isostasy
 Mars volcanoes
 mountains
 peaks (landforms)
 volcanoes
 volcanology

orreries
 USE **astronomical models**

Orr-Sommerfeld equations
 RT ∞ equations
 flow distortion
 flow stability
 flow theory
 quantum mechanics
 velocity distribution

orthicons
 GS electron tubes
 . camera tubes
 . . **orthicons**
 . . . image orthicons
 RT image intensifiers
 photocathodes
 television cameras
 television equipment

ortho hydrogen
 GS gases
 . **ortho hydrogen**
 RT hydrogen

ortho para conversion
 GS isomerization
 . **ortho para conversion**
 RT ∞ conversion
 para hydrogen

orthogonal functions
 GS analysis (mathematics)
 . complex variables
 . . **orthogonal functions**
 . . . Walsh function
 functions (mathematics)
 . **orthogonal functions**
 . . Walsh function
 RT Bessel functions
 exponential functions
 function space
 Hankel functions
 hyperbolic functions
 Laguerre functions

orthogonal multiplexing theory

Legendre functions
linear transformations
Mathieu function
orthogonality
orthonormal functions
quality control

orthogonal multiplexing theory

RT pulse communication
signal transmission
 ∞ theories
wave interaction
wavelength division multiplexing

orthogonality

UF *Kronecker product*
GS moments
. distribution moments
. . . **orthogonality**
statistical analysis
. variance (statistics)
. . . multivariate statistical analysis
. . . **orthogonality**
RT covariance
experiment design
factor analysis
orthogonal functions
quality control

orthography

RT handwriting
intelligibility
languages
linguistics
semantics
syntax
words (language)

orthonormal functions

GS functions (mathematics)
. **orthonormal functions**
RT orthogonal functions
wavelet analysis

orthopedics

GS medical science
. **orthopedics**

orthophotography

GS imagery
. photography
. . . **orthophotography**
RT aerial photography
color photography
mapping

orthostatic tolerance

RT bed rest
blood pressure
fluid shifts (biology)
head down tilt
head up tilt
human tolerances
lower body negative pressure
posture
tilt-table test
tolerances (physiology)

orthotropic cylinders

RT ∞ cylinders
cylindrical bodies
cylindrical shells
rocket engine cases

orthotropic plates

GS structural members
. plates (structural members)
. . . **orthotropic plates**

orthotropic shells

GS shells (structural forms)
. **orthotropic shells**
RT cylindrical shells
metal shells
reinforced shells
shell stability

thin walled shells

orthotropism

RT plates (structural members)

oscillating cylinders

RT ∞ cylinders
cylindrical bodies
cylindrical shells
oscillations
vibration

oscillating flow

GS fluid flow
. unsteady flow
. . . **oscillating flow**
RT buffeting
compressibility effects
flow distortion
nonequilibrium flow
small perturbation flow
Strouhal number
surface tension driven convection

oscillation dampers

RT ∞ absorbers
 ∞ dampers
Maxwell bodies
nonoscillatory action
nonstabilized oscillation
nutration dampers
springs (elastic)
vibration isolators

oscillations

DEF Fluctuations or vibrations on each side of a mean value or position. One oscillation is half an oscillatory cycle, consisting of a fluctuation or vibration in one direction; half a vibration. The variation, usually with time, of the magnitude of a quantity with respect to a specified reference when the magnitude is alternately greater and smaller than the reference. Used for phugoid oscillations.

UF *phugoid oscillations*

GS **oscillations**
. airfoil oscillations
. . . wing oscillations
. . . wing rock
. electron oscillations
. harmonic oscillation
. hydrofoil oscillations
. molecular oscillations
. nonoscillatory action
. nonstabilized oscillation
. plasma oscillations
. pressure oscillations
. self oscillation
. Southern Oscillation
. stable oscillations
. stellar oscillations
. . . solar oscillations
. transient oscillations
. transverse oscillation
. . . H waves
. Madden-Julian Oscillation
. quasi-biennial oscillation
. undamped oscillations

RT amplitudes
Brunt-Vaisala frequency
crystal oscillators
damping
feedback
 ∞ motion
nonuniformity
orbital resonances (celestial mechanics)
oscillating cylinders
oscillators
pendulums
periodic variations
perturbation
resonance
resonant vibration
 ∞ rhythm
spacecraft motion
springs (elastic)
syntony
traveling wave tubes
vibration

vibration tests

oscillator strengths

DEF A quantum mechanical analog of the number of dispersion electrons having a given natural frequency in an atom, used in an equation for the absorption coefficient of a spectral line.

RT absorption spectra
absorptivity
electron oscillations
electron transitions
line spectra
molecular oscillations
molecular oscillators
oscillators
spectral line width

oscillators

DEF Nonrotating devices for producing alternating current.

UF *wave oscillators*

GS **oscillators**

. autodynes
. crystal oscillators
. . . piezoelectric crystals
. harmonic oscillators
. mechanical oscillators
. . . pendulums
. . . gyroscopic pendulums
. microwave oscillators
. . . magnetrons
. . . nigotrons
. molecular oscillators
. relaxation oscillators
. . . phantastrons
. synchronized oscillators
. vacuum tube oscillators
. voltage controlled oscillators

RT amplifiers
automatic frequency control
cavity resonators
circuits
electron tubes
feedback
feedback amplifiers
flip-flops
frequency pulling
frequency stability
frequency synthesizers
harmonic generators
inverters
microwave tubes
 ∞ motion
multivibrators
negative feedback
nonoscillatory action
nonstabilized oscillation
oscillations
oscillator strengths
parametrons
periodic variations
perturbation
positive feedback
resonant frequencies
resonators
self excitation
semiconductor devices
signal generators
solid state devices
subharmonic generators
superconducting cavity resonators
transformers
vibration

oscillograms

USE **oscillographs**

oscillographs

UF *oscillograms*
GS measuring instruments
. **oscillographs**
recording instruments
. **oscillographs**
RT Barkhausen effect
electrical measurement
oscilloscopes

- time measurement
- oscilloscopes**
 DEF Instruments for producing visual representations of oscillations or changes in an electric current.
 RT cathode ray tubes
 electronic equipment tests
 flying spot scanners
 frequency analyzers
 oscillographs
 sweep circuits
 sweep frequency
 synchrosopes
 video equipment
- oscultations*
 USE **double cusps**
- Oseen approximation**
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **Oseen approximation**
 RT incompressible fluids
 Navier-Stokes equation
 Roshko prediction
 Stokes flow
 viscous fluids
- osmium**
 GS chemical elements
 . **osmium**
 . . osmium isotopes
 metals
 . refractory metals
 . . **osmium**
 . . . osmium isotopes
 . transition metals
 . . **osmium**
 . . . osmium isotopes
 refractory materials
 . refractory metals
 . . **osmium**
 . . . osmium isotopes
- osmium alloys**
 GS alloys
 . heat resistant alloys
 . . refractory metal alloys
 . . . **osmium alloys**
 refractory materials
 . refractory metal alloys
 . . **osmium alloys**
- osmium compounds**
 RT ∞ chemical compounds
 ∞ Group 8 compounds
 ∞ metal compounds
- osmium isotopes**
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **osmium isotopes**
 . osmium
 . . **osmium isotopes**
 metals
 . refractory metals
 . . osmium
 . . . **osmium isotopes**
 . transition metals
 . . osmium
 . . . **osmium isotopes**
 refractory materials
 . refractory metals
 . . osmium
 . . . **osmium isotopes**
- osmometers**
 GS measuring instruments
 . pressure gages
 . . **osmometers**
- osmosis**
 UF *hypertonia*
osmotic pressure
 GS **osmosis**
 . reverse osmosis
 RT cell membranes (biology)
- demineralizing
 desalinization
 diaphragms (mechanics)
 diffusion
 extraction
 homeostasis
 isotonicity
 membranes
 permeating
 pressure
 ∞ separation
 water balance
- osmotic pressure*
 USE **osmosis**
- OSO**
 UF *Orbiting Solar Observatory*
 GS artificial satellites
 . geophysical satellites
 . . **OSO**
 . . . AOSO
 . . . OSO-1
 . . . OSO-2
 . . . OSO-3
 . . . OSO-4
 . . . OSO-5
 . . . OSO-6
 . . . OSO-7
 . . . OSO-8
 . . . OSO-C
 . scientific satellites
 . . astronomical satellites
 . . . **OSO**
 . . . AOSO
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 . . . OSO-6
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 . . . OSO-C
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **OSO**
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 solar observatories
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 geophysical observatories
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 . . . OSO-7
 . . . OSO-8
 . . . OSO-C
 sun
 Thor Delta launch vehicle
- OSO-1**
 UF *OSO-A*
S-16 satellite
 GS artificial satellites
 . geophysical satellites
- . . OSO
 . . . **OSO-1**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-1**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-1**
 . solar observatories
 . . . OSO
 **OSO-1**
 . geophysical observatories
 . . OSO
 . . . **OSO-1**
 RT Delta launch vehicle
- OSO-2**
 UF *OSO-B*
S-17 satellite
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **OSO-2**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-2**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-2**
 . solar observatories
 . . . OSO
 **OSO-2**
 . geophysical observatories
 . . OSO
 . . . **OSO-2**
 RT Delta launch vehicle
- OSO-3**
 UF *OSO-E*
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **OSO-3**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-3**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-3**
 . solar observatories
 . . . OSO
 **OSO-3**
 . geophysical observatories
 . . OSO
 . . . **OSO-3**
- OSO-4**
 UF *OSO-D*
 GS artificial satellites
 . geophysical satellites
 . . OSO
 . . . **OSO-4**
 . scientific satellites
 . . astronomical satellites
 . . . OSO
 **OSO-4**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . OSO
 **OSO-4**
 . solar observatories
 . . . OSO
 **OSO-4**
 . geophysical observatories
 . . OSO
 . . . **OSO-4**
 RT Delta launch vehicle
- OSO-5**
 UF *OSO-F*

- GS artificial satellites
 . geophysical satellites
 . . . OSO
 . . . **OSO-5**
 . scientific satellites
 . . . astronomical satellites
 . . . OSO
 **OSO-5**
 . observatories
 . . . astronomical observatories
 . . . astronomical satellites
 . . . OSO
 **OSO-5**
 . . . solar observatories
 . . . OSO
 **OSO-5**
 . . . geophysical observatories
 . . . OSO
 **OSO-5**
- OSO-6**
 UF *OSO-G*
 GS artificial satellites
 . geophysical satellites
 . . . OSO
 **OSO-6**
 . scientific satellites
 . . . astronomical satellites
 . . . OSO
 **OSO-6**
 . observatories
 . . . astronomical observatories
 . . . astronomical satellites
 . . . OSO
 **OSO-6**
 . . . solar observatories
 . . . OSO
 **OSO-6**
 . . . geophysical observatories
 . . . OSO
 **OSO-6**
- OSO-7**
 UF *OSO-H*
 GS artificial satellites
 . geophysical satellites
 . . . OSO
 **OSO-7**
 . scientific satellites
 . . . astronomical satellites
 . . . OSO
 **OSO-7**
 . observatories
 . . . astronomical observatories
 . . . astronomical satellites
 . . . OSO
 **OSO-7**
 . . . solar observatories
 . . . OSO
 **OSO-7**
 . . . geophysical observatories
 . . . OSO
 **OSO-7**
 RT dual spin spacecraft
- OSO-8**
 DEF One of a series of NASA orbiting solar observatories developed mainly for solar research. Used for OSO-J.
 UF *OSO-J*
 GS artificial satellites
 . geophysical satellites
 . . . OSO
 **OSO-8**
 . scientific satellites
 . . . astronomical satellites
 . . . OSO
 **OSO-8**
 . observatories
 . . . astronomical observatories
 . . . astronomical satellites
 . . . OSO
 **OSO-8**
 . . . solar observatories
 . . . OSO
 **OSO-8**
 . . . geophysical observatories
 . . . OSO
- . . . **OSO-8**
 OSO-A
 USE **OSO-1**
 OSO-B
 USE **OSO-2**
 OSO-C
 UF *S-57 satellite*
 GS artificial satellites
 . geophysical satellites
 . . . OSO
 **OSO-C**
 . . . scientific satellites
 . . . astronomical satellites
 . . . OSO
 **OSO-C**
 . . . observatories
 . . . astronomical observatories
 . . . astronomical satellites
 . . . OSO
 **OSO-C**
 . . . solar observatories
 . . . OSO
 **OSO-C**
 . . . geophysical observatories
 . . . OSO
 **OSO-C**
 RT Delta launch vehicle
 OSO-D
 USE **OSO-4**
 OSO-E
 USE **OSO-3**
 OSO-F
 USE **OSO-5**
 OSO-G
 USE **OSO-6**
 OSO-H
 USE **OSO-7**
 OSO-J
 USE **OSO-8**
 Osprey aircraft
 USE **V-22 aircraft**
 Osprey missile
 GS missiles
 . **Osprey missile**
 RT J-85 engine
 OSS-1 payload
 DEF Experiment package flown aboard the Space Shuttle STS-3 in 1982 which was sponsored by the NASA Office of Space Sciences from which the acronym is derived.
 GS payloads
 . Space Shuttle payloads
 . . **OSS-1 payload**
 RT exploration
 Get Away Specials (STS)
 investigation
 NASA programs
 space transportation system
 spaceborne experiments
- OSTA-1 payload**
 SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
 DEF Spaceborne experiments flown aboard the Space Shuttle STS-2 in 1981 which was sponsored by the NASA Office of Space & Terrestrial Applications from which the acronym is derived. Used for Office of Space & Terrestrial Applications Payloads.
 UF *Office of Space & Terrestrial Applications Payloads*
 GS payloads
 . Space Shuttle payloads
 . . **OSTA-1 payload**
 RT space transportation system
 spaceborne experiments
- OSTA-2 payload**
 SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
 UF *Office of Space & Terrestrial Applications Payloads*
 GS payloads
 . Space Shuttle payloads
 . . **OSTA-2 payload**
 RT space transportation system
 spaceborne experiments
 spaceflight equipment
- OSTA-3 payload**
 SN (OFFICE OF SPACE & TERRESTRIAL APPLICATIONS PAYLOADS)
 DEF Spaceborne systems flown aboard the Space Shuttle STS-17, sponsored by the NASA Office of Space & Terrestrial Applications from which the acronym is derived. The systems included the feature identification and location experiment-1 (FILE-1), the measurement of atmospheric pollution from satellite (MAPS), the imaging camera-B, and the large format camera/attitude reference system (LFC/ARS). Used for Office of Space & Terrestrial Applications Payloads.
 UF *Office of Space & Terrestrial Applications Payloads*
 GS payloads
 . Space Shuttle payloads
 . . **OSTA-3 payload**
 RT remote sensing
 space transportation system
 spaceborne experiments
 spacecraft equipment
- osteoblasts**
(added June 2001)
 DEF Bone-forming cells that secrete an extracellular matrix. Hydroxyapatite crystals are then deposited into the matrix to form bone.
 GS cells (biology)
 . **osteoblasts**
 RT bone demineralization
 bone mineral content
 bones
 cytochemistry
 fibroblasts
 osteocalcin
 osteogenesis
 osteoporosis
- osteocalcin**
(added August 2004)
 DEF Vitamin K-dependent calcium-binding protein synthesized by osteoblasts and found primarily in bone.
 GS biopolymers
 . proteins
 . . **osteocalcin**
 . organic compounds
 . proteins
 . . **osteocalcin**
 RT bone demineralization
 bone mineral content
 bones
 calcification
 calcium
 osteoblasts
 phytylquinone
- osteogenesis**
(added August 2004)
 DEF The process of bone formation. Histogenesis of bone including ossification.
 UF *bone formation*
 GS cytochemistry
 . **osteogenesis**
 RT bone demineralization
 bone marrow
 bone mineral content
 bones
 osteoblasts
 tissues (biology)
- osteoporosis**
 DEF A medical condition whose chief symptom is the loss of internal bone mass.
 GS diseases
 . **osteoporosis**
 RT bone demineralization
 bone mineral content
 bones
 calcium metabolism
 metabolism

- osteoblasts
- Ostwald coarsening*
- USE **Ostwald ripening**
- Ostwald ripening**
- (added March 1994)
- UF *Ostwald coarsening*
- RT coarseness
- crystallization
- grain size
- microstructure
- phase transformations
- precipitation (chemistry)
- solid solutions
- solidification
- OT-2
- USE **ESSA 2 satellite**
- OT-3
- USE **ESSA 1 satellite**
- OTF
- USE **optical transfer function**
- otolaryngology**
- GS medical science
- . **otolaryngology**
- RT ear
- otolith organs**
- DEF Structures of the inner ear (utricle and saccule) which respond to linear acceleration and tilting.
- GS anatomy
- . sense organs
- . . ear
- . . . labyrinth
- **otolith organs**
- . . gravireceptors
- . . . **otolith organs**
- receptors (physiology)
- . gravireceptors
- . . **otolith organs**
- RT oculogravic illusions
- Orbiting Frog Otolith
- semicircular canals
- vertical perception
- otology**
- GS medical science
- . **otology**
- RT ear
- OTS (ESA)**
- UF *Orbital Test Satellite (ESA)*
- GS artificial satellites
- . ESA satellites
- . . **OTS (ESA)**
- ESA spacecraft
- . ESA satellites
- . . **OTS (ESA)**
- RT European Communications Satellite
- European space programs
- Otto cycle**
- GS cycles
- . thermodynamic cycles
- . . **Otto cycle**
- RT Rankine cycle
- OTV
- USE **orbit transfer vehicles**
- outcrops**
- RT folds (geology)
- formations
- geology
- Outer Banks (NC)**
- GS landforms
- . barriers (landforms)
- . . **Outer Banks (NC)**
- RT Atlantic Ocean
- islands
- North Carolina
- outer planet missions*
- USE **Grand Tours**
- outer planet spacecraft*
- USE **outer planets explorers**
- outer planets explorers**
- UF *outer planet spacecraft*
- planetary explorer*
- RT Delta launch vehicle
- Explorer satellites
- flyby missions
- Grand Tours
- interplanetary flight
- Mars probes
- ∞ spacecraft
- TOPS (spacecraft)
- Venus probes
- outer radiation belt**
- GS particles
- . charged particles
- . . magnetically trapped particles
- . . . radiation belts
- **outer radiation belt**
- . corpuscular radiation
- . . radiation belts
- . . . **outer radiation belt**
- . trapped particles
- . . magnetically trapped particles
- . . . radiation belts
- **outer radiation belt**
- RT artificial radiation belts
- inner radiation belt
- proton belts
- ∞ radiation
- outer space treaty**
- GS policies
- . foreign policy
- . . international relations
- . . . international cooperation
- **outer space treaty**
- RT conventions
- international law
- research and development
- resource allocation
- space law
- outgassing**
- DEF The evolution of gas from a material in a vacuum.
- RT degassing
- desorption
- evolution (liberation)
- gas evolution
- purging
- residual gas
- transpiration
- vacuum
- vacuum pumps
- outlet flow**
- GS fluid flow
- . **outlet flow**
- RT cascade flow
- channel flow
- ∞ flow
- flow characteristics
- nozzle flow
- outlets**
- GS **outlets**
- . vents
- RT apertures
- cavities
- ∞ discharge
- doors
- ducts
- egress
- exhaust nozzles
- exhaust systems
- gates (openings)
- ∞ nozzles
- openings
- output
- pipe nozzles
- plugs
- ports (openings)
- ∞ terminals
- outlets (geology)*
- USE **estuaries**
- outliers (landforms)**
- DEF Areas or groups of rocks surrounded by rocks of older age. Used for klippen.
- UF *klippen*
- GS landforms
- . **outliers (landforms)**
- RT formations
- rocks
- soil erosion
- outliers (statistics)**
- DEF In sets of data values so far removed from other values in the distribution that their presence cannot be attributed to the random combination of change causes.
- RT mathematical models
- probability theory
- statistical analysis
- statistical distributions
- statistical tests
- output**
- DEF The yield or product of an activity furnished by man, machine, or system. Used for dummy loads.
- UF *dummy loads*
- GS **output**
- . cardiac output
- . . heart minute volume
- . . stroke volume
- . laser outputs
- . maser outputs
- RT ∞ capacity
- catchers
- computer systems performance
- delivery
- efflux
- input
- outlets
- ∞ performance
- power conditioning
- printouts
- ∞ production
- products
- readout
- supplying
- tracking problem
- transfer functions
- transmission
- yield
- OV-1 aircraft**
- UF *AO-1 aircraft*
- Grumman OV-1C aircraft*
- Mohawk aircraft*
- GS Grumman aircraft
- . **OV-1 aircraft**
- jet aircraft
- . turboprop aircraft
- . . **OV-1 aircraft**
- monoplanes
- . **OV-1 aircraft**
- observation aircraft
- . **OV-1 aircraft**
- RT ∞ aircraft
- OV-1 satellites**
- GS artificial satellites
- . scientific satellites
- . . **OV-1 satellites**
- RT gravity gradient satellites
- spin stabilization
- OV-2 satellites**
- GS artificial satellites
- . scientific satellites
- . . **OV-2 satellites**
- RT gravity gradient satellites
- spin stabilization
- OV-3 satellites**
- GS artificial satellites
- . scientific satellites
- . . **OV-3 satellites**

OV-4 satellites

RT gravity gradient satellites
spin stabilization

OV-4 satellites

GS artificial satellites
. scientific satellites

RT gravity gradient satellites
spin stabilization

OV-5 satellites

GS artificial satellites
. scientific satellites
. . . **OV-5 satellites**

RT gravity gradient satellites
spin stabilization

OV-10 aircraft

UF *NA-300 aircraft*
GS attack aircraft
. COIN aircraft
. . . **OV-10 aircraft**
jet aircraft
. turboprop aircraft
. . . **OV-10 aircraft**
monoplanes
. **OV-10 aircraft**
North American aircraft
. **OV-10 aircraft**
observation aircraft
. **OV-10 aircraft**
RT ∞ aircraft

ovaries

GS anatomy
. genitourinary system
. . . reproductive systems
. . . sex glands
. . . . gonads
. **ovaries**
. glands (anatomy)
. . . endocrine glands
. . . gonads
. . . . **ovaries**
. . . sex glands
. . . gonads
. . . . **ovaries**
RT eggs
menstruation

ovens

GS heating equipment
. **ovens**
RT baking
dry heat
furnaces
waste energy utilization

overcast

USE **cloud cover**

overcompression

USE **overconsolidation**

overconsolidation

UF *overcompression*
RT consolidation
foundations

Overhauser effect

DEF In atomic physics, a radio frequency field applied to a substance in an external magnetic field, whose nuclei have spin 1/2 and which has unpaired electrons at the electron spin resonance frequency. This results in polarization of the nuclei as great as if the nuclei had the much larger electron magnetic moment.

RT ∞ effects
magnetic resonance
nuclear spin
∞ polarization
resonance

overpressure

DEF (1) The pressure resulting from the blast wave of an explosion. It is referred to as positive when it exceeds atmospheric pressure and negative during the passage of the wave when resulting pressures are less than atmospheric pressure. (2) The transient pressure,

usually expressed in pounds per square inch, exceeding existing atmospheric pressure manifested in the blast wave from an explosion. During some period of the passage of the wave past a point, the overpressure is negative.

GS pressure
. **overpressure**
RT blast loads
dynamic pressure

over-the-horizon radar

GS radar
. search radar
. . . **over-the-horizon radar**
RT early warning systems
moving target indicators
optical radar
radar detection
radar range

overtones

USE **harmonics**

overvoltage

RT circuit protection
decomposition
electric potential
Geiger counters
open circuit voltage
polarization (charge separation)
surges

oxalates

GS **oxalates**
. cobalt oxalates
RT oxalic acid
∞ oxygen compounds

oxalic acid

GS acids
. carboxylic acids
. . . **oxalic acid**
organic compounds
. carboxylic acids
. . . **oxalic acid**
RT oxalates

oxamic acids

GS acids
. carboxylic acids
. . . **oxamic acids**
nitrogen compounds
. amides
. . . **oxamic acids**
organic compounds
. carboxylic acids
. . . **oxamic acids**

oxazole

DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen and one oxygen atom.

GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . azoles
. . . . **oxazole**

oxetane polymers

(*added August 1994*)
RT alkenes
binders (materials)
carbonyl compounds
monomers
photochemical reactions
∞ polymers
propellants

oxidase

GS acids
. **oxidase**
biopolymers
. proteins
. . . enzymes
. . . . **oxidase**
organic compounds
. proteins
. . . enzymes
. . . . **oxidase**

RT dehydrogenases

oxidation

DEF A reaction in which electrons are removed from a reactant. Sometimes, more specifically the combination of a reactant with oxygen.

GS chemical reactions
. **oxidation**
. . . electrochemical oxidation
. . . photooxidation
. . . rusting

RT association reactions
charring
chemical attack
combustion
combustion chemistry
corrosion
degradation
dehydrogenation
dopa
electron transfer
epoxidation
erosive burning
fuel combustion
hot corrosion
hydrocarbon combustion
metal combustion
oxidizers
oxygenation
passivity
reduction (chemistry)
roasting
thermal resistance
turbulent combustion

oxidation resistance

GS corrosion resistance
. **oxidation resistance**
RT passivity
∞ resistance
rusting
siliconizing
thermal resistance

oxidation-reduction reactions

DEF An oxidizing chemical change, where an element's positive valence is increased (electron loss), accompanied by a simultaneous reduction of an associated element (electron gain).

GS chemical reactions
. **oxidation-reduction reactions**
RT electrochemistry
reduction (chemistry)

oxide dispersion strengthening

(*added February 1994*)
GS dispersion strengthening
. **oxide dispersion strengthening**
RT alloys
hardening (materials)
heat resistant alloys

oxide films

RT cathodic coatings
∞ films
metal oxides
metal surfaces
surface layers
thin films

oxides

GS chalcogenides
. **oxides**
. . . alkoxides
. . . anhydrides
. . . peroxides
. . . . inorganic peroxides
. hydrogen peroxide
. organic peroxides
. potassium peroxides
. sodium peroxides
. . . boron oxides
. . . brucite
. . . carbon monoxide
. . . carbon suboxides
. . . chlorine oxides
. . . dioxides
. . . carbon dioxide

- . . . flint
- . . . hydrogen peroxide
- . . . silicon dioxide
- . . . quartz
 - coesite
 - stishovite
- . . . sulfur dioxides
- . . . germanium oxides
- . . . heavy water
- . . . indium oxides
- . . . metal oxides
 - alkaline earth oxides
 - barium oxides
 - beryllium oxides
 - alexandrite
 - calcium oxides
 - akermanite
 - magnesium oxides
 - akermanite
 - periclase
 - aluminum oxides
 - alexandrite
 - sapphire
 - bismuth oxides
 - cerium oxides
 - cesium oxides
 - chromium oxides
 - cobalt oxides
 - copper oxides
 - gallium oxides
 - hafnium oxides
 - iron oxides
 - hematite
 - ilmenite
 - magnetite
 - lanthanum oxides
 - lead oxides
 - lithium oxides
 - manganese oxides
 - Hopcalite (trademark)
 - mercury oxides
 - mixed oxides
 - BSCCO superconductors
 - YBCO superconductors
 - molybdenum oxides
 - nickel oxides
 - niobium oxides
 - platinum oxides
 - plutonium oxides
 - potassium oxides
 - scandium oxides
 - silver oxides
 - sodium peroxides
 - strontium oxides
 - tantalum oxides
 - thorium oxides
 - tin oxides
 - titanium oxides
 - anatase
 - ilmenite
 - rutile
 - tungsten oxides
 - scheelite
 - uranium oxides
 - vanadium oxides
 - yttrium oxides
 - zinc oxides
 - zirconium oxides
 - yttria-stabilized zirconia
- . . . nitrogen oxides
 - nitric oxide
 - nitrogen dioxide
 - nitrogen tetroxide
 - nitrous oxides
- . . . phosphorus oxides
 - pyroxenes
 - enstatite
 - selenium oxides
 - silicon oxides
 - muscovite
 - nephelite
 - silicon dioxide
 - quartz
 - coesite
 - stishovite
 - spodumene
 - sulfur oxides
 - sulfur dioxides
- RT anodic coatings
- cathodic coatings
- ethylene oxide
- euxenite
- insulation
- metal coatings
- niobates
- nonflammable materials
- ∞ oxygen compounds
- solid oxide fuel cells
- water
- oxidizers**
 - DEF Specifically, substances (not necessarily containing oxygen) that support the combustion of a fuel or propellant.
 - GS **oxidizers**
 - . high energy oxidizers
 - . liquid oxidizers
 - . liquid oxygen
 - . photochemical oxidants
 - . rocket oxidizers
 - . . FLOX
 - . . TAGN
 - RT ∞ agents
 - air pollution
 - fluorine
 - fuels
 - nitramine propellants
 - oxidation
- oximetry**
 - RT biochemical oxygen demand
 - blood
 - hyperoxia
 - hypoxia
 - oxygen consumption
- oxosilanes*
- USE **polysilanes**
- oxyacetylene**
 - GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkynes
 - **oxyacetylene**
 - RT acetylene
 - detonable gas mixtures
 - ∞ oxygen compounds
- oxyalkylation*
- USE **alkylation**
- oxyfluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . **oxyfluorides**
 - . . halides
 - . . . fluorides
 - **oxyfluorides**
 - RT ∞ oxygen compounds
- oxygen**
 - GS chemical elements
 - . **oxygen**
 - . . liquid oxygen
 - . . oxygen isotopes
 - . . . oxygen 17
 - . . . oxygen 18
 - gases
 - . **oxygen**
 - . . liquid oxygen
 - . . oxygen isotopes
 - . . . oxygen 17
 - . . . oxygen 18
 - RT Chlorella
 - high pressure oxygen
 - oxygen atoms
 - oxygen ions
 - oxygen plasma
 - ozone
 - reaction bonding
 - Schumann-Runge bands
 - sialon
- oxygen 17**
 - DEF An isotope of oxygen.
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . oxygen isotopes
 - **oxygen 17**
 - . . oxygen
 - . . . oxygen isotopes
 - **oxygen 17**
 - gases
 - . oxygen
 - . . oxygen isotopes
 - . . . **oxygen 17**
- oxygen 18**
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . oxygen isotopes
 - **oxygen 18**
 - . . oxygen
 - . . . oxygen isotopes
 - **oxygen 18**
 - gases
 - . oxygen
 - . . oxygen isotopes
 - . . . **oxygen 18**
- oxygen afterglow**
 - GS afterglows
 - . **oxygen afterglow**
- oxygen analyzers**
 - UF *oxygen detectors*
 - GS measuring instruments
 - . **oxygen analyzers**
 - RT gas analysis
- oxygen atoms**
 - GS atoms
 - . **oxygen atoms**
 - RT oxygen
- oxygen breathing**
 - RT ∞ breathing
- ∞ **oxygen compounds**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT acids
 - aluminates
 - arsenates
 - borates
 - bromates
 - carbohydrates
 - carbon suboxides
 - carbonates
 - ∞ chemical compounds
 - chlorates
 - chromates
 - germanium oxides
 - niobates
 - oxalates
 - oxides
 - oxyacetylene
 - oxyfluorides
 - oxygen fluorides
 - ozonates
 - ozone fluoride
 - ozonides
 - stannates
- oxygen consumption**
 - GS consumption
 - . **oxygen consumption**
 - RT biochemical oxygen demand
 - hyperoxia
 - hypoxia
 - metabolism
 - oximetry
- oxygen deficiency*
- USE **hypoxia**
- oxygen detectors*
- USE **oxygen analyzers**

oxygen fluorides

oxygen fluorides

- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **oxygen fluorides**
- . halides
- . . fluorides
- . . . **oxygen fluorides**
- RT ∞ oxygen compounds

oxygen ions

- GS ions
- . **oxygen ions**
- RT free radicals
- negative ions
- oxygen

oxygen isotopes

- GS chemical elements
- . nuclides
- . . isotopes
- . . . **oxygen isotopes**
- oxygen 17
- oxygen 18
- . oxygen
- . . **oxygen isotopes**
- . . . oxygen 17
- . . . oxygen 18
- gases
- . oxygen
- . . **oxygen isotopes**
- . . . oxygen 17
- . . . oxygen 18

oxygen masks

- GS breathing apparatus
- . **oxygen masks**
- masks
- . **oxygen masks**
- oxygen supply equipment
- . **oxygen masks**
- RT high altitude breathing
- life support systems
- portable life support systems

oxygen metabolism

- GS metabolism
- . **oxygen metabolism**
- RT hydrogen metabolism
- respiration

oxygen plasma

- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **oxygen plasma**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **oxygen plasma**
- RT argon plasma
- helium plasma
- hydrogen plasma
- oxygen

oxygen production

- RT closed ecological systems
- gas exchange
- in situ resource utilization

oxygen recombination

- GS chemical reactions
- . atomic recombination
- . . **oxygen recombination**
- recombination reactions
- . atomic recombination
- . . **oxygen recombination**
- RT ionization

oxygen regulators

- GS control equipment
- . regulators
- . . **oxygen regulators**
- RT flow regulators
- pressure regulators

oxygen spectra

- GS spectra
- . **oxygen spectra**

- RT airglow
- Herzberg bands
- molecular spectra
- solar spectra

oxygen supply equipment

- UF *oxygen systems*
- GS **oxygen supply equipment**
- . oxygen masks
- RT AEPS
- air conditioning equipment
- breathing apparatus
- cabin atmospheres
- compressed air
- controlled atmospheres
- emergency life sustaining systems
- life support systems
- pressurized cabins
- survival equipment

oxygen systems

- USE **oxygen supply equipment**

oxygen tension

- GS pressure
- . partial pressure
- . . **oxygen tension**
- . . . hypoxemia

oxygen toxicity

- USE **hyperoxia**

oxygenation

- GS chemical reactions
- . **oxygenation**
- RT aeration
- dissolved gases
- oxidation

oxygen-hydrocarbon rocket engines

- (added May 1989)
- UF *liquid oxygen hydrocarbon rocket engines*
- GS *LOX-hydrocarbon rocket engines*
- engines
- . rocket engines
- . . liquid propellant rocket engines
- . . . **oxygen-hydrocarbon rocket engines**
- RT booster rocket engines
- liquid oxygen
- reusable rocket engines
- spacecraft propulsion

oxyhalides

- GS halogen compounds
- . halides
- . . **oxyhalides**

oxyhemoglobin

- GS biopolymers
- . proteins
- . . hemoglobin
- . . . **oxyhemoglobin**
- organic compounds
- . proteins
- . . hemoglobin
- . . . **oxyhemoglobin**
- organometallic compounds
- . hemoglobin
- . . **oxyhemoglobin**
- RT erythrocytes

oxynitrides

- DEF Base for a broad field of nitrogen ceramics utilizing silicon, aluminum, and other elements to produce high temperature refractory materials.
- GS nitrogen compounds
- . nitrides
- . . **oxynitrides**
- RT ∞ chemical compounds
- ∞ Group 5A compounds

ozonates

- RT ∞ oxygen compounds
- ozone

ozone

- DEF A very active form of oxygen that may

be produced by the corona, arcing, or ultra-violet rays.

- GS gases
- . **ozone**
- RT Halogen Occultation Experiment
- oxygen
- ozonates
- ozone fluoride
- ozonides
- ozonometry
- photochemical oxidants
- quasi-biennial oscillation
- SAGE satellite
- Solar Mesosphere Explorer
- volatile organic compounds

ozone depletion

- (added December 1991)
- UF *ozone holes*
- GS depletion
- . **ozone depletion**
- RT air pollution
- Antarctic regions
- Arctic regions
- atmospheric composition
- chlorofluorocarbons
- chlorofluoromethane
- ozonometry
- ozonosphere
- Total Ozone Mapping Spectrometer

ozone fluoride

- GS halogen compounds
- . fluorine compounds
- . . fluorides
- . . . **ozone fluoride**
- . halides
- . . fluorides
- . . . **ozone fluoride**
- RT ∞ oxygen compounds
- ozone

ozone holes

- USE **ozone depletion**

ozone layer

- USE **ozonosphere**

ozonesondes

- (added July 2005)
- DEF Instruments which measure atmospheric ozone profiles.
- GS measuring instruments
- . meteorological instruments
- . . **ozonesondes**
- . sondes
- . . **ozonesondes**
- RT air sampling
- balloon sounding
- balloon-borne instruments
- ozonometry

ozonides

- RT ∞ oxygen compounds
- ozone

ozonometry

- GS chemical tests
- . chemical analysis
- . . gas analysis
- . . . **ozonometry**
- RT ozone
- ozone depletion
- ozonesondes
- Total Ozone Mapping Spectrometer

ozonosphere

- DEF The general stratum of the upper atmosphere in which there is an appreciable ozone concentration and in which ozone plays an important part in the radiation balance of the atmosphere. This region lies roughly between 10 and 50 kilometers, with maximum ozone concentration at about 20 to 25 kilometers. Used for ozone layer.
- UF *ozone layer*
- GS Earth atmosphere
- . middle atmosphere
- . . stratosphere
- . . . **ozonosphere**

RT chemosphere
chlorofluorocarbons
homosphere

ozone depletion
Umkehr effect

upper atmosphere

P

P band

- SN (225 TO 390 MHz)
- GS frequencies
 - . radio frequencies
 - . microwave frequencies
 - . . . **P band**
 - . ultrahigh frequencies
 - . . . **P band**
 - . very high frequencies
 - . . . **P band**

P waves

- GS elastic waves
 - . **P waves**
- RT compressible fluids
 - compression waves
 - crustal fractures
 - dilatational waves
- S waves
 - seismic waves
 - surface waves

P-1 engine

- GS engines
 - . rocket engines
 - . booster rocket engines
 - . . . **P-1 engine**
 - . solid propellant rocket engines
 - . . . **P-1 engine**

P-3 aircraft

- UF *Orion aircraft*
 - P3V aircraft*
- GS antisubmarine warfare aircraft
 - . **P-3 aircraft**
 - jet aircraft
 - . turboprop aircraft
 - . . . **P-3 aircraft**
 - Lockheed aircraft
 - . **P-3 aircraft**
 - monoplanes
 - . **P-3 aircraft**
- RT ∞ aircraft
 - turboprop engines

P3V aircraft

- USE **P-3 aircraft**

P-51 aircraft

- UF *Mustang aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . . **P-51 aircraft**
 - monoplanes
 - . **P-51 aircraft**
 - North American aircraft
 - . **P-51 aircraft**
 - single engine aircraft
 - . **P-51 aircraft**
- RT ∞ aircraft

P78-2 satellite

- USE **SCATHA satellite**

P-84 aircraft

- USE **jet provost aircraft**

P-160 aircraft

- UF *ME P-160 aircraft*
 - Messerschmitt ME P-160 aircraft*
- GS commercial aircraft
 - . **P-160 aircraft**
 - passenger aircraft
 - . **P-160 aircraft**
 - transport aircraft
 - . cargo aircraft
 - . . . **P-160 aircraft**
- RT ∞ aircraft

P-166 aircraft

- UF *Piaggio P-166 aircraft*
- GS monoplanes
 - . **P-166 aircraft**
 - passenger aircraft
 - . **P-166 aircraft**
 - Piaggio aircraft*
 - . **P-166 aircraft**
 - transport aircraft
 - . cargo aircraft

. . . P-166 aircraft

- RT ∞ aircraft

P-308 aircraft

- UF *ME P-308 aircraft*
 - Messerschmitt ME P-308 aircraft*
- GS attack aircraft
 - . **P-308 aircraft**
 - jet aircraft
 - . **P-308 aircraft**
 - monoplanes
 - . **P-308 aircraft**
- RT ∞ aircraft

P-531 helicopter

- UF *Scout helicopter*
 - Westland P-531 helicopter*
- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - . . . military helicopters
 - **P-531 helicopter**
 - Westland aircraft
 - . **P-531 helicopter**
- RT antisubmarine warfare aircraft
 - passenger aircraft

P-1127 aircraft

- UF *Hawker P-1127 aircraft*
 - Kestrel aircraft*
 - VZ-12 aircraft*
 - XV-6A aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . . **P-1127 aircraft**
 - Hawker Siddeley aircraft
 - . **P-1127 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . . **P-1127 aircraft**
 - monoplanes
 - . **P-1127 aircraft**
 - single engine aircraft
 - . **P-1127 aircraft**
 - V/STOL aircraft
 - . **P-1127 aircraft**
- RT ∞ aircraft
 - Bristol-Siddeley BS 53 engine
 - Harrier aircraft
 - turbofan engines

P-1154 aircraft

- UF *Hawker P-1154 aircraft*
- GS attack aircraft
 - . fighter aircraft
 - . . . **P-1154 aircraft**
 - Hawker Siddeley aircraft
 - . **P-1154 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . . **P-1154 aircraft**
 - monoplanes
 - . **P-1154 aircraft**
 - single engine aircraft
 - . **P-1154 aircraft**
 - supersonic aircraft
 - . **P-1154 aircraft**
 - V/STOL aircraft
 - . **P-1154 aircraft**
- RT ∞ aircraft
 - turbofan engines

P.A.C.M. telemetry

- SN (PULSE AMPLITUDE CODE MODULATION)
- GS telecommunication
 - . telemetry
 - . . . **P.A.C.M.** telemetry
 - transmission
 - . signal transmission
 - . . . telemetry
 - **P.A.C.M.** telemetry
- RT amplitude modulation
 - communication equipment
 - differential pulse code modulation
 - modulation
 - pulse amplitude modulation

pulse code modulation

PA-34 Seneca aircraft

- UF *Seneca aircraft*
- GS light aircraft
 - . Piper aircraft
 - . . . **PA-34 Seneca aircraft**
- RT ∞ aircraft
 - ATLIT project
 - GAW-1 airfoil
 - General Dynamics aircraft

PACE

- USE **Physics and Chemistry Experiment in Space**

Pacific islands

- GS landforms
 - . islands
 - . . . **Pacific islands**
 - . . . Guam
 - . . . Japan
 - . . . Johnston Island
 - . . . Kurile Islands
 - . . . New Guinea (island)
 - . . . New Zealand
 - . . . Philippines
 - . . . Samoa

Pacific Northwest (US)

- GS regions
 - . **Pacific Northwest (US)**
- RT Canada
 - United States

Pacific Ocean

- GS oceans
 - . **Pacific Ocean**
- RT Bering Sea
 - coastal ranges (CA)
 - el Nino
 - Gulf of Alaska
 - Gulf of California (Mexico)
 - Indonesia
 - mid-ocean ridges
 - Monterey Bay (CA)
 - San Francisco Bay (CA)
 - Sea of Okhotsk
 - Southern California

packages

DEF Any assemblies or apparatus, complete in themselves or practically so, identifiable as units and readily available for use or installation.

GS packages

- . instrument packages
- . . . Apollo Lunar Surface Experiments Package
- . . . EASEP
- . . . EREP

RT

- bags
- boxes (containers)
- bundles
- cartridges
- cases (containers)
- ∞ containers
- ∞ instruments
- packaging

packaging

DEF (1) The technique of preparing goods for distribution; (2) The design criteria, processes, and procedures used to protect materials from deterioration and damage from the time manufacturing is completed until use or disposal; (3) The processes and procedures used to protect an item in a unit package.

GS packaging

- . electronic packaging
- RT ∞ containers
 - corrosion prevention
 - encapsulating
 - enclosure
 - hauling
 - hoppers
 - inhibitors
 - marking
 - materials handling

- packages
- ∞ packing
 - preserving
 - sealers
 - spiral wrapping
 - ∞ storage
 - transportation
 - vermiculite
 - weatherproofing
 - ∞ wrap
- packet switching**
- DEF Switching circuit system for multiple access time division data transmission.
- GS switching
- . **packet switching**
 - RT asynchronous transfer mode
 - beam switching
 - communication networks
 - data transmission
 - interruption
 - microwave switching
 - multiple access
 - network control
 - packet transmission
 - packets (communication)
 - protocol (computers)
 - radio transmission
 - sequencing
 - signal transmission
 - switching circuits
 - switching theory
 - telecommunication
 - time division multiple access
- packet transmission**
- DEF Transmission of bursts of digital data.
- GS telecommunication
- . **packet transmission**
 - . . Aloha system
 - transmission
 - . signal transmission
 - . . data transmission
 - . . . **packet transmission**
 - Aloha system
 - RT asynchronous transfer mode
 - automatic repeat request
 - carrier sense multiple access
 - channel capacity
 - message processing
 - packet switching
 - packets (communication)
 - satellite communication
 - spacecraft communication
 - transmission efficiency
- packets (communication)**
- DEF Digital data messages which are almost always preceded by headers (containing address information and other control characters) and followed by control characters which signify the end of a message.
- UF *bursts (communication)*
- RT Aloha system
- communication networks
 - data transmission
 - packet switching
 - packet transmission
 - transmission efficiency
 - wave packets
 - wide area networks
- ∞ **packing**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT packaging
- packing density
 - packings (seals)
 - sealing
- packing density**
- GS density (number/volume)
- . **packing density**
 - RT Bravais crystals
 - crystal structure
 - crystals
 - ∞ packing
- void ratio
- packings (seals)**
- GS seals (stoppers)
- . **packings (seals)**
 - RT bearings
 - glands (seals)
 - labyrinth seals
 - ∞ packing
 - pumps
 - sealers
 - sealing
 - shafts (machine elements)
 - valves
- ∞ **pad**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT cushions
- foundations
 - launching pads
- paddles**
- RT folding structures
- mixers
 - solar generators
 - turbomachine blades
- Pade approximation**
- GS analysis (mathematics)
- . calculus
 - . . series (mathematics)
 - . . . **Pade approximation**
 - . numerical analysis
 - . . approximation
 - . . . **Pade approximation**
 - . real variables
 - . . series (mathematics)
 - . . . **Pade approximation**
- PAGEOS satellite**
- GS artificial satellites
- . geodetic satellites
 - . . **PAGEOS satellite**
 - . passive satellites
 - . . **PAGEOS satellite**
 - RT Explorer 29 satellite
 - Explorer 36 satellite
 - GEOS 1 satellite
 - GEOS 2 satellite
 - GEOS 3 satellite
- PAH
- USE **polycyclic aromatic hydrocarbons**
- pain**
- GS perception
- . sensory perception
 - . . **pain**
 - RT analgesia
- pain sensitivity**
- GS perception
- . sensory perception
 - . . **pain sensitivity**
 - sensitivity
 - . **pain sensitivity**
- paint removal**
- (added August 1995)
- UF *paint stripping*
- GS removal
- . **paint removal**
 - RT abrasives
 - cleaning
 - solvents
 - ∞ stripping
 - surface treatment
- paint stripping*
- USE **paint removal**
- paints**
- GS coatings
- . **paints**
 - . . pressure sensitive paints
 - . . temperature sensitive paints
 - RT fillers
 - finishes
 - metal coatings
- pigments
- primers (coatings)
 - protective coatings
 - rubber coatings
 - sealers
 - sprayed coatings
 - turpentine
 - varnishes
- pair production**
- GS particle production
- . **pair production**
 - RT electromagnetic absorption
 - electron emission
 - electron photon cascades
 - electron-positron pairs
 - emission
 - high energy interactions
 - nuclear reactions
 - photoproduction
 - positron annihilation
 - positrons
- Pakistan**
- GS nations
- . **Pakistan**
 - RT Asia
 - Bangladesh
 - Himalayas
 - Pakistan space program
- Pakistan space program**
- (added November 1989)
- GS programs
- . space programs
 - . . **Pakistan space program**
 - RT Pakistan
- Palapa 2 satellite**
- UF *Palapa B satellite*
- GS artificial satellites
- . communication satellites
 - . . Palapa satellites
 - . . . **Palapa 2 satellite**
 - RT Indonesian space program
 - international cooperation
- Palapa B satellite*
- USE **Palapa 2 satellite**
- Palapa satellites**
- DEF Satellites launched by the US for the Indonesian government for their domestic communications network.
- GS artificial satellites
- . communication satellites
 - . . **Palapa satellites**
 - . . . Palapa 2 satellite
 - RT Indonesian space program
 - international cooperation
- paleobiology**
- DEF The study of life and organisms that existed in the geologic past.
- RT archaeobacteria
- ∞ biology
 - Cretaceous-Tertiary boundary
 - fossils
 - geochemistry
 - geochronology
 - paleontology
- paleoclimatology**
- DEF The study of climates in the geologic past, involving fossil, glacial, isotropic, or other data.
- GS climatology
- . **paleoclimatology**
 - RT climate
 - climate change
 - paleontology
 - primitive Earth atmosphere
- paleomagnetism**
- UF *archaeomagnetism*
- GS magnetic fields
- . **paleomagnetism**
 - magnetic properties
 - . **paleomagnetism**
 - RT archaeology

paleontology

- cones (volcanoes)
- continental drift
- geology
- geomagnetism
- geophysics
- magnetostratigraphy
- Mars volcanoes
- remanence
- rocks
- volcanoes
- volcanology

paleontology

- RT archaeobacteria
- Cambrian Period
- Cenozoic Era
- Cretaceous Period
- Cretaceous-Tertiary boundary formations
- fossils
- geochemistry
- geochronology
- geological surveys
- geology
- histories
- Mesozoic Era
- paleobiology
- paleoclimatology
- Paleozoic Era
- Precambrian period
- protobiology
- stratigraphy
- Tertiary Period

Paleozoic Era

(added June 1989)

DEF An era of geologic time, from the end of the Precambrian Period to the beginning of the Mesozoic Era, or about 570 to about 225 million years ago.

- GS **Paleozoic Era**
 - . Cambrian Period
- RT geochronology
- Mesozoic Era
- paleontology
- Precambrian period

palladium

- GS chemical elements
 - . **palladium**
 - metals
 - . transition metals
 - . . **palladium**
- RT palladium isotopes

palladium alloys

- GS alloys
 - . **palladium alloys**

palladium compounds

- RT ∞ chemical compounds
- metals
- transition metals

palladium isotopes

- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **palladium isotopes**
- RT palladium

Palmar sweat index

- RT perspiration
- stress (physiology)
- stress (psychology)

Palmgren-Miner rule

- UF *Miner rule*
- GS rules
 - . **Palmgren-Miner rule**
- RT fatigue life

palmitic acid

- GS acids
 - . carboxylic acids
 - . . fatty acids
 - . . . **palmitic acid**
- organic compounds
 - . carboxylic acids
 - . . fatty acids

- . . . **palmitic acid**

- RT fats

Palo Verde Valley (CA)

- GS valleys
 - . **Palo Verde Valley (CA)**
- RT California
- deserts

PAM (modulation)

USE **pulse amplitude modulation**

pampas

DEF A vast treeless grassy plain of temperate regions, especially as used in Argentina and adjacent parts of Uruguay. It is comparable to the prairies of North America, the steppes of the Eurasia, and the veld of South Africa.

- GS land
 - . plains
 - . . **pampas**
- landforms
 - . plains
 - . . **pampas**

PAN (polyacrylonitrile)

USE **polyacrylonitrile**

Panama

- GS nations
 - . **Panama**
- RT canals
- Central America

Panama Canal Zone

- GS regions
 - . **Panama Canal Zone**
- RT Caribbean Sea
- Central America
- United States

pancreas

- GS anatomy
 - . digestive system
 - . . **pancreas**
 - . glands (anatomy)
 - . . endocrine glands
 - . . . **pancreas**
- RT diabetes mellitus
- gastrointestinal system
- trypsin

Pandora

(added July 1995)

DEF A natural satellite of Saturn, orbiting at a mean distance of 141,700 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Saturn satellites
 - . . . **Pandora**
- RT Saturn (planet)

panel flutter

- GS vibration
 - . structural vibration
 - . . flutter
 - . . . **panel flutter**
 - . . self induced vibration
 - . . . **panel flutter**
- RT aerodynamic noise
- aeroelasticity
- bending vibration

panel method (fluid dynamics)

DEF Technique for analyzing and predicting the properties and characteristics of fluid flow; sometimes called the finite element method.

- GS procedures
 - . **panel method (fluid dynamics)**
- RT Bernoulli theorem
- boundary layers
- computational fluid dynamics
- finite element method
- ∞ flow
- flow theory
- fluid dynamics
- flux vector splitting
- gas-solid interactions
- ∞ methodology
- turbulence

vortex lattice method

panels

- SN (EXCLUDES GROUPS OF PEOPLE)
- GS **panels**
 - . curved panels
 - . rectangular panels
 - . wing panels
- RT baffles
- ceilings (architecture)
- ∞ construction materials
- dividers
- flat plates
- ∞ plates
- ∞ sheets
- shielding
- thin plates
- walls

panic

- RT emotional factors
- emotions
- fear
- human behavior

panoramic cameras

- GS optical equipment
 - . cameras
 - . . **panoramic cameras**
- photographic equipment
 - . cameras
 - . . **panoramic cameras**
- RT camera shutters
- focusing
- lenses
- photography
- wide angle lenses

panoramic scanning

- GS scanning
 - . **panoramic scanning**
- RT conical scanning
- frequency scanning
- multispectral band scanners
- radar scanning
- scanners
- searching
- surveillance

panspermia

DEF The theory that holds that reproductive bodies of living organisms exist throughout the universe and develop wherever the environment is favorable.

- RT abiogenesis
- aerospace environments
- bacteria
- biological evolution
- exobiology
- extraterrestrial life
- fungi

PANT program

DEF The passive nosetip technology (PANT) program is an investigation of flow phenomena over reentry vehicle nosetips by the Air Force. Used for ablative nosetips and passive nosetip technology.

- UF *ablated nosetips*
- passive nosetip technology*
- GS programs
 - . **PANT program**

Pantar chondrites

- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . chondrites
 - **Pantar chondrites**

Panther aircraft

USE **F-9 aircraft**

papain

- GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **papain**
- organic compounds
 - . proteins

- . . enzymes
 - . . . **papain**
- RT pepsin
- paper (material)**
- DEF Felted or matted sheets of cellulose fibers, formed on a fine wire screen from a dilute water suspension, and bonded together as the water is removed and the sheet is dried.
- RT boards (paper)
- Kraft process (woodpulp)
- ∞ materials
- organic materials
- webs (sheets)
- wood
- paper chromatography**
- GS chemical tests
- . chemical analysis
- . . chromatography
- . . . **paper chromatography**
- RT gas chromatography
- liquid chromatography
- papers**
- GS documents
- . **papers**
- RT boards (paper)
- conferences
- fibers
- ∞ films
- laminates
- literature
- Presidential reports
- privacy reports
- ∞ sheets
- webs (sheets)
- papillae**
- RT protuberances
- Papua New Guinea**
- GS nations
- . **Papua New Guinea**
- RT Asia
- Australia
- New Guinea (island)
- para hydrogen**
- GS gases
- . **para hydrogen**
- RT hydrogen
- ortho para conversion
- parabolas**
- DEF Open curves where all points of which are equidistant from a fixed point called the focus, and a straight line. The limiting case occurs when the point is on the line, in which case the parabola becomes a straight line.
- GS geometry
- . Euclidean geometry
- . . analytic geometry
- . . . conics
- **parabolas**
- parabolic antennas**
- GS antennas
- . directional antennas
- . . reflector antennas
- . . . **parabolic antennas**
- RT antenna design
- Cassegrain antennas
- horn antennas
- microwave antennas
- radar antennas
- radar equipment
- radar reflectors
- parabolic bodies**
- DEF Surfaces of revolution generated by revolving sections of parabolas about their major axis. Used for paraboloids.
- UF *paraboloids*
- GS symmetrical bodies
- . bodies of revolution
- . . **parabolic bodies**
- parabolic differential equations**
- GS analysis (mathematics)
- . real variables
- . . differential equations
- . . . partial differential equations
- **parabolic differential equations**
- RT ∞ equations
- parabolic flight**
- RT ascent trajectories
- ballistic trajectories
- climbing flight
- coasting flight
- descent trajectories
- ∞ flight
- midcourse trajectories
- missile trajectories
- suborbital flight trajectories
- weightlessness
- weightlessness simulation
- parabolic reflectors**
- DEF Reflecting surfaces having the cross section along the axis in the shape of a parabola. Parallel rays striking the reflector are brought to a focus at a point, or if the source of the rays is placed at the focus, the reflected rays are parallel. Used for dishes.
- UF *dishes*
- GS reflectors
- . **parabolic reflectors**
- . . paraboloid mirrors
- RT microwave antennas
- radar reflectors
- reflector antennas
- Schwarzschild antennas
- solar reflectors
- parabolic velocity*
- USE **escape velocity**
- paraboloid mirrors**
- GS mirrors
- . **paraboloid mirrors**
- reflectors
- . . parabolic reflectors
- . . . **paraboloid mirrors**
- RT reflecting telescopes
- solar reflectors
- paraboloids*
- USE **parabolic bodies**
- parachute descent**
- UF *parachuting*
- GS descent
- . **parachute descent**
- RT bailout
- ejection
- ejection training
- escape (abandonment)
- free fall
- Mars Pathfinder
- parachutes
- parachute fabrics**
- GS fabrics
- . **parachute fabrics**
- RT Fortisan (trademark)
- gores
- netting (materials/structures)
- parachutes
- parachutes**
- DEF A device used, or intended to be used to retard the fall of a body or object through the air.
- GS **parachutes**
- . drag chutes
- . parafoils
- . recovery parachutes
- . ribbon parachutes
- . rotochutes
- RT aerodynamic brakes
- air drop operations
- airdrops
- ballutes
- brakes (for arresting motion)
- folding structures
- parachute descent
- parachute fabrics
- paracone
- parawings
- towed bodies
- whirl towers
- parachuting*
- USE **parachute descent**
- parachuting injury**
- GS injuries
- . **parachuting injury**
- paracone**
- DEF A system for recovering men and objects from great distances above the Earth's surface and landing them safely onto the Earth.
- RT escape capsules
- escape systems
- parachutes
- paradoxes**
- GS philosophy
- . **paradoxes**
- RT knowledge
- ∞ logic
- relativity
- paraffins**
- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkanes
- **paraffins**
- ceresin
- RT hydrocarbon fuels
- kerosene
- shale oil
- parafoils**
- (added July 1994)
- GS parachutes
- . **parafoils**
- RT aerodynamic brakes
- airdrops
- bailout
- free fall
- paragliders
- paragliders**
- GS gliders
- . **paragliders**
- . . inflatable gliders
- RT folding structures
- hypersonic gliders
- parafoils
- parawings
- ∞ subsonic aircraft
- Paraguay**
- GS nations
- . **Paraguay**
- RT South America
- parallax**
- DEF The difference in the apparent direction or position of an object when viewed from different points expressed as an angle.
- GS **parallax**
- . solar parallax
- . stellar parallax
- RT astrometry
- companion stars
- ∞ optics
- parallel computers**
- GS data processing equipment
- . computers
- . . digital computers
- . . . **parallel computers**
- massively parallel processors
- Connection Machine
- MIMD (computers)
- SIMD (computers)

parallel flow

RT hypercube multiprocessors

parallel flow

GS fluid flow
. **parallel flow**
. . pipe flow
. . three dimensional flow
. . . Karman-Bodewadt flow
. . . secondary flow
RT flow geometry
flow velocity
laminar flow
steady flow

parallel plates

RT capacitors
∞ channels
flat plates
metal plates
∞ plates
thin plates
waveguides

parallel processing (computers)

DEF The concurrent or simultaneous execution of more than one program, or the handling of input for more than one operation at the same time.

GS data processing
. **parallel processing (computers)**
RT associative processing (computers)
computational electromagnetics
concurrent processing
Connection Machine
distributed memory
hypercube multiprocessors
Illiack 3 computer
Illiack 4 computer
interprocessor communication
massively parallel processors
MIMD (computers)
response time (computers)
SIMD (computers)
sorting algorithms
supercomputers
systolic arrays
transputers
vector processing (computers)

parallel programming

GS computer programming
. **parallel programming**
RT multiprocessing (computers)
pipelining (computers)

parallel strip lines

USE **microstrip transmission lines**

parallelepipeds

GS geometry
. Euclidean geometry
. . polyhedrons
. . . **parallelepipeds**

parallelograms

GS geometry
. Euclidean geometry
. . polygons
. . . tetragons
. . . . **parallelograms**
. . . . rhomboids

paralysis

GS diseases
. **paralysis**
injuries
. **paralysis**
RT disabilities
tremors

paramagnetic amplifiers

USE **masers**

paramagnetic resonance

GS resonance
. magnetic resonance
. . **paramagnetic resonance**
. . . electron paramagnetic resonance
RT absorption spectra
ferromagnetic resonance

nuclear magnetic resonance
paramagnetism

paramagnetism

GS magnetic properties
. **paramagnetism**
RT antiferromagnetism
Curie-Weiss law
diamagnetism
paramagnetic resonance

paramecia

GS animals
. protozoa
. . **paramecia**
microorganisms
. protozoa
. . **paramecia**

parameter identification

DEF The estimation of the unknown parameters of models of physical plants or processes from their dynamic response.

GS estimating
. **parameter identification**
identifying
. **parameter identification**
parameterization
. **parameter identification**
RT complex systems
control systems design
dynamic response
estimates
frequency domain analysis
genetic algorithms
independent variables
least squares method
mathematical models
maximum likelihood estimates
observability (systems)
optimal control
optimization
prediction analysis techniques
probability theory
sensitivity analysis
statistical analysis
steepest descent method
system identification
systems analysis
systems engineering
Taguchi methods
time domain analysis

parameterization

GS **parameterization**
. parameter identification
RT algorithms
∞ applications of mathematics
dependent variables
derivation
dimensional analysis
∞ estimators
formalism
formulations
mathematical models
scale effect
semiempirical equations
sensitivity analysis
system identification
units of measurement

parameters

USE **independent variables**

parametric amplifiers

DEF Inverting parametric devices used to amplify a signal without frequency translation from input to output. Used for parametric oscillators and reactance amplifiers.

UF *parametric oscillators*
reactance amplifiers
GS amplifiers
. **parametric amplifiers**
RT frequency converters
LC circuits
magnetostatic amplifiers
microwave amplifiers
negative resistance devices
power amplifiers

semiconductor devices

parametric diodes

GS electronic equipment
. diodes
. . semiconductor diodes
. . . **parametric diodes**
. solid state devices
. . semiconductor devices
. . . **parametric diodes**
RT varactor diodes

parametric frequency converters

GS frequency converters
. **parametric frequency converters**
RT ∞ converters
phase modulation
up-converters

parametric oscillators

USE **parametric amplifiers**

parametrons

RT computer storage devices
magnetic cores
magnetic storage
oscillators
phase lock demodulators
thin films

paranasal sinuses

GS anatomy
. respiratory system
. . **paranasal sinuses**
sinuses
. **paranasal sinuses**
RT nose (anatomy)

paraplasts

GS plasters
. **paraplasts**
RT resins

parapsychology

USE **extrasensory perception**

parasites

GS **parasites**
. trypanosome
RT animals
blight
infestation

parasitic antennas

USE **parasitic elements (antennas)**

parasitic diseases

GS diseases
. infectious diseases
. . **parasitic diseases**
RT airborne infection
amoeba
blight
rust fungi
trypanosome

parasitic elements (antennas)

(added July 1993)

UF *parasitic antennas*
parasitic reflectors
passive elements
GS antenna components
. **parasitic elements (antennas)**
. . directors (antenna elements)
antennas
. **parasitic elements (antennas)**
. . directors (antenna elements)
RT antenna design
antenna radiation patterns
dipole antennas
directional antennas
log periodic antennas
radio receivers
reflectors
Yagi antennas

parasitic reflectors

USE **parasitic elements (antennas)**

parathyroid gland

GS anatomy

- . glands (anatomy)
- . . . endocrine glands
- . . . **parathyroid gland**
- RT calcium metabolism
- parawings**
- GS airfoils
- . wings
- . . flexible wings
- . . . **parawings**
- RT air drop operations
- folding structures
- hang gliders
- parachutes
- paragliders
- parenteral functions**
- RT ∞ functions
- parents**
- RT adults
- children
- human beings
- parity**
- DEF A symmetry property of a wave function.
- RT BCH codes
- coding
- conservation
- correction
- CP violation
- equivalence
- error detection codes
- information theory
- nuclear physics
- particle spin
- quantum numbers
- quantum theory
- strangeness
- vector currents
- ∞ **parking**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT parking orbits
- ramps (structures)
- parking orbits**
- GS orbits
- . spacecraft orbits
- . . satellite orbits
- . . . **parking orbits**
- RT Earth orbits
- Earth-Moon trajectories
- flight optimization
- interplanetary trajectories
- low Earth orbits
- lunar orbits
- lunar trajectories
- orbital mechanics
- ∞ parking
- planetary orbits
- thrust programming
- transfer orbits
- Parkinson disease**
- GS diseases
- . **Parkinson disease**
- RT tremors
- parks**
- GS land
- . **parks**
- . . national parks
- . . . Yellowstone National Park (ID-MT-WY)
- RT recreation
- regional planning
- urban development
- urban planning
- parotid gland*
- USE **salivary glands**
- parsing algorithms**
- DEF Computer routines for the syntactic and/or semantic analysis and restructuring of natural language instructions or data for internal processing.
- GS mathematical logic
- . algorithms
- . . **parsing algorithms**
- RT compilers
- computer techniques
- grammars
- natural language processing
- semantics
- subroutines
- syntax
- partial differential equations**
- GS analysis (mathematics)
- . real variables
- . . differential equations
- . . . **partial differential equations**
- biharmonic equations
- Burger equation
- Cauchy-Riemann equations
- elliptic differential equations
- Monge-Ampere equation
- Euler-Cauchy equations
- Frowcs Williams-Hawkings equation
- Fokker-Planck equation
- Gauss equation
- Helmholtz vorticity equation
- Liouville equations
- parabolic differential equations
- Poisson equation
- vlasov equations
- RT alternating direction implicit methods
- Boltzmann-Vlasov equation
- ∞ equations
- Euler-Bernoulli beams
- functional integration
- kinetic equations
- Laplace equation
- meshfree methods
- method of characteristics
- Neumann problem
- reaction-diffusion equations
- Trefftz method
- wave equations
- partial pressure**
- DEF The pressure exerted by a designated component or components of a gaseous mixture.
- GS pressure
- . **partial pressure**
- . . oxygen tension
- . . . hypoxemia
- RT Dalton law
- gas pressure
- Henry law
- internal pressure
- Raoult law
- residual gas
- ∞ tension
- vapor pressure
- particle acceleration**
- GS rates (per time)
- . acceleration (physics)
- . . **particle acceleration**
- RT ∞ acceleration
- electromagnetic acceleration
- magnetic fields
- plasma acceleration
- racetracks (particle accelerators)
- wave-particle interactions
- particle accelerator targets**
- GS targets
- . **particle accelerator targets**
- RT ∞ accelerators
- target thickness
- particle accelerators**
- DEF Specifically, devices for imparting large kinetic energy to charged particles, such as electrons, protons, deuterons, and helium ions.
- GS **particle accelerators**
- . cyclic accelerators
- . . betatrons
- . . synchrocyclotrons
- . . synchrotrons
- . . . bevatron
- . . . storage rings (particle accelerators)
- . cyclotrons
- . . geocyclotrons
- . . microtrons
- . . Oak Ridge isochronous cyclotron
- . . omegatrons
- . . synchrocyclotrons
- . electron accelerators
- . . betatrons
- . ion accelerators
- . linear accelerators
- . Nimrod accelerator
- . superconducting super collider
- . synchrophasotrons
- . Van de Graaff accelerators
- RT ∞ accelerators
- beam splitters
- electron guns
- elementary particles
- ion sources
- kaon production
- neutron sources
- nuclear particles
- racetracks (particle accelerators)
- railgun accelerators
- SEPAC (payload)
- particle beams**
- GS beams (radiation)
- . **particle beams**
- . . atomic beams
- . . electron beams
- . . relativistic electron beams
- . . ion beams
- . . neutral beams
- . . molecular beams
- . . neutron beams
- . . neutrino beams
- . . pion beams
- . . proton beams
- RT beam splitters
- electron acceleration
- electron bombardment
- flux (rate)
- ion stripping
- magnetic sails
- phonon beams
- particle charging**
- RT charged particles
- particle collisions**
- GS collisions
- . **particle collisions**
- RT atomic collisions
- atomic excitations
- BGK model
- dense plasmas
- Faddeev equations
- ionic collisions
- kinetics
- mean free path
- molecular collisions
- molecular excitation
- nucleon-nucleon scattering
- scattering
- particle counters*
- USE **radiation counters**
- particle decay**
- (added May 1994)
- SN (LIMITED TO THE DECAY OF ELEMENTARY PARTICLES; EXCLUDES NUCLEAR DECAY)
- GS decay
- . **particle decay**
- . . neutron decay
- RT CP violation
- elementary particle interactions
- fermions
- hadrons
- radioactive decay
- particle density (concentration)**
- GS density (number/volume)
- . **particle density (concentration)**
- . . electron density (concentration)
- . . . carrier density (solid state)
- . . . electron density profiles

particle diffusion

- . . . ionospheric electron density
- . . . magnetospheric electron density
- . . . electron distribution
- . . . electron density profiles
- . . . ion density (concentration)
- . . . ionospheric ion density
- . . . magnetospheric ion density
- magnetospheric proton density
- proton density (concentration)
- magnetospheric proton density
- . . . plasma density

RT atmospheric density
ESRO 4 satellite
ion stripping
ionospheric composition
space density
spatial distribution

particle detectors

USE **radiation counters**

particle diffusion

GS diffusion

- . **particle diffusion**
- . . . electron diffusion
- . . . ionic diffusion

RT atomic beams
Boltzmann transport equation
diffusion coefficient
diffusion length
drop size
flux (rate)
gaseous self-diffusion
molecular diffusion
muon spin rotation
self diffusion (solid state)
thermophoresis

particle emission

GS emission

- . **particle emission**
- . . . electron emission
- . . . field emission
- . . . photoelectric emission
- . . . secondary emission
- . . . ion emission
- . . . neutron emission
- . . . thermionic emission

RT exhaust emission
expulsion
self sustained emission
stimulated emission

particle energy

GS **particle energy**

- . . . electron energy
- . . . electron states
- . . . proton energy

RT ∞ energy
internal energy
kinetic energy
monochromatization
∞ particle intensity

particle flux

USE **flux (rate)**

particle flux density

SN (LIMITED TO PARTICLE EMISSION OR
DETECTION RATE PER UNIT AREA)

GS rates (per time)

- . flux density
- . . . radiant flux density
- **particle flux density**
- electron flux density
- neutron flux density
- proton flux density

RT Helios satellites

∞ particle intensity
radiancy
radiation counters
radiation pressure
solar constant
solar flux density

particle image displacement velocimetry

USE **particle image velocimetry**

particle image velocimetry

(added June 1993)

UF *particle image displacement*

velocimetry

PIDV (velocimetry)

PIV (velocimetry)

GS mechanical measurement

. flow measurement

. . **particle image velocimetry**

. . . velocity measurement

. . . **particle image velocimetry**

RT flow distribution
flow velocity
flow visualization
imaging techniques
laser doppler velocimeters
photographic measurement
photographic recording
two phase flow

particle in cell technique

GS analysis (mathematics)

- . numerical analysis
- . . . approximation
- **particle in cell technique**

RT ∞ cells

- . crystal lattices
- . flow equations
- . meshfree methods

∞ methodology
vortex in cell technique

∞ particle intensity

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)

RT particle energy
particle flux density

particle interactions

GS **particle interactions**

- . elementary particle interactions
- . . . electroweak interactions (field theory)
- . . . high energy interactions
- strong interactions (field theory)
- . . . meson-meson interactions
- . . . meson-nucleon interactions
- . . . nuclear capture
- electron capture
- . . . nucleon-nucleon interactions
- . . . weak energy interactions
- weak interactions (field theory)
- . . . proton-antiproton interactions
- . . . ion atom interactions
- . . . molecular interactions
- . . . molecular collisions
- . . . nuclear interactions
- nuclear capture
- electron capture
- spin-orbit interactions
- electron capture
- . . . weak interactions (field theory)
- . . . plasma-particle interactions
- . . . wave-particle interactions

RT Bragg curve
charm (particle physics)
chemical reactions
collision parameters
electron phonon interactions
electron scattering
Feynman diagrams
flavor (particle physics)

∞ interactions
neutral currents
nuclear reactions
photonuclear reactions
photophoresis
quantum chromodynamics

particle laden jets

DEF Fluid, mainly issuing from a nozzle,
that are turbulent and contain dispersed particles.

RT fuel flow
jet flow
particles
turbulent flow

particle mass

GS mass

- . **particle mass**

. . . electron mass

RT gravitinos

magnetic rigidity

nuclides

particle motion

RT diffraction radiation
electrophoresis
falling
lattice vibrations
magnetic rigidity
mean free path

∞ motion
neutral sheets
photophoresis
recoillings
relativistic velocity
settling
thermophoresis
transverse momentum

particle precipitation

DEF The precipitation of particles other than
electrons and protons.

GS **particle precipitation**

- . electron precipitation
- . proton precipitation

RT atomic structure
charged particles

∞ precipitation

particle production

GS **particle production**

- . kaon production
- . pair production
- . photoproduction

RT comminution
corpuscular radiation
high energy interactions
nuclear radiation
nuclear reactions
particles
radioactivity
spallation

particle size distribution

GS size distribution

- . **particle size distribution**

RT dimensions
drop size
finesness
fines
fractions
grain size
particles
particulates
precipitation particle measurement
size determination
size separation
solids flow
thermophoresis

particle spin

GS spin

- . **particle spin**
- . . . electron spin
- . . . isotopic spin
- . . . nuclear spin

RT angular momentum
Ising model
muon spin rotation
nuclear magnetic resonance
nuclear physics
parity
quenching (atomic physics)
spin resonance

particle telescopes

UF *electron telescopes*
GEP telescopes
Goddard experiment package
telescope

GS *proton telescopes*
measuring instruments

- . counters
- . . . radiation counters
- **particle telescopes**
- . . . radiation measuring instruments
- . . . radiation counters
- **particle telescopes**

- telescopes
- . **particle telescopes**
- RT anticoincidence detectors
- Geiger counters
- satellite-borne instruments
- scintillation counters
- particle theory**
- RT body kinematics
- charm (particle physics)
- collision parameters
- electroweak model
- flavor (particle physics)
- grand unified theory
- Higgs bosons
- ∞ interactions
- many body problem
- plasma-particle interactions
- quark models
- standard model (particle physics)
- string theory
- supergravity
- supersymmetry
- ∞ theories
- unified field theory
- weak energy interactions
- particle tracks**
- RT chemical analysis
- core sampling
- cosmic rays
- fossils
- geochronology
- lunar rocks
- meteoroids
- nuclear particles
- radiation effects
- stratigraphy
- trace elements
- ∞ tracks
- particle trajectories**
- GS trajectories
- . **particle trajectories**
- . . electron trajectories
- RT bubble chambers
- charged particles
- electron optics
- ionizing radiation
- ∞ motion
- ∞ paths
- racetracks (particle accelerators)
- ∞ tracks
- particles**
- DEF Elementary subatomic particles such as protons, electrons or neutrons. Very small pieces of matter. In celestial mechanics, hypothetical entities which respond to gravitational forces but which exert no appreciable gravitational force on other bodies, thus simplifying orbital computations.
- GS **particles**
- . aerosols
- . . fog
- . charged particles
- . . antiprotons
- . . energetic particles
- . . . electrons
- conduction electrons
- free electrons
- high energy electrons
- relativistic electron beams
- hot electrons
- N electrons
- negatrons
- photoelectrons
- pi-electrons
- polarons
- solar electrons
- . . . nuclei (nuclear physics)
- alpha particles
- deuterons
- even-even nuclei
- heavy nuclei
- hypernuclei
- odd-even nuclei
- odd-odd nuclei
- tritons
- . . . plasmas (physics)
- argon plasma
- beta particles
- boundary layer plasmas
- cold plasmas
- collisional plasmas
- strongly coupled plasmas
- collisionless plasmas
- cosmic plasma
- cylindrical plasmas
- dense plasmas
- plasma focus
- strongly coupled plasmas
- electron plasma
- electron-positron plasmas
- elliptical plasmas
- helium plasma
- high temperature plasmas
- hydrogen plasma
- deuterium plasma
- laser plasmas
- metallic plasmas
- cesium plasma
- uranium plasmas
- microplasmas
- nitrogen plasma
- nonequilibrium plasmas
- nonuniform plasmas
- oxygen plasma
- rarefied plasmas
- relativistic plasmas
- rotating plasmas
- semiconductor plasmas
- space plasmas
- solar wind
- stellar winds
- stellar winds
- dusty plasmas
- spherical plasmas
- thermal plasmas
- toroidal plasmas
- . . . primary cosmic rays
- . . . solar cosmic rays
- . . . radiation belts
- . . . artificial radiation belts
- . . . inner radiation belt
- . . . outer radiation belt
- . . . proton belts
- . . . solar corpuscular radiation
- . . . solar electrons
- . . . solar neutrinos
- . . . solar neutrons
- . . . solar protons
- . . . drops (liquids)
- . . . raindrops
- . . . dust
- . . . cosmic dust
- . . . interplanetary dust
- . . . meteoroid dust clouds
- zodiacal dust
- . . . lunar dust
- . . . terrestrial dust belt
- . . . elementary particles
- . . . antiparticles
- . . . antineutrinos
- . . . antinucleons
- . . . antiprotons
- . . . positrons
- . . . beta particles
- . . . bosons
- alpha particles
- Higgs bosons
- mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- photons
- xi hyperons
- deuterons
- electron-positron pairs
- . . . fermions
- . . . baryons
- . . . hyperons
- beta particles
- boundary layer plasmas
- cold plasmas
- collisional plasmas
- strongly coupled plasmas
- collisionless plasmas
- cosmic plasma
- cylindrical plasmas
- dense plasmas
- plasma focus
- strongly coupled plasmas
- electron plasma
- electron-positron plasmas
- elliptical plasmas
- helium plasma
- high temperature plasmas
- hydrogen plasma
- deuterium plasma
- laser plasmas
- metallic plasmas
- cesium plasma
- uranium plasmas
- microplasmas
- nitrogen plasma
- nonequilibrium plasmas
- nonuniform plasmas
- oxygen plasma
- rarefied plasmas
- relativistic plasmas
- rotating plasmas
- semiconductor plasmas
- space plasmas
- solar wind
- stellar winds
- stellar winds
- dusty plasmas
- spherical plasmas
- thermal plasmas
- toroidal plasmas
- . . . primary cosmic rays
- . . . solar cosmic rays
- . . . radiation belts
- . . . artificial radiation belts
- . . . inner radiation belt
- . . . outer radiation belt
- . . . proton belts
- . . . solar corpuscular radiation
- . . . solar electrons
- . . . solar neutrinos
- . . . solar neutrons
- . . . solar protons
- . . . drops (liquids)
- . . . raindrops
- . . . dust
- . . . cosmic dust
- . . . interplanetary dust
- . . . meteoroid dust clouds
- zodiacal dust
- . . . lunar dust
- . . . terrestrial dust belt
- . . . elementary particles
- . . . antiparticles
- . . . antineutrinos
- . . . antinucleons
- . . . antiprotons
- . . . positrons
- . . . beta particles
- . . . bosons
- alpha particles
- Higgs bosons
- mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- photons
- xi hyperons
- deuterons
- electron-positron pairs
- . . . fermions
- . . . baryons
- . . . hyperons

particulate reinforced composites

- xi hyperons
- omega-mesons
- rho-mesons
- sigma-mesons
- eta-mesons
- . . . leptons
- antineutrinos
- electrons
- conduction electrons
- free electrons
- high energy electrons
- relativistic electron beams
- hot electrons
- N electrons
- negatrons
- photoelectrons
- pi-electrons
- polarons
- solar electrons
- muons
- neutrinos
- solar neutrinos
- positrons
- . . . meson resonance
- X mesons
- . . . neutrons
- cold neutrons
- fast neutrons
- photoneutrons
- solar neutrons
- thermal neutrons
- . . . protons
- recoil protons
- solar protons
- . . hadrons
- . . baryons
- . . . hyperons
- xi hyperons
- omega-mesons
- rho-mesons
- sigma-mesons
- . . . mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- . . hypothetical particles
- . . magnetic monopoles
- . . nucleons
- . . . gluons
- . . . gravitinos
- . . . gravitons
- . . . partons
- . . . quarks
- . . . tachyons
- . . . weakly interacting massive particles
- . flakes
- . metal particles
- . metal powder
- . . platinum black
- . . powdered aluminum
- . . . sintered aluminum powder
- . microparticles
- . mist
- . neutral particles
- . . gravitinos
- . . neutrons
- . . . cold neutrons
- . . . fast neutrons
- . . . photoneutrons
- . . . solar neutrons
- . . . thermal neutrons
- . nuclear particles
- . . antiparticles
- . . . antineutrinos
- . . . antinucleons
- . . . antiprotons
- . . . positrons
- . . beta particles
- . . bosons

- . . . alpha particles
- . . . Higgs bosons
- . . . mesons
- eta-mesons
- hyperons
- xi hyperons
- kaons
- meson resonance
- X mesons
- muons
- omega-mesons
- pions
- vector mesons
- rho-mesons
- sigma-mesons
- . . . photons
- . . . xi hyperons
- . . nucleons
- . . photoelectrons
- . particulates
- . . soot
- . . pollen
- . powder (particles)
- . . fines
- . . metal powder
- . . platinum black
- . . powdered aluminum
- . . . sintered aluminum powder
- . relativistic particles
- . . relativistic electron beams
- . . trapped particles
- . . magnetically trapped particles
- . . . radiation belts
- artificial radiation belts
- inner radiation belt
- outer radiation belt
- proton belts
- . . nanoparticles

RT air pollution
chemical clouds

∞ clouds
colloids
deuteron irradiation
dirt
dispersions
gas atomization

∞ grains
granular materials
grit
ion stripping
ions
neutral beams
neutron beams
nodules
nonpoint sources
particle laden jets
particle production
particle size distribution
positron annihilation
precipitation particle measurement
proton precipitation
smoke

particulate filters

USE fluid filters

particulate reinforced composites

(added January 1992)

GS composite materials
. **particulate reinforced composites**

RT metal matrix composites
metal particles
microparticles
nanocomposites
particulates
reinforcing materials

particulate sampling

GS sampling
. **particulate sampling**

RT assaying
chemical analysis
concentration (composition)
identifying
particulates

particulates

GS particles
. **particulates**
. . soot

RT aerosols
air pollution
air quality
air sampling
atmospheric composition
combustion products
contaminants
dispersions
dust
exhaust gases
fly ash
grain formation
particle size distribution
particulate reinforced composites
particulate sampling
pollution control
pollution monitoring
smog
smoke
solid suspensions

∞ partitions

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT curtains
partitions (mathematics)
partitions (structures)
septum

partitions (mathematics)

GS analysis (mathematics)
. combinatorial analysis
. . **partitions (mathematics)**

RT combinations (mathematics)
equivalence

∞ partitions
permutations
Voronoi diagrams

partitions (structures)

RT bulkheads
curtains

∞ partitions
thin walls
walls

partons

GS particles
. charged particles
. . **partons**
. elementary particles
. . hypothetical particles
. . . **partons**

RT hadrons
leptons
quark parton model
quarks

parts

USE components

PAS

UF *perigee-apogee satellites*
GS artificial satellites
. **PAS**

RT elliptical orbits
twenty-four hour orbits

Pascal (programming language)

DEF High order computer programming language developed by Niklaus Wirth originally as an educational tool to foster structured programming.

GS languages
. programming languages
. . **Pascal (programming language)**

RT compilers
computer programming

Paschen series

GS spectra
. radiation spectra
. . electromagnetic spectra
. . . line spectra
. . . . **Paschen series**

RT absorption spectra
atomic spectra
electron transitions
emission spectra
H lines

hydrogen

Pasiphae

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 23,500,000 kilometers.

GS celestial bodies
 . natural satellites
 . . . Jupiter satellites
 . . . **Pasiphae**

RT Jupiter (planet)

passageways

DEF A pass-through between non-adjacent modules or spaces.

GS **passageways**

. straits
 . . . Torres Strait
 . transfer tunnels

RT approach
 cavities
 corridors
 gaps
 notches
 openings
 ∞ paths
 roads
 ∞ tunnels
 underground structures
 vestibules

passenger aircraft

UF *executive aircraft*

GS **passenger aircraft**

. BAC 111 aircraft
 . BO-105 helicopter
 . Boeing 707 aircraft
 . Boeing 720 aircraft
 . Boeing 727 aircraft
 . Boeing 737 aircraft
 . Boeing 747 aircraft
 . Boeing 757 aircraft
 . Boeing 767 aircraft
 . Boeing 777 aircraft
 . Boeing 2707 aircraft
 . Breguet 941 aircraft
 . C-33 aircraft
 . C-35 aircraft
 . C-46 aircraft
 . Cessna 172 aircraft
 . Cessna 205 aircraft
 . Cessna 210 aircraft
 . Cessna 402B aircraft
 . CH-3 helicopter
 . CH-46 helicopter
 . CH-47 helicopter
 . CH-54 helicopter
 . Comet 4 aircraft
 . commuter aircraft
 . . . ATR-72 aircraft
 . CV-340 aircraft
 . CV-440 aircraft
 . CV-880 aircraft
 . CV-990 aircraft
 . DC 8 aircraft
 . DC 10 aircraft
 . DH 121 aircraft
 . DH 125 aircraft
 . DO-27 aircraft
 . DO-28 aircraft
 . DO-328 aircraft
 . Electra aircraft
 . European Airbus
 . . . A-300 aircraft
 . . . A-310 aircraft
 . . . A-320 aircraft
 . . . A-330 aircraft
 . . . A-340 aircraft
 . . . A-380 aircraft
 . Boeing 717 aircraft
 . F-27 aircraft
 . F-28 helicopter
 . F-28 transport aircraft
 . G-1 aircraft
 . G-222 aircraft
 . H-19 helicopter
 . H-53 helicopter
 . H-56 helicopter
 . HFB-320 aircraft
 . HS-748 aircraft

. IL-62 aircraft
 . IL-76 aircraft
 . IL-86 aircraft
 . IL-96 aircraft
 . Jetstream aircraft
 . L-1011 aircraft
 . L-2000 aircraft
 . MD 11 aircraft
 . MD 80 aircraft
 . Mystere 20 aircraft
 . Mystere 50 aircraft
 . OH-5 helicopter
 . P-160 aircraft
 . P-166 aircraft
 . SE-210 aircraft
 . T-39 aircraft
 . TU-104 aircraft
 . TU-124 aircraft
 . TU-134 aircraft
 . TU-144 aircraft
 . TU-204 aircraft
 . U-10 aircraft
 . VC-10 aircraft
 . Viscount aircraft
 . Yak 40 aircraft
 . YS-11 aircraft

RT air transportation

∞ aircraft

AN-22 aircraft
 AN-24 aircraft
 C-121 aircraft
 cargo aircraft
 civil aviation
 commercial aircraft
 DC 7 aircraft
 E-2 aircraft
 general aviation aircraft
 ground effect machines
 HC-3 helicopter
 jet aircraft
 light aircraft
 light transport aircraft
 ∞ low wing aircraft
 Mercure aircraft
 MH-262 aircraft
 ∞ military aircraft
 P-531 helicopter
 PD-808 aircraft
 rotary wing aircraft
 Saab 105 aircraft
 SC-7 aircraft
 short haul aircraft
 ∞ subsonic aircraft
 supersonic aircraft
 supersonic transports
 transport aircraft
 TU-154 aircraft
 turbofan aircraft
 turboprop aircraft
 V/STOL aircraft
 very large transport aircraft
 water takeoff and landing aircraft

passengers

RT airline operations
 automated guideway transit vehicles
 automated mixed traffic vehicles
 automated transit vehicles
 payloads
 rapid transit systems
 riding quality
 transportation

passes

USE **gaps (geology)**

passivation

USE **passivity**

passive elements

USE **parasitic elements (antennas)**

passive L-band radiometers

GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . radiometers
 **passive L-band radiometers**
 RT microwave frequencies

ultrahigh frequencies

passive nosetip technology

USE **PANT program**

passive satellites

UF *reflector satellites*
 GS artificial satellites
 . **passive satellites**
 . . Beacon satellites
 . . . Beacon Explorer A
 . . . Explorer 22 satellite
 . . Echo satellites
 . . . Echo 1 satellite
 . . . Echo 2 satellite
 . . LAGEOS (satellite)
 . . PAGEOS satellite
 RT active satellites
 communication satellites
 Echo project
 geodetic satellites
 navigation satellites
 satellite laser ranging
 synchronous satellites

passivity

UF *passivation*
 RT anodizing
 chemical attack
 chemical properties
 coatings
 corrosion
 corrosion prevention
 corrosion resistance
 deactivation
 electrolysis
 ∞ inhibition
 inhibitors
 oxidation
 oxidation resistance
 rusting
 siliconizing

paste (consistency)

DEF Mixtures with characteristic soft or plastic consistencies.
 RT mixtures

pastes

DEF Adhesive compositions having a characteristic plastic-type consistency, that is, high order of yield values, such as that of pastes prepared by heating a mixture of starch and water and subsequently cooling the hydrolyzed product.
 GS adhesives
 . **pastes**
 RT glues
 plasters

pasteurizing

GS heating
 . **pasteurizing**
 RT purification
 sterilization

patch antennas

(added June 1997)
 GS antennas
 . **patch antennas**
 RT antenna arrays
 antenna design
 microstrip antennas
 microwave antennas

patch tests

SN (CONDITIONS FOR ASSESSING FINITE ELEMENT METHOD CONVERGENCE AND STABILITY PROPERTIES)
 RT convergence
 finite element method
 hydraulic fluids
 structural analysis
 ∞ tests

patent applications

RT copyrights
 inventions
 licensing
 patents
 product development

patent policy

- technology utilization
- patent policy**
 - GS policies
 - . **patent policy**
 - RT intellectual property
 - inventions
 - patents
 - product development
 - regulations
 - rules
- patents**
 - GS intellectual property
 - . **patents**
 - RT claiming
 - grants
 - inventions
 - patent applications
 - patent policy
- path planning*
 - USE **trajectory planning**
- Pathfinder nuclear reactor**
 - GS nuclear electric power generation
 - . nuclear power reactors
 - . . **Pathfinder nuclear reactor**
 - nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . boiling water reactors
 - **Pathfinder nuclear reactor**
 - . nuclear power reactors
 - . . **Pathfinder nuclear reactor**
- pathogenesis**
 - RT cholera
 - diseases
 - pathogens
- pathogens**
 - DEF Disease-producing agents, usually referring to living organisms.
 - RT bacteria
 - Clostridium botulinum
 - pathogenesis
- pathological cell death*
 - (added October 2000)
 - USE **necrosis**
- pathological effects**
 - GS **pathological effects**
 - . necrosis
 - RT biological effects
 - carbon monoxide poisoning
 - cholera
 - diseases
 - ∞ effects
 - physiological responses
 - stress (biology)
- pathology**
 - GS medical science
 - . **pathology**
 - . . human pathology
 - RT animal models
 - autopsies
 - diagnosis
 - dissection
 - hemorrhages
 - necrosis
 - radiation therapy
 - veterinary medicine
- ∞ **paths**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *courses*
 - lanes*
 - RT critical path method
 - diffraction paths
 - duality principle
 - flight paths
 - ground tracks
 - mean free path
 - meteor trails
 - multipath transmission
 - network analysis
- operations research
- optical paths
- orbits
- particle trajectories
- passageways
- PERT
- routes
- sound transmission
- thermodynamics
- trajectories
- patients**
 - RT human beings
 - human pathology
 - therapy
- Patriot missile**
 - DEF Surface to air, anti-aircraft missile.
 - GS missiles
 - . surface to air missiles
 - . . **Patriot missile**
 - RT missile configurations
 - ∞ rockets
 - weapons
- patrols**
 - RT reconnaissance
- pattern distribution*
 - USE **distribution (property)**
- pattern method (forecasting)**
 - GS management methods
 - . **pattern method (forecasting)**
 - predictions
 - . forecasting
 - . . technological forecasting
 - . . . **pattern method (forecasting)**
 - RT Delphi method (forecasting)
 - estimating
 - ∞ methodology
 - operations research
 - planning
 - probe method (forecasting)
 - technology assessment
- pattern recognition**
 - DEF The identification of shapes, forms and configurations by automatic means.
 - UF *automatic pattern recognition*
 - feature extraction*
 - GS recognition
 - . **pattern recognition**
 - . . character recognition
 - . . graphology
 - RT change detection
 - clumps
 - cluster analysis
 - computer vision
 - context
 - edge detection
 - Feature Identification and Location
 - Exper
 - gray scale
 - image analysis
 - image classification
 - multisensor applications
 - optical relay systems
 - principal components analysis
 - readers
 - repetition
- pattern registration**
 - RT comparison
 - image contrast
 - image correlators
 - image motion compensation
 - image reconstruction
 - image resolution
 - imaging techniques
 - magnetic signatures
 - matching
- ∞ **patterns**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT diffraction patterns
 - distribution (property)
 - drainage patterns
 - kurtosis
- molds
- photomasks
- prototypes
- radiation distribution
- regularity
- resins
- speckle patterns
- synthetic arrays
- templates
- test pattern generators
- Widmanstätten structure
- Patterson map**
 - GS charts
 - . graphs (charts)
 - . . **Patterson map**
 - RT crystal lattices
 - crystal structure
 - lattice parameters
- Pauli exclusion principle**
 - GS mechanics (physics)
 - . quantum mechanics
 - . . **Pauli exclusion principle**
 - wave functions
 - . **Pauli exclusion principle**
 - RT atomic structure
 - exclusion
 - fermions
- pavements**
 - RT asphalt
 - coatings
 - concretes
 - foundations
 - highways
 - roads
 - runways
 - streets
- payload assist module**
 - DEF Rocket vehicle with a spinning solid-propellant motor to attain injection velocity to place payload into intended orbits from the parking orbits of the STS.
 - GS modules
 - . **payload assist module**
 - rocket vehicles
 - . **payload assist module**
 - RT instrument packages
 - payloads
 - Space Shuttle payloads
 - space transportation system
 - spaceborne experiments
- payload control**
 - DEF Execution of events involved in operating the payload and supporting systems.
 - RT ∞ control
 - payloads
 - sounding rockets
 - space shuttles
- payload delivery (STS)**
 - DEF The transport of payloads via the Space Transportation System including ground to Earth orbit delivery by the Space Shuttle and orbit to orbit delivery via orbit transfer vehicles.
 - GS delivery
 - . **payload delivery (STS)**
 - RT Advanced Launch System (STS)
 - electric power supplies
 - Multi-Purpose Logistics Modules
 - orbit insertion
 - orbit transfer vehicles
 - orbital launching
 - payloads
 - power modules (STS)
 - solar arrays
 - space transportation system
- payload deployment & retrieval system**
 - DEF System of mechanical and control devices, with associated data systems, for payload handling in space.
 - RT manipulators
 - NASA programs
 - orbit transfer vehicles
 - payloads
 - remote handling

remote manipulator system
 space shuttles
 Space Station Mobile Servicing System
 ∞ systems

payload integration
 RT mission planning
 payload integration plan
 payloads
 Space Shuttle payloads

payload integration plan
 DEF Procedures providing for compatibility of spaceborne experiments with the carrier spacecraft (e.g., shuttle orbiter).
 RT payload integration payloads
 ∞ plans
 Space Shuttle orbiters
 Space Shuttle payloads
 space transportation system
 spaceborne experiments

payload mass ratio
 GS ratios
 . mass ratios
 . . **payload mass ratio**
 RT multistage rocket vehicles
 piggyback systems
 pressure ratio
 propellant mass ratio

payload retrieval (STS)
 GS retrieval
 . **payload retrieval (STS)**
 RT orbit transfer vehicles
 orbital rendezvous
 payload transfer
 remote manipulator system
 space shuttles
 space transportation system
 stationkeeping

payload stations
 SN (THE POSITION OR MOUNTING PLACE FOR A PAYLOAD ONBOARD A ROCKET VEHICLE, SPACECRAFT, OR SPACE STATION; EXCLUDES ORBITAL STATIONS AND CREW WORKSTATIONS)
 DEF The locations in the Space Shuttles' flight decks and cargo bay at which payloads are mounted.
 GS stations
 . **payload stations**
 RT payloads
 space transportation

payload transfer
 DEF The in-space movement of payloads from point to point.
 RT orbital servicing
 payload retrieval (STS)
 space maintenance

payloads
 DEF Originally, the revenue producing portions of an aircraft's load, e.g., passengers, cargo, and mail. By extension, that which an aircraft, rocket, or spacecraft carries over and above which is necessary for the operation of the vehicle for its flight.
 GS **payloads**
 . EXPOS (Spacelab payload)
 . OSTA-2 payload
 . SEPAC (payload)
 . sortie systems
 . Space Shuttle payloads
 . . Advanced Technology Laboratory
 . . Astro missions (STS)
 . . Atmospheric General Circulation Experiment
 . . Earth radiation budget experiment
 . . Earth Viewing Applications Laboratory
 . . electromagnetic environment experiment
 . . Get Away Specials (STS)
 . . Halogen Occultation Experiment
 . . OSS-1 payload
 . . OSTA-1 payload

. . OSTA-3 payload
 . . Physics and Chemistry Experiment in Space
 . . plasma interaction experiment
 . . Spacelab
 . . X Ray Astrophysics Facility
 . space station payloads
 . Spacelab payloads
 . . AMPS (satellite payload)
 . . Atmospheric Cloud Physics Lab (Spacelab)
 . . Atmospheric General Circulation Experiment
 . . geophysical fluid flow cells
 . . Solar Cell Calibration Facility

RT aircraft performance
 aircraft specifications
 annular suspension and pointing system
 Apollo Lunar Surface Experiments Package
 asteroid capture
 EASEP
 German Infrared Laboratory
 instrument packages
 LIRTS (telescope)
 ∞ loading
 loads (forces)
 passengers
 payload assist module
 payload control
 payload delivery (STS)
 payload deployment & retrieval system
 payload integration
 payload integration plan
 payload stations
 piggyback systems
 Space Processing Applications
 Rocket
 space transportation
 space tugs
 spaceborne experiments
 warheads
 ∞ weight
 weight (mass)

PBB
 USE **polybrominated biphenyls**

PBRE (reactors)
 USE **pebble bed reactors**

PCB
 USE **polychlorinated biphenyls**

PCM (materials)
 USE **phase change materials**

PCM (modulation)
 USE **pulse code modulation**

PCM telemetry
 GS telecommunication
 . telemetry
 . . **PCM telemetry**
 transmission
 . signal transmission
 . . telemetry
 . . . **PCM telemetry**
 RT differential pulse code modulation
 pulse code modulation

PD-808 aircraft
 UF *Douglas PD-808 aircraft*
Piaggio-Douglas PD-808 aircraft
 GS jet aircraft
 . **PD-808 aircraft**
 light aircraft
 . **PD-808 aircraft**
 McDonnell Douglas aircraft
 . Douglas aircraft
 . . **PD-808 aircraft**
 monoplanes
 . **PD-808 aircraft**
 Piaggio aircraft
 . **PD-808 aircraft**
 RT ∞ aircraft

passenger aircraft

PDE (engines)
 (added March 2001)
 USE **pulse detonation engines**

PDM (modulation)
 USE **pulse duration modulation**

PDP 7 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 7 computer**
 RT PDP 9 computer

PDP 8 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 8 computer**

PDP 9 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 9 computer**
 RT PDP 7 computer

PDP 10 computer
 UF *System 10 computer*
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 10 computer**

PDP 11 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 11 computer**

PDP 11/20 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 11/20 computer**

PDP 11/40 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 11/40 computer**

PDP 11/45 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 11/45 computer**

PDP 11/50 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 11/50 computer**

PDP 11/70 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 11/70 computer**

PDP 12 computer
 GS data processing equipment
 . computers
 . . digital computers
 . . . PDP computers
 **PDP 12 computer**

PDP 15 computer
 GS data processing equipment

PDP computers

- . computers
- .. digital computers
- ... **PDP 15 computer**

PDP computers

- GS data processing equipment
- . computers
- .. digital computers
- ... **PDP computers**
- ... PDP 7 computer
- ... PDP 8 computer
- ... PDP 9 computer
- ... PDP 10 computer
- ... PDP 11 computer
- ... PDP 11/20 computer
- ... PDP 11/40 computer
- ... PDP 11/45 computer
- ... PDP 11/50 computer
- ... PDP 11/70 computer
- ... PDP 12 computer

PDRE (engines)

- (added March 2001)
- USE **pulse detonation engines**

PDS (spectroscopy)

- (added November 1998)
- USE **photothermal deflection spectroscopy**

PDWE (engines)

- (added March 2001)
- USE **pulse detonation engines**

Peacekeeper missile

- USE **MX missile**

peacetime

- RT electronic warfare
- histories
- international cooperation
- international law
- warfare

∞ peaks

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT apexes
- extremum values
- maxima
- mountains
- plateaus

peaks (landforms)

- UF *pinnacles*
- GS landforms
- . **peaks (landforms)**
- .. Pike's Peak (CO)
- RT mountains
- orography
- topography

pearlite

- DEF An aggregate in steel of ferrite and cementite.
- RT cementite
- ferrites
- iron alloys
- microstructure
- steels

Pearson distributions

- GS functions (mathematics)
- . probability density functions
- .. **Pearson distributions**
- statistical analysis
- . probability density functions
- .. **Pearson distributions**
- statistical distributions
- . **Pearson distributions**

peat

- DEF Dark brown or black residuum produced from the partial decomposition and disintegration of mosses, hedges, trees, and other plants that grow in marshes and other wet places.
- GS carbonaceous materials
- . **peat**
- fuels

- . chemical fuels
- .. hydrocarbon fuels
- ... fossil fuels
- ... **peat**
- organic materials
- . **peat**
- resources
- . Earth resources
- . fossil fuels
- ... **peat**
- RT coal
- sediments

pebble bed reactors

- UF *PBRE (reactors)*
- GS nuclear reactors
- . **pebble bed reactors**
- RT reactor design
- reactor technology

Peclet number

- DEF A nondimensional number arising in problems of heat transfer in fluids.
- GS dimensionless numbers
- . **Peclet number**
- ratios
- . **Peclet number**
- RT advection
- heat transfer
- Prandtl number
- Reynolds number
- thermal diffusion

peculiar galaxies

- (added November 1988)
- GS celestial bodies
- . galaxies
- .. **peculiar galaxies**
- RT elliptical galaxies
- galactic structure
- spiral galaxies

peculiar stars

- DEF Stars with spectra that cannot be conveniently fitted into any of the standard spectral classifications. They are denoted by a "p" after their spectral type.
- GS celestial bodies
- . stars
- .. **peculiar stars**
- ... shell stars
- ... Sigma Orionis
- ... symbiotic stars
- RT A stars
- B stars
- hot stars
- magnetic stars
- stellar spectra
- stellar spectrophotometry
- stellar structure

pedals

- RT levers
- manual control

Pedersen currents

- (added December 2001)
- DEF Ionic currents flowing parallel to ionospheric conductive electric fields.
- GS electric current
- . ionospheric currents
- .. **Pedersen currents**
- electricity
- . atmospheric electricity
- .. ionospheric currents
- ... **Pedersen currents**
- ion currents
- . **Pedersen currents**
- RT auroral zones
- Birkeland currents
- electric fields
- field aligned currents

Hall effect

pediments

- USE **piedmonts**

pediplains

- USE **piedmonts**

pedology

- USE **soil science**

PEEK

DEF A class of semicrystalline polymers called polyethylene ethers for use as molding compounds and for use as composite matrix materials. Used for polyetheretherketones.

UF *polyetheretherketones*

GS plastics

- . synthetic resins
- .. polyether resins
- ... **PEEK**
- .. thermoplastic resins
- ... **PEEK**

resins

- . synthetic resins
- .. polyether resins
- ... **PEEK**
- .. thermoplastic resins
- ... **PEEK**

resins

- . synthetic resins
- .. polyether resins
- ... **PEEK**
- .. thermoplastic resins
- ... **PEEK**

RT carbon fiber reinforced plastics

- ethers
- ketones
- polymer matrix composites
- resin matrix composites

peeling

- RT adhesion
- cutting
- debonding (materials)
- delaminating
- flaking
- mechanical properties
- shedding
- ∞ stripping

peening

- GS metal finishing
- . **peening**
- .. shot peening
- RT cold working
- hardening (materials)
- metal working
- work hardening

Pegasus air-launched booster

- (added May 1990)
- GS launch vehicles
- . **Pegasus air-launched booster**
- rocket vehicles
- . multistage rocket vehicles
- .. **Pegasus air-launched booster**
- RT air launching
- B-52 aircraft
- X-43 vehicle

Pegasus computer

- GS data processing equipment
- . computers
- .. **Pegasus computer**

Pegasus engine

- USE **Bristol-Siddeley BS 53 engine**

Pegasus satellites

- GS artificial satellites
- . **Pegasus satellites**
- RT Saturn project

pelagic zone

- GS regions
- . **pelagic zone**
- RT oceanography

pellets

- RT briquets
- fuel capsules
- granular materials
- nuclear fuels

- ∞ shot
- pellicle**
RT thin films
- pelomyxa**
GS animals
. protozoa
. . . amoeba
. . . . **pelomyxa**
microorganisms
. protozoa
. . . amoeba
. . . . **pelomyxa**
- Peltier effects**
DEF The effects which result in the production or absorption of heat at the junction of two metals on the passage of an electrical current.
RT ∞ effects
Seebeck effect
temperature effects
thermocouples
thermoelectric cooling
thermoelectricity
thermophysical properties
- pelvis**
GS anatomy
. musculoskeletal system
. . . bones
. . . . **pelvis**
RT girdles
- penalties**
GS law (jurisprudence)
. public law
. . . **penalties**
RT air law
disciplining
judgments
legal liability
liabilities
prohibition
regulations
- penalty function**
DEF In mathematics, a function used in treating maxima and minima problems subject to restraints.
GS functions (mathematics)
. **penalty function**
RT constraints
∞ functions
maxima
minima
optimization
- pencil beams**
GS beams (radiation)
. **pencil beams**
RT antenna design
antenna radiation patterns
radar beams
- pendulous gyroscopes*
USE **gyroscopic pendulums**
- pendulums**
GS oscillators
. mechanical oscillators
. . . **pendulums**
. . . . gyroscopic pendulums
RT accelerometers
gravitation
momentum
oscillations
timing devices
- penetrants**
RT ∞ agents
preservatives
retardants
- penetrating particles*
USE **corpuscular radiation**
- penetration**
DEF The depths to which one material extends into or penetrates another.
RT diffusion
- drilling
fragmentation
hydrodynamic ram effect
impact
nuclear vulnerability
percolation
perforating
permeability
permeating
piercing
∞ saturation
seepage
terminal ballistics
terrain following
vulnerability
- penetration ballistics*
USE **terminal ballistics**
- penetrometers**
DEF Simple devices for measuring the penetrating power of a beam of x rays or other penetrating radiation by comparing transmission through various absorbers.
GS measuring instruments
. **penetrometers**
RT lunar soil
- penicillin**
GS drugs
. antibiotics
. . . **penicillin**
- Peninsular Ranges (CA)**
GS landforms
. mountains
. . . **Peninsular Ranges (CA)**
RT California
- peninsulas**
DEF Elongated bodies or stretches of land nearly surrounded by water and connected with a larger land area, usually by a neck or an isthmus. The term is derived from the Latin 'paeninsula' "almost island."
GS landforms
. **peninsulas**
. . . Delmarva Peninsula (DE-MD-VA)
RT isthmuses
land
water
- Penning discharge**
DEF A direct current discharge where electrons are forced to oscillate between two opposed cathodes and are restrained from going to the surrounding anode by the presence of a magnetic field.
GS electric current
. electric discharges
. . . **Penning discharge**
RT electrodeless discharges
gas ionization
ion motion
plasma generators
- Penning effect**
DEF An increase in the effective ionization rate of a gas due to the presence of a small number of foreign metastable atoms.
RT ∞ effects
gas ionization
laser cooling
metastable atoms
- Penning gages**
GS measuring instruments
. pressure gages
. . . vacuum gages
. . . . ionization gages
. . . . **Penning gages**
vacuum apparatus
. vacuum gages
. . . ionization gages
. . . **Penning gages**
- Pennsylvania**
GS nations
. United States
. . . **Pennsylvania**
- RT Allegheny Plateau (US)
Delaware Bay (US)
Delaware River Basin (US)
Ohio River (US)
Susquehanna River Basin
(MD-NY-PA)
- ∞ **pens**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
UF *styluses*
RT enclosures
recording instruments
- pentaboranes**
GS boron compounds
. boron hydrides
. . . boranes
. . . . **pentaboranes**
hydrogen compounds
. hydrides
. . . boron hydrides
. . . . boranes
. **pentaboranes**
- pentachlorides*
USE **chlorides**
- pentacerythritol tetranitrate*
USE **PETN**
- pentanes**
GS organic compounds
. hydrocarbons
. . . aliphatic hydrocarbons
. . . . alkanes
. **pentanes**
. neopentane
- pentanone**
GS ketones
. **pentanone**
organic compounds
. **pentanone**
RT acetone
acetylacetone
- pentobarbital**
RT drugs
narcotics
sedatives
- pentobarbital sodium**
GS drugs
. **pentobarbital sodium**
. . . reserpine
RT Nembutal (trademark)
- pentodes**
RT electron tubes
semiconductor devices
tetrodes
transistors
vacuum tubes
- pentolite**
GS explosives
. **pentolite**
propellants
. **pentolite**
- pentose**
GS organic compounds
. carbohydrates
. . . sugars
. . . . monosaccharides
. **pentose**
. ribose
. xylose
- penumbras**
GS shadows
. **penumbras**
RT eclipses
umbras
- PEOLE satellites**
GS artificial satellites
. French satellites
. . . **PEOLE satellites**

peppers

RT geophysical satellites

Peoples Democratic Republic of Germany
USE **East Germany**

peppers

RT ∞ food

pepsin

GS biopolymers
. proteins
. . enzymes
. . . **pepsin**
organic compounds
. proteins
. . enzymes
. . . **pepsin**
RT papain

peptides

GS organic compounds
. **peptides**
. . polypeptides
. . . angiotensins
. . . glutathione
. . . hypertensin
. . vasopressins
RT amino acids
aspartic acid
proteins

percentage

USE **ratios**

perception

GS **perception**
. binaural hearing
. motion perception
. sensory perception
. . auditory perception
. . consciousness
. . extrasensory perception
. . kinesthesia
. . olfactory perception
. . pain
. . pain sensitivity
. . proprioception
. . . autokinesis
. . taste
. . touch
. . . tactile discrimination
. . vertical perception
. . vibration perception
. . visual perception
. . . critical flicker fusion
. . . space perception
. . . . autokinesis
. . . visual discrimination
. gravity perception
. sound localization
RT acuity
adaptation
artificial intelligence
character recognition
cognition
color
contrast
electrocutaneous communication
frequency response
identifying
illusions
images
information processing (biology)
∞ interpretation
knowledge
legibility
monocular vision
perceptual time constant
reading
resolution
retinal adaptation
sensitivity
sensory deprivation
sensory feedback
situational awareness
symbols
thresholds (perception)
visibility

vision

perceptrons

USE **self organizing systems**

perceptual errors

DEF Deviations from accuracy in the perception of objects, shapes, colors, weights, etc., through the use of the senses.
RT display devices
visual perception
visual stimuli

perceptual time constant

GS constants
. time constant
. . **perceptual time constant**
RT perception
reaction time
sense organs
sensorimotor performance
velocity

perchlorates

GS halogen compounds
. chlorine compounds
. . **perchlorates**
. . . aluminum perchlorates
. . . ammonium perchlorates
. . . hydrazine perchlorates
. . . hydrogen perchlorate
. . . hydroxylammonium perchlorates
. . . lithium perchlorates
. . . magnesium perchlorates
. . . nitronium perchlorate
. . . potassium perchlorates
RT chlorates
perchloric acid

perchloric acid

GS acids
. **perchloric acid**
RT perchlorates

perchloryl fluorides

GS halogen compounds
. fluorine compounds
. . fluorides
. . . **perchloryl fluorides**
. halides
. . fluorides
. . . **perchloryl fluorides**

percolation

RT beds (process engineering)
concentrating
diffusion
extraction
filtration
interstices
leaching
lysimeters
penetration
permeability
permeating
seepage
∞ separation
voids

Percus method

RT flow equations
integral equations
∞ methodology

percussion

RT detonation
impact
physical examinations
primers (explosives)

perfect gas

USE **ideal gas**

perfectly matched layers

(added July 1998)
DEF In the area of computational electromagnetism, an absorbing boundary condition used for terminating infinite domain calculations in the finite-difference time-domain (FDTD) or finite element methods. The approach has also

been extended to the analysis of some problems in acoustics.

UF **PML (electromagnetism)**
conditions

GS . boundary conditions
. . **perfectly matched layers**
RT computational electromagnetics
computational grids
electromagnetic absorption
electromagnetic scattering
finite difference theory
finite element method
Maxwell equation

perfluoro compounds

GS **perfluoro compounds**
. perfluoroalkane
. perfluoroguanidine

perfluoroalkane

GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . difluoro compounds
. . . . **perfluoroalkane**
. . . fluorine organic compounds
. . . . **perfluoroalkane**
organic compounds
. fluorine organic compounds
. . **perfluoroalkane**
perfluoro compounds
. **perfluoroalkane**

perfluoroguanidine

GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . fluorine organic compounds
. . . . **perfluoroguanidine**
organic compounds
. fluorine organic compounds
. . **perfluoroguanidine**
perfluoro compounds
. **perfluoroguanidine**
RT guanidines

perforated plates

GS structural members
. plates (structural members)
. . **perforated plates**
RT anisotropic plates
cavities
hole geometry (mechanics)
holes (mechanics)
openings
∞ perforation
porous boundary layer control
stress concentration

perforated shells

GS shells (structural forms)
. **perforated shells**
RT arches
cavities
enclosures
fairings
hole distribution (mechanics)
hole geometry (mechanics)
holes (mechanics)
housings
hulls (structures)
membrane structures
nacelles
∞ perforation
pressure vessel design
rocket engine cases
shell theory
stress concentration

perforating

RT burnthrough (failure)
cutting
drilling
formations
fracturing
gas injection
injection
metal cutting
metal working
penetration

- ∞ perforation
piercing
water injection
- ∞ **perforation**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cavities
holes (mechanics)
perforated plates
perforated shells
perforating
piercing
- ∞ **performance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aircraft performance
astronaut performance
comfort
complexity
computer systems performance
consistency
efficiency
effort
environments
evaluation
examination
fatigue (biology)
figure of merit
flight characteristics
human factors engineering
human performance
long term effects
mental performance
modulation transfer function
observation
operator performance
optical transfer function
output
performance tests
pilot performance
postflight analysis
propulsion system performance
quality
ratings
reliability
spacecraft performance
standards
task complexity
training evaluation
- performance prediction**
GS predictions
. **performance prediction**
RT evaluation
management
prediction analysis techniques
reliability
reliability analysis
reliability engineering
trend analysis
- performance tests**
SN (APPLY ONLY TO OPERATING EQUIPMENT)
RT accelerated life tests
acceptability
certification
checkout
computer systems performance
field tests
hardware-in-the-loop simulation
inspection
∞ performance
space vehicle checkout program
specifications
standards
∞ tests
- perfusion*
USE **diffusion**
- periclast**
GS chalcogenides
. oxides
. . . metal oxides
. . . . alkaline earth oxides
. magnesium oxides
. **periclast**
- magnesium compounds
. magnesium oxides
. . **periclast**
- peridotite**
UF *kimberlite*
GS rocks
. igneous rocks
. . **peridotite**
RT chromites
dunite
olivine
regolith
soils
- perigee-apogee satellites*
USE **PAS**
- perigees**
DEF Those orbital points nearest the Earth when the Earth is the center of attraction.
GS apsides
. **perigees**
RT apogees
Earth orbits
elliptical orbits
orbits
perilunes
- perihelions**
DEF Those points in solar orbits which are nearest the sun.
GS apsides
. **perihelions**
RT aphelions
elliptical orbits
orbital elements
orbits
solar orbits
- perilunes**
GS apsides
. **perilunes**
RT lunar orbits
lunar satellites
perigees
- period doubling**
DEF The bifurcation of a nonlinear system to two stable periodic cycles on its route to chaotic turbulence.
GS branching (mathematics)
. **period doubling**
RT chaos
periodic functions
transition flow
turbulence
turbulent flow
- period equations*
USE **periodic functions**
- periodic functions**
UF *period equations*
GS analysis (mathematics)
. real variables
. . **periodic functions**
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
functions (mathematics)
. transcendental functions
. . **periodic functions**
. . . trigonometric functions
. . . . cosine series
. . . . sine series
. . . . tangents
RT Floquet theorem
Fourier analysis
period doubling
- periodic orbits*
USE **orbits**
- periodic processes*
USE **cycles**
- periodic variations**
UF *periodicity*
GS variations
- . **periodic variations**
. . alternations
. . annual variations
. . diurnal variations
. . intraseasonal variations
. . nocturnal variations
. . secular variations
. . . Madden-Julian Oscillation
. . quasi-biennial oscillation
RT autocorrelation
cataclysmic variables
climatology
cycles
dendrochronology
el Nino
extrapolation
Fourier analysis
long term effects
oscillations
oscillators
polar wandering (geology)
regularity
∞ rhythm
semiregular variable stars
Southern Oscillation
trends
variability
variable stars
- periodicals**
UF *journals (documents)*
GS documents
. **periodicals**
RT ∞ journals
records
- periodicity*
USE **periodic variations**
- periodicity (biology)*
USE **rhythm (biology)**
- peripheral circulation**
GS circulation
. blood circulation
. . **peripheral circulation**
- peripheral equipment (computers)**
SN (EXCLUDES COMPUTER-CONTROLLED EQUIPMENT)
DEF Equipment that works in conjunction with a computer but is not part of the computer itself. Card or paper-tape readers or punches, magnetic tape handlers, or line printers are among items of peripheral equipment.
UF *auxiliary equipment (computers)*
GS computer components
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
data processing equipment
. **peripheral equipment (computers)**
. . printers (data processing)
. . remote consoles
RT analog to digital converters
computer storage devices
computer systems design
data processing
digital to analog converters
∞ equipment
magnetic disks
magnetic tapes
modems
plotters
- peripheral jet flow**
GS fluid flow
. jet flow
. . **peripheral jet flow**
RT downwash
ground effect (aerodynamics)
ground effect machines
lift augmentation
- peripheral nervous system**
GS anatomy
. nervous system
. . **peripheral nervous system**
RT neuromuscular transmission

peripheral vision

∞ systems

peripheral vision

GS vision
. **peripheral vision**
RT space perception
visual acuity
visual fields

peripheries

USE **boundaries**

periscopes

DEF Optical instruments which displace the line of sight parallel to itself to permit a view which may otherwise be obstructed.

GS optical equipment
. **periscopes**
RT binoculars
eyepieces
optical measuring instruments
telescopes
viewing

peritoneum

GS anatomy
. **peritoneum**
membranes
. **peritoneum**
RT abdomen
epithelium
tissues (biology)
viscera

permafrost

DEF Any soil, subsoil or other surficial deposit, or even bedrock, occurring in arctic or subarctic regions at a variable depth beneath the Earth's surface in which a temperature below freezing has existed continuously for a long time. Used for frozen soils.

UF *frozen soils*
GS soils
. **permafrost**
RT aufeis (ice)
Earth cryosphere
planetary cryospheres
polar regions

Permalloys (trademark)

GS alloys
. **Permalloys (trademark)**
magnetic materials
. ferromagnetic materials
. **Permalloys (trademark)**
RT iron alloys
magnets
molybdenum alloys
nickel alloys
permanent magnets

permanent magnets

GS magnets
. **permanent magnets**
RT ferrimagnets
ferromagnetic materials
magnetic materials
Permalloys (trademark)

permanganates

GS manganese compounds
. **permanganates**
RT manganese ions

permeability

SN (EXCLUDES MAGNETIC PERMEABILITY)
DEF Of a magnetic material, the ratio of the magnetic induction to the magnetic field intensity in the same region. The ability to permit penetrations or passage. In this sense the term is applied particularly to substances which permit penetration or passage of fluids.

GS **permeability**
. dielectric permeability
RT aquifers
density (mass/volume)
diffusion
diffusivity
drainage
formations

infiltration
interstices
leaching
leakage
mechanical properties
penetration
percolation
permeating
∞ physical properties
porosity
∞ resistance
seepage
surface properties
void ratio
voids
wettability

permeating

RT ∞ absorption
desorption
dialysis
diffusion
dispersing
impregnating
osmosis
penetration
percolation
permeability
porosity
reverse osmosis
∞ saturation
sorption
transpiration

permissivity

RT compatibility
psychological factors

permittivity

UF *dielectric constant*
GS electrical properties
. dielectric properties
. **permittivity**
RT dielectric loss
electric fields
field strength

permutations

GS analysis (mathematics)
. combinatorial analysis
. **permutations**
RT ∞ combination
combinations (mathematics)
partitions (mathematics)
set theory

perovskites

DEF Minerals with a close-packed lattice and the general formula ABX₃ where A and B are metals and X is a nonmetal, usually O.

GS calcium compounds
. **perovskites**
minerals
. **perovskites**
titanium compounds
. titanates
. **perovskites**

peroxides

GS chalcogenides
. oxides
. anhydrides
. **peroxides**
. . . . inorganic peroxides
. . . . hydrogen peroxide
. . . . organic peroxides
. . . . potassium peroxides
. . . . sodium peroxides
RT dioxides

Perseid meteoroids

GS celestial bodies
. meteoroid showers
. **Perseid meteoroids**
. meteoroids
. **Perseid meteoroids**

Pershing missile

GS missiles
. ballistic missiles

. . **Pershing missile**
. surface to surface missiles
. **Pershing missile**
RT multistage rocket vehicles
solid propellant rocket engines

Persian Gulf

GS gulfs
. **Persian Gulf**
RT inlets (topography)

personal computers

GS data processing equipment
. computers
. . . digital computers
. . . . microcomputers
. . . . **personal computers**
. IBM personal computers
. Macintosh personal computers
RT computer techniques
VSAT (network)

personality

RT depersonalization
personnel selection

personality tests

RT intelligence tests
psychological tests
psychometrics
qualifications
∞ tests

personnel

GS **personnel**
. air traffic controllers (personnel)
. crews
. . . flight crews
. . . spacecrews
. enemy personnel
. engineers
. flying personnel
. . . astronauts
. . . orbital workers
. . . cosmonauts
. . . flight crews
. . . spacecrews
. . . pilots (personnel)
. . . aircraft pilots
. . . . test pilots
. . . ground crews
. instructors
. medical personnel
. . . flight nurses
. . . physicians
. . . surgeons
. . . flight surgeons
. navigators
. operators (personnel)
. . . pilots (personnel)
. . . aircraft pilots
. . . . test pilots
. military personnel
. police
. programmers
. scientists
RT ∞ complement
consulting
crew experiment stations
crew observation stations
crew workstations
depersonalization
deployment
employee relations
∞ estimators
helmet mounted displays
human resources
incentives
inhabitants
manpower
occupation
organizing
position (title)
qualifications
research management
resources
retirement
retraining
services
unionization

wage surveys

personnel development

RT ∞ development
employee relations
human resources
management
resources
training analysis

personnel management

GS management
. industrial management
. . **personnel management**
RT employee relations
human relations
human resources
leadership
management planning

personnel propulsion systems

USE **self maneuvering units**

personnel selection

GS selection
. **personnel selection**
. . pilot selection
RT aptitude
employment
intelligence tests
labor
personality
physical examinations
physiological tests

personnel subsystems

RT industries

Perspex (trademark)

GS plastics
. **Perspex (trademark)**

perspiration

UF *sweating*
RT body fluids
body temperature
evaporation
excretion
feces
heat acclimatization
humidity
Palmar sweat index
skin (anatomy)
sweat
transpiration

PERT

UF *program evaluation review technique*
RT commerce
contract management
critical path method
GERT
management analysis
management methods
management planning
∞ paths
program trend line analysis
project management

perturbation

DEF Any departure introduced into an assumed steady state of a system, or a small departure from a nominal path such as a desired trajectory. Usually used as equivalent to small perturbation. Specifically, a disturbance in the regular motion of a celestial body, the result of a force additional to that which causes the regular motion, specifically a gravitational force.

GS **perturbation**
. orbit perturbation
. . satellite perturbation

RT ∞ disturbances
four body problem
geodesy
gravitational instability
long term effects
many body problem
nutaton
orbital mechanics
oscillations

oscillators
radiation pressure
Schach effect
three body problem
two body problem
variations

perturbation theory

UF *disturbance theory*
GS **perturbation theory**
. vinti theory
RT Boussinesq approximation
celestial mechanics
disturbing functions
Hansen lunar theory
Hartree approximation
Hill lunar theory
Hill method
many body problem
operators (mathematics)
orbit perturbation
orbital elements
quantum theory
strange attractors
Taylor instability
∞ theories
von Zeipel method
wave functions
Wentzel-Kramer-Brillouin method
Yang-Mills fields
Yang-Mills theory

Peru

GS nations
. **Peru**
RT South America

perveance

DEF The quotient of the space-charge-limited cathode current by the three-halves power of the anode voltage in a diode. Note: Perveance is the constant G appearing in the Child-Langmuir-Schottky equation.

GS ratios
. **perveance**
RT Child-Langmuir law
space charge
thermionic diodes
vacuum tubes
work functions

pesticides

GS poisons
. **pesticides**
. . insecticides
. . . Carbamates (tradename)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
RT crop dusting
environmental chemistry
toxicology

petals

RT plants (botany)

petechia

GS hemorrhages
. **petechia**
RT skin (anatomy)

PETN

UF *pentaerythritol tetranitrate*
GS esters
. organic nitrates
. . **PETN**
nitrogen compounds
. nitrates
. . organic nitrates
. . . **PETN**
RT explosives

Petrel sounding rocket

GS rocket vehicles
. sounding rockets
. . **Petrel sounding rocket**

RT ∞ rockets

Petri nets

DEF Abstract, formal models of the information flow in systems with discrete sequential or parallel events. The major use has been the modeling of hardware systems and software concepts of computers.

GS models
. mathematical models
. . **Petri nets**
networks
. **Petri nets**
RT consecutive events
dynamic models
graphs (charts)
information theory
∞ nets
sequencing
trees (mathematics)

petrogenesis

(added August 1997)

DEF Branch of petrology dealing with the origin and formation of rocks, particularly igneous rocks.

UF *petrogeny*
GS geology
. petrology
. . **petrogenesis**
RT geochronology
igneous rocks
magma
meteorite parent bodies
mineralogy
∞ origins
petrography
volcanology

petrogeny

(added August 1997)

USE **petrogenesis**

petrography

GS geology
. petrology
. . **petrography**
RT inliers (landforms)
petrogenesis
rocks
sedimentary rocks
siderophile elements

petroleum

USE **crude oil**

petroleum products

DEF Materials derived from petroleum, natural gas, and asphalt deposits. Includes gasolines, diesel and heating fuels, lubricants, waxes, greases, petroleum coke, petrochemicals, and sulfur.

GS products
. **petroleum products**
. . asphalt
. . diesel fuels
. . gasoline
. . tars
RT butanes
crude oil
greases
kerogen
lubricants
lubricating oils
methane
natural gas
oils
plastics
polynuclear organic compounds

petrology

DEF That branch of geology dealing with the origin, occurrence, structure, and history of rocks, especially igneous and metamorphic rocks.

GS geology
. **petrology**
. . lithology
. . petrogenesis
. . petrography

Pfaff equation

RT cones (volcanoes)
formations
geochemistry
geological surveys
geophysics
impact melts
inliers (landforms)
Mars volcanoes
mineralogy
rocks
stratigraphy
volcanoes
volcanology

Pfaff equation

GS analysis (mathematics)
. **Pfaff equation**
RT differential equations
∞ equations
thermodynamics

PFM (modulation)

USE **pulse frequency modulation**

pH

RT acid base equilibrium
acid rain
acidity
acidosis
alkalinity
alkalosis
bases (chemical)
buffers (chemistry)
hydrogen ions

pH factor

RT acid base equilibrium
acidosis
alkalosis
hydrogen ions
ion concentration
soil sampling

Phaethon (hypothetical planet)

(added June 1998)

USE **hypothetical planets**

phantastrons

GS circuits
. delay circuits
. . **phantastrons**
oscillators
. relaxation oscillators
. . **phantastrons**
RT feedback amplifiers

Phantom aircraft

USE **F-4 aircraft**

pharmacology

GS medical science
. **pharmacology**
. . psychopharmacology
RT anesthesiology
antiradiation drugs
bioavailability
bioprocessing
cyclic AMP
drugs
∞ medicine
motion sickness drugs
vasoconstrictor drugs
veterinary medicine

pharynx

GS anatomy
. respiratory system
. . **pharynx**

phase angle

USE **phase shift**

phase change materials

DEF Materials undergoing solid/liquid phase transformations and whose latent heat of fusion properties are used to store and deliver thermal energy, usually solar energy. Used for PCM (materials).

UF *PCM (materials)*

RT ceresin
condensing

fusion (melting)
heat of fusion
heat storage
heat transfer
liquid-solid interfaces
∞ materials
melting
organic materials
phase transformations
solar energy conversion
solar heating
sublimation
Trombe walls
waxes
working fluids

phase coherence

RT ∞ coherence
coherence coefficient
coherent light
four-wave mixing
wave fronts

phase conjugation

DEF Technique for the removal of phase distortions during propagation of laser beams through the atmosphere.

GS conjugation
. **phase conjugation**
. . four-wave mixing

phase contrast

GS contrast
. **phase contrast**
RT diffraction patterns
electron microscopy
microscopy
optical measurement
optical paths
scanning electron microscopy
transmission electron microscopy

phase control

RT circuit protection
∞ control
phase locked systems
transformers

phase demodulators

GS demodulators
. **phase demodulators**
RT Bragg cells
modems

phase detectors

DEF Devices that continuously compare the phase of two signals and provide an output proportional to their difference in phase.

GS circuits
. **phase detectors**
. . synchrosopes
RT ∞ detectors
phase locked systems
signal detection
synchronism

phase deviation

DEF The peak difference between the instantaneous phase of the modulated wave and the carrier frequency.

RT amplitudes
modulated continuous radiation
signal analysis

phase diagrams

UF *constitutional diagrams*
equilibrium diagrams
eutectic diagrams
GS diagrams
. **phase diagrams**
RT alloys
binary systems (materials)
cluster variation method
critical temperature
eutectics
heat of fusion
heat treatment
intermetallics
liquid phases
liquids

liquidus
melting points
phase separation (materials)
phase stability (materials)
solid phases
solid solutions
solid suspensions
solubility
stoichiometry
transition points
transition temperature
vapor phases

phase error

GS errors
. **phase error**
RT anisoplanatism
circuit protection
error signals

phase lock demodulators

GS demodulators
. **phase lock demodulators**
RT correlation detection
parametrons

phase locked systems

RT feedback frequency modulation
optical coupling
phase control
phase detectors
synchronized oscillators
∞ systems
tracking filters

phase matching

DEF A way of maximizing the coupling between two systems used in second harmonic generation which happens mostly in crystals.

RT crystal optics
crystals
frequency multipliers
harmonic generations
laser outputs
lasers

phase modulation

DEF Angle modulation in which the angle of a sine wave carrier is caused to depart from the carrier angle by an amount proportional to the instantaneous value of the modulation wave. Combinations of phase and frequency modulation are commonly referred to as frequency modulation.

GS coding
. signal encoding
. . **phase modulation**
. . . FM/PM (modulation)
. . . phase shift keying
. . . . binary phase shift keying
. . . . quadrature phase shift keying
modulation
. **phase modulation**
. . FM/PM (modulation)
. . phase shift keying
. . . binary phase shift keying
. . . quadrature phase shift keying
RT amplitude modulation
Bragg cells
deformable mirrors
demodulation
demodulators
frequency modulation
modems
modulators
parametric frequency converters
pulse modulation
push-pull amplifiers
trellis coding

phase response

USE **frequency response**
phase shift

phase rule

GS rules
. **phase rule**
RT chemical equilibrium
degrees of freedom

∞ Gibbs equations

phase separation (materials)

(added December 1988)

RT binary systems (materials)
 liquid phases
 miscibility gap
 phase diagrams
 phase stability (materials)
 phase transformations
 ∞ separation
 solid phases
 solubility

phase shift

DEF The phase difference of two periodically recurring phenomena of the same frequency, expressed in angular measure. The angle between the lines connecting a celestial body and the sun and a celestial body and the Earth. Used for phase angle and phase response.

UF *phase angle*
phase response

GS **phase shift**

. Sagnac effect
 RT angles (geometry)
 equalizers (circuits)
 microwave switching

∞ phases
 ∞ shift

phase shift circuits

GS circuits
 . **phase shift circuits**
 . . . circulators (phase shift circuits)
 RT delay circuits
 duplex operation
 gyrators

phase shift keying

DEF The form of phase modulation in which the modulating function shifts the instantaneous phase of the modulated wave among predetermined discrete values.

GS coding
 . signal encoding
 . . phase modulation
 . . . **phase shift keying**
 binary phase shift keying
 quadrature phase shift keying
 keying
 . **phase shift keying**
 . . binary phase shift keying
 . . quadrature phase shift keying
 modulation
 . phase modulation
 . . **phase shift keying**
 . . . binary phase shift keying
 . . . quadrature phase shift keying
 RT cochannel interference
 information theory
 quadrature amplitude modulation
 Rayleigh fading
 trellis coding

phase stability (materials)

(added July 1991)

GS stability
 . **phase stability (materials)**
 RT crystallization
 phase diagrams
 phase separation (materials)
 phase transformations
 ∞ phases
 stabilization

phase switching interferometers

GS measuring instruments
 . interferometers
 . . **phase switching interferometers**
 RT radio astronomy
 radio telescopes

phase transformations

GS **phase transformations**
 . freezing
 . . vibrational freezing
 . . zone melting
 . liquefaction

. . coal liquefaction
 . martensitic transformation
 . melting
 . . arc melting
 . . fusion (melting)
 . . levitation melting
 . . vacuum melting
 . . zone melting
 . vaporizing
 . . boiling
 . . . film boiling
 . . . nucleate boiling
 Leidenfrost phenomenon
 . . evaporation
 . . . evapotranspiration
 . . . propellant evaporation
 . . . transpiration
 . . flashing (vaporizing)
 . . prevaporization
 . . sublimation

RT cluster variation method
 cold hardening
 condensing
 critical temperature
 crystallization
 directional solidification (crystals)
 electron-hole drops
 ferroelasticity
 heat of fusion
 Ising model
 Laves phases
 martensite
 melt spinning
 metamorphism (geology)
 mushy zones
 neel temperature
 order-disorder transformations
 Ostwald ripening
 phase change materials
 phase separation (materials)
 phase stability (materials)
 ∞ phases
 shape memory alloys
 solidification
 solids
 syntectic alloys
 ∞ transformations
 ∞ transition
 transition pressure
 transition temperature

phase velocity

DEF Of a traveling plane wave at a single frequency, the velocity of an equiphase surface along the wave normal.

GS rates (per time)
 . **phase velocity**
 velocity

RT **phase velocity**
 electromagnetic radiation
 group velocity
 Landau damping
 propagation velocity
 quantum mechanics
 traveling waves
 wave fronts
 wave propagation

phased arrays

GS arrays
 . **phased arrays**
 RT antenna arrays
 laser arrays
 linear arrays
 monopulse antennas
 seismographs
 steerable antennas

∞ phases

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT cycles
 liquid phases
 lunar phases
 phase shift
 phase stability (materials)
 phase transformations
 solid phases
 terminator lines

vapor phases

phase-space integral

GS analysis (mathematics)
 . **phase-space integral**
 RT classical mechanics
 Euclidean geometry
 hyperspaces
 state vectors

phenacetin

USE **acetanilide**

phenanthrene

GS organic compounds
 . hydrocarbons
 . . **phenanthrene**
 RT anthracene
 dyes
 isomers

phenobarbital

RT drugs
 narcotics
 sedatives

phenol formaldehyde

RT formaldehyde
 phenolic resins
 resins

phenolic epoxy resins

GS plastics
 . synthetic resins
 . . thermosetting resins
 . . . epoxy resins
 **phenolic epoxy resins**
 . . . phenolic resins
 **phenolic epoxy resins**
 resins
 . synthetic resins
 . . thermosetting resins
 . . . epoxy resins
 **phenolic epoxy resins**
 . . . phenolic resins
 **phenolic epoxy resins**
 RT adhesives
 amines
 crosslinking

phenolic resins

GS plastics
 . synthetic resins
 . . thermosetting resins
 . . . **phenolic resins**
 micarta
 phenolic epoxy resins
 resins
 . synthetic resins
 . . thermosetting resins
 . . . **phenolic resins**
 micarta
 phenolic epoxy resins
 RT carbon-phenolic composites
 phenol formaldehyde

phenology

DEF A branch of science dealing with the relations between climate and periodic biological phenomena.

RT activity cycles (biology)
 biometeorology
 climatology
 coastal ecology
 ecology
 migration
 molting
 phenomenonology
 rhythm (biology)
 zeitgebers

phenols

GS hydroxyl compounds
 . alcohols
 . . **phenols**
 . . . bisphenols
 . . . cresols
 . . . phloroglucinol
 . . . thymol

phenomenology

RT thiols

phenomenology

RT case histories
experimentation
medical phenomena
mesoscale phenomena
phenology

phenothiazines

GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . azines
. . . . **phenothiazines**
poisons
. pesticides
. . . insecticides
. . . **phenothiazines**
pyrazines
. azines
. . **phenothiazines**

phenotype

(added August 2004)

DEF The outward appearance of the individual. It is the product of interactions between genes, and between the genotype and the environment.

RT cloning (biology)
gene expression
genes
genetic engineering
genetically modified plants

phenylalanine

GS acids
. amino acids
. . alanine
. . . **phenylalanine**
. carboxylic acids
. . alanine
. . . **phenylalanine**
organic compounds
. amino acids
. . alanine
. . . **phenylalanine**
. carboxylic acids
. . alanine
. . . **phenylalanine**

phenyls

GS **phenyls**
. polybrominated biphenyls
. polychlorinated biphenyls
. polyphenyls
. . tetraphenyls
. . triphenyls
. terphenyls
RT phosphene
propargyl groups

Philco 2000 computer

GS data processing equipment
. computers
. . digital computers
. . . **Philco 2000 computer**

Philippines

GS landforms
. islands
. . Pacific islands
. . . **Philippines**
nations
. **Philippines**

Philips ionization gages

GS measuring instruments
. pressure gages
. . vacuum gages
. . . ionization gages
. . . . **Philips ionization gages**
vacuum apparatus
. vacuum gages
. . ionization gages
. . . **Philips ionization gages**
RT pressure measurement

philosophy

GS philosophy

. . paradoxes
RT knowledge
literature
 ∞ logic
mathematical logic

phloroglucinol

GS hydroxyl compounds
. alcohols
. . phenols
. . . **phloroglucinol**
RT chemical indicators
resins

phobias

GS **phobias**
. fear
. . fear of flying
RT anxiety
emotional factors

Phobos

DEF A satellite of Mars orbiting at a mean distance of 9,400 kilometers.

GS celestial bodies
. natural satellites
. . Mars satellites
. . . **Phobos**

RT Deimos
Mars (planet)
Nozomi Mars Orbiter
Phobos spacecraft

Phobos spacecraft

(added August 1998)

DEF Two Soviet spacecraft (Phobos 1 and 2, both launched in July 1988) designed to study the plasma environment in the Martian vicinity, the surface and atmosphere of Mars, and the surface composition of the Martian satellite Phobos. Other mission objectives included the study of the interplanetary environment and solar observations.

GS interplanetary spacecraft
. Mars probes
. . **Phobos spacecraft**
Soviet spacecraft
. **Phobos spacecraft**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Phobos spacecraft**

RT Mars atmosphere
Mars environment
Phobos

Phoebe

DEF A satellite of Saturn orbiting at a mean distance of 12,960,000 kilometers.

GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Phoebe**

RT Saturn (planet)

Phoebus nuclear reactor

GS nuclear reactors
. **Phoebus nuclear reactor**
RT KIWI reactors
nuclear engine for rocket vehicles
nuclear rocket engines

Phoenix (AZ)

GS cities
. **Phoenix (AZ)**
RT Arizona

Phoenix Mars Lander

(added December 2007)

DEF A robotic spacecraft launched under the Mars Scout Program to land in the planet's water-ice-rich northern polar region. Instruments aboard the lander were developed to search for environments suitable for microbial life on Mars and research the history of water there. The lander mission was headed by the Lunar and Planetary Laboratory at the University of Arizona and was the first scientist led mission to Mars.

GS interplanetary spacecraft
. Mars probes

. . **Phoenix Mars Lander**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Phoenix Mars Lander**
RT extraterrestrial life
extraterrestrial water
Mars missions
Mars surface

Phoenix quadrangle (AZ)

GS landforms
. **Phoenix quadrangle (AZ)**
RT Arizona
geodetic surveys
mapping

Phoenix sounding rocket

GS rocket vehicles
. multistage rocket vehicles
. . **Phoenix sounding rocket**
. sounding rockets
. . **Phoenix sounding rocket**
RT solid propellant rocket engines

phonemes

GS speech
. **phonemes**
RT languages
linguistics
phonemics
phonetics
psycholinguistics
speech recognition
words (language)

phonemics

GS linguistics
. **phonemics**
RT intelligibility
languages
phonemes
phonetics
psycholinguistics
speech
speech defects
speech recognition
words (language)

phonetics

GS linguistics
. **phonetics**
speech
. **phonetics**
RT acoustics
intelligibility
languages
phonemes
phonemics
speech defects
speech recognition
verbal communication
words (language)

phonoarteriography

RT arteries
blood circulation
phonocardiography

phonocardiograms

USE **phonocardiography**

phonocardiography

UF *phonocardiograms*
vibrocardiography
GS bioengineering
. biometrics
. . cardiology
. . . **phonocardiography**
. . . . echocardiography
RT ballistocardiography
electrocardiography
heart
heart diseases
phonoarteriography
vectorcardiography

phonon beams

GS beams (radiation)
. **phonon beams**

- elastic waves
 . phonons
 . . **phonon beams**
 electromagnetic radiation
 . thermal radiation
 . . **phonon beams**
 elementary excitations
 . phonons
 . . **phonon beams**
 corpuscular radiation
 RT particle beams
 photon beams
 Umklapp process
- phonons**
 GS elastic waves
 . **phonons**
 . . phonon beams
 elementary excitations
 . **phonons**
 . . phonon beams
 RT crystal structure
 lattice vibrations
 plasmons
 polarons
 sound waves
 Umklapp process
- phoria**
 GS diseases
 . eye diseases
 . . **phoria**
- phosgene**
 GS gases
 . **phosgene**
 halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **phosgene**
 . halides
 . . chlorides
 . . . **phosgene**
 poisons
 . **phosgene**
 RT ∞ chemical compounds
- phosphatases**
(added August 2004)
 DEF A group of hydrolases which catalyze the hydrolysis of monophosphoric esters and the transfer of phosphate groups.
 GS biopolymers
 . proteins
 . . enzymes
 . . . **phosphatases**
 organic compounds
 . proteins
 . . enzymes
 . . . **phosphatases**
 RT catalytic activity
 enzymology
 esters
 hydrolysis
 phosphates
- phosphates**
 GS phosphorus compounds
 . **phosphates**
 . . adenines
 . . adenosine triphosphate
 . . ammonium phosphates
 . . calcium phosphates
 . . cyclic AMP
 . . diphosphates
 . . . adenosine diphosphate
 . . . adenosine monophosphate
 . . indium phosphates
 . . monazite sands
 . . phosphene
 . . polynucleotides
 . . potassium phosphates
 . . pyridine nucleotides
 . . uridylic acid
 RT creep
 phosphatases
 phosphoric acid
- Skydrol (trademark)
- phosphazene**
 DEF A ring or chain polymer that contains alternating phosphorus and nitrogen atoms, with two substituents on each phosphorus atom.
 GS organic compounds
 . organic phosphorus compounds
 . . **phosphazene**
 phosphorus compounds
 . organic phosphorus compounds
 . . **phosphazene**
 RT nitrogen compounds
 phosphines
 phosphonitriles
 polymer chemistry
- phosphene**
 GS organic compounds
 . organic phosphorus compounds
 . . **phosphene**
 phosphorus compounds
 . organic phosphorus compounds
 . . **phosphene**
 . phosphates
 . . **phosphene**
 RT luminosity
 phenyls
 retina
 vision
- phosphides**
 GS phosphorus compounds
 . **phosphides**
 . . boron phosphides
 . . gallium phosphides
 . . indium phosphides
 . . manganese phosphides
 . . schreibersite
- phosphines**
 GS hydrogen compounds
 . hydrides
 . . **phosphines**
 phosphorus compounds
 . **phosphines**
 RT phosphazene
- phosphonitriles**
 GS nitrogen compounds
 . nitriles
 . . **phosphonitriles**
 organic compounds
 . nitriles
 . . **phosphonitriles**
 . organic phosphorus compounds
 . . **phosphonitriles**
 phosphorus compounds
 . organic phosphorus compounds
 . . **phosphonitriles**
 RT phosphazene
- phosphonium compounds**
 GS phosphorus compounds
 . **phosphonium compounds**
 RT ∞ chemical compounds
- phosphorescence**
 DEF Emission of light which continues after the exciting mechanism has ceased.
 GS electromagnetic properties
 . optical properties
 . . **phosphorescence**
 emission
 . light emission
 . . luminescence
 . . . fluorescence
 **phosphorescence**
 RT afterglows
 bioluminescence
 chemiluminescence
 phosphors
 plasma radiation
 scintillation
 trapping
- phosphoric acid**
 GS acids
 . **phosphoric acid**
 phosphorus compounds
- . **phosphoric acid**
 RT phosphates
- phosphoric acid fuel cells**
 DEF Long life fuel cells for the low to medium wattage range which use phosphoric acid as an electrolyte.
 GS electric generators
 . direct power generators
 . . fuel cells
 . . . **phosphoric acid fuel cells**
 electrochemical cells
 . fuel cells
 . . **phosphoric acid fuel cells**
 RT biochemical fuel cells
 electrolytic cells
 energy technology
 hydrogen oxygen fuel cells
 regenerative fuel cells
 total energy systems
- phosphors**
 DEF Phosphorescent substances such as zinc sulfide, which emit light when excited by radiation, as on the scope of a cathode ray tube.
 GS **phosphors**
 . radiophosphors
 RT fluorescence
 image intensifiers
 laser induced fluorescence
 mercury lamps
 phosphorescence
 photographic film
- phosphorus**
 GS chemical elements
 . **phosphorus**
 . . phosphorus isotopes
 . . . phosphorus 32
- phosphorus 32**
 GS chemical elements
 . nuclides
 . . isotopes
 . . . phosphorus isotopes
 **phosphorus 32**
 radioactive isotopes
 **phosphorus 32**
 . phosphorus
 . . phosphorus isotopes
 . . . **phosphorus 32**
- phosphorus compounds**
 GS **phosphorus compounds**
 . diethyl hydrogen phosphite (DEHP)
 . organic phosphorus compounds
 . . phosphazene
 . . phosphene
 . . phosphonitriles
 . . uridylic acid
 . phosphates
 . . adenines
 . . adenosine triphosphate
 . . ammonium phosphates
 . . calcium phosphates
 . . cyclic AMP
 . . diphosphates
 . . . adenosine diphosphate
 . . . adenosine monophosphate
 . . indium phosphates
 . . monazite sands
 . . phosphene
 . . polynucleotides
 . . potassium phosphates
 . . pyridine nucleotides
 . . uridylic acid
 . phosphides
 . . boron phosphides
 . . gallium phosphides
 . . indium phosphides
 . . manganese phosphides
 . . schreibersite
 . phosphines
 . phosphonium compounds
 . phosphoric acid
 . phosphorus oxides
 . phosphorus polymers
 RT ∞ chemical compounds

phosphorus isotopes

∞ Group 5A compounds

phosphorus isotopes

- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **phosphorus isotopes**
 - phosphorus 32
 - . phosphorus
 - . . **phosphorus isotopes**
 - . . . phosphorus 32

phosphorus metabolism

- GS metabolism
 - . **phosphorus metabolism**

phosphorus oxides

- GS chalcogenides
 - . oxides
 - . . **phosphorus oxides**
- phosphorus compounds
 - . **phosphorus oxides**

phosphorus polymers

- GS phosphorus compounds
 - . **phosphorus polymers**
- RT ∞ polymers

phosphorylation

- GS chemical reactions
 - . **phosphorylation**

photics

- RT light (visible radiation)
- ∞ optics

photo reconnaissance spacecraft

- GS military spacecraft
 - . reconnaissance spacecraft
 - . . **photo reconnaissance spacecraft**
- RT ∞ spacecraft

photoabsorption

- GS energy absorption
 - . radiation absorption
 - . . electromagnetic absorption
 - . . . **photoabsorption**
- RT ∞ absorption
 - . photoexcitation

photoacoustic microscopy

- GS microscopy
 - . **photoacoustic microscopy**
- RT acoustic microscopes
 - . acousto-optics
 - . ceramics
 - . nondestructive tests
 - . photoacoustic spectroscopy

photoacoustic spectroscopy

DEF An optical technique for investigating solid and semisolid materials, in which the sample is placed in a closed chamber filled with a gas and illuminated with monochromatic radiation of any desired wavelength, and with intensity modulated at some acoustic frequency. Absorption of radiation results in a periodic heat flow from the sample, which generates sound detectable with a sensitive microphone.

- GS spectroscopy
 - . **photoacoustic spectroscopy**
- RT absorption spectra
 - . absorptivity
 - . acousto-optics
 - . laser applications
 - . laser spectroscopy
 - . photoacoustic microscopy
 - . photothermal deflection spectroscopy

photocathodes

DEF Electrodes used for obtaining a photoelectric emission when irradiated. Used for photoelectric cathodes.

- UF *photoelectric cathodes*
- GS electrodes
 - . cathodes
 - . . tube cathodes
 - . . . **photocathodes**
- RT dark current
 - . electrode materials

image converters
image intensifiers
image orthicons
light amplifiers
microchannels
orthicons
photoelectric cells
photoelectric emission
photoelectric materials
photomultiplier tubes

photocells

USE **photoelectric cells**

photochemical oxidants

DEF Any of the chemicals which enter into oxidation reactions in the presence of light or other radiant energy.

- GS oxidizers
 - . **photochemical oxidants**
- RT air pollution
 - . atmospheric chemistry
 - . nitrogen oxides
 - . ozone
 - . photooxidation

photochemical reactions

DEF Chemical reactions which involve either the absorption or emission of radiation. Used for photochemistry and photoreduction.

- UF *photochemistry*
 - . *photoreduction*
- GS chemical reactions
 - . **photochemical reactions**
 - . . photochromism
 - . . photodecomposition
 - . . photolysis
 - . . photooxidation
 - . . photosynthesis
 - . . radiolysis
- RT association reactions
 - . atmospheric chemistry
 - . charge transfer
 - . cycloaddition
 - . oxetane polymers
 - . sodalite
 - . volatile organic compounds

photochemistry

USE **photochemical reactions**

photochromism

- GS chemical reactions
 - . photochemical reactions
 - . . **photochromism**
- RT color photography
 - . sodalite

photoclinometry

USE **photogrammetry**

photoconductive cells

DEF Photoelectric cells whose electrical resistance varies with the amount of illumination falling upon the sensitive area of the cell.

- GS photoelectric cells
 - . **photoconductive cells**
- RT ∞ cells
 - . photovoltaic cells

photoconductivity

DEF The conductivity increase exhibited by some nonmetallic materials, resulting from the free carriers generated when photon energy is absorbed in electronic transitions. The rate at which free carriers are generated, the mobility of the carriers, and the length of time they persist in conducting states (their lifetime) are some of the factors that determine the amount of conductivity change. Used for photoresistivity.

- UF *photoresistivity*
- GS electrical properties
 - . electrical resistivity
 - . . **photoconductivity**
 - . electromagnetic properties
 - . optical properties
 - . . **photoconductivity**
 - . photoelectricity
 - . photoelectric effect
 - . . **photoconductivity**

transport properties

- . electrical resistivity
- . . **photoconductivity**

RT ∞ conductivity

- . mercury cadmium tellurides
- . photoconductors
- . square wells

photoconductors

- UF *photoresistors*
- GS conductors
 - . **photoconductors**
 - . semiconductors (materials)
 - . **photoconductors**
- RT mercury cadmium tellurides
 - . photoconductivity
 - . photodiodes
 - . photoelectric cells
 - . photoelectric materials
 - . photometers
 - . phototransistors
 - . resistors
 - . tunnel junctions

photocurrents

USE **electric current**
photoelectric emission

photodecomposition

- GS chemical reactions
 - . photochemical reactions
 - . . **photodecomposition**
- decomposition
 - . **photodecomposition**
 - . radiation chemistry
 - . **photodecomposition**
- RT electromagnetic absorption
 - . photodetachment
 - . photolysis

photodetachment

- RT photodecomposition
 - . photoionization

photodetectors

USE **photometers**

photodiodes

DEF Diodes designed to produce photocurrent by absorbing light. Photodiodes are used for the conversion of optical power to electrical power.

- GS electronic equipment
 - . diodes
 - . . semiconductor diodes
 - . . . **photodiodes**
 - . solid state devices
 - . . semiconductor devices
 - . . . **photodiodes**
 - . optoelectronic devices
 - . **photodiodes**
- RT dark current
 - . focal plane devices
 - . ion implantation
 - . lasers
 - . mercury cadmium tellurides
 - . MSM (semiconductors)
 - . photoconductors
 - . photoelectric cells
 - . photoelectric materials
 - . phototransistors
 - . phototubes
 - . pushbroom sensor modes
 - . SIS (semiconductors)
 - . solar cells
 - . x ray detectors

photodissociation

DEF The dissociation (splitting) of a molecule by the absorption of a photon. The resulting components may be ionized in the process (photoionization).

- GS decomposition
 - . **photodissociation**
 - . dissociation
 - . **photodissociation**
 - . radiation chemistry
 - . **photodissociation**
- RT electromagnetic absorption
 - . photoexcitation

photolysis

photoelastic analysis
 UF *photoelastic stress measurement*
 RT fringe multiplication
 Moire effects
 ∞ optics
 photographic measurement
 ∞ polarization
 polarization (waves)
 stress analysis
 stress measurement
 temperature inversions

photoelastic materials
 RT ∞ materials
 photoelasticity

photoelastic stress measurement
 USE **photoelastic analysis**

photoelasticity
 GS electromagnetic properties
 . **photoelasticity**
 . . photoviscoelasticity
 mechanical properties
 . elastic properties
 . . **photoelasticity**
 . . . photoviscoelasticity
 RT birefringence
 dichroism
 photoelastic materials
 polarized light
 prisms
 refraction
 stress analysis

photoelectric cathodes
 USE **photocathodes**

photoelectric cells
 DEF Transducers which convert electromagnetic radiation in the infrared, visible, and ultraviolet regions into electrical quantities such as voltage, current, or resistance. Used for photocells.
 UF *photocells*
 GS **photoelectric cells**
 . photoconductive cells
 . photovoltaic cells
 . . solar cells
 . . . vertical junction solar cells
 RT ∞ cells
 dark current
 direct power generators
 ∞ electric cells
 electrochemical cells
 electrode materials
 energy absorption films
 photocathodes
 photoconductors
 photodiodes
 photometers
 photomultiplier tubes
 phototransistors
 phototubes
 solar generators
 transducers

photoelectric effect
 DEF The emission of an electron from a surface as the surface absorbs a photon of electromagnetic radiation. Electrons so emitted are termed photoelectrons.
 GS photoelectricity
 . **photoelectric effect**
 . . photoconductivity
 . . photoelectric emission
 . . photoionization
 . . photovoltaic effect
 RT ∞ effects
 photoelectrons

photoelectric emission
 DEF The emission of electrons from atoms or molecules. Used for photocurrents, photoemission, and photoemissivity.
 UF *photocurrents*
photoemission
photoemissivity

GS emission
 . particle emission
 . . electron emission
 . . . **photoelectric emission**
 photoelectricity
 . photoelectric effect
 . . **photoelectric emission**
 RT electrical properties
 external surface currents
 negative electron affinity
 photocathodes
 photoexcitation
 photoionization
 photopeak
 photovoltages
 photovoltaic effect
 stimulated emission
 work functions

photoelectric generators
 GS electric generators
 . direct power generators
 . . **photoelectric generators**
 . . . photovoltaic cells
 solar cells
 vertical junction solar cells
 RT ∞ generators
 photoelectrochemical devices
 solar energy conversion
 solar generators
 thermoelectric generators

photoelectric materials
 UF *photoemitters*
 RT electrode materials
 electron emission
 ∞ materials
 photocathodes
 photoconductors
 photodiodes
 photoelectricity
 photoelectrons
 phototransistors
 phototubes
 photovoltaic cells

photoelectric photometers
 USE **electrophotometers**

photoelectricity
 UF *photoelectronics*
photosensors
 GS **photoelectricity**
 . photoelectric effect
 . . photoconductivity
 . . photoelectric emission
 . . photoionization
 . . photovoltaic effect
 RT Compton effect
 electrical properties
 electricity
 optical properties
 photoelectric materials
 photoelectrons
 photovoltages

photoelectrochemical devices
 DEF Electrochemical devices powered by light or other incident radiation to produce electricity and/or chemical fuels (e.g., hydrogen).
 RT ∞ devices
 electrochemical cells
 electrode materials
 energy technology
 photoelectric generators
 photoelectrochemistry
 photon beams
 solar energy conversion

photoelectrochemistry
 DEF The study of the interaction between impinging light energy and the electropotential of the chemical changes in the electrode, electrolytic solution, or a photosensitive membrane.
 GS electrochemistry
 . **photoelectrochemistry**
 RT ∞ chemistry

photoelectrochemical devices

photoelectromagnetic detectors
 USE **photoelectromagnetic effects**
radiation measuring instruments

photoelectromagnetic effects
 UF *photoelectromagnetic detectors*
 RT ∞ effects
 excitons
 intermetallics

photoelectron spectroscopy
 GS spectroscopy
 . **photoelectron spectroscopy**
 RT electron emission
 spectroscopic analysis

photoelectronics
 USE **electronics**
photoelectricity

photoelectrons
 DEF Electrons which have been ejected from their parent atoms by interaction between those atoms and high energy photons.
 GS particles
 . charged particles
 . . energetic particles
 . . . electrons
 **photoelectrons**
 corpuscular radiation
 energetic particles
 electrons
 **photoelectrons**
 elementary particles
 fermions
 leptons
 electrons
 **photoelectrons**
 nuclear particles
 **photoelectrons**
 RT electron emission
 photoelectric effect
 photoelectric materials
 photoelectricity
 photoionization
 photomagnetic effects
 photoneutrons
 photonuclear reactions
 photovoltaic effect

photoemission
 USE **photoelectric emission**

photoemissivity
 USE **emissivity**
photoelectric emission

photoemitters
 USE **photoelectric materials**

photoengraving
 RT micromachining
 photomechanical effect
 printing

photoexcitation
 (added December 1992)
 GS excitation
 . **photoexcitation**
 potential energy
 . electric potential
 . . quantum wells
 . . . **photoexcitation**
 RT fluorescence
 molecular excitation
 photoabsorption
 photodissociation
 photoelectric emission
 photoionization
 photoluminescence

photogeology
 GS geology
 . **photogeology**
 RT aerial photography
 Earth Resources Survey aircraft
 geological surveys
 geomorphology
 ice mapping

photogoniometers

natural gas exploration
photogrammetry
photomapping
reconnaissance
thematic mapping

photogoniometers

GS measuring instruments
. goniometers
. . . **photogoniometers**
. optical measuring instruments
. . . **photogoniometers**
optical equipment
. optical measuring instruments
. . . **photogoniometers**
RT angles (geometry)
diffractometers
etalons
interferometers
monochromators
spectrometers

photogrammetry

DEF The art or science of obtaining reliable measurements by means of photography. Used for photoclinometry.

UF *photoclinometry*
GS photographic measurement
. **photogrammetry**
RT aerial photography
digital cameras
mapping
photogeology
photoreconnaissance
projectors
relief maps
stereophotography
surveys
terrain analysis

photograph interpretation

USE **photointerpretation**

photographic developers

UF *developers (photography)*
RT ∞ development
photographs
photography

photographic emulsions

DEF The light-sensitive coatings on photographic film consisting usually of silver halide.

GS mixtures
. dispersions
. . . emulsions
. . . . **photographic emulsions**
. . . . nuclear emulsions
. solutions
. . . **photographic emulsions**
. . . nuclear emulsions
RT photography
photosensitivity

photographic equipment

GS **photographic equipment**
. cameras
. . Baker-Nunn camera
. . ballistic cameras
. . CCD cameras
. . Delft camera
. . diffraction limited cameras
. . faint object camera
. . high speed cameras
. . . framing cameras
. . digital cameras
. . I2S cameras
. . Lallemand cameras
. . multispectral band cameras
. . panoramic cameras
. . pinhole cameras
. . Schmidt cameras
. . streak cameras
. . television cameras
. photographic processing equipment
. photographic rectifiers
RT ∞ equipment
lenses
optical equipment
optical filters
photography

photometers
projectors

photographic film

GS **photographic film**
. microfilms
RT ∞ films
magazines (supply chambers)
optical data storage materials
optical filters
phosphors
photographs
photography
polymeric films
Sabatier reaction

photographic measurement

GS **photographic measurement**
. photogrammetry
RT dosimeters
∞ measurement
optical correction procedure
optical measurement
particle image velocimetry
photoelastic analysis
photography
photointerpretation
photometry
photoreconnaissance
spectrometers

photographic plates

RT glass
photographic processing
photographs
photography
∞ plates

photographic processing

RT darkrooms
photographic plates
photographs
photography
printing
∞ processing

photographic processing equipment

GS photographic equipment
. **photographic processing equipment**
RT darkrooms
photography
reproduction (copying)

photographic recording

GS recording
. **photographic recording**
RT data recording
high speed photography
hologrammetry
intermittency hypothesis
particle image velocimetry
photographs
photography
recording instruments

photographic rectifiers

GS optical equipment
. **photographic rectifiers**
photographic equipment
. **photographic rectifiers**
RT ∞ condensers
photography

photographic tracking

GS tracking (position)
. **photographic tracking**
RT cinetheodolites
optical tracking
photography
satellite tracking
space detection and tracking system

photographs

GS **photographs**
. cloud photographs
. lunar photographs
. Mars photographs
. microphotographs
. motion pictures

. photomicrographs
RT display devices
images
mosaics
optical correction procedure
photographic developers
photographic film
photographic plates
photographic processing
photographic recording
photography
pixels
representations
spatial filtering
video tapes
visual aids
xerography

photography

DEF A process for recording visual images by exposing a light-sensitive substance to radiation such as visible light, infrared radiation, or x-rays.

GS imagery
. **photography**
. . . aerial photography
. . . all sky photography
. . . astronomical photography
. . . autoradiography
. . . black and white photography
. . . chronophotography
. . . cinematography
. . . cloud photography
. . . color photography
. . . electron photography
. . . electro-optical photography
. . . fractography
. . . frame photography
. . . high speed photography
. . . holography
. . . . acoustical holography
. . . . microwave holography
. . . . speckle holography
. . . . white light holography
. . . infrared imagery
. . . lunar photography
. . . metric photography
. . . microwave photography
. . . multispectral photography
. . . . infrared photography
. color infrared photography
. . . . radar photography
. . . orthophotography
. . . photomicrography
. . . rocket-borne photography
. . . shadowgraph photography
. . . Schlieren photography
. . . spaceborne photography
. . . satellite-borne photography
. . . spectrophotography
. . . stereoscopy
. . . stereophotography
. . . streak photography
. . . ultraviolet photography
. . . ultraviolet photometry
. . . underwater photography
. . . urography

RT brightness distribution
brightness temperature
cameras
CCD cameras
cloud photographs
darkrooms
Earth observations (from space)
Earth resources
evaporography
exposure
graphic arts
HS-801 aircraft
ice mapping
imaging techniques
lunar photographs
mapping
Mars photographs
microphotographs
multispectral band cameras
multispectral band scanners
panoramic cameras
photographic developers

photographic emulsions
 photographic equipment
 photographic film
 photographic measurement
 photographic plates
 photographic processing
 photographic processing equipment
 photographic recording
 photographic rectifiers
 photographic tracking
 photographs
 photointerpretation
 photolithography
 photomapping
 photomaps
 photomasks
 photomechanical effect
 photoreconnaissance
 pinhole cameras
 pixels
 projectors
 radiography
 rapid ballistics identification
 reproduction (copying)
 timber inventory
 video tapes
 wave front reconstruction
 xerography

photointerpretation

UF *photograph interpretation*
 RT aerial photography
 ∞ analyzing
 change detection
 ground truth
 ∞ interpretation
 photographic measurement
 photography
 photomapping
 photoreconnaissance
 sea truth
 spatial filtering

photoionization

DEF The ionization of an atom or molecule by the collision of a high energy photon with the particle.
 GS emission
 . **photoionization**
 ionization
 . **photoionization**
 photoelectricity
 . photoelectric effect
 . . **photoionization**
 RT atmospheric ionization
 auroral ionization
 auroral irradiation
 electron emission
 gas ionization
 laser induced fluorescence
 photodetachment
 photoelectric emission
 photoelectrons
 photoexcitation

photolithography

DEF The process of making a printing plate by exposing a design photographically on a sensitized emulsion and removing unwanted portions chemically.
 GS printing
 . lithography
 . . **photolithography**
 RT lab-on-a-chip devices
 microelectronics
 micromodules
 photography
 photoresists

photoluminescence

DEF Luminescence produced by the absorption of radiant flux, distinguished from ordinary reflection by a time delay and usually, an upward shift in a wavelength.
 GS emission
 . light emission
 . . luminescence
 . . . **photoluminescence**
 triboluminescence
 x ray fluorescence

RT blue shift
 fluorescence
 laser induced fluorescence
 photoexcitation
 photoluminescent bands
 photorefractivity
 porous silicon

photoluminescent bands

GS spectra
 . spectral bands
 . . **photoluminescent bands**
 RT absorption spectra
 ∞ bands
 emission spectra
 photoluminescence
 triboluminescence

photolysis

GS chemical reactions
 . photochemical reactions
 . . **photolysis**
 decomposition
 . **photolysis**
 radiation chemistry
 . **photolysis**
 RT cracking (chemical engineering)
 electrolysis
 photodecomposition
 photodissociation
 radiolysis

photomagnetic effects

RT deuterons
 ∞ effects
 gamma rays
 photoelectrons
 spin decoupling

photomapping

GS mapping
 . **photomapping**
 RT aerial photography
 Coastal Zone Color Scanner
 color photography
 DMSP satellites
 Earth resources
 geodesy
 geology
 gnomonic projection
 hologrammetry
 ice mapping
 maps
 ocean color scanner
 photogeology
 photography
 photointerpretation
 rocket-borne photography
 satellite-borne photography
 soil mapping
 spaceborne photography
 thematic mapping
 thermal mapping
 topography

photomaps

GS maps
 . **photomaps**
 RT aerial photography
 photography
 relief maps
 satellite-borne photography
 spaceborne photography
 thematic mapping

photomasks

DEF In the production of integrated circuit devices, repeated arrays of microphotographs of the circuit patterns on glass substrates used to form successive patterns on single wafers often of submicrometer sizes.
 RT arrays
 circuit diagrams
 integrated circuits
 masking
 microelectronics
 micromachining
 microphotographs
 ∞ patterns
 photography

photoresists
 printed circuits
 solid state devices
 substrates
 wafers

photomechanical effect

RT ∞ effects
 lithography
 micromachining
 photoengraving
 photography
 printing

photometers

DEF Instruments for measuring the intensity of light or the relative intensity of a pair of lights. Used for microphotometers and photodetectors.
 UF *microphotometers*
photodetectors
 GS measuring instruments
 . optical measuring instruments
 . . **photometers**
 . . . electrophotometers
 ultraviolet spectrometers
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 . . . quantum well infrared photodetectors
 . . . ultraviolet spectrophotometers
 . . . radiation measuring instruments
 . . **photometers**
 . . . electrophotometers
 . . . ultraviolet spectrometers
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 . . . quantum well infrared photodetectors
 . . . ultraviolet spectrophotometers
 optical equipment
 . optical measuring instruments
 . . **photometers**
 . . . electrophotometers
 . . . ultraviolet spectrometers
 high dispersion spectrographs
 Total Ozone Mapping Spectrometer
 . . . quantum well infrared photodetectors
 . . . ultraviolet spectrophotometers
 RT bolometers
 densitometers
 electrophotometry
 ellipsometers
 horizon scanners
 infrared spectrophotometers
 microdensitometers
 nephelometers
 optical measurement
 photoconductors
 photoelectric cells
 photographic equipment
 photometry
 phototransistors
 polarimeters
 pyranometers
 radiometers
 reflectometers
 spectrometers
 spectrophotometers
 telephotometry
 transmissometers
 ultraviolet detectors
 x ray detectors

photometry

DEF The study of the measurement of the intensity of light.
 GS optical measurement
 . **photometry**
 . . astronomical photometry
 . . . stellar spectrophotometry
 . . . electrophotometry
 . . . infrared photometry
 . . . spectrophotometry
 . . . stellar spectrophotometry
 . . . telephotometry
 . . . ultraviolet photometry

photomicrographs

. . visual photometry
RT chemical analysis
colorimetry
illuminating
∞ illumination
light (visible radiation)
luminance
photographic measurement
photometers
polarimetry
reflectance
spectroscopy
transmittance

photomicrographs
GS photographs
. **photomicrographs**
RT photomicrography

photomicrography
UF *micrography*
GS imagery
. photography
. . **photomicrography**
RT black and white photography
electron microscopes
metallography
microscopes
microscopy
microstructure
photomicrographs

photomultiplier tubes
DEF Phototubes with one or more dynodes between its photocathode and output electrode. Used for electron multipliers and multiplier phototubes.

UF *electron multipliers*
multiplier phototubes
GS amplifiers
. current amplifiers
. . **photomultiplier tubes**
. . . frequency modulation
photomultipliers
electron tubes
. cold cathode tubes
. . phototubes
. . . **photomultiplier tubes**
. . . . frequency modulation
photomultipliers

RT cathodes
channel multipliers
dynodes
electrodes
microchannel plates
microwave tubes
multipactor discharges
multipliers
photocathodes
photoelectric cells
scintillating fibers
scintillation counters
secondary emission

photon absorptiometry
GS density measurement
. **photon absorptiometry**
RT absorption spectra
densitometers
electromagnetic absorption
energy absorption
gamma ray absorptiometry
gamma ray absorption
multiphoton absorption
radiation absorption

photon beams
GS beams (radiation)
. **photon beams**
electromagnetic radiation
. **photon beams**
RT beam waveguides
gamma ray beams
incident radiation
laser outputs
light beams
optical paths
optical scanners
phonon beams
photoelectrochemical devices

photonic propulsion
photons
reflected waves
refracted waves
thermal blooming

photon density
GS rates (per time)
. flux density
. . **photon density**
RT squeezed states (quantum theory)

photon-electron interaction
RT elastic scattering
electron scattering
elementary particle interactions
∞ interactions
Umklapp process

photoneutrons
GS nuclear radiation
. **photoneutrons**
particles
. elementary particles
. . fermions
. . . neutrons
. . . . **photoneutrons**
. neutral particles
. . neutrons
. . . **photoneutrons**
RT baryons
nuclear particles
nuclear reactions
photoelectrons
photonuclear reactions
vector dominance model

photonic propulsion
GS propulsion
. low thrust propulsion
. . **photonic propulsion**
. . . laser propulsion
. spacecraft propulsion
. . **photonic propulsion**
. . . laser propulsion
RT electromagnetic propulsion
photon beams

photonic switching
USE **optical switching**

photonics
RT electro-optics
fiber optics
free-space optical interconnects
lasers
light emitting diodes
optical data processing
optical interconnects
optical switching
optical waveguides
optoelectronic devices
photons

photons
DEF According to the quantum theory of radiation, the elementary quantities of radiant energy. They are regarded as discrete quantities having a momentum equal to $h\nu/c$, where h is the Planck constant, ν is the frequency of the radiation, and c is the speed of light in a vacuum. Photons are never at rest, have no electric charges and no magnetic moments, but they have spin moments. The energy of a photon (the unit quantum of energy) is equal to $h\nu$.

GS particles
. elementary particles
. . bosons
. . . **photons**
. nuclear particles
. . bosons
. . . **photons**
RT annihilation reactions
cosmic rays
electromagnetic radiation
gamma rays
light (visible radiation)
nuclear radiation
optical properties
photon beams

photonics
photonuclear reactions
photoproduction
Planck's constant
quantum theory
∞ radiation
rotations

photonuclear reactions
GS nuclear reactions
. **photonuclear reactions**
RT electromagnetic interactions
light (visible radiation)
particle interactions
photoelectrons
photoneutrons
photons
photoproduction

photooxidation
GS chemical reactions
. oxidation
. . **photooxidation**
. . . photochemical reactions
. . . **photooxidation**
RT association reactions
photochemical oxidants

photopeak
RT amplitude distribution analysis
photoelectric emission
pulse amplitude
scintillation counters

photoperiod
(added August 2004)
DEF The time of daily exposure that an organism receives from daylight or artificial light. It is believed the photoperiodic responses may affect the control of energy balance and thermoregulation.

GS cycles
. **photoperiod**
exposure
. **photoperiod**
RT activity cycles (biology)
circadian rhythms
diurnal variations
light (visible radiation)
melatonin

photophilic plants
GS plants (botany)
. **photophilic plants**
RT light (visible radiation)
photosensitivity

photophoresis
DEF Production of unidirectional motion in a collection of very fine particles, suspended in a gas or falling in a vacuum, by a powerful beam of light.

RT aerosols
light (visible radiation)
particle interactions
particle motion
radiation pressure

photoplasticity
GS mechanical properties
. plastic properties
. . **photoplasticity**

photopolymers
(added July 1995)
DEF Polymers created by photochemical processes.
RT diffractive optics
display devices
holography
photoresists
∞ polymers

photoproduction
GS electromagnetic interactions
. **photoproduction**
particle production
. **photoproduction**
RT electromagnetic absorption
pair production

photons
 photonuclear reactions
 radioactive decay
 vector dominance model

photoreceptors

GS anatomy
 . sense organs
 . . **photoreceptors**
 receptors (physiology)
 . **photoreceptors**
 RT eye (anatomy)
 photosensitivity
 retina
 sensitometry
 visual pigments
 Young-Helmholtz theory

photoreconnaissance

GS reconnaissance
 . **photoreconnaissance**
 RT aerial reconnaissance
 Airborne Integrated Reconnaissance System
 black and white photography
 DMSP satellites
 Earth Resources Survey aircraft
 ground truth
 HS-801 aircraft
 photogrammetry
 photographic measurement
 photography
 photointerpretation
 spectral reconnaissance

photoreduction

USE **photochemical reactions**

photorefractivity

(added May 1995)
 GS electromagnetic properties
 . optical properties
 . . refractivity
 . . . **photorefractivity**
 reactivity
 . **photorefractivity**
 RT crystal optics
 gratings (spectra)
 optical waveguides
 photoluminescence

photoresistivity

USE **photoconductivity**

photoresistors

USE **photoconductors**

photoresists

(added June 2000)
 DEF Photosensitive substances that are either rendered soluble or insoluble to chemical etchants when exposed to light, and are used in transferring circuit patterns in the production of integrated circuits.
 RT etching
 integrated circuits
 microelectronics
 photolithography
 photomasks
 photopolymers
 photosensitivity

photosensitivity

DEF The property of a material whereby its chemical makeup is altered by exposure to light.
 GS sensitivity
 . **photosensitivity**
 . . light adaptation
 . . phototropism
 RT light (visible radiation)
 photographic emulsions
 photophilic plants
 photoreceptors
 photoresists
 sensitometry
 thresholds (perception)

visual pigments

photosensors

USE **photoelectricity**
radiation measuring instruments

photosphere

DEF The intensely bright portion of the sun visible to the unaided eye.
 GS **photosphere**
 . solar granulation
 RT chromosphere
 faculae
 solar atmosphere
 solar physics
 spicules
 starspots
 stellar activity
 sun
 sunspots

photostresses

GS stresses
 . **photostresses**

photosynthesis

DEF A process operating in green plants in which carbohydrates are formed under the influence of light with chlorophyll serving as a catalyst.
 GS chemical reactions
 . photochemical reactions
 . . **photosynthesis**
 RT algae
 carbohydrates
 Chlorella
 chlorophylls
 chloroplasts
 crop growth
 photosynthetically active radiation
 phytochrome
 plant physiology
 respiration

photosynthetically active radiation

(added January 2002)
 DEF Incident natural or artificial radiation of wavelengths that can be used by plants for photosynthesis.
 GS electromagnetic radiation
 . **photosynthetically active radiation**
 RT crop growth
 insolation
 irradiance
 leaf area index
 photosynthesis
 ∞ radiation
 solar radiation
 vegetation growth

photothermal conversion

DEF Conversion into thermal energy from optical radiation by a photoabsorptive or photo-selective material.
 GS energy conversion
 . solar energy conversion
 . . **photothermal conversion**
 . . . thermophotovoltaic conversion
 RT ∞ conversion
 energy absorption films
 energy conversion efficiency
 energy technology
 selectivity
 solar collectors
 solar dynamic power systems
 solar energy absorbers
 solar reflectors
 solar thermal electric power plants
 spectral sensitivity
 thermal energy
 thermodynamics

photothermal deflection spectroscopy

(added November 1998)
 UF *PDS (spectroscopy)*
 GS spectroscopy
 . **photothermal deflection spectroscopy**
 RT optical measurement

photoacoustic spectroscopy
 thermal diffusivity
 thermal lensing

photothermotropism

USE **anisotropy**
phototropism
temperature effects

phototransistors

GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . transistors
 **phototransistors**
 optoelectronic devices
 . **phototransistors**
 RT junction transistors
 photoconductors
 photodiodes
 photoelectric cells
 photoelectric materials
 photometers
 phototubes

phototropism

UF *photothermotropism*
 GS sensitivity
 . photosensitivity
 . . **phototropism**
 RT color
 crop vigor
 optical properties
 plant physiology
 plants (botany)

phototubes

GS electron tubes
 . cold cathode tubes
 . . **phototubes**
 . . . photomultiplier tubes
 frequency modulation photomultipliers
 RT cathodes
 dark current
 electrodes
 flying spot scanners
 gas discharge tubes
 microwave tubes
 photodiodes
 photoelectric cells
 photoelectric materials
 phototransistors

photoviscoelasticity

GS electromagnetic properties
 . optical properties
 . . **photoviscoelasticity**
 photoelasticity
 . . **photoviscoelasticity**
 mechanical properties
 . elastic properties
 . . photoelasticity
 . . . **photoviscoelasticity**
 . . viscoelasticity
 . . . **photoviscoelasticity**

photovoltages

GS potential energy
 . electric potential
 . . **photovoltages**
 RT photoelectric emission
 photoelectricity
 photovoltaic effect
 threshold voltage

photovoltaic cells

DEF Photoelectric detectors capable of directly generating an electric current in response to irradiation.
 GS electric generators
 . direct power generators
 . . photoelectric generators
 . . . **photovoltaic cells**
 solar cells
 vertical junction solar cells
 electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . **photovoltaic cells**

photovoltaic conversion

. . . . solar cells
. . . . vertical junction solar cells
photoelectric cells
 photovoltaic cells
 . . . solar cells
 . . . vertical junction solar cells
RT amorphous silicon
∞ cells
 electrochemical cells
 photoconductive cells
 photoelectric materials
 short circuit currents
 SIS (semiconductors)
 solar generators

photovoltaic conversion

GS energy conversion
 . solar energy conversion
 . **photovoltaic conversion**
 . . . thermophotovoltaic conversion
RT ∞ conversion
 photovoltaic effect
 solar arrays
 solar cells

photovoltaic effect

DEF The production of a voltage difference across a pn junction resulting from the absorption of photon energy. The voltage difference is caused by the internal drift of holes and electrons.
GS electrical properties
 . **photovoltaic effect**
 photoelectricity
 . photoelectric effect
 . **photovoltaic effect**
RT ∞ effects
 photoelectric emission
 photoelectrons
 photovoltages
 photovoltaic conversion
 threshold voltage

phreatophytes

GS plants (botany)
 . **phreatophytes**
RT trees (plants)

phthalates

GS esters
 . **phthalates**

phthalimides

(added August 2004)
DEF The imide of phthalic acids.
GS nitrogen compounds
 . imides
 . . . **phthalimides**
RT amides

phthalocyanin

GS organic compounds
 . cyclic compounds
 . . . heterocyclic compounds
 . . . **phthalocyanin**
RT pigments

phugoid oscillations

USE **oscillations**
pitch (inclination)

phylloquinone

UF *vitamin K*
GS organic compounds
 . cyclic compounds
 . . . heterocyclic compounds
 . . . **phylloquinone**
 . lipids
 . . . **phylloquinone**
 vitamins
 . **phylloquinone**
RT osteocalcin

physical chemistry

DEF The application of the laws, principles, and techniques of physics to the study of chemical properties, transformations, and reactions.
GS **physical chemistry**
 . cryochemistry
 . quantum chemistry

RT aerothermochemistry
 atmospheric chemistry
 chemical analysis
∞ chemistry
 computational chemistry
 molecular dynamics
 nuclear chemistry
∞ physics
 thermochemistry
 thermodynamics

physical constants testing reactor

USE **nuclear research and test reactors**
water cooled reactors

physical endurance

USE **physical fitness**

physical examinations

RT flight fitness
 mobile quarantine facility
 percussion
 personnel selection

physical exercise

UF *exercise*
gymnastics
GS **physical exercise**
 . hyperkinesia
RT angina pectoris
 athletes
 atrophy
 exercise physiology
 fatigue (biology)
 hypokinesia
 physical fitness
 running
 swimming
 treadmills
 walking

physical factors

GS physiological factors
 . **physical factors**
RT ∞ physics
 work

physical fitness

UF *physical endurance*
GS fitness
 . **physical fitness**
RT athletes
 competition
 exercise physiology
 flight fitness
 physical exercise
 physiological tests
 posture
 sports medicine
 swimming
 treadmills
 work capacity

physical optics

RT crystal optics
 fiber optics
 geometrical optics
 gradient index optics
 optical properties
∞ optics
 quantum optics
 quantum theory
∞ theories

∞ physical properties

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT acoustic properties
 adsorptivity
 Bragg angle
 buoyancy
 chemical properties
 color
 density (mass/volume)
 diffusivity
 durability
 eddy currents
 elastic properties
 electrical properties
 electromagnetic properties

fusibility
∞ high resistance
 hygroscopicity
 hysteresis
 impedance
 internal friction
 isotropy
 magnetic dipoles
 magnetic properties
 mechanical properties
 optical properties
 permeability
 polymorphism
 propellant properties
∞ properties
 surface properties
 thermal expansion
 thermodynamic properties
 thixotropy
 transmissivity
 transport properties
 virtual properties
 viscosity

∞ physical sciences

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT astronomy
∞ chemistry
 geology
 life sciences
∞ metallurgy
 meteorology
 mineralogy
 oceanography
∞ physics
∞ science

physical work

UF *exertion*
GS work
 . **physical work**
RT effort
 horsepower
 tasks
 treadmills
 work capacity
 workloads (psychophysiology)

physicians

GS personnel
 . medical personnel
 . . . **physicians**
RT stethoscopes

∞ physics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT astrophysics
 atmospheric physics
 atomic physics
 biophysics
 branching (physics)
 charm (particle physics)
 cloud physics
 combustion
 combustion physics
 condensed matter physics
 degenerate matter
 electrophysics
 field theory (physics)
 flavor (particle physics)
 geophysics
 health physics
 Health Physics Research Reactor
 kinetics
 low temperature physics
 magnetomechanics (physics)
 matter (physics)
∞ molecular physics
 neutron physics
 nuclear physics
 nuclei (nuclear physics)
 physical chemistry
 physical factors
∞ physical sciences
 plasma physics
 plasmas (physics)
 polymer physics

psychophysics
 quenching (atomic physics)
 radio physics
 reactor physics
 reentry physics
 rigid rotors (plasma physics)
 ∞ science
 selection rules (nuclear physics)
 solar physics
 ∞ solid state physics
 strange attractors
 theoretical physics

Physics and Chemistry Experiment in Space

DEF A group of Space Shuttle payloads consisting of various space experiments. Used for PACE.

UF *PACE*

GS experimentation

. **Physics and Chemistry Experiment in Space**

payloads

. Space Shuttle payloads

. . **Physics and Chemistry Experiment in Space**

spaceborne experiments

. **Physics and Chemistry Experiment in Space**

RT ∞ chemistry
 space flight

physiochemistry

GS biochemistry

. **physiochemistry**

RT bioavailability

∞ chemistry

exercise physiology

molecular biology

organic chemistry

physiology

psychotropic drugs

∞ science

physiography

USE **geomorphology**

physiologic availability

(added August 2001)

USE **bioavailability**

physiological acceleration

DEF The acceleration experienced by a human or an animal test subject in an accelerating vehicle.

GS rates (per time)

. **physiological acceleration**

RT ∞ acceleration

acceleration (physics)

acceleration stresses (physiology)

deceleration

gravitational physiology

impact acceleration

physiological defenses

GS **physiological defenses**

. immunity

RT acquired immunodeficiency syndrome

antibodies

antigens

biocompatibility

∞ defense

immune systems

inoculum

interferon

physiological effects

GS **physiological effects**

. physiological responses

. . hemodynamic responses

. apoptosis

RT biological effects

bone demineralization

cholera

comfort

diving (underwater)

∞ effects

electrolyte metabolism

environmental engineering

environments

exercise physiology
 fluid shifts (biology)
 geotopism
 gonads
 gravitational physiology
 head down tilt
 heat acclimatization
 heat stroke
 hematopoiesis
 hematopoietic system
 human reactions
 noise pollution
 radiation effects
 reaction time
 relative biological effectiveness (RBE)
 shock (physiology)
 space adaptation syndrome
 sports medicine

physiological factors

GS **physiological factors**

. physical factors

RT astronaut performance

chemical defense

chemical warfare

flight stress (biology)

noise pollution

sex factor

physiological responses

GS physiological effects

. **physiological responses**

. . hemodynamic responses

responses

. **physiological responses**

. . hemodynamic responses

RT baroreflexes

desynchronization (biology)

evoked response (psychophysiology)

gravitational physiology

head up tilt

pathological effects

tilt-table test

zeitgebers

physiological telemetry

USE **biotelemetry**

physiological tests

GS **physiological tests**

. body sway test

. carboxyhemoglobin test

. ear pressure test

. electronystagmography

. tilt-table test

. vestibular tests

. Weber test

RT cardiac output

cardiography

certification

environmental index

environmental tests

mobile quarantine facility

personnel selection

physical fitness

pilot selection

psychomotor performance

sensorimotor performance

stroke volume

Taylor manifest anxiety scale

∞ tests

treadmills

urinalysis

physiology

DEF The science that treats of the functions of living organisms or their parts, as distinguished from morphology or anatomy.

GS **physiology**

. electrophysiology

. exercise physiology

. gravitational physiology

. neuropsychology

. plant physiology

. psychophysiology

. respiratory physiology

. underwater physiology

RT aging (biology)

blood circulation

bone demineralization

catabolism
 cytotogenesis
 differentiation (biology)
 digesting
 heart function
 hemodynamics
 homeostasis
 menstruation
 metabolism
 mitosis
 narcosis
 physiochemistry
 regeneration (physiology)
 regularity
 respiration
 ∞ science
 shock (physiology)
 stress (physiology)
 thermoregulation
 tolerances (physiology)

phytochrome

(added August 2004)

DEF A blue-green biliprotein widely used in the plant kingdom.

GS biopolymers

. proteins

. . **phytochrome**

organic compounds

. proteins

. . **phytochrome**

pigments

. **phytochrome**

RT

photosynthesis

plant physiology

plants (botany)

vegetation growth

phytoplankton

DEF The aggregate of passively floating or drifting plant organisms in aquatic ecosystems.

GS

plankton

. **phytoplankton**

plants (botany)

. aquatic plants

. . **phytoplankton**

RT

algae

dissolved organic matter

marine biology

Sea-viewing Wide Field-of-view

Sensor

water pollution

zooplankton

phytotrons

DEF Apparatus for the growth of plants under a variety of controlled environmental conditions. Used for germinators and growth chambers.

UF

germinators

growth chambers

RT

germination

greenhouses

growth

plants (botany)

Piaggio aircraft

GS **Piaggio aircraft**

. P-166 aircraft

. PD-808 aircraft

RT ∞ aircraft

Piaggio P-166 aircraft

USE **P-166 aircraft**

Piaggio-Douglas PD-808 aircraft

USE **PD-808 aircraft**

Piasecki aircraft

GS **Piasecki aircraft**

. VZ-8 aircraft

RT ∞ aircraft

pickling (metallurgy)

DEF Preferential removal of oxide or mill scale from the surface of a metal by immersion usually in an acidic or alkaline solution.

GS

cleaning

. chemical cleaning

. . **pickling (metallurgy)**

picosecond pulses

RT descaling
metal films
metal finishing
scale (corrosion)

pickoffs
USE **sensors**

pickups
USE **sensors**

picosecond pulses

GS pulses
. **picosecond pulses**
RT amplitudes
electromagnetic missiles
electromagnetic pulses
laser outputs
pulse rate
pulsed radiation
time signals

picrates

GS nitrogen compounds
. nitro compounds
. . . **picrates**
. . . ammonium picrates

picture elements

USE **pixels**

picture tubes

UF *kinescopes*
GS electron tubes
. vacuum tubes
. . . cathode ray tubes
. . . . **picture tubes**
video equipment
. **picture tubes**
RT display devices
flying spot scanners
raster scanning
television equipment

PIDV (velocimetry)

USE **particle image velocimetry**

piedmonts

UF *pediments*
pediplains
GS landforms
. terraces (landforms)
. . . plateaus
. . . . **piedmonts**
. . . . Central Piedmont (US)
RT coastal plains
mountains

pi-electrons

GS particles
. charged particles
. . . energetic particles
. . . . electrons
. **pi-electrons**
. corpuscular radiation
. energetic particles
. electrons
. **pi-electrons**
. elementary particles
. fermions
. leptons
. electrons
. **pi-electrons**
RT molecular electronics
nuclear particles

piercing

UF *puncturing*
RT cutting
drilling
extruding
forging
metal working
penetration
perforating
∞ perforation
spark machining

vulnerability

piers
USE **wharves**

piezoactuators
(added January 2001)
USE **piezoelectric actuators**

piezoelectric actuators

(added January 2001)
DEF Any actuator that uses the piezoelectric effect as a basis for its function.
UF *piezoactuators*
GS actuators
. **piezoelectric actuators**
electromechanical devices
. **piezoelectric actuators**
RT active control
microelectromechanical systems
piezoelectric motors
piezoelectric transducers
smart materials
smart structures
ultrasonic wave transducers
vibration damping

piezoelectric ceramics

DEF Ceramic material with piezoelectric properties similar to those of some natural crystals.
GS ceramics
. **piezoelectric ceramics**
RT lead zirconate titanates
smart materials

piezoelectric crystals

GS crystals
. crystal oscillators
. . . **piezoelectric crystals**
oscillators
. crystal oscillators
. . . **piezoelectric crystals**
RT microsionics
piezoresistive transducers
quartz transducers
single crystals

piezoelectric gages

GS measuring instruments
. pressure gages
. . . **piezoelectric gages**
transducers
. piezoelectric transducers
. . . **piezoelectric gages**
. piezoresistive transducers
. . . **piezoelectric gages**
RT pressure sensors
strain gages

piezoelectric motors

(added January 2001)
DEF Any motor that uses the piezoelectric effect to produce its mechanical output.
UF *piezomotors*
GS electromechanical devices
. electric motors
. . . **piezoelectric motors**
motors
. electric motors
. . . **piezoelectric motors**
RT microelectromechanical systems
micromotors
piezoelectric actuators
piezoelectric transducers
ultrasonic wave transducers

piezoelectric transducers

DEF Transducers that depend for their operation on the interaction between electric charge and the deformation of certain materials having piezoelectric properties. Note: Some crystals and specially processed ceramics have piezoelectric properties.
GS transducers
. **piezoelectric transducers**
. . . piezoelectric gages
RT interdigital transducers
piezoelectric actuators
piezoelectric motors

praetersonic devices
ultrasonic cleaning

piezoelectricity

DEF The property exhibited by some asymmetrical crystalline materials which when subjected to strain in suitable directions develop polarization proportional to the strain.
GS electrical properties
. **piezoelectricity**
mechanical properties
. **piezoelectricity**
RT crystal oscillators
elastic properties
electricity
electrostriction
piezoresistive transducers
pyroelectricity

piezometers

GS measuring instruments
. pressure gages
. . . **piezometers**
RT seepage

piezomotors

(added January 2001)
USE **piezoelectric motors**

piezoresistive transducers

GS transducers
. **piezoresistive transducers**
. . . piezoelectric gages
RT piezoelectric crystals
piezoelectricity

pigeons

GS animals
. vertebrates
. . . birds
. . . . **pigeons**

piggyback systems

RT air launching
multistage rocket vehicles
payload mass ratio
payloads
Saenger space transportation system
∞ systems

pigments

GS **pigments**
. carotene
. carotenoids
. chlorophylls
. cytochromes
. melanin
. phytochrome
. visual pigments
RT additives
albinism
anatase
chromophores
dopa
fillers
inks
myoglobin
paints
phthalocyanin
plastids
rutile
skin (anatomy)

pigs (swine)

USE **swine**

Pike's Peak (CO)

GS landforms
. peaks (landforms)
. . . **Pike's Peak (CO)**
RT Colorado
mountains

pile foundations

GS foundations
. **pile foundations**

- RT ∞ piles
- ∞ **piles**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT nuclear reactors
pile foundations
- pilocarpine**
- GS bases (chemical)
. alkaloids
. . . **pilocarpine**
nitrogen compounds
. alkaloids
. . . **pilocarpine**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . alkaloids
. . . . **pilocarpine**
- pilot error**
- UF *flight technical error*
GS errors
. **pilot error**
- RT aircraft accidents
collisions
crash landing
crashes
human factors engineering
human performance
midair collisions
pilot induced oscillation
- pilot induced oscillation**
- DEF Oscillations of a flying aircraft caused by transients and system changeovers, by pilot overreaction upon such transients, or by misleading pilot cues or excessive pilot gain in modern high-gain, high order aircraft control systems.
- RT aerodynamic stability
aircraft control
aircraft stability
control stability
high gain
longitudinal control
man machine systems
nonstabilized oscillation
pilot error
pilot performance
self induced vibration
stable oscillations
transient oscillations
- pilot landing aid television system*
USE **PLAT system**
- pilot opinion ratings*
(added August 1999)
USE **pilot ratings**
- pilot performance**
- GS human performance
. **pilot performance**
. . . blackout prevention
- RT aircraft performance
astronaut performance
flight fatigue
intravehicular activity
man operated propulsion systems
operator performance
∞ performance
pilot induced oscillation
psychomotor performance
sensorimotor performance
situational awareness
- pilot plants**
- RT industrial plants
models
product development
prototypes
- pilot ratings**
(added August 1999)
- DEF Subjective assessment of the handling and stability characteristics of an aircraft or other flight vehicle.
- UF *pilot opinion ratings*
- GS flight characteristics
. **pilot ratings**
. . . Cooper-Harper ratings
ratings
. **pilot ratings**
. . . Cooper-Harper ratings
- RT aircraft performance
assessments
controllability
helicopter performance
- pilot selection**
- GS selection
. personnel selection
. . . **pilot selection**
- RT physiological tests
psychological tests
- pilot support systems**
(added October 1997)
- SN (LIMITED TO ADVANCED FLIGHT VEHICLE SYSTEMS FOR INTEGRATING, INTERPRETING, AND PRESENTING FLIGHT OR MISSION RELATED INFORMATION)
- UF *cockpit assistant systems*
Pilot's Associate
- GS information systems
. **pilot support systems**
support systems
. **pilot support systems**
- RT artificial intelligence
automatic pilots
avionics
cockpits
decision support systems
expert systems
flight management systems
human-computer interface
knowledge based systems
man machine systems
situational awareness
- pilot training**
- GS education
. flight training
. . . **pilot training**
- RT astronaut training
aviation psychology
ejection injuries
ejection training
flight simulators
space flight training
training simulators
- piloted centrifuges*
USE **human centrifuges**
- pilotless aircraft**
- SN (AIR VEHICLES USING REMOTE OR AUTONOMOUS CONTROL)
- UF *Darkstar unmanned aerial vehicle*
unmanned aerial vehicles
- GS **pilotless aircraft**
. drone aircraft
. . . target drone aircraft
. . . . Firebee 2 target drone aircraft
. . . . Jindivik target aircraft
. . . . X-45 aircraft
- RT ∞ aircraft
balloons
drone vehicles
light aircraft
∞ military aircraft
oblique wings
planetary aerial vehicles
reconnaissance aircraft
remotely piloted vehicles
unmanned aircraft systems
- ∞ **pilots**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aircraft pilots
automatic pilots
pilots (personnel)
test pilots
- pilots (personnel)**
- GS personnel
. flying personnel
- . . . **pilots (personnel)**
. . . . aircraft pilots
. test pilots
. operators (personnel)
. . . **pilots (personnel)**
. . . . aircraft pilots
. test pilots
- RT astronauts
cosmonauts
crews
flight crews
∞ pilots
- Pilot's Associate*
(added October 1997)
USE **pilot support systems**
- p-i-n diodes*
USE **diodes**
p-i-n junctions
- p-i-n junctions**
- UF *p-i-n diodes*
GS semiconductor junctions
. **p-i-n junctions**
- RT diodes
∞ junctions
solar cells
- pinch effect**
- DEF The result of an electromechanical force that constricts, and sometimes momentarily ruptures, a molten conductor carrying current at a high density. The self contradiction of a plasma column carrying large currents due to the interaction of this current with its own magnetic field.
- GS **pinch effect**
. plasma pinch
. . . screw pinch
. . . theta pinch
. . . zeta pinch
. reverse field pinch
- RT cylindrical plasmas
∞ effects
magnetic fields
magnetohydrodynamics
plasma compression
plasma control
relativistic plasmas
stellarators
thermonuclear power generation
thermonuclear reactions
zeta thermonuclear reactor
- pineal gland**
- GS anatomy
. glands (anatomy)
. . . endocrine glands
. . . . **pineal gland**
. nervous system
. . . central nervous system
. . . . brain
. diencephalon
. **pineal gland**
- RT melatonin
- pinhole cameras**
- DEF Cameras which have no lenses, but consist essentially of a darkened box with a small hole in one side, so that an inverted image of outside objects is projected on the opposite side where it is recorded on photographic film.
- GS optical equipment
. cameras
. . . **pinhole cameras**
photographic equipment
. cameras
. . . **pinhole cameras**
- RT apertures
photography
Pinhole Occulter Facility
pinholes
- Pinhole Occulter Facility**
- GS observatories
. astronomical observatories
. . . solar observatories
. . . . **Pinhole Occulter Facility**
- RT occultation

pinholes

pinhole cameras
pinholes
spaceborne astronomy

pinholes

RT casting
castings
defects
interstices
leakage
pinhole cameras
Pinhole Occluder Facility
porosity

pinnacles

USE **peaks (landforms)**

pinning

SN (LIMITED TO ELECTRONICS)
DEF Sites within a superconducting material that are produced by localizing inclusions, dislocations, voids, etc., which provide a means of resisting flux motion (flux jumps) due to Lorenz forces. SN (limited to electronics).
GS **pinning**
. flux pinning
RT crystal defects
crystal dislocations
current density
magnetic flux
superconductors (materials)

pins

GS fasteners
. **pins**
RT couplings
holders
latches
rivets
∞ spikes
studs (structural members)

pintles

RT pivots
rudders
shafts (machine elements)

pion beams

GS beams (radiation)
. particle beams
. **pion beams**
RT neutral beams
neutron beams

Pioneer 1 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 1 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 1 space probe**
RT Thor Able rocket vehicle

Pioneer 2 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 2 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 2 space probe**

Pioneer 3 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 3 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 3 space probe**
RT Juno 2 launch vehicle

Pioneer 4 lunar probe

USE **Pioneer 4 space probe**

Pioneer 4 space probe

UF *Pioneer 4 lunar probe*
GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 4 space probe**

unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 4 space probe**
RT Juno 2 launch vehicle

Pioneer 5 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 5 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 5 space probe**
RT Thor Able rocket vehicle

Pioneer 6 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 6 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 6 space probe**
RT Delta launch vehicle
Juno 2 launch vehicle

Pioneer 7 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 7 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 7 space probe**
RT Delta launch vehicle
Juno 2 launch vehicle

Pioneer 8 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 8 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 8 space probe**
RT Juno 2 launch vehicle
∞ probes

Pioneer 9 space probe

GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 9 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 9 space probe**
RT ∞ probes

Pioneer 10 space probe

UF *Pioneer F space probe*
GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 10 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 10 space probe**
RT ∞ probes

Pioneer 11 space probe

UF *Pioneer G space probe*
Pioneer Saturn spacecraft
GS interplanetary spacecraft
. Pioneer space probes
. **Pioneer 11 space probe**
unmanned spacecraft
. space probes
. Pioneer space probes
. **Pioneer 11 space probe**

RT ∞ probes

Pioneer 12 space probe

USE **Pioneer Venus spacecraft**

Pioneer F space probe

USE **Pioneer 10 space probe**

Pioneer G space probe

USE **Pioneer 11 space probe**

Pioneer project

GS programs
. NASA programs
. NASA space programs
. **Pioneer project**
. projects
. **Pioneer project**
. space programs
. NASA space programs
. **Pioneer project**
RT lunar probes
Pioneer space probes
space probes

Pioneer Saturn spacecraft

USE **Pioneer 11 space probe**

Pioneer space probes

GS interplanetary spacecraft
. **Pioneer space probes**
. Pioneer 1 space probe
. Pioneer 2 space probe
. Pioneer 3 space probe
. Pioneer 4 space probe
. Pioneer 5 space probe
. Pioneer 6 space probe
. Pioneer 7 space probe
. Pioneer 8 space probe
. Pioneer 9 space probe
. Pioneer 10 space probe
. Pioneer 11 space probe
. Pioneer Venus 2 entry probes
. Pioneer Venus 2 night probe
. Pioneer Venus 2 sounder probe
unmanned spacecraft
. space probes
. **Pioneer space probes**
. Pioneer 1 space probe
. Pioneer 2 space probe
. Pioneer 3 space probe
. Pioneer 4 space probe
. Pioneer 5 space probe
. Pioneer 6 space probe
. Pioneer 7 space probe
. Pioneer 8 space probe
. Pioneer 9 space probe
. Pioneer 10 space probe
. Pioneer 11 space probe
. Pioneer Venus 2 entry probes
. Pioneer Venus 2 night probe
. Pioneer Venus 2 sounder probe
RT Juno 2 launch vehicle
Pioneer project
Pioneer Venus 1 spacecraft
Pioneer Venus 2 spacecraft
Pioneer Venus spacecraft
solar probes

Pioneer Venus 1 spacecraft

DEF This orbiter spacecraft is the first of two launched on a seven month journey to observe the planet Venus, its atmosphere and clouds. It was launched May 20, 1978 and is still operational. Used for Pioneer Venus Orbiter.

UF *Pioneer Venus Orbiter*

GS interplanetary spacecraft
. Pioneer Venus spacecraft
. **Pioneer Venus 1 spacecraft**
unmanned spacecraft
. Pioneer Venus spacecraft
. **Pioneer Venus 1 spacecraft**

RT Pioneer space probes

∞ probes
space probes

Pioneer Venus 2 entry probes

DEF Collective term for the five Pioneer Venus atmospheric probes. They are Pioneer Venus 2 day probe, Pioneer Venus 2 night

probe, Pioneer Venus 2 North probe, Pioneer Venus 2 sounder probe, and Pioneer Venus 2 transporter bus.

GS interplanetary spacecraft
 . Pioneer space probes
 . . **Pioneer Venus 2 entry probes**
 . . . Pioneer Venus 2 night probe
 . . . Pioneer Venus 2 sounder probe
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . **Pioneer Venus 2 entry probes**
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 . Venus probes
 . . Pioneer Venus 2 spacecraft
 . . . **Pioneer Venus 2 entry probes**
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 . unmannned spacecraft
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . **Pioneer Venus 2 entry probes**
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 . space probes
 . . Pioneer space probes
 . . . **Pioneer Venus 2 entry probes**
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 . Venus probes
 . . Pioneer Venus 2 spacecraft
 **Pioneer Venus 2 entry probes**
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 probe

RT ∞ probes

Pioneer Venus 2 Multiprobe spacecraft

USE **Pioneer Venus 2 spacecraft**

Pioneer Venus 2 night probe

GS interplanetary spacecraft
 . Pioneer space probes
 . . Pioneer Venus 2 entry probes
 . . . **Pioneer Venus 2 night probe**
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 night probe**
 . Venus probes
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 night probe**
 . unmannned spacecraft
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 night probe**
 . space probes
 . . Pioneer space probes
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 night probe**
 . Venus probes
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 night probe**

RT ∞ probes

Pioneer Venus 2 sounder probe

GS interplanetary spacecraft
 . Pioneer space probes
 . . Pioneer Venus 2 entry probes
 . . . **Pioneer Venus 2 sounder probe**
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 sounder probe**
 . Venus probes
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 sounder probe**
 . unmannned spacecraft
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 sounder probe**
 . space probes

. . . Pioneer space probes
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 sounder probe**
 . . . Venus probes
 . . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 **Pioneer Venus 2 sounder probe**

Pioneer Venus 2 spacecraft

DEF This multiprobe spacecraft, launched on its Venus mission in August 1978, comprises a Transporter Bus, a sounder probe, and three identical probes (North, night, and day) which separately investigated and photographed the atmosphere, clouds and related phenomena. The multiprobe spacecraft traveled about 354 million kilometers. It entered Venus atmosphere on December 9, 1978 and all probes transmitted data. Used for Pioneer Venus 2 Multiprobe spacecraft.

UF *Pioneer Venus 2 Multiprobe spacecraft*

GS interplanetary spacecraft
 . Pioneer Venus spacecraft
 . . **Pioneer Venus 2 spacecraft**
 . . . Pioneer Venus 2 entry probes
 . . . Pioneer Venus 2 night probe
 . . . Pioneer Venus 2 sounder probe
 . . . Pioneer Venus 2 transporter bus
 . Venus probes
 . . **Pioneer Venus 2 spacecraft**
 . . . Pioneer Venus 2 entry probes
 . . . Pioneer Venus 2 night probe
 . . . Pioneer Venus 2 sounder probe
 . . . Pioneer Venus 2 transporter bus
 . unmannned spacecraft
 . Pioneer Venus spacecraft
 . . **Pioneer Venus 2 spacecraft**
 . . . Pioneer Venus 2 entry probes
 . . . Pioneer Venus 2 night probe
 . . . Pioneer Venus 2 sounder probe
 . . . Pioneer Venus 2 transporter bus
 . space probes
 . . Venus probes
 . . . **Pioneer Venus 2 spacecraft**
 Pioneer Venus 2 entry probes
 Pioneer Venus 2 night probe
 Pioneer Venus 2 sounder probe
 probe

RT Pioneer space probes

∞ probes
 ∞ spacecraft

Pioneer Venus 2 transporter bus

GS interplanetary spacecraft
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . **Pioneer Venus 2 transporter bus**
 . Venus probes
 . . Pioneer Venus 2 spacecraft
 . . . **Pioneer Venus 2 transporter bus**
 . unmannned spacecraft
 . Pioneer Venus spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . **Pioneer Venus 2 transporter bus**
 . space probes
 . . Venus probes
 . . . Pioneer Venus 2 spacecraft
 **Pioneer Venus 2 transporter bus**

RT ∞ probes

Pioneer Venus Orbiter

USE **Pioneer Venus 1 spacecraft**

Pioneer Venus spacecraft

UF *Pioneer 12 space probe*
 GS interplanetary spacecraft
 . **Pioneer Venus spacecraft**
 . . Pioneer Venus 1 spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 . . . Pioneer Venus 2 night probe
 . . . Pioneer Venus 2 sounder probe

. . . Pioneer Venus 2 transporter bus
 . unmannned spacecraft
 . **Pioneer Venus spacecraft**
 . . Pioneer Venus 1 spacecraft
 . . Pioneer Venus 2 spacecraft
 . . . Pioneer Venus 2 entry probes
 . . . Pioneer Venus 2 night probe
 . . . Pioneer Venus 2 sounder probe
 . . . Pioneer Venus 2 transporter bus

RT Pioneer space probes
 ∞ probes
 space probes

pions

GS particles
 . elementary particles
 . . bosons
 . . mesons
 . . . **pions**
 . . . hadrons
 . . . mesons
 . . . **pions**
 . . . nuclear particles
 . . bosons
 . . mesons
 . . . **pions**
 RT baryons
 charged particles
 kaons

pipe flow

UF *Kirchhoff-Helmholtz flow*
 GS fluid flow
 . gas flow
 . . **pipe flow**
 . internal flow
 . . **pipe flow**
 . parallel flow
 . . **pipe flow**
 RT cavity flow
 channel flow
 choked flow
 critical flow
 flow noise
 laminar flow
 liquid flow
 mass flow
 multiphase flow
 open channel flow
 orifice flow
 pipes (tubes)
 pressure gradients
 single-phase flow
 steady flow
 steam flow
 subcritical flow
 supercritical flow
 turbulent flow
 uniform flow
 unsteady flow
 water flow
 water hammer
 water pressure

pipe nozzles

RT exhaust systems
 inlet nozzles
 intake systems
 nozzle geometry
 ∞ nozzles
 openings
 outlets
 tanks (containers)

pipelines

GS **pipelines**
 . sewers
 RT crossings
 ∞ lines
 materials handling
 pipes (tubes)
 pumps
 siphons
 steam flow
 ∞ storage
 storage tanks
 transportation
 waste disposal

pipelining (computers)

water hammer

pipelining (computers)

DEF Processing techniques for improving the capability of computer systems by modeling, sequencing control, resource allocation, etc.

GS data processing

. **pipelining (computers)**

RT associative processing (computers)

data processing equipment

multiprocessing (computers)

multiprogramming

parallel programming

RISC processors

time sharing

vector processing (computers)

Piper aircraft

GS light aircraft

. **Piper aircraft**

. . PA-34 Seneca aircraft

RT ∞ aircraft

general aviation aircraft

piperidine

GS bases (chemical)

. **piperidine**

organic compounds

. cyclic compounds

. . heterocyclic compounds

. . . **piperidine**

RT pyridines

pipes (tubes)

UF *tubing*

GS **pipes (tubes)**

. gas pipes

. U bends

RT ∞ casing

circular tubes

ducts

fluid flow

∞ headers

hoses

∞ hydraulics

internal flow

manifolds

pipe flow

pipelines

risers

siphons

syringes

∞ tubes

pipettes

RT burettes

glassware

laboratory equipment

Pirani gages

GS measuring instruments

. pressure gages

. . vacuum gages

. . . **Pirani gages**

vacuum apparatus

. vacuum gages

. . **Pirani gages**

RT hot-wire flowmeters

ionization gages

Knudsen gages

Mcleod gages

pressure measurement

piston engines

DEF Engines, especially internal combustion engines, in which a piston or pistons moving back and forth work upon a crankshaft or other device to create rotational movement. Used for reciprocating engines.

UF *reciprocating engines*

GS engines

. **piston engines**

. . diesel engines

. . free-piston engines

. . Stirling engines

RT

aircraft engines

automobile engines

external combustion engines

fuel injection

internal combustion engines

pistons

reciprocation

rotary engines

Wankel engines

piston theory

RT compressing

fluid dynamics

pistons

∞ theories

pistons

GS **pistons**

. magnetic pistons

RT combustion chambers

engine parts

free-piston engines

internal combustion engines

piston engines

piston theory

plungers

reciprocation

PIT (rocket engines)

(added April 2001)

USE **pulsed inductive thrusters**

∞ **pitch**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *tone*

RT frequencies

pitch (inclination)

pitch (material)

pitch (inclination)

DEF Of a vehicle, an angular displacement about an axis parallel to the lateral axis of the vehicle. Used for damping in pitch, phugoid oscillations, and pitch angles.

UF *damping in pitch*

phugoid oscillations

pitch angles

GS attitude (inclination)

. **pitch (inclination)**

RT angles (geometry)

heaving

longitudinal control

longitudinal stability

∞ motion

∞ pitch

roll

rotation

slopes

stability augmentation

variable pitch propellers

yaw

pitch (material)

DEF The residues from the destructive distillation of tars.

RT asphalt

oils

∞ pitch

tars

pitch angles

USE **pitch (inclination)**

pitch attitude control

USE **longitudinal control**

pitching moments

GS moments

. stability derivatives

. . **pitching moments**

RT aerodynamic coefficients

longitudinal stability

moments of inertia

rolling moments

torque

yawing moments

pitot tubes

DEF Open ended tubes or tube arrangements which, when pointed upstream, may be used to measure the stagnation pressure of the fluid for subsonic flow; or the stagnation pressure behind the tube's normal shock wave for

supersonic flow. (Pronounced pee-toe. After Henri Pitot, 1695-1771, French scientist.) Used for Preston tubes.

UF *Preston tubes*

RT flow measurement

flowmeters

pressure measurement

protuberances

speed indicators

static pressure

∞ tubes

velocity measurement

Venturi tubes

∞ **pits**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT pits (excavations)

pitting

pits (excavations)

RT boreholes

excavation

mines (excavations)

∞ pits

sumps

pitting

RT chemical attack

chipping

corrosion

corrosion resistance

corrosion tests

degradation

erosion

erosive burning

etching

hot corrosion

metal-water reactions

∞ pits

scoring

pituitary gland

UF *hypophysis*

GS anatomy

. glands (anatomy)

. . endocrine glands

. . . **pituitary gland**

RT

brain

hypothalamus

vasopressins

pituitary hormones

UF *growth hormone*

GS secretions

. endocrine secretions

. . hormones

. . . **pituitary hormones**

. . . . adrenocorticotropin (ACTH)

. . . . vasopressins

PIV (velocimetry)

USE **particle image velocimetry**

pivoted wing aircraft

USE **tilt wing aircraft**

pivots

DEF The paths followed by a point in a diameter of a circle as the circle rolls along in a straight line. Used for trochoids.

UF *trochoids*

RT bearings

gimbals

hinges

pintles

shafts (machine elements)

supports

swivels

PIX

USE **plasma interaction experiment**

pixels

DEF Shortened term for 'picture elements.' They are image resolution elements in vidicon-type detectors. Used for picture elements.

UF *picture elements*

RT aerial photography

electrophotometry

- imaging techniques
 - photographs
 - photography
 - remote sensing
 - satellite imagery
 - spectral mixture analysis
 - vidicons
- PL/1**
- GS languages
 - . programming languages
 - . . **PL/1**
 - RT Cobol
 - compilers
 - computer programming
 - FORTTRAN
 - machine oriented languages
- plages (faculae)*
- USE **faculae**
- plagioclase**
(added August 2004)
- DEF A family of feldspar minerals with formulas ranging from pure sodium aluminum silicate (albite) to pure calcium aluminum silicate (anorthite).
- GS aluminum compounds
 - . aluminum silicates
 - . . feldspars
 - . . . **plagioclase**
 - minerals
 - . feldspars
 - . . **plagioclase**
 - silicon compounds
 - . silicates
 - . . aluminum silicates
 - . . . feldspars
 - **plagioclase**
 - RT aluminum oxides
 - calcium silicates
 - sodium silicates
- plains**
- DEF Any flat areas, large or small, at a low elevation; specifically, extensive regions of comparatively smooth and level or gently undulating land, having few or no prominent surface irregularities. Plains sometime have a considerable slope, and usually at a low elevation with reference to surrounding areas. Plains may be either forested or bare of trees, and may be formed by deposition or by erosion.
- GS land
 - . **plains**
 - . . coastal plains
 - . . flood plains
 - . . Llanos Orientales (Colombia)
 - . . pampas
 - . . playas
 - . . tundra
 - landforms
 - . **plains**
 - . . coastal plains
 - . . flood plains
 - . . Llanos Orientales (Colombia)
 - . . pampas
 - . . playas
 - . . tundra
 - RT farmlands
 - flats (landforms)
 - geography
 - grasslands
 - Great Plains Corridor (North America)
 - plateaus
 - steppes
 - topography
 - wilderness
- plan position indicators**
- DEF Display devices on which target blips are shown in plan position, thus forming a map-like display, with radial distance from the center representing range and with the angle of the radius vector representing azimuth angle. Used for PPI (position indicators).
- UF *PPI (position indicators)*
 - GS display devices
 - . position indicators
 - . . **plan position indicators**
- . radarscopes
 - . . **plan position indicators**
 - measuring instruments
 - . indicating instruments
 - . . position indicators
 - . . . **plan position indicators**
 - radar equipment
 - . radarscopes
 - . . **plan position indicators**
- planar structures**
- RT flat layers
 - flat plates
 - flat surfaces
 - flatness
 - ∞ structures
 - surface properties
- Plancks constant**
- GS constants
 - . **Plancks constant**
 - RT black body radiation
 - de Broglie wavelengths
 - electromagnetic radiation
 - nuclear magnetic resonance
 - photons
 - quantum theory
 - thermal radiation
 - Wentzel-Kramer-Brillouin method
- plane strain**
- DEF A deformation of a body in which the displacement of all points in the body are parallel to a given plane, and the displacement values are not dependent on the distance perpendicular to the plane.
- RT crack propagation
 - elastic deformation
 - fracture mechanics
 - plane stress
 - plastic deformation
 - stress intensity factors
 - stress-strain relationships
- plane stress**
- GS stresses
 - . **plane stress**
 - RT loads (forces)
 - plane strain
 - stress concentration
- plane waves**
- GS longitudinal waves
 - . **plane waves**
 - RT beams (radiation)
 - cylindrical waves
 - elastic waves
 - evanescent waves
 - normal shock waves
 - ∞ radiation
 - shock waves
 - solitary waves
 - sound waves
 - spatial filtering
 - spherical waves
 - transverse waves
 - traveling waves
 - ∞ waves
- planet detection**
(added January 2003)
- DEF Detection of extrasolar planets using any of a number of direct and indirect observation techniques including astrometry, transit photometry, Doppler spectroscopy, and ground and space-based interferometry.
- UF *exoplanet detection*
 - extrasolar planet detection*
 - GS detection
 - . **planet detection**
 - RT astrometry
 - astronomical interferometry
 - astronomical photometry
 - extrasolar planets
 - Kepler mission
 - planetary systems
- planet ephemerides**
- GS ephemerides
 - . **planet ephemerides**
- RT geocentric coordinates
 - planets
- planet origins*
- USE **planetary evolution**
- planet X*
(added June 1998)
- USE **hypothetical planets**
- planetariums**
- RT astronomical models
 - display devices
- planetary aerial vehicles**
(added November 2006)
- DEF Aircraft capable of flight in planetary and satellite atmospheres, and configured to support surface and atmospheric exploration missions.
- UF *planetary aircraft*
 - RT ∞ aircraft
 - pilotless aircraft
 - space exploration
- planetary aircraft*
(added November 2006)
- USE **planetary aerial vehicles**
- planetary atmospheres**
- SN (EXCLUDES EARTH ATMOSPHERE)
 - GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . **planetary atmospheres**
 - helium hydrogen atmospheres
 - Jupiter atmosphere
 - Mars atmosphere
 - Mercury atmosphere
 - Neptune atmosphere
 - planetary ionospheres
 - Pluto atmosphere
 - Saturn atmosphere
 - Uranus atmosphere
 - Venus atmosphere
 - Venus clouds
 - RT ∞ absorption
 - ∞ atmospheres
 - atmospheric attenuation
 - atmospheric composition
 - atmospheric density
 - atmospheric energy sources
 - atmospheric temperature
 - Earth analogs
 - Earth atmosphere
 - ionopause
 - Juno mission
 - lunar atmosphere
 - nongray atmospheres
 - Nozomi Mars Orbiter
 - organic solids
 - planetary meteorology
 - planetary rings
 - primitive Earth atmosphere
 - radiative transfer
 - radio occultation
 - satellite atmospheres
 - Saturn rings
 - solar planetary interactions
 - terraforming
- planetary bases**
- GS space bases
 - . **planetary bases**
 - . . Mars bases
 - RT extraterrestrial resources
 - in situ resource utilization
 - space exploration
 - stations
- planetary boundary layer**
- DEF The layer of the atmosphere from the Earth's surface to the geostrophic wind level, including the surface boundary layer and the Ekman layer.
- GS boundary layers
 - . **planetary boundary layer**
 - RT atmospheric boundary layer

planetary composition

core-mantle boundary

planetary composition

GS composition (property)
. **planetary composition**
RT Earth planetary structure
extraterrestrial water
gas giant planets
Juno mission
Jupiter rings
Saturn rings
siderophile elements
space exploration
structural properties (geology)

planetary cores

DEF The centers of planets.
GS cores
. **planetary cores**
. . Earth core
RT core-mantle boundary
Juno mission
lunar core
planets
stellar cores

planetary craters

DEF Collective term for craters on any of the planetary surfaces.
GS craters
. **planetary craters**
. . Mars craters
RT Earth (planet)
impact damage
Mars (planet)
Mars surface
Mercury (planet)
Mercury surface
meteorite craters
planetary geology
planets
Venus (planet)
Venus surface

planetary crusts

DEF The outermost layers of planets. The planetary crusts are on top of the mantle and are modified by various processes of weathering, sedimentation, metamorphosis, volcanism, and bombardment by meteorites.
GS crusts
. **planetary crusts**
. . Earth crust
RT lunar crust
planetary geology
planetary mantles

planetary cryospheres

(added June 1996)
RT ∞ cryospheres
ice environments
Mars (planet)
permafrost
planetary meteorology
polar caps

planetary entry

USE **atmospheric entry**

planetary environments

SN (EXCLUDES EARTH)
GS environments
. extraterrestrial environments
. . **planetary environments**
. . . Mars environment
. . . . Mars atmosphere
. . . planetary atmospheres
. . . . helium hydrogen atmospheres
. . . . Jupiter atmosphere
. . . . Mars atmosphere
. . . . Mercury atmosphere
. . . . Neptune atmosphere
. . . . planetary ionospheres
. . . . Pluto atmosphere
. . . . Saturn atmosphere
. . . . Uranus atmosphere
. . . . Venus atmosphere
. . . . Venus clouds
. . . planetary magnetospheres
. . . planetary magnetotails

RT aerospace environments
bioastronautics
∞ cryospheres
exobiology
life support systems
long duration space flight
lunar environment
planets
protoplanets
terraforming
terrestrial planets
thermal environments

planetary evolution

UF *planet origins*
GS evolution (development)
. **planetary evolution**
RT cosmology
Juno mission
planetary geology
protoplanetary disks
protoplanets
solar nebula
solar system evolution
stellar evolution

planetary exploration

USE **space exploration**

planetary explorer

USE **outer planets explorers**

planetary geology

DEF Study or science of a planet, its history, and its life as recorded in the rocks. Includes the study of the surface features, the geometry of rock formations, weathering and erosion, and sedimentation.
GS geology
. **planetary geology**
. . Mars volcanoes
RT Earth analogs
lunar geology
Mars Express
Mars Pathfinder
MESSENGER (spacecraft)
planetary craters
planetary crusts
planetary evolution
planetary structure
planetary surfaces
planetology
planets
remote sensing
solar system
space exploration

planetary gravitation

GS gravitation
. **planetary gravitation**
RT escape velocity
lunar gravitation

planetary ionospheres

SN (EXCLUDES EARTH IONOSPHERE)
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary atmospheres
. . . . **planetary ionospheres**
RT ∞ atmospheres
∞ ionospheres
Jupiter atmosphere
magnetosphere-ionosphere coupling
Mars atmosphere
Neptune atmosphere
Saturn atmosphere
Uranus atmosphere
Venus atmosphere

planetary landing

SN (EXCLUDES LANDING ON THE PLANET EARTH)
GS landing
. spacecraft landing
. . **planetary landing**
. . . Mars landing
RT crash landing
glide landings
hard landing
horizontal spacecraft landing

interplanetary flight
lunar landing
orbital mechanics
roving vehicles
soft landing
water landing

planetary limb

DEF In astronomy, the circular outer edge of a planet.
GS **planetary limb**
. Earth limb
RT ∞ limbs
lunar limb
solar limb

planetary magnetic fields

GS magnetic fields
. **planetary magnetic fields**
RT geomagnetic tail
geomagnetism
Juno mission
MESSENGER (spacecraft)
planetary magnetospheres
planetary magnetotails
polar cusps
solar planetary interactions

planetary magnetospheres

SN (EXCLUDES EARTH MAGNETOSPHERE)
GS environments
. extraterrestrial environments
. . planetary environments
. . . **planetary magnetospheres**
. . . . planetary magnetotails
RT Earth magnetosphere
∞ magnetospheres
planetary magnetic fields
solar planetary interactions

planetary magnetotails

(added March 1990)
SN (EXCLUDES EARTH'S MAGNETOTAIL; FOR EARTH USE 'GEOMAGNETIC TAIL')
DEF The portion of the magnetosphere extending from a planet in the direction away from the sun for a variable distance of the order of 1,000 planet radii.
GS environments
. extraterrestrial environments
. . planetary environments
. . . planetary magnetospheres
. . . . **planetary magnetotails**
RT exosphere
geomagnetic tail
magnetopause
∞ magnetotails
planetary magnetic fields
solar planetary interactions
solar wind

planetary mantles

GS **planetary mantles**
. Earth mantle
RT core-mantle boundary
crusts
lithosphere
lunar mantle
planetary crusts

planetary mapping

GS mapping
. **planetary mapping**
RT astrography
ground penetrating radar
Heat Capacity Mapping Mission
Mars Reconnaissance Orbiter
thermal mapping

planetary mass

GS mass
. **planetary mass**
RT protoplanets

planetary meteorology

GS meteorology
. **planetary meteorology**
RT atmospheric circulation
atmospheric physics
Jupiter atmosphere
Mars atmosphere

Mercury atmosphere
planetary atmospheres
planetary cryospheres
planetology
planets
Venus atmosphere

planetary motion

USE **solar orbits**

planetary nebulae

GS celestial bodies
. nebulae
. . **planetary nebulae**
RT Orion nebula

planetary oceans

(added June 2001)

USE **extraterrestrial oceans**

planetary orbits

GS orbits
. **planetary orbits**
RT Amor asteroid
Apollo asteroids
Charon
circular orbits
Earth orbits
elliptical orbits
equatorial orbits
hypothetical planets
interplanetary trajectories
orbital resonances (celestial mechanics)
parking orbits
polar orbits
retrograde orbits
satellite orbits
spacecraft orbits
swingby technique
transfer orbits
twenty-four hour orbits
Viking orbiter spacecraft

planetary protection

(added August 2001)

DEF Technological and legal measures taken to prevent biological cross-contamination between Earth and other planets as a result of solar system exploration missions. Also includes safeguards imposed on the handling, distribution, and analysis of material samples returned to Earth.

GS protection
. **planetary protection**
. . planetary quarantine
RT contamination
decontamination
environment protection
exobiology
extraterrestrial life
Mars sample return missions
space law
spacecraft sterilization

planetary quakes

RT earthquakes
geodynamics
moonquakes
seismic waves
shock waves

planetary quarantine

GS protection
. planetary protection
. . **planetary quarantine**
RT spacecraft sterilization

planetary radiation

SN (EXCLUDES TERRESTRIAL RADIATION)
GS electromagnetic radiation
. **planetary radiation**
extraterrestrial radiation
. **planetary radiation**
RT albedo
decimeter waves
infrared radiation
light (visible radiation)
∞ radiation
radio waves

Saturn atmosphere
terrestrial radiation
thermal radiation
VLF emission recorders

planetary rings

GS celestial bodies
. **planetary rings**
. . Jupiter rings
. . Saturn rings
. . Uranus rings
RT dusty plasmas
moonlets
planetary atmospheres
planets
∞ rings

planetary rotation

GS gyration
. rotation
. . **planetary rotation**
RT astrophysics
planetology
rotating bodies
stellar rotation

planetary satellites

USE **natural satellites**

planetary space flight

USE **interplanetary flight**

planetary spacecraft

USE **interplanetary spacecraft**

planetary structure

RT asthenosphere
chemical composition
Earth planetary structure
GRAIL mission
Juno mission
Jupiter rings
lunar mantle
planetary geology
planetology
Uranus rings

planetary surfaces

GS **planetary surfaces**
. Mars surface
. Mercury surface
. Venus surface
RT Earth surface
extraterrestrial oceans
Jupiter red spot
Mars roving vehicles
Marsokhod Mars roving vehicles
planetary geology
roving vehicles
Saturn rings
surface properties
∞ surfaces
topography

planetary systems

DEF Systems consisting of a star and the planets and other objects in orbit around it.

GS **planetary systems**
. solar system
RT extrasolar planets
Kepler mission
orbital resonances (celestial mechanics)
planet detection
solar system evolution
∞ systems

planetary temperature

GS temperature
. **planetary temperature**
RT atmospheric temperature
Saturn rings

planetary waves

DEF Waves on uniform currents in two-dimensional nondivergent fluid systems rotating with varying angular speeds about the local vertical (beta plane). These waves represent a special case of barotropic disturbance, conserving absolute vorticity. As applied to atmospheric

flow, the planetary waves takes into account the variability of the Coriolis parameter while assuming the motion to be two-dimensional. Used for long waves (meteorology) and Rossby waves.

UF *long waves (meteorology)*
Rossby waves
GS barotropism
. **planetary waves**
internal waves
. **planetary waves**
tropospheric waves
. **planetary waves**
RT atmospheric circulation
barotropic flow
Coriolis effect
fluid flow
gravity waves
Kelvin waves
Rossby regimes
rotating fluids
rotating liquids
vortices
∞ waves
zonal flow (meteorology)

Planet-B spacecraft

(added August 1998)

USE **Nozomi Mars Orbiter**

planetesimals

USE **protoplanets**

planetocentric coordinates

GS coordinates
. **planetocentric coordinates**
. . geocentric coordinates
RT astronomical coordinates
celestial reference systems
spherical coordinates

planetology

RT Jupiter rings
planetary geology
planetary meteorology
planetary rotation
planetary structure
Saturn rings
terrestrial planets
trans-Neptunian objects

planets

DEF Celestial bodies of the solar system, revolving around the sun in nearly circular orbits, or similar bodies revolving around stars. The larger of such bodies are sometimes called principal planets to distinguish them from asteroids, planetoids, or minor planets, which are comparatively small. The larger planets are accompanied by satellites such as the moon. Inferior planets have orbits smaller than that of the Earth; superior planets have orbits larger than that of the Earth. The four planets nearest the sun are called inner planets; the others, outer planets. The four largest planets are called major planets. The four planets commonly used for celestial observations are called navigational planets. The word planet is of Greek origin, meaning, literally, wanderer, applied because the planets appear to move relative to the stars.

GS celestial bodies
. **planets**
. . extrasolar planets
. . gas giant planets
. . . Jupiter (planet)
. . . Neptune (planet)
. . . Saturn (planet)
. . . Uranus (planet)
. . terrestrial planets
. . . Earth (planet)
. . . Mars (planet)
. . . Mercury (planet)
. . . Venus (planet)
. . hypothetical planets
RT celestial mechanics
Chiron
ecliptic
Jupiter red spot
natural satellites
planet ephemerides
planetary cores

planforms

planetary craters
planetary environments
planetary geology
planetary meteorology
planetary rings
Pluto (planet)
protoplanetary disks
protoplanets
Saturn rings
solar system
solar system evolution
sun

planforms

GS **planforms**
. caret wings
. rectangular planforms
. . . rectangular panels
. . . rectangular plates
. . . rectangular wings
. sweptback tail surfaces
. trapezoidal tail surfaces
. wing planforms
. . . channel wings
. . . infinite span wings
. . . swept forward wings
. . . trapezoidal wings
. . . sweptback wings
. . . . arrow wings
. . . . delta wings
. . . . trapezoidal wings
. . . . variable sweep wings
RT ∞ bodies
∞ cross sections
geometry
∞ profiles
shapes
∞ surface geometry

planigraphy

USE **tomography**

planing

SN (EXCLUDES MOTION INVOLVING DYNAMIC SUPPORTING FORCES)
GS cutting
. **planing**
RT grinding (material removal)
machining
metal cutting
milling (machining)
slicing
smoothing

planispheres

GS maps
. astronomical maps
. . . **planispheres**
RT astronomical coordinates
celestial sphere
constellations
polar coordinates

plankton

DEF The aggregate of passively floating or drifting plant and animal organisms which provide the major source of sustenance for animal life in the aquatic ecosystem. Used for plankton bloom.

UF *plankton bloom*
GS **plankton**
. phytoplankton
. zooplankton
RT algae
animals
plants (botany)
red tide
thermal pollution

plankton bloom

USE **plankton**

planning

GS **planning**
. airport planning
. management planning
. . . production planning
. . . project planning
. . . mission planning
. . . regional planning

. . urban planning
. task planning (robotics)
. trajectory planning
RT budgeting
critical path method
Delphi method (forecasting)
∞ design
forecasting
∞ missions
optimization
pattern method (forecasting)
probe method (forecasting)
production engineering
profile method (forecasting)
progress
sequencing
slicing
Starsite program
training analysis
urban development

planotrons

UF *amplitrons (trademark)*
GS amplifiers
. microwave amplifiers
. . . **planotrons**
electron tubes
. vacuum tubes
. . . microwave tubes
. . . . **planotrons**
microwave equipment
. microwave amplifiers
. . . **planotrons**
. . . microwave tubes
. . . . **planotrons**
RT camera tubes
electric arcs
magnetrons

∞ plans

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT drawings
flight plans
layouts
mission planning
payload integration plan
urban development

plant design

SN (EXCLUDES BIOLOGICAL PLANTS)
DEF Encompasses all design consideration of physical plants, i.e., airports, industrial plants, test facilities, etc. Structural is just one aspect of this design. SN (excludes biological plants)
RT architecture
∞ design
structural design

plant diseases

UF *diseased vegetation*
GS **plant diseases**
. blight
RT agriculture
crop growth
crop identification
crop vigor
diseases
fungi
plant physiology
plant stress
plants (botany)
rust fungi

plant growth regulators

(added August 2004)
DEF A substance which affects the growth and other functions of a plant. These include the hormones auxins, gibberellins, and cytokinins, which are produced naturally in plants, as well as ethylene.
GS **plant growth regulators**
. abscisic acid
. auxins
RT ethylene
indoleacetic acids
plant physiology

plants (botany)

plant physiology

(added August 2004)
DEF Physiological functions characteristic of plants.
GS physiology
. **plant physiology**
RT abscisic acid
auxins
germination
gravitropism
leaves
photosynthesis
phototropism
phytochrome
plant diseases
plant growth regulators
plant roots
plant stress
plants (botany)
respiration
seedlings (botany)
transpiration
vegetation growth

plant roots

RT auxins
bulbs
plant physiology
plants (botany)
∞ roots
seedlings (botany)
vegetation growth

plant stress

DEF Stimulus or a series of stimuli of such magnitude as to disrupt the growth and/or survival of plants.
GS stress (biology)
. **plant stress**
RT aerial photography
agriculture
crop growth
crop vigor
Earth Resources Program
plant diseases
plant physiology
remote sensing
soil moisture
spectral reflectance
vegetation growth

plantar tissues

GS tissues (biology)
. **plantar tissues**

planting

RT agriculture
∞ crops
cultivation
farm crops
farmlands
fertilizers
plants (botany)
plowing
plows
seeds
silviculture
soils
tractors
vegetables

plants (botany)

UF *flora*
GS **plants (botany)**
. alfalfa
. algae
. . . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
. . . Chlorella
. . . Dunaliella
. . . porphyra
. . . scenedesmus
. . . aquatic plants
. . . phytoplankton
. barley
. brush (botany)

. . chaparral
 . Bryophytes
 . corn
 . cotton
 . fungi
 . . Aspergillus
 . . Coccomyces
 . . gibberellins
 . . neurospora
 . . rhizopus
 . . rust fungi
 . . saccharomyces
 . . yeast
 . grasses
 . . hay
 . . reeds (plants)
 . . sea grasses
 . . sorghum
 . guayule
 . leguminous plants
 . . soybeans
 . lichens
 . millet
 . oats
 . photophilic plants
 . phreatophytes
 . potatoes
 . rice
 . saprophytes
 . spinach
 . sugar beets
 . sugar cane
 . sunflowers
 . thermophilic plants
 . . blue green algae
 . . . anabaena
 . . . Microcystis
 . . . Nostoc
 . tobacco
 . tradescantia
 . tragacanth
 . trees (plants)
 . . citrus trees
 . . conifers
 . . deciduous trees
 . genetically modified plants
 . seedlings (botany)
 RT abscisic acid
 agriculture
 angiosperms
 animals
 auxins
 biochemical oxygen demand
 biogeochemistry
 biomass
 blight
 botany
 canopies (vegetation)
 carbon cycle
 chlorophylls
 cortexes (botany)
 crop growth
 crop vigor
 defoliants
 defoliation
 Earth resources
 environments
 farm crops
 foliage
 food chain
 forests
 frost damage
 geobotany
 geotropism
 gravitropism
 greenhouses
 halophiles
 herbicides
 heterotrophs
 hydroponics
 infestation
 lacunas
 leaves
 microorganisms
 microspores
 mitra
 orchards
 organisms
 petals

phototropism
 phytochrome
 phytotrons
 plankton
 plant diseases
 plant growth regulators
 plant physiology
 plant roots
 planting
 plastids
 plowing
 pollen
 rain forests
 seeds
 spores
 stems
 utricle
 vegetation
 viability
 vineyards
 wood

plants (industries)
 USE **industrial plants**

plasma acceleration
 UF *magnetohydrodynamic acceleration*
 GS rates (per time)
 . acceleration (physics)
 . . **plasma acceleration**
 RT ∞ acceleration
 magnetic nozzles
 particle acceleration
 plasmas (physics)
 wave propagation
 wave-particle interactions

plasma accelerators
 GS **plasma accelerators**
 . alpha plasma devices
 . coaxial plasma accelerators
 . Cyclops plasma accelerator
 RT ∞ accelerators
 electromagnetic acceleration
 ion injection
 magnetic annular arc
 magnetohydrodynamic generators
 magnetoplasma dynamic thrusters
 plasmas (physics)

plasma antennas
 DEF An air plasma made by ionizing the atmosphere which acts as the conducting element of an RF antenna.
 GS antennas
 . **plasma antennas**
 RT antenna design
 antenna radiation patterns
 plasma cylinders
 satellite communication
 spacecraft communication

plasma arc cutting
 DEF Use of plasma torches for cutting hard materials at extremely high temperatures.
 RT metal cutting
 metal working
 plasma arc welding
 plasma torches
 plasmas (physics)

plasma arc spraying
 USE **arc spraying**

plasma arc welding
 GS welding
 . fusion welding
 . . electric welding
 . . . arc welding
 **plasma arc welding**
 RT plasma arc cutting
 plasma torches
 plasmas (physics)

plasma arcs
 USE **plasma jets**

plasma bubbles
 DEF Pockets of very low electron density in the equatorial F region of the ionosphere in

which the plasma density is lower than the ambient density.
 RT F region
 plasma density

plasma chemistry
 RT ∞ chemistry
 nuclear chemistry
 plasmas (physics)

plasma chromatography
 USE **ion mobility spectroscopy**

plasma clouds
 DEF Specifically, a mass of ionized gas flowing out of the sun.
 GS particles
 . charged particles
 . . **plasma clouds**
 . . . magnetic clouds
 RT chemical clouds
 ∞ clouds
 cosmic plasma
 dusty plasmas
 Earth magnetosphere
 geomagnetic hollow
 hydrogen clouds
 interplanetary medium
 ion sheaths
 plasmopause
 plasmas (physics)

plasma composition
 GS composition (property)
 . **plasma composition**
 RT atom concentration
 dusty plasmas
 gas composition
 ion motion
 ionospheric composition
 nonequilibrium plasmas
 nonuniform plasmas
 plasmas (physics)
 Thomas-Fermi model
 uranium plasmas

plasma compression
 DEF Decrease in volume and consequent increase in density of a plasma usually by the application of an intense magnetic field.
 GS compressing
 . **plasma compression**
 RT controlled fusion
 dense plasmas
 inertial fusion (reactor)
 magnetic effects
 magnetic field configurations
 pinch effect
 plasma focus
 plasma pressure
 plasmas (physics)
 strongly coupled plasmas
 theta pinch
 tokamak devices
 zeta pinch

plasma conductivity
 GS electrical properties
 . electrical resistivity
 . . **plasma conductivity**
 transport properties
 . electrical resistivity
 . . **plasma conductivity**
 RT collisional plasmas
 ∞ conductivity
 ionospheric conductivity
 magnetohydrodynamic stability
 plasmas (physics)
 strongly coupled plasmas

plasma confinement
 USE **plasma control**

plasma control
 UF *plasma confinement*
 RT ballooning modes
 beta factor
 bumpy toruses
 confinement
 ∞ control

plasma cooling

crossed field guns
crossed fields
divertors (fusion reactors)
electron-ion recombination
elliptical plasmas
helical inducers
helical windings
heliotrons
limiters (fusion reactors)
magnetic annular arc
magnetic compression
magnetic field configurations
magnetic mirrors
magnetically trapped particles
mirror fusion
pinch effect
plasmas (physics)
reverse field pinch
rigid rotors (plasma physics)
screw pinch
spheromaks
stellarators
tandem mirrors
thermal barriers (plasma control)
tokamak devices
toroidal plasmas
transformers
TRAP program
trapped magnetic fields
zeta pinch

plasma cooling

DEF Temperature control of plasmas in controlled fusion operations.
GS cooling
. **plasma cooling**
RT controlled fusion
magnetohydrodynamic stability
plasmas (physics)
temperature control

plasma core reactors

DEF Nuclear reactors utilizing fissionable plasmas (such as uranium fluoride) for the fuel.
GS nuclear reactors
. **plasma core reactors**
RT critical mass
nuclear power plants
nuclear research
plasmas (physics)
radioactive wastes
reactor cores
 ∞ reactors
reflectors
waste disposal

plasma currents

DEF Electric currents induced in plasmas by injection of fast ion beams or some other means.
GS electric current
. **plasma currents**
RT beam currents
controlled fusion
eddy currents
electric discharges
electrical resistivity
field aligned currents
high current
ionospheric currents
line current
low currents
magnetohydrodynamics
plasma-particle interactions
plasmas (physics)
ring currents
spheromaks
toroidal plasmas

plasma cylinders

GS **plasma cylinders**
. cylindrical plasmas
RT ∞ cylinders
cylindrical bodies
cylindrical shells
plasma antennas
plasmaguides

plasmas (physics)

plasma decay

GS decay
. **plasma decay**
RT afterglows
electromagnetic wave transmission
helium afterglow
magnetohydrodynamic stability
plasmas (physics)

plasma density

GS density (number/volume)
. particle density (concentration)
. . **plasma density**
RT atmospheric density
atom concentration
cavitons
collisional plasmas
electron density (concentration)
electron-hole drops
ion density (concentration)
magnetoplasmadynamics
magnetospheric electron density
magnetospheric ion density
magnetospheric proton density
plasma bubbles
plasma drift
plasma pressure
plasmas (physics)
proton density (concentration)
space density
space plasmas
strongly coupled plasmas

plasma diagnostics

RT Fabry-Perot interferometers
laser-induced breakdown spectroscopy
microwave interferometers
OPEN Project
plasmas (physics)
resonance probes
space plasmas

plasma diffusion

UF *plasma dispersion*
GS diffusion
. **plasma diffusion**
RT ambipolar diffusion
colloidal generators
diffusion waves
electron diffusion
gaseous self-diffusion
ion motion
ionic diffusion
plasmas (physics)

plasma diodes

GS electronic equipment
. diodes
. . **plasma diodes**
RT cesium diodes
plasmas (physics)

plasma discharges

USE **plasma jets**

plasma dispersion

USE **plasma diffusion**

plasma display devices

DEF Digital matrix flat panel devices in which small gas discharge plasma cells are used as light emitting sources.
GS display devices
. **plasma display devices**
RT ∞ devices
gas ionization
glow discharges
light sources
plasmas (physics)

plasma drift

DEF Movement in the ionosphere of ion and plasma concentration by electric field variations in the upper atmosphere.
RT magnetohydrodynamic stability
plasma density
plasma waves

plasmas (physics)

plasma dynamics

UF *snowplow effect*
RT ∞ dynamics
hydrodynamic equations
Langmuir turbulence
magnetohydrodynamics
meshfree methods
plasmas (physics)

plasma electrodes

GS electrodes
. **plasma electrodes**
RT hot-wire flowmeters
plasmaguides
plasmatrons
zeta pinch

plasma engines

DEF Reaction engines using magnetically accelerated plasma as a propellant. Plasma engines are types of electrical engines.
UF *electromagnetic rocket engines*
GS engines
. rocket engines
. . electric rocket engines
. . . **plasma engines**
. . . . magnetoplasmadynamic thrusters
. . . . pulsed inductive thrusters
. . . . pulsed plasma thrusters
. . . . two stage plasma engines
. . . . VASIMR (propulsion system)
RT arc jet engines
coaxial plasma accelerators
electrothermal engines
Hall thrusters
high temperature propellants
ion engines
magnetic nozzles
mercury ion engines
plasma power sources
plasmas (physics)
pulsed jet engines
resistojet engines
RIT engines

plasma equilibrium

DEF Condition of plasma in which the constituent particles or fluid elements are unaccelerated or collectively at rest in steady flow.
RT ballooning modes
beta factor
confinement
electron-hole drops
 ∞ equilibrium
equilibrium flow
magnetic mirrors
magnetohydrodynamic stability
plasmas (physics)
strongly coupled plasmas

plasma etching

DEF Removal of material by use of a focused plasma beam.
GS etching
. **plasma etching**
RT plasmas (physics)
sputtering

plasma flow

USE **magnetohydrodynamic flow**

plasma flux measurement

RT interferometry
magnetohydrodynamic flow
microwave plasma probes
plasmas (physics)
rotating plasmas
speckle interferometry

plasma focus

DEF A highly compressed plasma.
GS foci
. **plasma focus**
particles
. charged particles
. . energetic particles
. . . plasmas (physics)

- dense plasmas
- **plasma focus**
- corpuscular radiation
- energetic particles
- plasmas (physics)
- dense plasmas
- **plasma focus**
- RT nuclear fusion
- plasma compression
- strongly coupled plasmas
- zeta pinch

- plasma frequencies**
- GS frequencies
- . **plasma frequencies**
- RT electron density (concentration)
- electrostatic probes
- free electrons
- plasmas (physics)
- plasmions

- plasma generation*
- USE **plasma generators**

- plasma generators**
- SN (EXCLUDES MAGNETOHYDRODYNAMIC OR THERMONUCLEAR GENERATORS OF ELECTRIC POWER)
- DEF Machines, such as electric arc chambers, that will generate very high heat fluxes to convert neutral gases into plasmas. Devices which use the interaction of plasmas and electrical field to generate currents. Used for plasma generation.
- UF *plasma generation*
- GS **plasma generators**
- . plasma guns
- . plasmatrons
- . . duoplasmatrons
- . Scylla
- . tokamak devices
- . . Joint European Torus
- RT arc chambers
- arc generators
- closed cycles
- colloidal generators
- electric arcs
- exploding wires
- ∞ generators
- Hall generators
- high temperature research
- ion injection
- ion sources
- magnetohydrodynamic generators
- Penning discharge
- plasmas (physics)
- pulse generators
- thermal plasmas
- thermonuclear power generation
- wind tunnel drives

- plasma guns**
- GS plasma generators
- . **plasma guns**
- RT coaxial plasma accelerators
- crossed field guns
- electron guns
- ∞ guns
- magnetic lenses
- plasmas (physics)
- plasmatrons

- plasma heating**
- GS heating
- . **plasma heating**
- . . electron cyclotron heating
- RT arc heating
- beam injection
- beta factor
- bumpy toruses
- electron cyclotron resonance
- energy transfer
- gas heating
- induction heating
- ionospheric heating
- kinetic heating
- Langmuir turbulence
- magnetic pumping
- magnetohydrodynamic shear heating
- plasma temperature

- plasmas (physics)
- radio frequency heating
- relativistic electron beams
- shock heating
- VASIMR (propulsion system)

- plasma instability*
- USE **magnetohydrodynamic stability**

- plasma interaction experiment**
- DEF A NASA Lewis experiment, the first of which was launched piggyback with Landsat 3 in 1978 to study the charged particle space plasma environment and its effect on spacecraft surfaces operating at high voltages. The experiment lasted several hours as planned. The second was launched piggyback with Iras in 1983. Used for PIX.
- UF *PIX*
- GS payloads
- . Space Shuttle payloads
- . . **plasma interaction experiment**
- . . . spaceborne experiments
- . . . **plasma interaction experiment**
- RT ∞ interactions
- Landsat 3
- plasmas (physics)
- space density
- SPHINX

- plasma interactions**
- GS **plasma interactions**
- . plasma-electromagnetic interaction
- . . laser plasma interactions
- . . . plasma-particle interactions
- RT ∞ interactions
- plasmas (physics)
- solar planetary interactions
- space plasmas
- wave interaction
- wave-particle interactions
- Weibel instability

- plasma jet synthesis**
- RT chemical reactions
- plasmas (physics)
- ∞ synthesis

- plasma jet wind tunnels**
- UF *hydrodynamic tunnels*
- GS test facilities
- . wind tunnels
- . . hypersonic wind tunnels
- . . . **plasma jet wind tunnels**
- . . . hypervelocity wind tunnels
- . . . **plasma jet wind tunnels**
- RT plasmas (physics)

- plasma jets**
- UF *plasma arcs*
- plasma discharges*
- GS particles
- . charged particles
- . . **plasma jets**
- . . . radio jets (astronomy)
- RT ∞ arcs
- crossed field guns
- drop transfer
- electron beams
- electron bombardment
- fluid jets
- ion injection
- ∞ jets
- low density wind tunnels
- magnetic lenses
- plasma torches
- plasmas (physics)
- plasmatrons
- pulse diffraction
- relativistic electron beams
- relativistic plasmas
- toroidal discharge
- vapor jets

- plasma layers**
- GS particles
- . charged particles
- . . **plasma layers**
- . . . plasma sheaths
- RT atmospheric stratification

- ∞ layers
- plasmas (physics)
- space plasmas
- ∞ transition layers

- plasma lifetime**
- GS life (durability)
- . **plasma lifetime**
- RT magnetohydrodynamic stability
- plasmas (physics)

- plasma loss**
- RT limiters (fusion reactors)
- losses
- magnetohydrodynamic stability
- plasmas (physics)

- plasma oscillations**
- UF *ion oscillation*
- plasma perturbation*
- GS oscillations
- . **plasma oscillations**
- RT electron oscillations
- ion acoustic waves
- Langmuir turbulence
- nonuniform plasmas
- plasmopause
- plasmas (physics)
- plasmions

- plasma perturbation*
- USE **plasma oscillations**

- plasma physics**
- DEF The study of the nature and properties of highly ionized gases (comprised of ions and free electrons).
- UF *plasma theory*
- GS rigid rotors (plasma physics)
- . **plasma physics**
- RT alpha plasma devices
- BBGKY hierarchy
- beta factor
- boundary layer plasmas
- cavitons
- controlled fusion
- electron runaway (plasma physics)
- grand unified theory
- Hall accelerators
- instantons
- Larmor radius
- Liouville equations
- magnetic field configurations
- magnetohydrodynamics
- magnetohydrostatics
- negative ions
- neutral sheets
- OPEN Project
- ∞ physics
- plasmopause
- plasmas (physics)
- radiation trapping
- ∞ science
- semiconductor plasmas
- space plasmas
- theoretical physics
- thermodynamics
- tokamak devices
- unified field theory
- uranium plasmas

- plasma pinch**
- GS pinch effect
- . **plasma pinch**
- . . screw pinch
- . . theta pinch
- . . zeta pinch
- RT magnetohydrodynamic stability
- plasmas (physics)
- Q devices

- plasma potentials**
- GS potential energy
- . **plasma potentials**
- RT Debye-Huckel theory
- magnetohydrodynamic stability
- nonequilibrium plasmas
- plasmas (physics)

plasma power sources

∞ potential

plasma power sources

- RT electric propulsion
- ∞ energy sources
 - plasma engines
 - plasmas (physics)
- ∞ power supplies
 - thermionic converters

plasma pressure

- GS pressure
 - . **plasma pressure**
- RT plasma compression
- plasma density
- plasmas (physics)

plasma probes

- GS measuring instruments
 - . **plasma probes**
 - . . . electrostatic probes
- RT ion sheaths
- plasmaguides
- plasmas (physics)
- radio frequency impedance probes

plasma propulsion

- GS propulsion
 - . electric propulsion
 - . . . **plasma propulsion**
 - . . low thrust propulsion
 - . . . **plasma propulsion**
 - . spacecraft propulsion
 - . . . **plasma propulsion**
- RT duoplasmatrons
- electromagnetic propulsion
- electrostatic propulsion
- fusion propulsion
- gaseous fission reactors
- ion propulsion
- magnetic annular arc
- magnetic nozzles
- magnetic sails
- magnetohydrodynamics
- magnetoplasmadynamic thrusters
- magnetoplasmadynamics
- nuclear electric propulsion
- plasmas (physics)
- plasmatrons
- pulsed inductive thrusters
- pulsed plasma thrusters
- VASIMR (propulsion system)

plasma pumping

- DEF Application of radiation of appropriate frequencies to plasma, to increase the population of atoms or molecules in the higher energy states.
- RT gas injection
- molecular pumps
- plasmas (physics)
- ∞ pumping

plasma radiation

- RT electron radiation
- fluorescence
- glow discharges
- ion cyclotron radiation
- laser induced fluorescence
- luminescence
- nonequilibrium plasmas
- optical resonance
- phosphorescence
- plasmas (physics)
- polarized radiation
- ∞ radiation
- relativistic plasmas

plasma renin activity

- USE **immunoassay**

plasma resonance

- GS resonance
 - . **plasma resonance**
- RT cavitons
- cyclotron resonance
- electromagnetic interactions
- electron cyclotron resonance
- plasmas (physics)
- resonance lines

resonance probes

plasma rings

- USE **toroidal plasmas**

plasma sheaths

DEF The boundary layers of charged particles between plasmas and their surrounding walls, electrodes, or other plasmas. Envelopes of ionized gases that surround bodies moving through an atmosphere at hypersonic velocities.

- GS particles
 - . charged particles
 - . . plasma layers
 - . . . **plasma sheaths**
 - sheaths
 - . **plasma sheaths**
- RT blackout (propagation)
- boundary layer plasmas
- ion sheaths
- magnetohydrodynamic shear heating
- magnetosheath
- metallic plasmas
- missiles
- nonequilibrium plasmas
- plasmas (physics)
- reentry communication
- reentry effects
- reentry physics
- system generated electromagnetic pulses
- uncontrolled reentry (spacecraft)

plasma slabs

- GS particles
 - . charged particles
 - . . **plasma slabs**
- RT magnetohydrodynamic stability
- plasmas (physics)

plasma sound waves

- USE **magnetohydrodynamic waves**
- plasma waves**

plasma spectra

- GS spectra
 - . **plasma spectra**
- RT emission spectra
- energy spectra
- optical resonance
- plasmas (physics)
- radiation spectra

plasma spraying

- GS spraying
 - . **plasma spraying**
- RT coating
- coatings
- flame spraying
- HVOF thermal spraying
- metal matrix composites
- plasmas (physics)
- sprayed coatings

plasma stability

- USE **magnetohydrodynamic stability**

plasma temperature

- GS temperature
 - . **plasma temperature**
- RT ion temperature
- magnetohydrodynamic stability
- plasma heating
- plasmas (physics)
- thermal plasmas

plasma theory

- USE **plasma physics**

plasma torches

DEF Burners which attain 50,000 degrees C temperatures by the use of plasma gas injected into an electric arc. Plasma torches are used for welding, spraying molten metal, and cutting hard rock or hard metals.

- GS torches
 - . **plasma torches**
- RT plasma arc cutting
- plasma arc welding
- plasma jets

plasmas (physics)

plasma turbulence

- GS turbulence
 - . magnetohydrodynamic turbulence
 - . . **plasma turbulence**
 - . . . Langmuir turbulence
- RT magnetohydrodynamic flow
- magnetohydrodynamic simulation
- magnetohydrodynamic stability
- plasmas (physics)

plasma waves

- UF *plasma sound waves*
- GS elastic waves
 - . magnetohydrodynamic waves
 - . . **plasma waves**
 - . . . electrostatic waves
- RT collisional plasmas
- diffusion waves
- electroacoustic waves
- electron plasma
- ion acoustic waves
- ion cyclotron radiation
- ionic waves
- Landau damping
- Langmuir turbulence
- magnetoacoustic waves
- magnetoelastic waves
- nonuniform plasmas
- plasma drift
- plasmas (physics)
- Polar/GGS spacecraft
- shock waves
- space plasmas
- wave packets
- wave-particle interactions

plasmadynamic lasers

DEF Stimulated emission devices in which the lasing gas flow has been replaced with a lasing plasma flow of atoms or ions.

- GS stimulated emission devices
 - . lasers
 - . . **plasmadynamic lasers**
- RT coherent light
- gasdynamic lasers
- laser applications
- plasmas (physics)

plasma-electromagnetic interaction

- GS electromagnetic interactions
 - . **plasma-electromagnetic interaction**
 - . . laser plasma interactions
 - plasma interactions
 - . **plasma-electromagnetic interaction**
 - . . laser plasma interactions
- RT electromagnetic coupling
- ∞ interactions
- plasmas (physics)
- space plasmas
- wave-particle interactions

plasmaguides

- GS waveguides
 - . **plasmaguides**
- RT beam waveguides
- Earth-ionosphere waveguide
- electromagnetic wave transmission
- microwave plasma probes
- plasma cylinders
- plasma electrodes
- plasma probes
- plasmas (physics)
- wave propagation

plasma-particle interactions

- GS particle interactions
 - . **plasma-particle interactions**
 - plasma interactions
 - . **plasma-particle interactions**
- RT beam injection
- beam plasma amplifiers
- charge exchange
- dusty plasmas
- electron phonon interactions
- electron plasma
- ∞ interactions

particle theory
 plasma currents
 plasmas (physics)
 relativistic electron beams
 relativistic plasmas
 SPHINX
 wave-particle interactions

plasmopause

SN (LIMITED TO EARTH'S ATMOSPHERE)
 RT cosmic plasma
 Earth magnetosphere
 ionopause
 plasma clouds
 plasma oscillations
 plasma physics
 plasmas (physics)
 solar wind

plasmas (physics)

SN (LIMITED TO COMPLETELY IONIZED MATTER; FOR PARTIALLY IONIZED GASES SEE IONIZED GASES)
 DEF Electrically conductive gases comprised of neutral particles, ionized particles, and free electrons but which, taken as a whole, are electrically neutral. Plasmas are further characterized by relatively large intermolecular distances, large amounts of energy stored in the internal energy levels of the particles, and the presence of plasma sheaths at all boundaries of the plasma. Plasmas are sometimes referred to as a fourth state of matter. Used for electrostatic plasma, ionized plasma, magnetoionic plasma, magnetoplasmas, and plasmoids.

UF *electrostatic plasma*
ionized plasmas
magnetoionic plasma
magnetoplasmas
plasmoids

GS particles
 . charged particles
 . . energetic particles
 . . . **plasmas (physics)**
 argon plasma
 beta particles
 boundary layer plasmas
 cold plasmas
 collisional plasmas
 strongly coupled plasmas
 collisionless plasmas
 cosmic plasma
 cylindrical plasmas
 dense plasmas
 plasma focus
 strongly coupled plasmas
 electron plasma
 electron-positron plasmas
 elliptical plasmas
 helium plasma
 high temperature plasmas
 hydrogen plasma
 deuterium plasma
 laser plasmas
 metallic plasmas
 cesium plasma
 uranium plasmas
 microplasmas
 nitrogen plasma
 nonequilibrium plasmas
 nonuniform plasmas
 oxygen plasma
 rarefied plasmas
 relativistic plasmas
 rotating plasmas
 semiconductor plasmas
 space plasmas
 solar wind
 stellar winds
 dusty plasmas
 spherical plasmas
 thermal plasmas
 toroidal plasmas
 . corpuscular radiation
 . . energetic particles
 . . . **plasmas (physics)**
 argon plasma
 beta particles
 boundary layer plasmas
 cold plasmas

. . . . collisional plasmas
 strongly coupled plasmas
 collisionless plasmas
 cosmic plasma
 cylindrical plasmas
 dense plasmas
 plasma focus
 strongly coupled plasmas
 electron plasma
 electron-positron plasmas
 elliptical plasmas
 helium plasma
 high temperature plasmas
 hydrogen plasma
 deuterium plasma
 laser plasmas
 metallic plasmas
 cesium plasma
 uranium plasmas
 microplasmas
 nitrogen plasma
 nonequilibrium plasmas
 nonuniform plasmas
 oxygen plasma
 rarefied plasmas
 relativistic plasmas
 rotating plasmas
 semiconductor plasmas
 space plasmas
 solar wind
 stellar winds
 dusty plasmas
 toroidal plasmas
 spherical plasmas
 thermal plasmas
 toroidal plasmas
 RT alpha plasma devices
 beam plasma amplifiers
 blackout (propagation)
 chemical elements
 combustion physics
 core flow
 Cyclops plasma accelerator
 Debye length
 deuteron irradiation
 deuterons
 duoplasmatrons
 electric arcs
 electron energy
 gases
 high temperature fluids
 ionized gases
 ions
 Kelvin-Helmholtz instability
 Landau factor
 laser fusion
 laser plasma interactions
 light ions
 Liouville equations
 low density research
 magnetic compression
 magnetohydrodynamic flow
 magnetohydrodynamic stability
 magnetohydrodynamics
 magnetoionics
 microwave plasma probes
 neutral gases
 ∞ Onsager phenomenological coefficient
 ∞ physics
 plasma acceleration
 plasma accelerators
 plasma arc cutting
 plasma arc welding
 plasma chemistry
 plasma clouds
 plasma composition
 plasma compression
 plasma conductivity
 plasma control
 plasma cooling
 plasma core reactors
 plasma currents
 plasma cylinders
 plasma decay
 plasma density
 plasma diagnostics
 plasma diffusion
 plasma diodes
 plasma display devices
 plasma drift

plasma dynamics
 plasma engines
 plasma equilibrium
 plasma etching
 plasma flux measurement
 plasma frequencies
 plasma generators
 plasma guns
 plasma heating
 plasma interaction experiment
 plasma interactions
 plasma jet synthesis
 plasma jet wind tunnels
 plasma jets
 plasma layers
 plasma lifetime
 plasma loss
 plasma oscillations
 plasma physics
 plasma pinch
 plasma potentials
 plasma power sources
 plasma pressure
 plasma probes
 plasma propulsion
 plasma pumping
 plasma radiation
 plasma resonance
 plasma sheaths
 plasma slabs
 plasma spectra
 plasma spraying
 plasma temperature
 plasma torches
 plasma turbulence
 plasma waves
 plasmadynamic lasers
 plasma-electromagnetic interaction
 plasmaguides
 plasma-particle interactions
 plasmopause
 plasmasphere
 plasmatrons
 radiation belts
 rarefied gas dynamics
 Scylla
 solar physics
 space charge
 SPHINX
 stellar magnetic fields
 tearing modes (plasmas)
 thermal dissociation
 thermodynamics
 thermonuclear reactions
 two stage plasma engines

plasmas-in-space payload
 USE **AMPS (satellite payload)**

plasmasphere

DEF Envelope of highly ionized gases surrounding the Earth or another planet.
 RT atmospheric ionization
 chemosphere
 Earth atmosphere
 Earth magnetosphere
 IMAGE satellite
 OPEN Project
 plasmas (physics)
 upper atmosphere

plasmatrons

GS ion sources
 . **plasmatrons**
 . . duoplasmatrons
 plasma generators
 . **plasmatrons**
 . . duoplasmatrons
 RT plasma electrodes
 plasma guns
 plasma jets
 plasma propulsion
 plasmas (physics)

plasmids

(added February 2002)
 DEF Self-replicating circular molecules of DNA that are found in a variety of bacterial, archaeal, fungal, algal and plant species.
 RT cloning (biology)

plasmolysis

- deoxyribonucleic acid
- gene therapy
- genetic engineering
- plasmoids*
- USE **plasmas (physics)**
- plasmolysis**
- RT cells (biology)
- cytology
- dehydration
- plasmons**
- SN (EXCLUDES ORGANIC CYTOPLASMIC CONDITIONS)
- GS electromagnetic radiation
- . **plasmons**
- elementary excitations
- . **plasmons**
- polaritons
- . **plasmons**
- RT electron gas
- excitons
- magnetohydrodynamic stability
- magnons
- phonons
- plasma frequencies
- plasma oscillations
- polarons
- surface plasmon resonance
- plasters**
- GS **plasters**
- . gypsum
- . paraplaster
- RT casts
- grout
- molding materials
- mortars (material)
- pastes
- plastic aircraft structures**
- GS aircraft structures
- . **plastic aircraft structures**
- RT aircraft construction materials
- aircraft survivability
- boron-epoxy composites
- glass fiber reinforced plastics
- plastics
- plastic anisotropy**
- GS anisotropy
- . **plastic anisotropy**
- . . elastic anisotropy
- RT viscoplasticity
- plastic bodies**
- RT beams (supports)
- ∞ bodies
- cylindrical bodies
- elastic bodies
- elastic plates
- elastoplasticity
- plastic properties
- plastic shells
- rigid structures
- plastic coatings**
- GS coatings
- . **plastic coatings**
- RT antiradar coatings
- encapsulating
- polymeric films
- protective coatings
- sprayed coatings
- plastic deformation**
- UF *Luder bands*
- plastic yielding*
- strain softening*
- GS deformation
- . **plastic deformation**
- RT ∞ bands
- bending
- Bordoni peaks
- creep properties
- creep tests
- ductile-brittle transition
- elastic deformation
- elongation
- friction stir welding
- J integral
- kink bands
- plane strain
- Saint Venant principle
- shear creep
- ∞ slip
- strain distribution
- stress propagation
- stress relaxation
- stress-strain relationships
- stretching
- structural strain
- superplastic forming
- superplasticity
- temperature inversions
- tensile creep
- tensile deformation
- thermomechanical treatment
- warpage
- work softening
- yield strength
- plastic fibers**
- (added June 1995)
- GS fibers
- . **plastic fibers**
- RT fiber optics
- glass fibers
- optical fibers
- plastic properties
- plastics
- waveguides
- plastic films*
- USE **polymeric films**
- plastic flow**
- GS fluid flow
- . **plastic flow**
- . . Tresca flow
- RT creep properties
- ∞ flow
- internal friction
- rheology
- shear flow
- steady state creep
- stress relaxation
- superplasticity
- viscoelasticity
- viscoplasticity
- plastic memory**
- RT shape memory alloys
- stress relaxation
- plastic plates**
- SN (STRUCTURAL PLATES EXHIBITING PLASTIC PROPERTIES)
- GS structural members
- . plates (structural members)
- . . **plastic plates**
- RT elastic plates
- elastoplasticity
- reinforced plates
- plastic propellants**
- GS propellants
- . solid propellants
- . . **plastic propellants**
- RT chemical fuels
- composite propellants
- explosives
- gelled propellants
- HTPB propellants
- monopropellants
- plasticizers
- polybutadiene tetranitramine
- pyrotechnics
- plastic properties**
- DEF The tendency of a loaded body to assume a deformed state other than its original state when the load is removed. Used for plasticity.
- UF *plasticity*
- GS mechanical properties
- . **plastic properties**
- . . elastoplasticity
- . . photoplasticity
- . . superplasticity
- . . thermoplasticity
- . . viscoplasticity
- . . yield point
- RT cohesion
- cold flow tests
- ductility
- elastic properties
- fatigue (materials)
- flexibility
- hardness
- influence coefficient
- method of characteristics
- plastic bodies
- plastic fibers
- ∞ properties
- rheology
- semisolids
- stress relaxation
- stress tensors
- structural stability
- plastic shells**
- GS shells (structural forms)
- . **plastic shells**
- RT cylindrical shells
- elastic shells
- elastoplasticity
- plastic bodies
- reinforced shells
- shell stability
- plastic tapes**
- RT adhesives
- magnetic tapes
- ∞ tapes
- plastic yielding*
- USE **plastic deformation**
- plasticity*
- USE **plastic properties**
- plasticizers**
- UF *casting solvents*
- elasticizers*
- GS additives
- . **plasticizers**
- RT case bonded propellants
- coatings
- Domino propellants
- esters
- plastic propellants
- propellant additives
- Skydrol (trademark)
- solid propellants
- solid rocket binders
- surfactants
- triacetin
- plastics**
- DEF Materials that contain as an essential ingredient one or more organic polymeric substances of large molecular weight, are solid in their finished state, and at some stage in their manufacture or processing into finished articles can be shaped by flow.
- GS **plastics**
- . Delrin (trademark)
- . Perspex (trademark)
- . polybutadiene
- . polyethylenes
- . . polyethylene terephthalate
- . polyisobutylene
- . polypropylene
- . polystyrene
- . . styrofoam (trademark)
- . polytetrafluoroethylene
- . . teflon (trademark)
- . polyvinyl alcohol
- . polyvinyl chloride
- . polyvinyl fluoride
- . reinforced plastics
- . . carbon fiber reinforced plastics
- . . carbon-phenolic composites
- . . glass fiber reinforced plastics
- . . micarta
- . synthetic resins
- . . addition resins
- . . . acrylic resins
- . . . vinyl copolymers

- . . polyester resins
- . . polyether resins
- . . . PEEK
- . . . polymethyl methacrylate
- . . thermoplastic resins
- . . . PEEK
- . . . quinoxalines
- . . . thermoplastic films
- . . thermosetting resins
- . . . epoxy resins
- phenolic epoxy resins
- . . . furan resins
- polyamide resins
- Kevlar (trademark)
- Nylon (trademark)
- . . . phenolic resins
- micarta
- phenolic epoxy resins

- RT acrylonitriles
- aramid fibers
- boron reinforced materials
- ∞ construction materials
- elastomers
- fluoropolymers
- furans
- injection molding
- ion exchange resins
- Kapton (trademark)
- ∞ materials science
- molding materials
- organic materials
- petroleum products
- plastic aircraft structures
- plastic fibers
- ∞ polymers
- sheet molding compounds
- tetrahydrofuran
- thioplastics

plastids

(added August 2004)

DEF Self-replicating cytoplasmic organelles of plant and algal cells that contain pigments and may synthesize and accumulate various substances. Plastids are used in phylogenetic studies.

- GS organelles
- . **plastids**
- RT algae
- cells (biology)
- cytology
- cytoplasm
- pigments
- plants (botany)

plastisols

DEF A suspension of a finely divided polymer in a plasticizer.

- GS mixtures
- . dispersions
- . . **plastisols**
- . . . smoke
- RT colloids
- composite propellants
- double base propellants
- resins

PLAT system

- UF *pilot landing aid television system*
- GS communication equipment
- . **PLAT system**
- telecommunication
- . **PLAT system**
- television systems
- . **PLAT system**
- RT landing aids
- ∞ systems

plate (metal)

USE **metal plates**

plate theory

- RT flat plates
- Mindlin plates
- structural analysis
- ∞ theories
- Treffitz method

plateaus

DEF Broadly, and comparatively flat areas

of great extent and elevation; specifically, extensive land regions considerably elevated (more than 150-300 meters in altitude) above the adjacent country or above sea level. They are commonly limited on at least one side by an abrupt descent, have a flat or nearly smooth surface but are often dissected by deep valleys and surmounted by high hills or high mountains, and have a large part of their total surface at or near the summit level. Plateaus are usually higher and have more noticeable relief than plains (they often represent elevated plains), and are usually higher and more extensive than mesas. They may be tectonic, residual, or volcanic in origin.

- GS landforms
- . terraces (landforms)
- . . **plateaus**
- . . . Allegheny Plateau (US)
- . . . Colorado Plateau (US)
- . . . Great Basin (US)
- . . . mesas
- buttes
- . . . piedmonts
- Central Piedmont (US)
- RT apexes
- erosion
- highlands
- ∞ peaks
- plains
- stratigraphy

platelets

- RT blood cell count
- blood coagulation
- blood groups
- histology
- thromboplastin

platens

- RT ∞ plates
- presses
- ∞ pressing
- punches
- rams (presses)
- rollers
- tools

∞ **plates**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT corrugating
- disks (shapes)
- flat plates
- metal coatings
- metal plates
- microchannel plates
- panels
- parallel plates
- photographic plates
- platens
- plates (structural members)
- plating
- rectangular plates
- scatter plates (optics)
- thick plates
- thin plates
- trays

plates (structural members)

- GS structural members
- . **plates (structural members)**
- . . anisotropic plates
- . . annular plates
- . . cantilever plates
- . . circular plates
- . . corrugated plates
- . . elastic plates
- . . end plates
- . . flat plates
- . . girder webs
- . . metal plates
- . . . boiler plate
- . . Mindlin plates
- . . orthotropic plates
- . . perforated plates
- . . plastic plates
- . . porous plates
- . . rectangular plates

- . . reinforced plates
- . . thick plates
- . . thin plates

- RT clamped structures
- girders
- metal sheets
- orthotropism
- ∞ plates
- Reissner theory
- slabs

plates (tectonics)

DEF Rigid divisions of the outer surface of the Earth (lithosphere) which moves over a weaker layer (asthenosphere). The plates are about 100 km thick, and the continents, which are 40 km thick, rest on the plates and moves with them.

- RT Earth crust
- Earth mantle
- Earth planetary structure
- earthquakes
- geological faults
- geophysics
- lithosphere
- neotectonics
- sea floor spreading
- structural properties (geology)
- subduction (geology)
- tectonics

∞ **platforms**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Automatic Universal Orbiting Stations
- data collection platforms
- flight mechanics
- floors
- flying platforms
- guidance (motion)
- inertial platforms
- landforms
- launching pads
- offshore platforms
- slabs
- solettas
- space platforms
- space stations
- stabilized platforms
- supports
- synchronous platforms

plating

- GS **plating**
- . electroplating
- . flame plating
- . ion plating
- . nickel plate
- RT anodic stripping
- cathodic coatings
- cladding
- deposition
- deposits
- electrodeposition
- electroless deposition
- finishes
- laminates
- metal coatings
- metal finishing
- metallizing
- ∞ plates
- protective coatings
- substrates
- thin films

platinum

- GS chemical elements
- . **platinum**
- . . platinum isotopes
- metals
- . transition metals
- . . **platinum**
- . . . platinum isotopes
- RT platinum black

platinum alloys

- GS alloys
- . **platinum alloys**
- RT iridium alloys

platinum black

rhodium alloys

platinum black

- GS particles
 - . metal particles
 - . . metal powder
 - . . . **platinum black**
 - . powder (particles)
 - . . metal powder
 - . . . **platinum black**
- RT catalysts
 - platinum

platinum compounds

- GS **platinum compounds**
 - . platinum oxides
- RT ∞ chemical compounds
- ∞ Group 8 compounds
- ∞ metal compounds

platinum isotopes

- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **platinum isotopes**
 - . platinum
 - . . **platinum isotopes**
 - metals
 - . transition metals
 - . . platinum
 - . . . **platinum isotopes**

platinum oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **platinum oxides**
 - platinum compounds
 - . **platinum oxides**

playas

- GS land
 - . plains
 - . . **playas**
 - landforms
 - . plains
 - . . **playas**
- RT deserts
 - lakes

playbacks

- RT magnetic tapes
 - ∞ recorders
 - recording
 - records
 - ∞ tapes
 - video disks

PLC effect

- (added August 1997)
- USE **Portevin-le Chatelier effect**

Pleiades cluster

- GS celestial bodies
 - . star clusters
 - . . open clusters
 - . . . **Pleiades cluster**
- RT ∞ clusters
 - Taurus constellation

Pleistocene epoch

- (added May 2001)
- DEF Geologic epoch of the Quaternary period extending from about two million years ago to about 10,000 years ago and covering the last ice age.
- GS Cenozoic Era
 - . Quaternary period
 - . . **Pleistocene epoch**
- RT geochronology
 - Holocene epoch

plenum chambers

- RT air intakes
 - ∞ chambers
 - ducts
 - exhaust systems
 - fuel systems
 - intake systems
 - manifolds

∞ water intakes

plethysmography

- GS bioengineering
 - . biometrics
 - . . **plethysmography**
 - . . . electroplethysmography

pleurae

- GS anatomy
 - . **pleurae**
 - membranes
 - . **pleurae**
- RT lungs
 - respiratory system

pleurotin

- GS drugs
 - . antibiotics
 - . . **pleurotin**
- RT staphylococcus

plexiglass (trademark)

- USE **polymethyl methacrylate**

plies

- USE **layers**

∞ plots

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT charts
 - display devices
 - plotters
 - plotting
 - sites

plotters

- UF *plotting instruments*
- GS recording instruments
 - . **plotters**
 - . . x-y plotters
- RT computer graphics
 - digital to analog converters
 - display devices
 - navigation aids
 - peripheral equipment (computers)
- ∞ plots
 - plotting
 - position indicators
 - printers
 - remote consoles

plotting

- RT analog to digital converters
 - display devices
 - navigation
- ∞ plots
 - plotters
 - printing
 - recording

plotting instruments

- USE **plotters**

plowed fields

- USE **farmlands**

plowing

- GS cultivation
 - . **plowing**
- RT agriculture
 - farm crops
 - farmlands
 - grasslands
 - planting
 - plants (botany)
 - plows
 - sod
 - tractors

plows

- RT agriculture
 - mixers
 - planting

plowing

PLSS

- USE **portable life support systems**

plug nozzles

- GS exhaust nozzles
 - . **plug nozzles**
- RT aerospike engines
 - annular nozzles
 - conical nozzles
 - nozzle geometry
- ∞ nozzles
 - rocket nozzles
 - spike nozzles

plugging

- UF *clogging*
- RT agglomeration
 - blocking
 - caulking
 - closing
 - closures
 - constrictions
 - fouling
 - plugs
 - sealing
 - seals (stoppers)

plugs

- SN (EXCLUDES SPARKPLUGS OR ELECTRICAL CONNECTORS)
- GS seals (stoppers)
 - . **plugs**
- RT blocking
 - closures
 - labyrinth seals
 - outlets
 - plugging
 - stopping

Plum Brook Reactor

- GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . **Plum Brook Reactor**
 - . nuclear research and test reactors
 - . . **Plum Brook Reactor**

plumage

- RT birds

plumbane

- USE **lead compounds**
 - metal hydrides**

plumes

- GS **plumes**
 - . rocket exhaust
- RT chimneys
 - condensates
 - pollution transport
 - shock waves

plungers

- RT mixers
 - pistons
 - rams (presses)
 - rams (pumps)

Pluto (planet)

- GS celestial bodies
 - . dwarf planets
 - . . **Pluto (planet)**
 - . trans-Neptunian objects
 - . . **Pluto (planet)**
- RT Charon
 - Hydra
 - New Horizons mission
 - Nix
 - planets
 - Pluto atmosphere

Pluto atmosphere

- GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary atmospheres
 - . . . **Pluto atmosphere**

- RT Pluto (planet)
- Pluto reactors**
 - GS nuclear reactors
 - . **Pluto reactors**
 - RT nuclear ramjet engines
 - . nuclear rocket engines
 - . supersonic low altitude missile
- Pluto satellites**
 - (added July 1995)
 - GS celestial bodies
 - . natural satellites
 - . **Pluto satellites**
 - . Charon
 - . Hydra
 - . Nix
- plutonium**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - . **plutonium**
 - . plutonium isotopes
 - . plutonium 238
 - . plutonium 239
 - . plutonium 240
 - . plutonium 241
 - . plutonium 244
 - . nuclides
 - . isotopes
 - . radioactive isotopes
 - . transuranium elements
 - . **plutonium**
 - . plutonium isotopes
 - . plutonium 238
 - . plutonium 239
 - . plutonium 240
 - . plutonium 241
 - . plutonium 244
 - . metals
 - . actinide series
 - . transuranium elements
 - . **plutonium**
 - . plutonium isotopes
 - . plutonium 238
 - . plutonium 239
 - . plutonium 240
 - . plutonium 241
 - . plutonium 244
 - RT fissionable materials
 - . nuclear fuels
- plutonium 238**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 238**
 - . nuclides
 - . isotopes
 - . radioactive isotopes
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 238**
 - . metals
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 238**
- plutonium 239**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 239**
 - . nuclides
 - . isotopes
 - . radioactive isotopes
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 239**
 - . metals
 - . actinide series
- . . . transuranium elements
 - . . . plutonium
 - . . . plutonium isotopes
 - . . . **plutonium 239**
- plutonium 240**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 240**
 - . nuclides
 - . isotopes
 - . radioactive isotopes
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 240**
 - . metals
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 240**
- plutonium 241**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 241**
 - . nuclides
 - . isotopes
 - . radioactive isotopes
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 241**
 - . metals
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 241**
- plutonium 244**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 244**
 - . nuclides
 - . isotopes
 - . radioactive isotopes
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 244**
 - . metals
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . **plutonium 244**
- plutonium alloys**
 - GS alloys
 - . **plutonium alloys**
 - RT nuclear fuel elements
 - . nuclear fuels
- plutonium carbides*
 - USE **plutonium compounds**
- plutonium compounds**
 - UF *plutonium carbides*
 - GS actinide series compounds
 - . **plutonium compounds**
 - . plutonium fluorides
 - . plutonium oxides
 - RT ceramic nuclear fuels
 - ∞ chemical compounds
 - ∞ metal compounds
 - . nuclear fuels
- plutonium fluorides**
 - GS actinide series compounds
 - . plutonium compounds
 - . **plutonium fluorides**
 - . halogen compounds
 - . fluorine compounds
 - . fluorides
 - . metal fluorides
 - . **plutonium fluorides**
 - . halides
 - . fluorides
 - . metal fluorides
 - . **plutonium fluorides**
 - . metal halides
 - . metal fluorides
 - . **plutonium fluorides**
- plutonium isotopes**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . **plutonium isotopes**
 - . plutonium 238
 - . plutonium 239
 - . plutonium 240
 - . plutonium 241
 - . plutonium 244
 - . nuclides
 - . isotopes
 - . radioactive isotopes
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . plutonium 238
 - . plutonium 239
 - . plutonium 240
 - . plutonium 241
 - . plutonium 244
 - . metals
 - . actinide series
 - . transuranium elements
 - . plutonium
 - . plutonium isotopes
 - . plutonium 238
 - . plutonium 239
 - . plutonium 240
 - . plutonium 241
 - . plutonium 244
- plutonium oxides**
 - GS actinide series compounds
 - . plutonium compounds
 - . **plutonium oxides**
 - . chalcogenides
 - . oxides
 - . metal oxides
 - . **plutonium oxides**
 - RT ceramic nuclear fuels
 - . mixed oxides
- plutonium recycle test reactor**
 - UF *PRTR (reactor)*
 - GS nuclear electric power generation
 - . nuclear power reactors
 - . **plutonium recycle test reactor**
 - . nuclear reactors
 - . liquid cooled reactors
 - . water cooled reactors
 - . heavy water reactors
 - . **plutonium recycle test reactor**
 - . nuclear power reactors
 - . **plutonium recycle test reactor**
 - . nuclear research and test reactors
 - . **plutonium recycle test reactor**
 - . water moderated reactors
 - . **plutonium recycle test reactor**
- pluviographs*
 - USE **rain gages**
 - recording instruments**
- ply orientation**
 - DEF The arrangement of bonded layers comprising laminated materials to obtain optimal strength or other characteristics.
 - RT alignment
 - . composite materials
 - . interlayers
 - . laminates
 - ∞ layers
 - . multilayer insulation

plywood

- ∞ orientation
- plywood
- positioning
- sandwich structures
- stacking sequence (composite materials)
- substrates

plywood

- GS composite materials
 - . **plywood**
- composite structures
 - . laminates
 - . . **plywood**
- wood
 - . **plywood**
- RT ply orientation
- trees (plants)
- wooden structures

PML (electromagnetism)
(added July 1998)

USE **perfectly matched layers**

p-n junctions

- UF *n-p junctions*
- GS semiconductor junctions
 - . **p-n junctions**
- RT ∞ junctions
 - SIS (semiconductors)

pneumatic circuits

- GS circuits
 - . **pneumatic circuits**
- pneumatic equipment
 - . **pneumatic circuits**
- RT fluidics
- valves

pneumatic control

- UF *pneumatic reset*
- RT automatic control
- automatic control valves
- compressed gas
 - ∞ control
- control equipment
- control valves
- controllers
- electronic control
- engine control
- fluid power
- fluidics
- hydraulic control
- remote control

pneumatic equipment

- GS **pneumatic equipment**
 - . gas valves
 - . pneumatic circuits
 - . pneumatic probes
- RT air bag restraint devices
- compressed air
- cushions
 - ∞ equipment
- fluid amplifiers
- fluid power
- fluid switching elements
- fluidics
- gas generators
- Golay detector cells
- inflatable structures
- servocontrol
- servomechanisms
- shock absorbers
- ∞ systems
- valves

pneumatic probes

- GS measuring instruments
 - . temperature measuring instruments
 - . . **pneumatic probes**
- pneumatic equipment
 - . **pneumatic probes**
- RT flow measurement
- high temperature gases
- mass flow rate
- nozzle flow

pressure measurement

pneumatic reset

USE **pneumatic control**

pneumatics

DEF The branch of physics dealing with the mechanical properties of gases with particular emphasis on gas statics in closed systems.

- GS mechanics (physics)
 - . fluid mechanics
 - . . **pneumatics**
- RT flow theory
- fluid power
- fluidics
- gases
 - ∞ hydraulics

pneumographs

USE **pneumography**

pneumography

- UF *pneumographs*
- RT biotelemetry
- lungs
 - ∞ measurement
- radiography

pneumonia

- GS diseases
 - . respiratory diseases
 - . . **pneumonia**
- RT acquired immunodeficiency syndrome
- bacterial diseases
- congestion
- viral diseases

pneumothorax

- RT diseases
- lungs
- medical science

pnictides

USE **Group 5A compounds**

p-n-p junctions

- GS semiconductor junctions
 - . **p-n-p junctions**
- RT ∞ junctions

p-n-p-n junctions

- GS semiconductor junctions
 - . **p-n-p-n junctions**
- RT ∞ junctions
- latch-up
- thyristors

Pockels effect

USE **birefringence**

pocket mice

- GS animals
 - . vertebrates
 - . . mammals
 - . . . rodents
 - mice
 - **pocket mice**
- RT rats

Pods (external stores)

- GS external stores
 - . **Pods (external stores)**
- RT cowlings
- external store separation
- fuel tanks
- nacelles
- wing-fuselage stores

POGO

- UF *Polar Orbit Geophysical Observatory*
- GS artificial satellites
 - . geophysical satellites
 - . . OGO
 - . . . **POGO**
 - OGO-4
 - OGO-6
 - OGO-C
- observatories
 - . geophysical observatories
 - . . OGO
 - . . . **POGO**

- OGO-4
- OGO-6
- OGO-C
- RT Agena B rocket vehicle
- EGO

POGO effects

- GS vibration
 - . **POGO effects**
- vibration effects
 - . **POGO effects**
- RT ∞ effects
- longitudinal stability

Pohlhausen method

- UF *Pohlhausen solution*
- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **Pohlhausen method**
- RT laminar boundary layer
 - ∞ methodology
- velocity distribution
- viscous flow

Pohlhausen solution

USE **Pohlhausen method**

poikilothermia

- UF *cold blooded animals*
- GS animals
 - . **poikilothermia**
- RT amphibia
- body temperature
- fishes
- invertebrates
- reptiles

Poincare problem

RT ∞ problems

Poincare spheres

- GS symmetrical bodies
 - . bodies of revolution
 - . . spheres
 - . . . **Poincare spheres**
- RT geometry

point defects

- GS defects
 - . crystal defects
 - . . **point defects**
 - . . . vacancies (crystal defects)
 - Frenkel defects
 - antisite defects
- RT crystal dislocations
- impurities
- surface defects

point impact

- GS impact
 - . **point impact**
- RT electron impact
- hypervelocity impact
- ion impact
- proton impact

point matching method (mathematics)

USE **boundary value problems**

point sources

- GS radiation sources
 - . **point sources**
- RT diffuse radiation
 - ∞ energy sources
- Huygens principle
- light sources
- spherical waves

point spread functions

- DEF Mathematical functions involved in image processing.
- GS functions (mathematics)
 - . **point spread functions**
- RT image processing

point to point communication

- GS communicating
 - . **point to point communication**
- . . NASCOM network
- RT radio communication

- telecommunication
Westar satellites
wideband communication
- pointers*
USE **dials**
- pointing control systems**
GS **pointing control systems**
. annular suspension and pointing system
RT ∞ control
entry guidance (STS)
flight control
guidance (motion)
space flight
spacecraft control
∞ systems
- ∞ **points**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT nonpoint sources
points (mathematics)
position (location)
- points (mathematics)**
GS geometry
. Euclidean geometry
. . . **points (mathematics)**
. . . fixed points (mathematics)
. . . inflection points
RT foci
loci
naked singularities
∞ points
reciprocal theorems
singularity (mathematics)
- Poiseuille flow*
USE **laminar flow**
- ∞ **poisoning**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
RT benzene poisoning
beryllium poisoning
carbon monoxide poisoning
carbon tetrachloride poisoning
curare
hydrocarbon poisoning
intoxication
lead poisoning
narcosis
poisoning (reaction inhibition)
toxic diseases
toxic hazards
- poisoning (reaction inhibition)**
RT control rods
neutron absorbers
nuclear reactions
∞ poisoning
radioactive wastes
- poisoning (toxicology)*
USE **toxic diseases**
- poisons**
GS **poisons**
. curare
. endotoxins
. pesticides
. . . insecticides
. . . Carbamates (tradenam)
. . . . urethanes
. . . DDT
. . . dieldrin
. . . phenothiazines
. phosgene
. strychnine
RT environment effects
environment pollution
environmental surveys
hazardous materials
nonpoint sources
pollution
- toxicity
- Poisson density functions**
UF *poisson process*
GS functions (mathematics)
. **Poisson density functions**
statistical analysis
. **Poisson density functions**
RT continuity (mathematics)
discrete functions
exponential functions
sorting algorithms
- Poisson equation**
GS analysis (mathematics)
. real variables
. . . differential equations
. . . partial differential equations
. . . . **Poisson equation**
RT classical mechanics
electrostatics
∞ equations
isentrope
Laplace equation
vortex in cell technique
- poisson process*
USE **Poisson density functions**
stochastic processes
- Poisson ratio**
GS mechanical properties
. **Poisson ratio**
ratios
. **Poisson ratio**
RT Airy function
compressive strength
elastic properties
fiber strength
modulus of elasticity
nu factor
stress-strain diagrams
tensile strength
- Polaire satellite*
USE **D-2 satellites**
- Poland**
GS nations
. **Poland**
RT Central Europe
Europe
- polar auroras*
USE **auroras**
- polar cap absorption**
GS energy absorption
. radiation absorption
. . . electromagnetic absorption
. . . **polar cap absorption**
. thermal absorption
. . **polar cap absorption**
RT ∞ absorption
- polar caps**
RT Antarctic regions
Arctic regions
∞ caps
Earth (planet)
Earth cryosphere
ice
Mars (planet)
planetary cryospheres
- polar coordinates**
DEF In a plane, a system of curvilinear coordinates in which a point is located by its distance r from the origin (or pole) and by the angle θ which a line (radius vector) joining the given point and the origin makes a fixed reference line, called the polar axis. In three dimensions, short for space polar coordinates.
GS coordinates
. **polar coordinates**
RT astronomical coordinates
planispheres
Smith chart
- spherical coordinates
- polar cusps**
RT aeronomy
∞ cusps
Earth magnetosphere
geomagnetic latitude
geomagnetic tail
geomagnetism
geophysics
interplanetary space
lines of force
magnetic field configurations
magnetic fields
magnetopause
planetary magnetic fields
polar regions
Polar/GGS spacecraft
space plasmas
- polar gases**
GS gases
. molecular gases
. . . **polar gases**
RT carbon dioxide lasers
gas composition
gas discharges
gas dynamics
gas lasers
gas masers
polarization (charge separation)
- polar ionosphere beacon*
USE **Beacon satellites**
- polar meteorology**
GS meteorology
. **polar meteorology**
RT aerology
climatology
hydrology
ice reporting
- polar navigation**
GS navigation
. **polar navigation**
RT air navigation
celestial navigation
dead reckoning
digital navigation
inertial navigation
loran
- Polar Orbit Geophysical Observatory*
USE **POGO**
- polar orbits**
GS orbits
. **polar orbits**
RT circular orbits
Earth orbits
elliptical orbits
equatorial orbits
low Earth orbits
lunar orbits
lunar satellites
NPOESS
planetary orbits
space station polar platforms
TIROS satellites
twenty-four hour orbits
- Polar Plasma Laboratory*
(added January 2001)
USE **Polar/GGS spacecraft**
- polar platforms (space stations)*
USE **space station polar platforms**
- polar radio blackout**
GS electromagnetic interference
. radio frequency interference
. . blackout (propagation)
. . . **polar radio blackout**
RT auroral zones
ionospheric propagation
- polar regions**
UF *high latitudes*
GS regions
. **polar regions**

polar substorms

- . . Antarctic regions
- . . . McMurdo sound
- . . . Ross ice shelf
- . . Arctic regions
- . . . subarctic regions
- RT auroral zones
- climatology
- geography
- permafrost
- polar cusps
- polynyas
- temperate regions
- timberline

polar substorms

- GS magnetic disturbances
- . magnetic storms
- . . **polar substorms**
- storms
- . magnetic storms
- . . **polar substorms**

polar wandering (geology)

DEF Migration during geologic time of the Earth's poles of rotation and magnetic poles. Also known as polar migration. Used for Chandler motion.

- UF *Chandler motion*
- RT Chandler wobble
- Earth axis
- ∞ Earth motion
- Earth orientation
- geodesy
- nutiation
- periodic variations
- precession

Polar/GGS spacecraft

(added January 2001)

DEF One of two NASA spacecraft in the Global Geospace Science (GGS) initiative and part of the International Solar Terrestrial Physics (ISTP) program. Polar (Polar Plasma Laboratory) measures solar wind entry, ionospheric output, and the depositions of energy into the neutral atmosphere at high latitudes. Imaging instruments make possible the measurement of visible, ultraviolet, and X-ray spectra of the polar caps. The spacecraft was launched in February 1996.

- UF *Polar Plasma Laboratory*
- GS artificial satellites
- . geophysical satellites
- . . **Polar/GGS spacecraft**
- . scientific satellites
- . . **Polar/GGS spacecraft**
- RT auroras
- Earth ionosphere
- Earth magnetosphere
- geomagnetism
- plasma waves
- polar cusps
- solar terrestrial interactions
- solar wind
- space plasmas
- space weather
- Wind/GGS spacecraft

polarimeters

DEF Instruments for determining the degree of polarization of electromagnetic radiation, specifically the polarization of light. Used for spectropolarimeters.

- UF *spectropolarimeters*
- GS measuring instruments
- . optical measuring instruments
- . . **polarimeters**
- optical equipment
- . optical measuring instruments
- . . **polarimeters**
- RT astronomical polarimetry
- chemical analysis
- ellipsometers
- optical measurement
- photometers
- polarimetry
- polariscopes
- polarizers
- polarography

Solar Maximum Mission

polarimetry

- GS optical measurement
- . **polarimetry**
- . . astronomical polarimetry
- RT optical activity
- optical measuring instruments
- photometry
- polarimeters
- polarization (waves)

Polaris A1 missile

- GS missiles
- . ballistic missiles
- . . intermediate range ballistic missiles
- . . . polaris missiles
- **Polaris A1 missile**
- . surface to surface missiles
- . . fleet ballistic missiles
- . . . **Polaris A1 missile**
- . . intermediate range ballistic missiles
- . . . polaris missiles
- **Polaris A1 missile**

Polaris A2 missile

- GS missiles
- . ballistic missiles
- . . intermediate range ballistic missiles
- . . . polaris missiles
- **Polaris A2 missile**
- . surface to surface missiles
- . . fleet ballistic missiles
- . . . **Polaris A2 missile**
- . . intermediate range ballistic missiles
- . . . polaris missiles
- **Polaris A2 missile**

Polaris A3 missile

- GS missiles
- . ballistic missiles
- . . intermediate range ballistic missiles
- . . . polaris missiles
- **Polaris A3 missile**
- . surface to surface missiles
- . . fleet ballistic missiles
- . . . **Polaris A3 missile**
- . . intermediate range ballistic missiles
- . . . polaris missiles
- **Polaris A3 missile**

polaris missiles

- GS missiles
- . ballistic missiles
- . . intermediate range ballistic missiles
- . . . **polaris missiles**
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- . surface to surface missiles
- . . intermediate range ballistic missiles
- . . . **polaris missiles**
- Polaris A1 missile
- Polaris A2 missile
- Polaris A3 missile
- RT multistage rocket vehicles
- solid propellant rocket engines
- XM-33 engine

Polaris submarines

USE **guided missile submarines**

polariscopes

- DEF Instruments for detecting polarized radiation and investigating its properties.
- GS measuring instruments
- . **polariscopes**
- . . Senarmont polariscopes
- optical equipment
- . **polariscopes**
- . . Senarmont polariscopes
- RT optical measuring instruments
- polarimeters
- polarization (waves)
- polarizers

polaritons

GS **polaritons**

. plasmons

polarity

DEF The sign of the electric discharge associated with a given object, as an electrode or an ion.

- RT ∞ dipoles
- electric charge
- electric fields
- magnetic fields
- magnetic poles
- polarization (charge separation)
- polarization (spin alignment)
- quadrupoles

∞ polarization

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF The state of electromagnetic radiation when transverse vibrations take place in some regular manner, e.g., all in one plane, in a circle, in an ellipse, or in some other definite curve. With respect to particles in an electric field, the displacement of the charge centers within a particle in response to the electric force acting thereon. The response of the molecules of a paramagnetic medium (such as iron) when subjected to a magnetic field.

- RT antiferroelectricity
- bipolarity
- linear polarization
- magnetization
- optical polarization
- Overhauser effect
- photoelastic analysis
- polarization (charge separation)
- polarization (spin alignment)
- polarization (waves)
- polarized radiation

polarization (charge separation)

UF *charge separation*

GS **polarization (charge separation)**

- . dielectric polarization
- . electrolytic polarization

- RT charge distribution
- charge transfer
- deactivation
- depolarization
- electrets
- electric charge
- electric moments
- electrode film barriers
- electromigration
- Hall effect
- ionospheric drift
- magnetization
- overvoltage
- polar gases
- polarity
- ∞ polarization
- pyroelectricity
- ∞ separation
- Tafel law

polarization (spin alignment)

- RT alignment
- anisotropy
- deactivation
- magnetic properties
- magnetization
- ∞ orientation
- polarity
- ∞ polarization
- rotation
- spin tests

polarization (waves)

- UF *polarization charts*
- GS **polarization (waves)**
- . circular polarization
- . cross polarization
- . elliptical polarization
- . linear polarization
- RT anisotropic media
- anisotropy
- beamforming
- birefringence
- BL Lacertae objects

collimation
 electromagnetic properties
 Faraday effect
 Kerr electrooptical effect
 Kerr magneto-optical effect
 magneto-optics
 monochromatization
 optical coupling
 optical properties
 ∞ orientation
 photoelastic analysis
 polarimetry
 polariscopes
 ∞ polarization
 polarization modulation
 polarized electromagnetic radiation
 polarizers
 polarons
 refractivity
 rotation

polarization characteristics
 GS magnetic properties
 . **polarization characteristics**
 RT Brewster angle
 ∞ characteristics
 polarized radiation
 zwitterions

polarization charts
 USE **graphs (charts)**
polarization (waves)

polarization modulation
(added March 1995)
 GS modulation
 . **polarization modulation**
 RT light modulation
 optical communication
 optical polarization
 polarization (waves)
 polarized electromagnetic radiation

polarized elastic waves
 GS elastic waves
 . **polarized elastic waves**
 polarized radiation
 . **polarized elastic waves**
 RT S waves
 seismic waves
 sound waves

polarized electromagnetic radiation
 GS electromagnetic radiation
 . **polarized electromagnetic radiation**
 . . polarized light
 . . synchrotron radiation
 polarized radiation
 . **polarized electromagnetic radiation**
 . . polarized light
 . . synchrotron radiation
 RT cross polarization
 extraterrestrial radiation
 Faraday effect
 infrared radiation
 Kerr cells
 light (visible radiation)
 linear polarization
 Lyman alpha radiation
 Lyman beta radiation
 magneto-optics
 monochromatic radiation
 polarization (waves)
 polarization modulation
 polarizers
 ∞ radiation
 radiative transfer
 radio waves
 stellar radiation
 ultraviolet radiation

polarized light
 GS electromagnetic radiation
 . light (visible radiation)
 . . **polarized light**
 . polarized electromagnetic radiation
 . . **polarized light**
 polarized radiation

. polarized electromagnetic radiation
 . . **polarized light**
 RT ellipsometry
 gegenschein
 Kerr magneto-optical effect
 monochromatic radiation
 optical activity
 optical depolarization
 optical polarization
 photoelasticity
 zodiacal light

polarized radiation
 GS **polarized radiation**
 . polarized elastic waves
 . polarized electromagnetic radiation
 . . polarized light
 . . synchrotron radiation
 RT caustics (optics)
 elastic waves
 electromagnetic radiation
 extraterrestrial radiation
 linear polarization
 plasma radiation
 ∞ polarization
 polarization characteristics
 ∞ radiation
 ∞ rays

polarizers
 DEF Devices for polarizing radiant energy.
 RT Kerr cells
 light (visible radiation)
 optical polarization
 polarimeters
 polariscopes
 polarization (waves)
 polarized electromagnetic radiation

polarographs
 USE **polarography**

polarography
 UF *polarographs*
 GS electrical measurement
 . **polarography**
 RT chemical analysis
 optical polarization
 polarimeters
 quantitative analysis

polarons
 GS elementary excitations
 . **polarons**
 particles
 . charged particles
 . . energetic particles
 . . . electrons
 **polarons**
 . corpuscular radiation
 . . energetic particles
 . . . electrons
 **polarons**
 . elementary particles
 . . fermions
 . . . leptons
 electrons
 **polarons**
 RT conduction bands
 cross polarization
 electron phonon interactions
 ionic crystals
 phonons
 plasmons
 polarization (waves)

∞ **poles**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ∞ dipoles
 magnetic dipoles
 magnetic poles
 monopoles
 poles (supports)
 Regge poles

poles (supports)
 RT electric power transmission

∞ poles

police
 GS personnel
 . **police**
 RT communities
 crime
 military personnel
 regulations
 security
 social factors
 violence

policies
 GS **policies**
 . energy policy
 . foreign policy
 . . international relations
 . . . international cooperation
 outer space treaty
 . patent policy
 . procurement policy
 RT copyrights
 governments
 licensing
 prohibition
 regulations
 rules

poliomyelitis
 GS diseases
 . infectious diseases
 . . viral diseases
 . . . **poliomyelitis**

Polish TS-11 aircraft
 USE **TS-11 aircraft**

polished metals
 USE **metal polishing**

polishing
 GS **polishing**
 . metal polishing
 . . electropolishing
 . vibratory polishing
 RT abrasion
 cleaning
 finishes
 grinding (material removal)
 metallography
 smoothing
 surface finishing
 ultrasonic cleaning

politics
 RT air law
 communities
 culture (social sciences)
 governments
 international cooperation
 international law
 law (jurisprudence)
 nations
 regimes
 sociology
 sovereignty
 United Nations
 voting
 warfare

pollen
 GS particles
 . **pollen**
 RT aerobiology
 air pollution
 dust
 plants (botany)

pollutants
 USE **contaminants**

pollution
 GS **pollution**
 . environment pollution
 . . air pollution
 . . . global air pollution
 . . . indoor air pollution
 . . soil pollution
 . . water pollution

pollution control

- . . . oil pollution
- . noise pollution
- . thermal pollution
- RT clean fuels
- contaminants
- contamination
- debris
- decontamination
- dissipation
- elimination
- endangered species
- energy policy
- environment effects
- environment protection
- environmental quality
- environmental surveys
- human wastes
- metabolic wastes
- Microcystis
- microorganisms
- nonpoint sources
- oil slicks
- poisons
- prevention
- public health
- purity
- quality
- radioactive wastes
- smoke abatement
- solid wastes
- toxicology
- waste disposal
- wastes
- water
- water reclamation
- water treatment

pollution control

- GS environmental control
- . **pollution control**
- RT air quality
- biochemical oxygen demand
- ∞ control
- dewatering
- environmental cleanup
- environmental surveys
- flue gases
- fly ash
- particulates

pollution monitoring

- RT air pollution
- air quality
- ambience
- environment pollution
- global air pollution
- ground stations
- in situ measurement
- monitors
- particulates
- soil pollution
- warning systems
- water pollution
- water sampling

pollution transport

- DEF Dispersing or diffusion of atmospheric or water pollutants. Used for atmospheric loading.
- UF *atmospheric loading*
- GS environmental transport
- . **pollution transport**
- RT aerosols
- air pollution
- atmospheric circulation
- atmospheric diffusion
- combustion products
- dispersing
- environment pollution
- exhaust emission
- exhaust gases
- gas transport
- gaseous diffusion
- global air pollution
- plumes
- thermal pollution
- trace contaminants
- transport properties
- transport theory
- water circulation

water pollution

poloidal flux

- DEF Plasma confinement concept with multiple magnetic fields.
- RT magnetic field configurations
- tokamak devices
- toroidal plasmas

polonium

- GS chemical elements
- . metalloids
- . . **polonium**
- . . . polonium isotopes
- polonium 208
- polonium 209
- polonium 210
- RT metals

polonium 208

- GS chemical elements
- . metalloids
- . . polonium
- . . . polonium isotopes
- **polonium 208**
- nuclides
- isotopes
- polonium isotopes
- **polonium 208**
- radioactive isotopes
- **polonium 208**
- RT metals

polonium 209

- GS chemical elements
- . metalloids
- . . polonium
- . . . polonium isotopes
- **polonium 209**
- nuclides
- isotopes
- polonium isotopes
- **polonium 209**
- radioactive isotopes
- **polonium 209**
- RT metals

polonium 210

- GS chemical elements
- . metalloids
- . . polonium
- . . . polonium isotopes
- **polonium 210**
- nuclides
- isotopes
- polonium isotopes
- **polonium 210**
- radioactive isotopes
- **polonium 210**
- RT metals

polonium compounds

- RT ∞ chemical compounds
- ∞ Group 6A compounds

polonium isotopes

- GS chemical elements
- . metalloids
- . . polonium
- . . . **polonium isotopes**
- polonium 208
- polonium 209
- polonium 210
- nuclides
- isotopes
- **polonium isotopes**
- polonium 208
- polonium 209
- polonium 210
- RT metals

polyacetylene

- DEF An aliphatic organic polymer that has high semiconductor properties which can be enhanced by doping.
- RT conducting polymers

semiconductors (materials)

polyacrylates

USE **acrylic resins**

polyacrylonitrile

- (added January 1990)
- UF *PAN (polyacrylonitrile)*
- GS nitrogen compounds
- . nitriles
- . . acrylonitriles
- . . . **polyacrylonitrile**
- . . . nitrogen polymers
- . . . **polyacrylonitrile**
- organic compounds
- . nitriles
- . . acrylonitriles
- . . . **polyacrylonitrile**
- RT acrylic resins
- carbon fibers
- ∞ polymers
- synthetic fibers

polyamide resins

- UF *nylon resins*
- GS plastics
- . synthetic resins
- . . thermosetting resins
- . . . furan resins
- **polyamide resins**
- Kevlar (trademark)
- Nylon (trademark)
- resins
- . synthetic resins
- . . thermosetting resins
- . . . furan resins
- **polyamide resins**
- Kevlar (trademark)
- Nylon (trademark)
- RT aramid fiber composites
- aramid fibers

polyatomic gases

- GS gases
- . molecular gases
- . . **polyatomic gases**
- . . . diatomic gases

polyatomic molecules

- GS molecules
- . **polyatomic molecules**
- . . diatomic molecules
- . . . triatomic molecules
- RT atoms
- buckminsterfullerene
- chemical bonds
- ∞ chemical compounds
- fullerenes
- ions
- molecular structure
- molecular weight
- positive ions

polybenzimidazole

- GS nitrogen compounds
- . nitrogen polymers
- . . **polybenzimidazole**
- RT synthetic fibers

polyblends

USE **polymer blends**

polybrominated biphenyls

- DEF A group of 209 chemicals whose toxicity varies and includes principally one fire retardant called firemaster. Used for PBB.
- UF *PBB*
- GS phenyls
- . **polybrominated biphenyls**
- toxins and antitoxins
- . **polybrominated biphenyls**
- RT bromine compounds
- flame retardants
- polychlorinated biphenyls

polybutadiene

- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . dienes

- ... **polybutadiene**
 - plastics
- RT **polybutadiene**
 - addition resins
 - block copolymers
 - butadiene
 - HTPB propellants
 - synthetic rubbers
- polybutadiene tetranitramine**
 - GS nitrogen compounds
 - . nitro compounds
 - . . . **polybutadiene tetranitramine**
 - . nitrogen polymers
 - . . . **polybutadiene tetranitramine**
 - RT plastic propellants
- polycarbonates**
 - GS carbon compounds
 - . carbonates
 - . . . **polycarbonates**
 - . . . Lexan (trademark)
 - esters
 - . **polycarbonates**
 - . . Lexan (trademark)
 - RT polycarbosilanes
 - ∞ polymers
- polycarbosilanes**
 - (added July 1991)
 - GS silicon polymers
 - . polysilanes
 - . . . **polycarbosilanes**
 - RT ceramic fibers
 - organometallic polymers
 - polycarbonates
 - silanes
 - silicon carbides
- polychlorinated biphenyls**
 - UF *PCB*
 - GS phenyls
 - . **polychlorinated biphenyls**
 - RT polybrominated biphenyls
- polycrystals**
 - GS crystals
 - . **polycrystals**
 - RT bicrystals
 - crystal structure
 - single crystals
- polycyclic aromatic hydrocarbons**
 - (added November 1994)
 - UF *PAH*
 - GS organic compounds
 - . cyclic compounds
 - . . cyclic hydrocarbons
 - . . . **polycyclic aromatic hydrocarbons**
 - . hydrocarbons
 - . . cyclic hydrocarbons
 - . . . **polycyclic aromatic hydrocarbons**
 - RT ∞ aromatic compounds
 - combustion products
 - cosmic dust
 - diffuse interstellar bands
 - graphene
 - interstellar matter
- polycythemia**
 - RT hemoglobin
 - hemolysis
 - hemorrhages
 - spleen
- polyester resins**
 - GS plastics
 - . synthetic resins
 - . . **polyester resins**
 - resins
 - . synthetic resins
 - . . **polyester resins**
 - RT Dacron (trademark)
 - thermosetting resins
- polyesters**
 - DEF Polymers in which the repeated structural unit in the chain is of the ester type.
- GS esters
 - . **polyesters**
- RT ∞ polymers
 - synthetic fibers
- polyether resins**
 - GS plastics
 - . synthetic resins
 - . . **polyether resins**
 - . . . PEEK
 - . . . polymethyl methacrylate resins
 - . synthetic resins
 - . . **polyether resins**
 - . . . PEEK
 - . . . polymethyl methacrylate
 - RT vulcanized elastomers
- polyetheretherketones*
 - USE **PEEK**
- polyethylene terephthalate**
 - GS esters
 - . **polyethylene terephthalate**
 - plastics
 - . polyethylenes
 - . . **polyethylene terephthalate**
 - terephthalate
 - . **polyethylene terephthalate**
 - RT addition resins
 - Mylar (trademark)
 - ∞ polymers
- polyethylenes**
 - GS plastics
 - . **polyethylenes**
 - . . polyethylene terephthalate
 - RT addition resins
 - ethylene
 - synthetic resins
 - thermoplastic resins
- polygonization**
 - RT crystal defects
 - crystal growth
 - recrystallization
- polygons**
 - GS geometry
 - . Euclidean geometry
 - . . **polygons**
 - . . . hexagons
 - . . . tetragons
 - parallelograms
 - rhomboids
 - rectangles
 - squares (mathematics)
 - trapezoids
 - . . . triangles
 - RT polytopes
- polyhedrons**
 - GS geometry
 - . Euclidean geometry
 - . . **polyhedrons**
 - . . . cubes (mathematics)
 - . . . icosahedrons
 - . . . octahedrons
 - . . . parallelepipeds
 - . . . pyramids
 - . . . rhombohedrons
 - . . . tetrahedrons
 - RT buckminsterfullerene
 - fullerenes
 - polytopes
- polyimide resins**
 - GS resins
 - . **polyimide resins**
 - RT bismaleimide
 - polyimides
 - resin matrix composites
- polyimides**
 - GS nitrogen compounds
 - . amides
 - . . **polyimides**
 - . . . bismaleimide
 - . . . Kapton (trademark)
- RT polyimide resins
- polyisobutylene**
 - GS plastics
 - . **polyisobutylene**
 - RT addition resins
 - synthetic rubbers
- polyisoprenes**
 - RT ∞ polymers
 - rubber
 - synthetic rubbers
- polymer alloys*
 - USE **polymer blends**
- polymer blends**
 - (added November 1992)
 - UF *polyblends*
 - polymer alloys*
 - GS mixtures
 - . **polymer blends**
 - RT copolymers
 - polymer physics
 - ∞ polymers
 - thermoplastic resins
- polymer chemistry**
 - RT biopolymer denaturation
 - ∞ chemistry
 - glass transition temperature
 - oligomers
 - phosphazene
 - polymer physics
 - ∞ polymers
 - polywater
- polymer matrix composites**
 - DEF Materials consisting of reinforcing fibers, filaments, and/or whiskers embedded in polymeric bonding matrices for increased mechanical and physical properties.
 - GS composite materials
 - . **polymer matrix composites**
 - . . epoxy matrix composites
 - . . . boron-epoxy composites
 - . . . graphite-epoxy composites
 - . . . graphite-polyimide composites
 - . . reinforced plastics
 - . . . carbon fiber reinforced plastics
 - . . . carbon-phenolic composites
 - . . . glass fiber reinforced plastics
 - . . . micarta
 - RT aramid fiber composites
 - bismaleimide
 - boron fibers
 - ∞ construction materials
 - fiber composites
 - hybrid composites
 - laminates
 - ∞ materials
 - ∞ matrices
 - matrix materials
 - nanocomposites
 - PEEK
 - ∞ polymers
 - pultrusion
 - resin film infusion
 - resin matrix composites
 - resin transfer molding
 - sheet molding compounds
- polymer physics**
 - RT glass transition temperature
 - ∞ physics
 - polymer blends
 - polymer chemistry
 - ∞ polymers
 - polywater
 - ∞ science
- polymerase chain reaction**
 - (added August 2004)
 - DEF In vitro methods for producing large amounts of specific DNA or RNA fragments of defined length and sequence from small amounts of short oligonucleotide flanking sequences (primers). The essential steps include thermal denaturation of the double-stranded target molecule, annealing of the primers to their

polymeric films

complementary sequences, and extension of the annealed primers by enzymatic synthesis with DNA polymerase.

- GS in vitro methods and tests
 - . **polymerase chain reaction**
- RT biochemistry
 - deoxyribonucleic acid
 - genetic engineering
 - oligonucleotides

polymeric films

- UF *plastic films*
- GS **polymeric films**
 - . Kapton (trademark)
 - . Mylar (trademark)
- RT casting
 - conducting polymers
 - fibers
- ∞ films
 - Langmuir-Blodgett films
 - Nylon (trademark)
 - photographic film
 - plastic coatings
 - polypyrroles
- ∞ sheets

polymerization

DEF A chemical reaction in which the molecules of monomers are linked together to form polymers.

- GS synthesis (chemistry)
 - . **polymerization**
 - . . copolymerization
 - . . dimerization
- RT chemical reactions
 - coupled modes
 - cycloaddition
 - depolymerization
 - electrochemical synthesis
 - oligomers
 - quinoxalines
 - refining
- ∞ setting
 - Ziegler catalyst
 - zwitterions

∞ polymers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT biopolymers
 - block copolymers
 - cellophane
 - conducting polymers
 - coordination polymers
 - copolymerization
 - copolymers
 - dendrimers
 - elastomers
 - electroactive polymers
 - ferroelectric materials
 - fluoropolymers
 - formica
 - glycidyl azide polymer
 - high polymers
 - Kapton (trademark)
 - KEL-F
 - Lexan (trademark)
 - lignin
 - macromolecules
 - methyl polysiloxanes
 - micarta
 - monomers
 - Mylar (trademark)
 - nitrogen polymers
 - Nylon (trademark)
 - oligomers
 - oligonucleotides
 - organic materials
 - organometallic polymers
 - oxetane polymers
 - phosphorus polymers
 - photopolymers
 - plastics
 - polyacrylonitrile
 - polycarbonates
 - polyesters
 - polyethylene terephthalate
 - polyisoprenes
 - polymer blends

polymer chemistry
polymer matrix composites
polymer physics
polyquinoxalines
polysilanes
polysiloxanes
polytetrafluoroethylene
polyurethane foam
polyvinyl fluoride
prepolymers
Pyrrones (trademark)
silicon polymers
silicones
siloxanes
solithanes
styrofoam (trademark)
synthetic resins
teflon (trademark)
vinyl copolymers
vinyl polymers

polymethyl methacrylate

- UF *lucite (trademark)*
 - . *plexiglass (trademark)*
- GS plastics
 - . synthetic resins
 - . . polyether resins
 - . . . **polymethyl methacrylate**
 - resins
 - . synthetic resins
 - . . polyether resins
 - . . . **polymethyl methacrylate**
 - vinyl polymers
 - . **polymethyl methacrylate**

polymorphism

- GS morphology
 - . **polymorphism**
- RT allotropy
 - crystal lattices
 - crystal structure
- ∞ physical properties

polynomials

- GS algebra
 - . **polynomials**
 - . . binomials
 - . . dyadics
 - . . Hermitian polynomial
- RT coefficients
 - cubic equations
 - eigenvalues
 - eigenvectors
- ∞ equations
 - linear equations
 - nonlinear equations
 - quadratic equations
 - roots of equations
 - shape functions

polynuclear organic compounds

DEF Hydrocarbon molecules with two or more nuclei and with or without oxygen, nitrogen, or other elements.

- GS organic compounds
 - . **polynuclear organic compounds**
- RT air pollution
 - ∞ chemical compounds
 - petroleum products
 - purification

polynucleotides

DEF Linear sequences of esters of nucleotides and phosphoric acid.

- GS organic compounds
 - . nucleotides
 - . . **polynucleotides**
 - phosphorus compounds
 - . phosphates
 - . . **polynucleotides**
- RT biopolymers
 - proteins
 - ribonucleic acids

polynyas

(added July 2001)
DEF Large areas of open water surrounded by sea ice.

- UF *ice clearings*
- GS clearings (openings)

. **polynyas**
RT air sea ice interactions

- Antarctic regions
- Arctic Ocean
- ocean surface
- polar regions
- sea ice
- surface water

polyorganosiloxanes

USE **polysiloxanes**

Polyot satellites

GS artificial satellites

- . **Polyot satellites**

polypeptides

DEF In organic chemistry, chains of amino acids linked by peptide bonds but with lower molecular weights than proteins; obtained by synthesis or by partial hydrolysis of proteins.

- GS organic compounds
 - . peptides
 - . . **polypeptides**
 - . . . angiotensins
 - . . . glutathione
 - . . . hypertensin
- RT amino acids
 - biopolymers
 - proteins

polyphenyl ether

GS ethers

- . **polyphenyl ether**

polyphenyls

GS phenyls

- . **polyphenyls**
- . . tetraphenyls
- . . triphenyls

polypropylene

GS plastics

- . **polypropylene**

RT addition resins
synthetic resins

polypyrroles

(added August 1994)
UF *PPY*
RT conducting polymers
electrode materials
polymeric films
pyrroles

polyquinoxalines

RT ∞ chemical compounds
∞ polymers

polysaccharides

GS biopolymers

- . **polysaccharides**
- . . cellulose
- . . . Fortisan (trademark)
- . . chitin
- . . dextrans
- . . glycogens
- . . starches

organic compounds

- . carbohydrates
- . . **polysaccharides**
- . . . cellulose
- Fortisan (trademark)
- . . . chitin
- . . . dextrans
- . . . glycogens
- . . . starches

RT gums (substances)

polysilanes

(added July 1991)
UF *oxosilanes*
GS silicon polymers

- . **polysilanes**
- . . polycarbosilanes

RT organometallic polymers
∞ polymers
silanes

polysiloxanes

(added July 1991)

- UF *polyorganosiloxanes*
 GS silicon polymers
 . silicones
 . . **polysiloxanes**
 . . . methyl polysiloxanes
 RT ∞ polymers
 silicon compounds
 siloxanes
- polyslips**
 RT ∞ slip
- polystation doppler tracking system**
 GS networks
 . tracking networks
 . . **polystation doppler tracking system**
 stations
 . ground stations
 . . **polystation doppler tracking system**
 . tracking stations
 . . **polystation doppler tracking system**
 tracking (position)
 . **polystation doppler tracking system**
 RT Doppler radar
 missile tracking
 pulse radar
 radar networks
 satellite doppler positioning
 space detection and tracking system
 spacecraft tracking
 ∞ systems
- polystyrene**
 GS plastics
 . **polystyrene**
 . . styrofoam (trademark)
 styrenes
 . **polystyrene**
 . . styrofoam (trademark)
 vinyl polymers
 . **polystyrene**
 . . styrofoam (trademark)
 RT addition resins
 block copolymers
 Santowax (trademark)
 synthetic resins
 thermoplastic resins
- polysulfides**
 GS chalcogenides
 . sulfides
 . . inorganic sulfides
 . . . **polysulfides**
 sulfur compounds
 . sulfides
 . . inorganic sulfides
 . . . **polysulfides**
 RT composite propellants
- polytetrafluoroethylene**
 GS halogen compounds
 . fluorine compounds
 . . fluoro compounds
 . . . difluoro compounds
 **polytetrafluoroethylene**
 teflon (trademark)
 fluorine organic compounds
 fluorohydrocarbons
 **polytetrafluoroethylene**
 teflon (trademark)
 fluoropolymers
 **polytetrafluoroethylene**
 teflon (trademark)
 organic compounds
 . fluorine organic compounds
 . . fluorohydrocarbons
 . . . **polytetrafluoroethylene**
 teflon (trademark)
 . . . fluoropolymers
 **polytetrafluoroethylene**
 teflon (trademark)
 . hydrocarbons
 . . fluorohydrocarbons
 . . . **polytetrafluoroethylene**
 teflon (trademark)
 plastics
- . **polytetrafluoroethylene**
 . . teflon (trademark)
 RT ∞ polymers
 synthetic resins
- polytopes**
 RT analytic geometry
 Euclidean geometry
 hyperplanes
 polygons
 polyhedrons
- polytropic processes**
 RT adiabatic conditions
 ∞ isobars
 thermodynamics
- polyurethane foam**
 RT foams
 low density materials
 ∞ polymers
 soils
 sponges (materials)
- polyurethane resins**
 GS resins
 . **polyurethane resins**
 RT composite propellants
- polyvinyl alcohol**
 GS hydroxyl compounds
 . alcohols
 . . **polyvinyl alcohol**
 plastics
 . **polyvinyl alcohol**
 vinyl polymers
 . **polyvinyl alcohol**
 RT addition resins
 synthetic resins
- polyvinyl chloride**
 UF *Geon (trademark)*
 GS plastics
 . **polyvinyl chloride**
 vinyl polymers
 . **polyvinyl chloride**
 RT addition resins
 chlorides
 synthetic resins
 tetrahydrofuran
- polyvinyl fluoride**
 DEF DuPont's Tedlar, unplasticized PVF films with outstanding resistance to ultraviolet radiation. Used for Tedlar (trademark).
 UF *Tedlar (trademark)*
 GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . **polyvinyl fluoride**
 . . . fluoro compounds
 . . . fluorine organic compounds
 fluoropolymers
 **polyvinyl fluoride**
 halides
 fluorides
 **polyvinyl fluoride**
 organic compounds
 . fluorine organic compounds
 . . fluoropolymers
 . . . **polyvinyl fluoride**
 plastics
 . **polyvinyl fluoride**
 vinyl polymers
 . **polyvinyl fluoride**
 RT ∞ polymers
- polyvinylidene*
 (added December 1997)
 USE **vinylidene**
- polywater**
 GS water
 . **polywater**
 RT atomic structure
 chemical bonds
 molecular structure
 polymer chemistry
- polymer physics
- Pomeranchuk theorem**
 GS theorems
 . **Pomeranchuk theorem**
 RT antiparticles
 deuterons
 diffraction patterns
 eikonal equation
 elastic scattering
 electrons
 elementary particles
 field theory (physics)
 Fredholm equations
 Glauber theory
 high energy interactions
 kaons
 mesons
 nucleon-nucleon scattering
 pomerons
 Regge poles
 scattering cross sections
- pomerons**
 RT nuclear reactions
 Pomeranchuk theorem
 proton-proton reactions
 Regge poles
 scattering
 scattering cross sections
- ponderomotive forces**
 GS electromotive forces
 . **ponderomotive forces**
 RT electrostatics
 ∞ force
 Lorentz force
 relativistic plasmas
 relativity
- ponds**
 DEF Natural bodies of standing fresh water occupying small surface depressions, usually smaller than lakes and larger than pools.
 RT aquifers
 Great Salt Lake (UT)
 irrigation
 lagoons
 lakes
 limnology
 liquid wastes
 reservoirs
 solar ponds (heat storage)
 surface water
 waste disposal
 water resources
 watersheds
 windpowered pumps
- Pontiac (MI)**
 GS cities
 . **Pontiac (MI)**
 RT Michigan
- pontryagin principle**
 RT calculus of variations
 maximum principle
 optimization
 reaction time
- Population I stars**
 (added May 2002)
 DEF Young stars formed from matter of previous generations of stars (Population II stars), and having significant amounts of heavier elements. They are particularly concentrated in the interstellar dust of the arms of spiral galaxies.
 GS celestial bodies
 . stars
 . . **Population I stars**
 RT B stars
 interstellar matter
 irregular galaxies
 O stars
 open clusters
 Population II stars
- Population II stars**
 (added May 2002)

Population III stars

DEF Old, low-metallicity stars up to 15 billion years in age found in globular clusters, elliptical galaxies, and the bulges and halos of spiral galaxies.

GS celestial bodies
. stars
. . . **Population II stars**
RT elliptical galaxies
galactic halos
globular clusters
horizontal branch stars
Population I stars

Population III stars

(added July 1999)
UF *primordial stars*
GS celestial bodies
. stars
. . . **Population III stars**
RT cosmology
dark matter
relic radiation
stellar evolution
supermassive stars

population inversion

GS inversions
. **population inversion**
RT electron pumping
energy levels
molecular relaxation
nitrogen lasers
nuclear pumping
populations
stimulated emission

population theory

RT populations
probability theory
∞ theories

populations

RT adults
biomass
discriminant analysis (statistics)
geographic distribution
population inversion
population theory
predators
∞ statistics

porcelain

GS ceramics
. **porcelain**
refractory materials
. **porcelain**
RT ceramic coatings
enamels
glass
glazes
silicon dioxide
vitreous materials
vitrification

pores

USE **porosity**

porosity

DEF The volume fraction of voids contained in a solid, often expressed as a percent.

UF *pores*
GS **porosity**
. microporosity
RT aquifers
buoyancy
compressibility
defects
∞ density
density (mass/volume)
formations
gas injection
hole distribution (mechanics)
hygral properties
impregnating
infiltration
interstices
leakage
moisture resistance
permeability
permeating

pinholes
porous boundary layer control
porous materials
porous plates
porous silicon
∞ properties
sintering
textures
void ratio
voids
wettability

porous airfoils

USE **porous boundary layer control**

porous boundary layer control

UF *porous airfoils*
GS boundary layer control
. **porous boundary layer control**
RT ∞ control
convective flow
Ekman layer
free convection
holes (mechanics)
mass transfer
perforated plates
porosity
wings

porous materials

GS **porous materials**
. porous silicon
RT aerogels
brittle materials
∞ cells
honeycomb structures
interstices
low density materials
∞ materials
metal powder
porosity
powder metallurgy
sands
soils
sponges (materials)
xerogels

porous plates

GS structural members
. plates (structural members)
. . . **porous plates**
RT low density materials
porosity

porous silicon

(added September 1995)
GS chemical elements
. metalloids
. . . silicon
. . . . **porous silicon**
porous materials
. **porous silicon**
RT cathodoluminescence
conduction bands
electroluminescence
light sources
photoluminescence
porosity

porous walls

GS walls
. **porous walls**
RT ∞ diffusers

porphines

GS organometallic compounds
. **porphines**
RT chlorophylls
hemoglobin

porphyra

GS plants (botany)
. algae
. . . **porphyra**

porphyrins

GS **porphyrins**
. chlorophylls

RT hemoglobin

porpoises

GS animals
. vertebrates
. . . mammals
. . . . marine mammals
. . . . **porpoises**

portable equipment

RT ∞ equipment
lixiscopes
logistics
mobility
stowage (onboard equipment)

portable life support systems

UF *PLSS*
GS support systems
. life support systems
. . . **portable life support systems**
. . . . AEPS
. . . . IMLSS
RT argon-oxygen atmospheres
biopaks
breathing apparatus
emergency life sustaining systems
helium-oxygen atmospheres
oxygen masks
pressure suits
∞ systems

Portevin-le Chatelier effect

(added August 1997)
DEF A discontinuous yielding in crystalline solids characterized by a serrated or step-like deformation curve.
UF *PLC effect*
RT crystal dislocations
deformation
∞ effects
strain rate
stress-strain diagrams
stress-strain relationships

∞ ports

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT airports
deepwater terminals
drydocks
harbors
ports (openings)
shipyards
wharves

ports (openings)

GS openings
. **ports (openings)**
RT apertures
cavities
ducts
exhaust systems
orifices
outlets
∞ ports
vents
∞ windows
windows (apertures)

Portugal

GS nations
. **Portugal**
. . Azores
RT Europe
Portuguese space program

Portuguese space program

(added August 1990)
GS programs
. space programs
. . European space programs
. . . **Portuguese space program**
RT Portugal

Poseidon missiles

GS missiles
. ballistic missiles
. . **Poseidon missiles**
. surface to surface missiles

. . . fleet ballistic missiles
 . . . **Poseidon missiles**
 RT ballistic missile submarines
 guided missile submarines
 sea launching

Poseidon satellite
 GS artificial satellites
 . French satellites
 . . **Poseidon satellite**
 RT TOPEX

∞ **position**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT attitude (inclination)
 position (location)
 position (title)

position (location)
 UF *localization*
location
 GS **position (location)**
 . solar position
 RT altitude
 astrolabes
 azimuth
 bearing (direction)
 collating
 collocation
 coordinates
 detection
 distance
 ephemerides
 exposure
 ∞ fixing
 geometry
 latitude
 longitude
 misalignment
 navigation
 orbital position estimation
 ∞ orientation
 ∞ points
 ∞ position
 position errors
 position sensing
 positioning
 radar beacons
 sites
 sound ranging
 spatial distribution
 spherical coordinates
 stations
 surveys
 tracking (position)

position (title)
 RT employee relations
 evaluation
 ∞ grade
 personnel
 ∞ position
 ratings

position errors
 GS errors
 . **position errors**
 . . boresight error
 RT astrolabes
 error signals
 navigation
 optical correction procedure
 orbit determination
 orbital position estimation
 position (location)
 positioning
 velocity errors

position indicators
 GS display devices
 . **position indicators**
 . . plan position indicators
 . . radio direction finders
 . . spacecraft position indicators
 measuring instruments
 . indicating instruments
 . . **position indicators**
 . . . plan position indicators
 . . . radio direction finders

. . . spacecraft position indicators
 RT aircraft instruments
 altimeters
 beacons
 distance measuring equipment
 flight instruments
 Global Positioning System
 head-up displays
 navigation aids
 navigation instruments
 plotters
 position sensing
 range finders
 rocket-borne instruments
 sextants
 solar compasses
 sound localization

position sensing
 RT computer vision
 electro-optics
 position (location)
 position indicators
 robotics

positioning
 GS **positioning**
 . formation flying
 . satellite doppler positioning
 . stationkeeping
 RT adjusting
 alignment
 ambiguity
 collating
 collocation
 displacement
 distributing
 ∞ distribution
 exposure
 fitting
 ∞ fixing
 ∞ Global Positioning System
 GLONASS
 instrument orientation
 ∞ joining
 latitude measurement
 longitude measurement
 look angles (electronics)
 navigation
 ∞ orientation
 ply orientation
 position (location)
 position errors
 radio navigation
 relocation
 ∞ setting
 spacing

positioning devices (machinery)
 GS **positioning devices (machinery)**
 . booms (equipment)
 . cams
 . jigs
 RT ∞ devices
 holders
 jacks (lifts)
 ∞ machinery
 slewing

positive feedback
 DEF Feedback which results in increasing the amplification. Used for regenerative feedback.
 UF *regenerative feedback*
 GS feedback
 . **positive feedback**
 RT amplification
 feedback amplifiers
 multivibrators
 nonlinear feedback
 oscillators
 regeneration (engineering)
 self oscillation
 transfer functions

positive ions
 DEF Group of atoms which has acquired a positive electric charge by the loss of one or more electrons.
 GS ions

. **positive ions**
 . . cations
 . . . formyl ions
 . . . vanadyl radical
 . . hydronium ions
 RT atoms
 hydrogen ions
 ion density (concentration)
 ionic mobility
 ionospheric ion density
 magnetospheric ion density
 metal ions
 molecular ions
 monatomic molecules
 polyatomic molecules
 protons
 trivalent ions
 valence

positron annihilation
 UF *electron-positron annihilation*
 GS annihilation reactions
 . **positron annihilation**
 RT antiparticles
 electron-positron pairs
 elementary particles
 matter-antimatter propulsion
 nuclear particles
 pair production
 particles

positronium
 RT atoms
 excitons

positrons
 DEF Subatomic particles which are identical to electrons in atomic mass, theoretical rest mass, and energy, but opposite in sign.
 GS antimatter
 . antiparticles
 . . **positrons**
 particles
 . charged particles
 . . **positrons**
 . elementary particles
 . . antiparticles
 . . . **positrons**
 . . fermions
 . . leptons
 . . . **positrons**
 . nuclear particles
 . . antiparticles
 . . . **positrons**
 RT electron-positron pairs
 electron-positron plasmas
 pair production

post boost propulsion system
 RT ascent trajectories
 propulsion
 propulsion system configurations
 rocket engines
 spacecraft propulsion
 ∞ systems
 trajectory control

postamplifiers
 GS amplifiers
 . **postamplifiers**
 RT preamplifiers

post-blast nuclear radiation
 GS nuclear radiation
 . **post-blast nuclear radiation**
 RT fallout
 half life
 radiant flux density
 ∞ radiation
 radiation effects
 radioactive decay
 radioactivity
 Vela satellites

posterior sections
 RT anatomy
 dorsal sections

postflight analysis
 RT ∞ analyzing

postlaunch reports

- ∞ performance
- postmission analysis (spacecraft)

postlaunch reports

DEF Memoranda issued following spacecraft launchings to report launch data, the launch vehicle performance, orbital elements (expected and measured), and current status.

- GS documents
 - . **postlaunch reports**
 - reports
 - . **postlaunch reports**

- RT prelaunch summaries
- spacecraft launching
- spacecraft performance
- summaries

postmission analysis (spacecraft)

DEF A broader term than postflight analysis which deals with the scientific aspects of a mission.

- RT flight tests
- postflight analysis

postulates

- USE **axioms**

posture

- GS **posture**
 - . head down tilt
 - . head up tilt
- RT human body
- orthostatic tolerance
- physical fitness

potable liquids

- GS liquids
 - . **potable liquids**
 - . beverages
 - . . . wines
 - . . . potable water
- RT purity

potable water

- GS liquids
 - . potable liquids
 - . . **potable water**
 - water
 - . **potable water**
- RT cold water
- conservation
- consumables (spacecrew supplies)
- drought
- fresh water
- ground water
- limnology
- Modular Integrated Utility System
- oases
- purification
- sanitation
- springs (water)
- water management
- water resources
- water tables
- water treatment

potassium

- GS chemical elements
 - . alkali metals
 - . . **potassium**
 - . . . liquid potassium
 - . . . potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
 - metals
 - . alkali metals
 - . . **potassium**
 - . . . liquid potassium
 - . . . potassium isotopes
 - potassium 38
 - potassium 39
 - potassium 40
- RT electrolyte metabolism
- creep

potassium 38

- GS chemical elements
 - . alkali metals
 - . . potassium

- . . . potassium isotopes
 - **potassium 38**
 - nuclides
 - isotopes
 - potassium isotopes
 - **potassium 38**
 - radioactive isotopes
 - **potassium 38**
 - metals
 - . alkali metals
 - . . potassium
 - . . . potassium isotopes
 - **potassium 38**

potassium 39

- GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . potassium isotopes
 - **potassium 39**
 - nuclides
 - isotopes
 - potassium isotopes
 - **potassium 39**
 - metals
 - . alkali metals
 - . . potassium
 - . . . potassium isotopes
 - **potassium 39**

potassium 40

- GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . potassium isotopes
 - **potassium 40**
 - nuclides
 - isotopes
 - potassium isotopes
 - **potassium 40**
 - radioactive isotopes
 - **potassium 40**
 - metals
 - . alkali metals
 - . . potassium
 - . . . potassium isotopes
 - **potassium 40**

potassium alloys

- GS alloys
 - . **potassium alloys**

potassium bromides

- GS halogen compounds
 - . bromine compounds
 - . . bromides
 - . . . **potassium bromides**
 - . . . halides
 - . . . bromides
 - . . . **potassium bromides**
 - . . . metal halides
 - . . . **potassium bromides**
 - potassium compounds
 - . **potassium bromides**

potassium channels (biology)

- (added August 2002)
- USE **ion channels (biology)**

potassium chlorides

- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **potassium chlorides**
 - . . . halides
 - . . . chlorides
 - . . . **potassium chlorides**
 - . . . metal halides
 - . . . **potassium chlorides**
 - potassium compounds
 - . **potassium chlorides**

potassium chromates

- GS chromium compounds
 - . chromates
 - . . **potassium chromates**
 - potassium compounds

. potassium chromates

potassium compounds

- GS **potassium compounds**
 - . alum
 - . nepheline
 - . potassium bromides
 - . potassium chlorides
 - . potassium chromates
 - . potassium hydrides
 - . potassium hydroxides
 - . potassium iodides
 - . potassium nitrates
 - . potassium oxides
 - . potassium perchlorates
 - . potassium peroxides
 - . potassium phosphates
 - . potassium silicates
- RT ∞ alkali metal compounds
- ∞ chemical compounds
- ∞ metal compounds

potassium hydrides

- GS hydrogen compounds
 - . hydrides
 - . . metal hydrides
 - . . . **potassium hydrides**
 - potassium compounds
 - . **potassium hydrides**

potassium hydroxides

- GS bases (chemical)
 - . alkalies
 - . . **potassium hydroxides**
 - hydroxides
 - . **potassium hydroxides**
 - potassium compounds
 - . **potassium hydroxides**

potassium iodides

- GS halogen compounds
 - . halides
 - . . metal halides
 - . . . alkali halides
 - **potassium iodides**
 - iodine compounds
 - iodides
 - **potassium iodides**
 - potassium compounds
 - . **potassium iodides**

potassium isotopes

- GS chemical elements
 - . alkali metals
 - . . potassium
 - . . . **potassium isotopes**
 - potassium 38
 - potassium 39
 - potassium 40
 - nuclides
 - isotopes
 - **potassium isotopes**
 - potassium 38
 - potassium 39
 - potassium 40
 - metals
 - . alkali metals
 - . . potassium
 - . . . **potassium isotopes**
 - potassium 38
 - potassium 39
 - potassium 40

potassium nitrates

- GS nitrogen compounds
 - . nitrates
 - . . inorganic nitrates
 - . . . **potassium nitrates**
 - potassium compounds
 - . **potassium nitrates**

potassium oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **potassium oxides**
 - potassium compounds

- . **potassium oxides**
- potassium perchlorates**
 - GS halogen compounds
 - . chlorine compounds
 - . . perchlorates
 - . . . **potassium perchlorates**
 - potassium compounds
 - . **potassium perchlorates**
 - RT explosives
 - solid rocket propellants
- potassium peroxides**
 - GS chalcogenides
 - . oxides
 - . . anhydrides
 - . . . peroxides
 - **potassium peroxides**
 - potassium compounds
 - . **potassium peroxides**
- potassium phosphates**
 - GS phosphorus compounds
 - . phosphates
 - . . **potassium phosphates**
 - potassium compounds
 - . **potassium phosphates**
- potassium silicates**
 - GS potassium compounds
 - . **potassium silicates**
 - silicon compounds
 - . silicates
 - . . **potassium silicates**
 - RT minerals
- potatoes**
 - GS farm crops
 - . **potatoes**
 - plants (botany)
 - . **potatoes**
 - vegetables
 - . **potatoes**
 - RT ∞ food
- ∞ **potential**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT Coulomb potential
 - electric potential
 - geopotential
 - ionization potentials
 - Klein-Dunham potential
 - myoelectric potentials
 - nucleon potential
 - open circuit voltage
 - plasma potentials
 - potential energy
 - potential fields
 - potential theory
 - Yukawa potential
- potential energy**
 - DEF Energy possessed by a body by virtue of its position in a gravity field in contrast with kinetic energy, that possessed by virtue of its motion.
 - GS **potential energy**
 - . electric potential
 - . . bioelectric potential
 - . . contact potentials
 - . . Coulomb potential
 - . . high voltages
 - . . Lienard potential
 - . . low voltage
 - . . open circuit voltage
 - . . photovoltages
 - . . quantum wells
 - . . . photoexcitation
 - . . spike potentials
 - . . threshold voltage
 - . geopotential height
 - . ionization potentials
 - . nuclear potential
 - . plasma potentials
 - RT chemical energy
 - electric energy storage
 - embedded atom method
 - ∞ energy
 - energy storage
- Froude number
- geopotential
- internal energy
- kinetic energy
- Lagrangian function
- Morse potential
- ∞ potential
- potential fields**
 - RT field theory (physics)
 - ∞ potential
- potential flow**
 - UF *irrotational flow*
 - GS fluid flow
 - . **potential flow**
 - . . equipotentials
 - RT Cartan space
 - heat transmission
 - inviscid flow
 - vorticity
- potential gradients**
 - DEF In general, the local space rate of change of any potential, as the gravitational potential gradient or the velocity potential gradient.
 - GS gradients
 - . **potential gradients**
 - RT pressure gradients
 - spark gaps
 - temperature gradients
- potential theory**
 - RT differential equations
 - Jacobi integral
 - Lennard-Jones potential
 - ∞ potential
 - stream functions (fluids)
 - ∞ theories
- ∞ **potentiometers**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF Instruments for measuring differences in electric potential by balancing the unknown voltage against a variable known voltage. If the balancing is accomplished automatically, the instrument is called a self-balancing potentiometer. A variable electric resistor.
 - RT potentiometers (instruments)
 - potentiometers (resistors)
- potentiometers (instruments)**
 - GS measuring instruments
 - . **potentiometers (instruments)**
 - RT bolometers
 - electric potential
 - electrical measurement
 - electrometers
 - ∞ potentiometers
 - thermocouple pyrometers
 - thermocouples
 - voltmeters
- potentiometers (resistors)**
 - GS attenuators
 - . resistors
 - . . **potentiometers (resistors)**
 - RT ∞ potentiometers
- potentiometric analysis**
 - UF *potentiometry*
 - GS chemical tests
 - . chemical analysis
 - . . **potentiometric analysis**
- potentiometry*
 - USE **potentiometric analysis**
- Potez aircraft**
 - RT ∞ aircraft
- Potomac River Valley (MD-VA-WV)**
 - GS valleys
 - . **Potomac River Valley (MD-VA-WV)**
 - RT District of Columbia
 - Maryland
 - Virginia
- West Virginia
- potting compounds**
 - RT ∞ compounds
 - encapsulating
 - insulation
- pouring**
 - RT casting
 - castings
- powder (particles)**
 - DEF An aggregate of discrete particles that are usually within the size range 1 to 1,000 mm.
 - GS particles
 - . **powder (particles)**
 - . . fines
 - . . metal powder
 - . . . platinum black
 - . . . powdered aluminum
 - sintered aluminum powder
 - RT compressibility
 - crop dusting
 - dust
 - explosives
 - flakes
 - flour (food)
 - granular materials
 - obsidian
 - pumice
 - size separation
- powder metallurgy**
 - DEF The art of producing metal powders and of the utilization of metal powders for the production of massive materials and shaped objects.
 - RT alloying
 - alloys
 - autoclaving
 - cermets
 - combustion synthesis
 - comminution
 - compacting
 - composite materials
 - electrodeposition
 - liquid phase sintering
 - low density materials
 - metal matrix composites
 - metal particles
 - metal powder
 - ∞ metallurgy
 - mixed crystals
 - porous materials
 - preforms
 - reaction bonding
 - sintered aluminum powder
 - sintering
 - vacuum melting
- powdered aluminum**
 - GS particles
 - . metal particles
 - . . metal powder
 - . . . **powdered aluminum**
 - sintered aluminum powder
 - . powder (particles)
 - . . metal powder
 - . . . **powdered aluminum**
 - sintered aluminum powder
 - RT aluminum
 - lithium aluminum hydrides
- powdered metals*
 - USE **metal powder**
- ∞ **power**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT electric generators
 - fluid power
 - flux (rate)
 - flux density
 - horsepower
 - resolution
 - thrust
- power amplifiers**
 - GS amplifiers
 - . **power amplifiers**

power beaming

RT amplidynes
cyclotron resonance devices
feedback amplifiers
magnetic amplifiers
parametric amplifiers
push-pull amplifiers
transistor amplifiers
traveling wave amplifiers

power beaming

(added November 1989)

UF *beamed power*
GS **power beaming**
. laser power beaming
. microwave power beaming
. satellite power transmission
RT energy conversion
laser propulsion
microwave transmission
∞ power transmission
solar power satellites
spacecraft power supplies

power conditioning

UF *power processing systems*
RT ∞ conditioning
electric current
electric generators
electric potential
energy conversion
energy conversion efficiency
output
satellite solar energy conversion
satellite solar power stations

power converters

RT ∞ converters
torque converters

power density (electromagnetic)

USE **radiant flux density**

power efficiency

GS efficiency
. **power efficiency**
RT combustion efficiency
compressor efficiency
exergy
horsepower
nozzle efficiency
power factor controllers
∞ power loss
propeller efficiency
propulsion system performance
propulsive efficiency
thermodynamic efficiency
transmission efficiency

power factor controllers

DEF A solid state electronic device that reduces excess energy waste in AC induction motors by providing only the amount of voltage required to satisfy a given load.

GS controllers
. **power factor controllers**
RT current regulators
electric motors
energy conservation
energy conversion efficiency
induction motors
power efficiency
voltage regulators

power gain

DEF The ratio of the power that a transducer delivers to a specified load, under specified operating conditions, to the power absorbed by its input circuit. Of an antenna, in a given direction, 4 pi times the ratio of the radiation intensity in that direction to the total power delivered to the antenna.

GS amplification
. **power gain**
RT CATT devices
high gain

open circuit voltage

power generators

USE **electric generators**

power law bodies

(added May 1995)

GS symmetrical bodies
. axisymmetric bodies
. . **power law bodies**
. bodies of revolution
. . **power law bodies**
RT blunt bodies
slender bodies

power limited spacecraft

RT ∞ spacecraft

power limiters

RT attenuators
clamping circuits
clipper circuits
limiter circuits

power lines

GS transmission lines
. **power lines**
RT bus conductors
∞ cables
coaxial cables
electric power transmission
electric wire
submarine cables
superconducting power transmission
underground transmission lines

∞ power loss

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT energy dissipation
power efficiency

power modules (STS)

DEF Modules for providing power for payloads for STS and mission dependent equipment.

GS modules
. **power modules (STS)**
RT orbital maneuvering vehicles
payload delivery (STS)
solar arrays
space transportation system
spacecraft power supplies

∞ power plants

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cogeneration
electric power plants
engines
Enrico Fermi atomic power plant
geothermal energy utilization
Hallam Nuclear Power Facility
hydroelectric power stations
hydroelectricity
ML-1 nuclear power plant
solar sea power plants
solar thermal electric power plants

power processing systems

USE **power conditioning**

power reactors

RT nuclear power reactors
∞ reactors
saturable reactors

power series

GS analysis (mathematics)
. calculus
. . series (mathematics)
. . . **power series**
. . . . Taylor series
. Maclaurin series
. real variables
. . series (mathematics)
. . . **power series**
. . . . Taylor series
. Maclaurin series
RT analytic functions

Bessel functions

power spectra

GS spectra
. **power spectra**
. . cepstra
RT acoustics
cepstral analysis
energy spectra
flux density
loudness
maximum entropy method

∞ power supplies

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aircraft engines
aircraft power supplies
auxiliary power sources
electric batteries
electric generators
electric power supplies
electron sources
energy requirements
heat sources
lead acid batteries
line current
lithium sulfur batteries
nuclear auxiliary power units
plasma power sources
propellants
rectifiers
solar generators
spacecraft power supplies
voltage converters (AC to AC)
voltage converters (DC to DC)

power supply circuits

GS circuits
. **power supply circuits**
RT current regulators
rectifiers
transformers
voltage converters (DC to DC)
voltage regulators

∞ power transmission

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bus conductors
electric outlets
electric power transmission
electrical engineering
electrification
hydroelectric power stations
mechanical drives
power beaming
windmills (windpowered machines)

power transmission (lasers)

USE **laser power beaming**

power transmission (microwave)

USE **microwave power beaming**

powered lift aircraft

RT ∞ aircraft
externally blown flaps
short takeoff aircraft
STOVL aircraft
vertical takeoff aircraft

powered models

SN (LIMITED TO TEST FACILITIES)
DEF Models that can be tested in complete force equilibrium, including propulsion.
GS models
. wind tunnel models
. . **powered models**
RT aircraft models
dynamic models

Poynting theorem

GS theorems
. **Poynting theorem**
RT ∞ electric power
electromagnetic radiation
energy transfer
Maxwell equation

vector analysis

Poynting-Robertson effect

DEF The gradual decrease in orbital velocity of a small particle such as a micrometeorite in orbit about the sun due to the absorption and remission of radiant energy by the particle.

RT ∞ effects
micrometeoroids
orbital mechanics
radiation effects
zodiacal dust
zodiacal light

PPI (*position indicators*)USE **plan position indicators**PPM (*modulation*)USE **pulse position modulation**PPT (*rocket engines*)(*added April 2001*)USE **pulsed plasma thrusters**

PPY

USE **polypyrrroles***practices*USE **procedures****Praesepe star clusters**

GS celestial bodies
. star clusters
. . open clusters
. . . **Praesepe star clusters**
. stars
. . **Praesepe star clusters**
RT ∞ clusters

praetersonic devices

RT microwave frequencies
piezoelectric transducers
thin films
ultrahigh frequencies

*prairies*USE **grasslands****Prandtl number**

DEF A dimensionless number representing the ratio of momentum transport to heat transport in a flow. (After Ludwig Prantl, 1875-1953, German scientist).

GS dimensionless numbers
. **Prandtl number**
ratios
. **Prandtl number**
RT forced convection
Grashof number
heat transfer
inviscid flow
momentum transfer
Nusselt number
Pecllet number
Reynolds number
Schmidt number
thermodynamic properties
viscous flow

Prandtl-Meyer expansion

GS expansion
. **Prandtl-Meyer expansion**
RT Blasius equation
Falkner-Skan equation
flow deflection
laminar flow
method of characteristics
Newton pressure law
supersonic flow
two dimensional flow

praseodymium

GS chemical elements
. rare earth elements
. . **praseodymium**
. . . praseodymium isotopes
metals
. rare earth elements
. . **praseodymium**
. . . praseodymium isotopes
RT didymium

praseodymium compounds

*praseodymium 144*USE **praseodymium isotopes****praseodymium compounds**

(*added August 1990*)
GS rare earth compounds
. **praseodymium compounds**
RT ∞ chemical compounds
∞ metal compounds
praseodymium

praseodymium isotopes

UF *praseodymium 144*
GS chemical elements
. nuclides
. . isotopes
. . . **praseodymium isotopes**
. rare earth elements
. . praseodymium
. . . **praseodymium isotopes**
metals
. rare earth elements
. . praseodymium
. . . **praseodymium isotopes**

preamplifiers

DEF Amplifiers, the primary function of which is to raise the output of a low level source to an intermediate level so that the signal may be further processed without appreciable degradation in the signal-to-noise ratio. In radar amplifiers separated from the remainder of the receiver and located so as to provide the shortest possible input circuit path from the antenna so as to avoid deterioration of the signal-to-noise ratio. Used for preselectors.

UF *preselectors*
GS amplifiers
. **preamplifiers**
RT intermediate frequency amplifiers
low noise
mixing circuits
postamplifiers
signal detection
signal detectors
signal reception
transistor amplifiers
voltage amplifiers

preburners

GS pressure vessels
. **preburners**
RT pumps
turbine pumps

Precambrian period

RT Baltic Shield (Europe)
Cambrian Period
Canadian Shield
geology
paleontology
Paleozoic Era

*precautions*USE **accident prevention****precession**

DEF Change in the direction of the axis of rotation of a spinning body, as a gyro, when acted upon by a torque.

GS gyration
. **precession**
. . Larmor precession
. . proton precession
. . quenching (atomic physics)
RT coning motion
Earth orientation
gyroscopes
gyroscopic stability
Larmor radius
libration
muon spin rotation
nutation
polar wandering (geology)
retrograde orbits
rotation

vortex precession

*precious metals*USE **noble metals****precipitates**

SN (EXCLUDES METEOROLOGICAL PRECIPITATES)
RT alloys
grain boundaries
microstructure
precipitation (chemistry)
precipitation hardening
reaction products

∞ **precipitation**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERM LISTED BELOW)
RT drop size
electron precipitation
falling
hydrometallurgy
materials recovery
particle precipitation
precipitation (chemistry)
precipitation (meteorology)
proton precipitation

precipitation (chemistry)

DEF The separation of a new phase from solid or liquid solution, usually with changing conditions of temperature or pressure or both.

RT agglomeration
cementation
∞ chemistry
coagulation
colloiding
concentrating
crystallization
deposition
dissolving
filtration
flocculating
hydrometallurgy
materials recovery
Ostwald ripening
precipitates
∞ precipitation
precipitators
∞ saturation
saturation (chemistry)
∞ separation
settling
solubility
supersaturation
unsaturation (chemistry)

precipitation (meteorology)

DEF The precipitation of water from the atmosphere in the form of hail, mist, rain, sleet, and snow. Deposits of dew, fog, and frost are excluded.

GS **precipitation (meteorology)**
. graupel
. hail
. rain
. . acid rain
. snow
. snow cover
RT Alpine meteorology
anvil clouds
atmospheric moisture
CALIPSO (Pathfinder satellite)
cap clouds
cirrocumulus clouds
cirrostratus clouds
climatology
cloud physics
cloud seeding
clouds (meteorology)
CloudSat
cumulonimbus clouds
cyclones
dew
drainage patterns
drought
flood damage
flood predictions
floods
fog

precipitation hardening

- fog dispersal
- hailstorms
- humidity
- hydrological cycle
- hydrology
- hydrology models
- hydrometeorology
- hydrometeors
- International Hydrological Decade
- meteorological parameters
- meteorology
- mist
- monsoons
- nephanalysis
- nimbostratus clouds
- ∞ precipitation
- precipitation measurement
- rainmaking
- rainstorms
- ∞ saturation
- snowstorms
- storm damage
- storm enhancement
- storm suppression
- storms
- storms (meteorology)
- water
- water resources
- watersheds
- weather
- weather forecasting

precipitation hardening

- UF *age hardening*
dispersion precipitation hardening
strain aging
- GS hardening (materials)
 - . **precipitation hardening**
 - . . maraging
- RT cold hardening
eutectic composites
heat treatment
precipitates
solid solutions
strain hardening
supersaturation
time temperature parameter

precipitation measurement

(added June 2003)

DEF Techniques and processes used to measure the amount and type of precipitation.

- RT ∞ measurement
meteorological instruments
meteorological radar
meteorological satellites
precipitation (meteorology)
rain
rain gages
snow

precipitation particle measurement

- GS size determination
 - . **precipitation particle measurement**
- RT drop size
meteorological radar
particle size distribution
particles

precipitators

- GS separators
 - . **precipitators**
 - . . electrostatic precipitators
- RT air filters
concentrators
dust collectors
precipitation (chemistry)
thickeners (equipment)

precision

DEF The quality of being exactly or sharply defined or stated. A measure of the precision of a representation is the number of distinguishable alternatives from which it was selected, which is sometimes indicated by the number of significant digits it contains. Used for exactness.

- UF *exactness*
- RT accuracy
allowances

- confidence limits
- consistency
- definition
- dynamic characteristics
- errors
- geometric dilution of precision
- high resolution
- hysteresis
- quality
- quality control
- reliability
- resolution
- schedules
- sensitivity
- ∞ sharpness
- tolerances (mechanics)
- truncation errors
- validity

precision guided projectiles

- DEF Missiles guided by precise laser radiation.
- GS missiles
 - . **precision guided projectiles**
 - projectiles
 - . **precision guided projectiles**
 - weapons
 - . guns (ordnance)
 - . . artillery
 - . . . **precision guided projectiles**
 - . warheads
 - . . **precision guided projectiles**
- RT ∞ bombs
terminal ballistics

preconditioning

- GS preparation
 - . **preconditioning**
- RT ∞ conditioning

precooling

- GS cooling
 - . **precooling**
- RT regenerative cooling

predators

- RT animals
ecology
ecosystems
populations

predicate calculus

(added September 1993)

- GS mathematical logic
 - . **predicate calculus**
- RT artificial intelligence
 - ∞ logic
 - theorem proving

predicate logic

(added September 1993)

- RT artificial intelligence
linguistics
 - ∞ logic
 - programming languages
 - semantics

prediction analysis techniques

- GS scheduling
 - . **prediction analysis techniques**
- RT ∞ analyzing
parameter identification
performance prediction
system identification
trend analysis

prediction recording

- GS recording
 - . **prediction recording**
- RT predictions

predictions

- UF *predictors*
- GS **predictions**
 - . flood predictions
 - . impact prediction
 - . linear prediction
 - . noise prediction
 - . . noise prediction (aircraft)
 - . forecasting

- . performance prediction
- . Roshko prediction
- . . technological forecasting
- . . . Delphi method (forecasting)
- . . . pattern method (forecasting)
- . . . probe method (forecasting)
- . . . profile method (forecasting)
- . . weather forecasting
- . . . long range weather forecasting
- . . . nowcasting
- . . . numerical weather forecasting
- . . . statistical weather forecasting
- . hindcasting
- RT catastrophe theory
confidence limits
contingency
estimates
maximum likelihood estimates
mission planning
prediction recording
- ∞ projection
risk
risk assessment
schedules

predictor-corrector methods

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **predictor-corrector methods**
 - . . iteration
 - . . . **predictor-corrector methods**
- RT differential equations
iterative solution

predictors

- USE **predictions**

preempting

- RT claiming
prevention

prefiring tests

- GS engine tests
 - . **prefiring tests**
- RT captive tests
checkout
ground tests
preflight analysis
prelaunch tests
rocket engine design
space vehicle checkout program
static tests
test firing
test stands
- ∞ tests

preflight analysis

- RT ∞ analyzing
prefiring tests
systems analysis
- ∞ tests
trajectory analysis
weight analysis

preflight operations

- GS **preflight operations**
 - . aircraft runup
 - . countdown
- RT crew procedures (preflight)
flight operations
ground tests
- ∞ operations
prelaunch tests
refueling

prefocusing

- GS focusing
 - . **prefocusing**
- RT ∞ optics

preforms

- RT blanks
composite materials
molds
powder metallurgy
resin film infusion

- resin transfer molding
- pregnancy**
RT birth
- preheaters*
USE **heating equipment**
- preheating*
USE **heating**
- pre-Imbrian period**
DEF One of four stratigraphic classifications adopted for displaying (on maps) the geological ages of major features on the moon.
RT lunar composition
lunar craters
lunar evolution
lunar geology
lunar rocks
- preimpregnation**
RT filament winding
pultrusion
- prejudices**
RT economics
irrationality
management
∞ properties
psychology
- prelaunch problems**
RT countdown
∞ problems
reliability
spacecraft reliability
- prelaunch summaries**
DEF Summaries prior to launch of the preparations and parameters of the mission.
GS summaries
. **prelaunch summaries**
RT mission planning
postlaunch reports
spacecraft launching
- prelaunch tests**
GS ground tests
. **prelaunch tests**
. . static firing
RT captive tests
cold flow tests
countdown
crew procedures (preflight)
engine tests
launching
missile tests
prefiring tests
preflight operations
spacecraft maintenance
static tests
test firing
test stands
∞ tests
- preloading*
USE **prestressing**
- pre-main sequence stars**
DEF Stars in which nuclear reactions that take place in its core have not yet occurred.
GS celestial bodies
. stars
. . protostars
. . . **pre-main sequence stars**
. . . . T Tauri stars
RT main sequence stars
star formation
stellar evolution
- premature operation**
RT ∞ operations
preparation
- premixed flames**
GS flames
. **premixed flames**
RT carburetors
flame propagation
gas mixtures
- mixing
premixing
reacting flow
turbulent combustion
turbulent flames
- premixing**
DEF The mixing of ingredients prior to a specified action (mixing of fuel and air prior to ignition in combustion, for example).
GS mixing
. **premixing**
RT fuel-air ratio
fuels
gas mixtures
homogenizing
ignition
jet mixing flow
premixed flames
spraying
- preparation**
GS **preparation**
. preconditioning
. pretreatment
. . prestressing
. prewhirling
. prewhitening
RT assembling
premature operation
∞ priming
- prepolymers**
DEF Polymers of degrees of polymerization between that of the monomer or monomers, and the final polymer.
GS **prepolymers**
. dimers
. trimers
RT monomers
∞ polymers
- prepregs**
DEF The reinforcing materials containing or combined with the full complement or resin before molding operations in the production of composite materials.
RT composite materials
epoxy resins
functionally gradient materials
laminates
resin matrix composites
- preprocessing**
RT data processing
data reduction
image processing
- presbyopia**
RT vision
- preselectors*
USE **preamplifiers**
- presentation**
RT information
- preservatives**
RT additives
∞ agents
anticoagulants
antioxidants
neutralizers
penetrants
preserving
retardants
stabilizers (agents)
- preserving**
GS food processing
. **preserving**
RT biopaks
∞ containers
corrosion prevention
coverings
curing
degradation
dehydrated food
∞ food
freeze drying
- freezing
frozen foods
impregnating
irradiation
packaging
preservatives
radiation effects
refrigerating
∞ storage
weatherproofing
- Presidential reports**
DEF Formal reports originated by the President or his office.
GS documents
. **Presidential reports**
reports
RT congressional reports
papers
records
- presintering*
USE **sintering**
- presses**
GS **presses**
. rams (presses)
RT compacting
hammers
machine tools
platens
∞ pressing
pressing (forming)
punches
tools
- ∞ **pressing**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cold pressing
compacting
compressing
hot isostatic pressing
hot pressing
platens
presses
pressing (forming)
- pressing (forming)**
GS forming techniques
. **pressing (forming)**
. . blanking (cutting)
. . coining
. . hot pressing
. . stamping
. . . hot isostatic pressing
RT cold pressing
compacting
extruding
forging
metal working
molds
presses
∞ pressing
pultrusion
sizing (shaping)
upsetting
- pressoreceptor reflexes*
(added March 2001)
USE **baroreflexes**
- pressoreceptors*
(added March 2001)
USE **baroreceptors**
- pressors*
USE **vasoconstrictor drugs**
- pressure**
DEF Force or load per unit area. Used for surface pressure.
UF *surface pressure*
GS **pressure**
. atmospheric pressure
. base pressure
. blood pressure
. . diastolic pressure
. . hypertension

pressure breathing

- . . hypotension
- . . lower body negative pressure
- . . systolic pressure
- . critical pressure
- . densification
- . differential pressure
- . dynamic pressure
- . fluid pressure
- . . water pressure
- . gas pressure
- . geopressure
- . high pressure
- . inlet pressure
- . internal pressure
- . intracranial pressure
- . intraocular pressure
- . isostatic pressure
- . low pressure
- . . high altitude pressure
- . middle ear pressure
- . overpressure
- . partial pressure
- . . oxygen tension
- . . . hypoxemia
- . plasma pressure
- . radiation pressure
- . . electron pressure
- . . lumens
- . . luminous intensity
- . . . illuminance
- . . . luminance
- . . sound pressure
- . stagnation pressure
- . static pressure
- . . hydrostatic pressure
- . supercritical pressures
- . thrust chamber pressure
- . transient pressures
- . transition pressure
- . vacuum
- . . high vacuum
- . . low vacuum
- . . ultrahigh vacuum
- . vapor pressure
- . wall pressure
- . wind pressure
- RT baroreceptors
- blast loads
- center of pressure
- compressing
- ear pressure test
- elastic waves
- environments
- ∞ force
- fuel tank pressurization
- Gibbs-Helmholtz equations
- head (fluid mechanics)
- high pressure oxygen
- impact
- isobars (pressure)
- loads (forces)
- Newton pressure law
- osmosis
- pressure breathing
- pressure broadening
- pressure chambers
- pressure distribution
- pressure drag
- ∞ pressure drop
- pressure effects
- pressure gages
- pressure gradients
- pressure heads
- pressure ice
- pressure measurement
- pressure modulator radiometers
- pressure oscillations
- pressure pulses
- pressure ratio
- pressure recorders
- pressure recovery
- pressure reduction
- pressure sensors
- pressure suits
- pressure vessel design
- pressure vessels
- pressure welding
- pressurized cabins
- pressurized water reactors

- pressurizing
- temperature inversions
- vacuum chambers
- weight (mass)
- pressure breathing**
- DEF The breathing of oxygen or a suitable mixture of gases at a pressure higher than the surrounding pressure.
- GS respiration
- . **pressure breathing**
- RT emergency breathing techniques
- liquid breathing
- pressure
- stress (physiology)
- pressure broadening**
- RT line spectra
- pressure
- spectroscopy
- pressure cabins*
- USE **pressurized cabins**
- pressure chambers**
- GS compartments
- . test chambers
- . . **pressure chambers**
- . . . hyperbaric chambers
- . . . vacuum chambers
- RT air locks
- ∞ chambers
- enclosures
- pressure
- pressurized cabins
- wind tunnel drives
- pressure dependence**
- DEF Study of how a rate constant changes with pressure.
- RT burning rate
- hydrostatic pressure
- reaction kinetics
- pressure distribution**
- UF *pressure fields*
- GS distribution (property)
- . **pressure distribution**
- RT aerodynamic coefficients
- aerodynamic loads
- aerodynamic stability
- center of pressure
- differential pressure
- ∞ distribution
- field theory (physics)
- influence coefficient
- internal pressure
- isobars (pressure)
- lift
- loading moments
- loads (forces)
- manometers
- mass distribution
- moment distribution
- Newton pressure law
- pressure
- ∞ pressure drop
- shock wave profiles
- spanwise blowing
- static loads
- structural design criteria
- Theodorsen transformation
- thrust distribution
- velocity distribution
- vertical distribution
- wall pressure
- pressure drag**
- GS dynamic characteristics
- . drag
- . . **pressure drag**
- . . . supersonic drag
- . . . wave drag
- interference drag
- RT aerodynamic drag
- friction drag

- pressure
- ∞ **pressure drop**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fluid power
- friction
- gas flow
- head flow
- inlet flow
- pressure
- pressure distribution
- pressure gradients
- pressure oscillations
- pressure reduction
- two phase flow
- pressure effects**
- RT beta factor
- compressibility effects
- ∞ effects
- jet blast effects
- loads (forces)
- nonisothermal processes
- pressure
- suction
- temperature effects
- temperature inversions
- transition pressure
- vacuum effects
- wind effects
- pressure fields*
- USE **pressure distribution**
- pressure gages**
- UF *bombs (pressure gages)*
- GS measuring instruments
- . **pressure gages**
- . . barometers
- . . manometers
- . . osmometers
- . . piezoelectric gages
- . . piezometers
- . . vacuum gages
- . . . ionization gages
- alphatrons
- Bayard-Alpert ionization gages
- Penning gages
- Philips ionization gages
- . . . Knudsen gages
- . . . Mcleod gages
- . . . Pirani gages
- RT ∞ bombs
- Bourdon tubes
- flowmeters
- hypsometers
- pressure
- shock measuring instruments
- strain gage accelerometers
- strain gage balances
- strain gages
- weight indicators
- pressure gradients**
- GS gradients
- . **pressure gradients**
- RT atmospheric pressure
- bathythermographs
- boundary layer thickness
- critical flow
- differential pressure
- fluid boundaries
- fluid flow
- friction factor
- geopressure
- hydrodynamics
- hydrostatics
- inlet pressure
- isobars (pressure)
- Knudsen flow
- liquid flow
- liquid-liquid interfaces
- liquid-vapor interfaces
- multiphase flow
- orifice flow
- pipe flow
- potential gradients
- pressure

- ∞ pressure drop
- Rankine-Hugoniot relation
- steady flow
- steam flow
- subcritical flow
- suction
- supercritical flow
- uniform flow
- unsteady flow
- Venturi tubes

pressure heads

- UF *head (pressure)*
- GS fluid flow
 - . head (fluid mechanics)
 - . . **pressure heads**
- RT center of pressure elevation
 - ∞ hydraulics
 - hydrodynamics
 - hydrostatic pressure
 - hydrostatics
 - liquid flow
 - pressure

pressure ice

- UF *pressure ridges*
- GS ice
 - . sea ice
 - . . **pressure ice**
- RT cold weather freezing
 - ice formation
 - low temperature
 - ocean currents
 - pressure
 - tides
 - wind (meteorology)
 - winter

pressure measurement

- UF *tonometry*
- GS mechanical measurement
 - . **pressure measurement**
- RT barometers
 - Bourdon tubes
 - differential pressure
 - flow measurement
 - flowmeters
 - ionization gages
 - Knudsen gages
 - manometers
 - McLeod gages
 - ∞ measurement
 - noise meters
 - Philips ionization gages
 - Pirani gages
 - pitot tubes
 - pneumatic probes
 - pressure
 - pressure sensitive paints
 - vacuum
 - vacuum gages
 - velocity
 - velocity measurement
 - Venturi tubes
 - weight indicators
 - wind tunnel calibration
 - wind tunnel tests

pressure modulator radiometers

DEF A cell containing a known quantity of a gas is placed in the single optical path of the radiometer and subjected to cyclical pressure changes which alter the absorption lines in the infrared spectrum of the gas. A narrow band signal results from the different voltages at the detector at high and low cell pressures. A wide-band signal is generated by physically chopping a percentage of the input beam with a rotating chopper blade.

- GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - **pressure modulator radiometers**
- RT infrared radiometers

pressure

pressure oscillations

- GS oscillations
 - . **pressure oscillations**
- RT acoustic frequencies
 - combustion stability
 - flame propagation
 - pressure
 - ∞ pressure drop
 - Southern Oscillation
 - turbulent flow

*pressure probes*USE **pressure sensors****pressure pulses**

- GS pulses
 - . **pressure pulses**
- RT blast loads
 - flame propagation
 - pressure
 - shock waves

pressure ratio

DEF The relationship of a force to the deformation of a system whose deformation varies in some proportion to the force.

- GS ratios
 - . **pressure ratio**
- RT fuel-air ratio
 - lift drag ratio
 - mass ratios
 - payload mass ratio
 - pressure
 - propellant mass ratio
 - stress ratio
 - thrust-weight ratio

pressure recorders

- GS recording instruments
 - . **pressure recorders**
- RT pressure

pressure recovery

- RT ∞ diffusers
 - explosive decompression
 - fluid amplifiers
 - inlet pressure
 - pressure
 - ∞ recovery

pressure reduction

- UF *bleed-off decompression*
 - deflating*
 - depressurization*
- GS **pressure reduction**
 - . explosive decompression
- RT ∞ bleeding
 - compressing
 - gas expansion
 - inflating
 - pressure
 - ∞ pressure drop
 - ∞ reduction

pressure regulators

- GS control equipment
 - . regulators
 - . . automatic control valves
 - . . . **pressure regulators**
 - valves
 - . automatic control valves
 - . . **pressure regulators**
- RT controllers
 - flow regulators
 - fuel tank pressurization
 - oxygen regulators
 - pressurizing
 - relief valves

*pressure ridges*USE **pressure ice****pressure sensitive paints***(added March 2001)*

DEF Luminescent paints used for the non-intrusive optical measurement of static and transient pressure fields. These paints are typically

organic luminophores or dyes dispersed in an oxygen permeable polymeric binder. The luminescence is induced by the excitation of the dye with an appropriate wavelength light. The emitted intensity or brightness of the paint is inversely proportional to the partial pressure of oxygen because the luminescence is quenched by oxygen.

- UF *PSP (paints)*
- GS coatings
 - . paints
 - . . **pressure sensitive paints**
- RT flow measurement
 - flow visualization
 - nonintrusive measurement
 - optical measurement
 - pressure measurement

pressure sensors

- UF *pressure probes*
- GS *pressure transducers*
 - transducers
 - . **pressure sensors**
 - . . Bourdon tubes
- RT electroacoustic waves
 - piezoelectric gages
 - pressure
 - quartz transducers
 - ∞ rakes
 - shock wave generators
 - transient pressures
 - transient response
 - ultrasonic wave transducers

pressure suits

DEF Garments designed to provide pressure upon the body so that the respiratory and circulatory functions may continue normally, or nearly so, under low pressure conditions, such as occur at high altitudes or in space without benefit of pressurized cabins.

- GS clothing
 - . protective clothing
 - . . **pressure suits**
 - . . . space suits
 - extravehicular mobility units
 - . suits
 - . . **pressure suits**
 - . . . space suits
 - extravehicular mobility units
- RT flight clothing
 - helmets
 - inflatable structures
 - life support systems
 - portable life support systems
 - pressure
 - safety devices

pressure switches

- GS control equipment
 - . **pressure switches**
 - switches
 - . **pressure switches**
- RT electric switches

*pressure transducers*USE **pressure sensors****pressure vessel design**

- GS structural design
 - . **pressure vessel design**
- RT ∞ design
 - perforated shells
 - pressure
 - shells (structural forms)

pressure vessels

- GS **pressure vessels**
 - . preburners
- RT accumulators
 - autoclaves
 - bells
 - boilers
 - bulbs
 - burst tests
 - ∞ containers
 - domes (structural forms)
 - fuel tank pressurization
 - fuel tanks
 - hemisphere cylinder bodies

pressure welding

isotenoid structures
pressure
propellant tanks
reactor materials
shallow shell equations
spherical tanks
storage tanks
tanks (containers)
∞ vessels
wall pressure
wind tunnel walls

pressure waves

USE **elastic waves**

pressure welding

GS welding
. **pressure welding**
. . cold welding
. . diffusion welding
. . explosive welding
. . friction welding
. . friction stir welding
. . ultrasonic welding
RT arc welding
electric welding
flash welding
fusion welding
gas welding
pressure
spot welds

pressurized cabins

UF *pressure cabins*
GS compartments
. **pressurized cabins**
RT aircraft compartments
cabin atmospheres
∞ cabins
cockpits
emergency life sustaining systems
environmental control
escape capsules
explosive decompression
life support systems
oxygen supply equipment
pressure
pressure chambers
spacecraft cabin atmospheres
spacecraft cabins

pressurized water reactors

GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . **pressurized water reactors**
. . . spectral shift control reactor
RT nuclear power reactors
pressure

pressurizing

GS **pressurizing**
. fuel tank pressurization
RT accumulators
densification
expulsion
expulsion bladders
gas generators
gas injection
inflating
pressure
pressure regulators
stimulation

Preston tubes

USE **pitot tubes**
speed indicators

prestraining

USE **prestressing**

prestressing

UF *preloading*
prestraining
pretwisting
GS preparation
. pretreatment
. . **prestressing**
RT elastic deformation
isotenoid structures

stresses
structural strain
tensegrity structures

pretests

USE **tests**

pretreatment

GS preparation
. **pretreatment**
. . prestressing
RT prevention
∞ priming

pretwisting

USE **prestressing**
twisting

prevaporization

DEF The phase transformations of liquids to gases prior to some physical or chemical reaction.

GS phase transformations
. vaporizing
. . **prevaporization**
RT flashing (vaporizing)
gases
vapor phases
vapors
volatility

prevention

GS **prevention**
. accident prevention
. corrosion prevention
. fire prevention
. ice prevention
. preventive maintenance
RT blocking
etiology
∞ inhibition
pollution
preempting
pretreatment
protection
∞ reduction
∞ resistance
retarding
sabotage
safety
stopping

preventive maintenance

(*added June 2000*)
GS maintenance
. **preventive maintenance**
prevention
. **preventive maintenance**
RT aircraft maintenance
failure analysis
inspection
nondestructive tests
reliability analysis

prewhirling

GS preparation
. **prewhirling**

prewhitening

GS preparation
. **prewhitening**
RT color
∞ treatment

Pribram meteorite

GS celestial bodies
. meteorites
. . stony meteorites
. . . chondrites
. . . **Pribram meteorite**
RT bolides
meteor trails

primary batteries

SN (NON-RECHARGEABLE BATTERIES)
GS electric generators
. direct power generators
. . **primary batteries**
. . . alkaline batteries
. . . dry cells
. . . magnesium cells

. . . . nickel zinc batteries
. . . . metal air batteries
. . . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
electrochemical cells
. electric batteries
. . **primary batteries**
. . . alkaline batteries
. . . dry cells
. . . . magnesium cells
. . . . nickel zinc batteries
. . . metal air batteries
. . . . zinc-oxygen batteries
. . . sodium sulfur batteries
. . . thermal batteries
RT charge efficiency
electrolytes
nonaqueous electrolytes
storage batteries
wet cells

primary cosmic rays

UF *heavy cosmic ray primaries*
GS extraterrestrial radiation
. **primary cosmic rays**
. . solar cosmic rays
ionizing radiation
. cosmic rays
. . **primary cosmic rays**
. . . solar cosmic rays
particles
. corpuscular radiation
. . **primary cosmic rays**
. . . solar cosmic rays
RT cosmic ray albedo
heavy nuclei
secondary cosmic rays

primates

GS animals
. vertebrates
. . mammals
. . . **primates**
. . . . apes
. chimpanzees
. baboons
. . . . human beings
. . . . monkeys

∞ primers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT engine primers
primers (coatings)
primers (explosives)

primers (coatings)

DEF Coatings designed to enhance adhesion.
GS coatings
. protective coatings
. . **primers (coatings)**
RT dopes
fillers
finishes
lacquers
metal coatings
paints
∞ primers
sprayed coatings
substrates
varnishes

primers (explosives)

GS explosive devices
. initiators (explosives)
. . **primers (explosives)**
igniters
. initiators (explosives)
. . **primers (explosives)**
RT caps (explosives)
detonation
detonators
exploding wires
percussion
∞ primers

- squibs
- ∞ **priming**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT coating
coatings
initiation
preparation
pretreatment
starting
- primitive Earth atmosphere**
- GS Earth atmosphere
. **primitive Earth atmosphere**
- RT ∞ atmospheres
atmospheric composition
atmospheric electricity
atmospheric models
Earth planetary structure
free atmosphere
paleoclimatology
planetary atmospheres
- primitive equations**
- DEF Eulerian equations of fluid motion in which the primary dependent variables are the fluid's velocity components. The equations govern a wide variety of fluid motions and form the basis of most hydrodynamical analysis.
- RT atmospheric boundary layer
climatology
∞ equations
Euler equations of motion
fluid dynamics
∞ mathematics
- primordial galaxies*
(added May 2002)
USE **protogalaxies**
- primordial stars*
(added July 1999)
USE **Population III stars**
- Prince Edward Island**
- GS landforms
. islands
. . **Prince Edward Island**
nations
. Canada
. . **Prince Edward Island**
- Prince William Sound (AK)**
- GS sounds (topographic features)
. **Prince William Sound (AK)**
- RT Alaska
- Princeton sailwings*
USE **sailwings**
- principal components analysis**
- RT image processing
imaging techniques
Karhunen-Loeve expansion
pattern recognition
spectral mixture analysis
- ∞ **principles**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT duality principle
∞ logic
∞ mathematics
- printed circuits**
- GS circuits
. **printed circuits**
- RT breadboard models
circuit boards
electronic packaging
hybrid circuits
integrated circuits
large scale integration
medium scale integration
miniature electronic equipment
miniaturization
photomasks
subminiaturization
thick films
- transistor circuits
- printed resistors**
- GS attenuators
. resistors
. . **printed resistors**
- RT miniaturization
- printers**
- GS **printers**
. printers (data processing)
. teleprinters
- RT cathode ray tubes
data processing equipment
plotters
printing
projectors
typewriters
- printers (data processing)**
- GS computer components
. peripheral equipment (computers)
. . **printers (data processing)**
data processing equipment
. peripheral equipment (computers)
. . **printers (data processing)**
printers
. **printers (data processing)**
- RT automatic typewriters
computers
∞ data
display devices
printouts
readout
teleprinters
- printing**
- GS **printing**
. lithography
. . photolithography
- RT binding
contrast
document markup languages
electronic publishing
electronography
engraving
inks
legibility
photoengraving
photographic processing
photomechanical effect
plotting
printers
reading
reproduction (copying)
stencil processes
- printouts**
- RT format
lists
output
printers (data processing)
readout
tables (data)
- priorities**
- RT engineering management
project planning
research management
resource allocation
sequencing
- Prirda module**
(added August 1995)
- GS modules
. space station modules
. . **Prirda module**
- RT Mir space station
radar imagery
remote sensing
space station structures
- prismatic bars**
- GS bars
. **prismatic bars**
- RT prisms
- prisms**
- DEF Transparent bodies with at least two polished plane faces inclined with respect to each other, from which light is reflected or through which light is refracted. When light is refracted by a prism whose refractive index exceeds that of the surrounding medium, it is deviated or bent toward the thicker part of the prism.
- GS optical equipment
. **prisms**
- RT photoelasticity
prismatic bars
refraction
- privacy**
- DEF Freedom from observation and/or intrusion. Applies to such things as communications, personal records, photographs.
- RT computer information security
information
information dissemination
integrity
papers
recording
records
security
- private aircraft*
USE **general aviation aircraft**
- probability*
USE **probability theory**
- probability density functions**
- GS functions (mathematics)
. **probability density functions**
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
statistical analysis
. **probability density functions**
. . normal density functions
. . Pearson distributions
. . Rayleigh distribution
. . Weibull density functions
- RT binomial theorem
censored data (mathematics)
continuity (mathematics)
discrete functions
events
expectancy hypothesis
exponential functions
failure analysis
gas density
Mills ratio
quartiles
- probability distribution functions**
- GS functions (mathematics)
. distribution functions
. . **probability distribution functions**
statistical analysis
. **probability distribution functions**
statistical distributions
. **probability distribution functions**
- RT discrete functions
goodness of fit
- probability theory**
- UF *probability*
statistical probability
- RT ∞ applications of mathematics
belief networks
binomial theorem
Borel sets
combinatorial analysis
confidence
∞ conjunction
consecutive events
continuums
correlation
decision theory
distribution functions
Duffing differential equation
Einstein equations
ergodic process
error analysis
events
extremum values
forecasting
fuzzy systems

probe method (forecasting)

- game theory
- goodness of fit
- ∞ indication
- infinity
- information theory
- iteration
- Kolmogorov-Smirnov test
- likelihood ratio
- martingales
- ∞ mathematics
- ∞ Maxwell-Boltzmann density function
- Minkowski space
- Monte Carlo method
- operations research
- outliers (statistics)
- parameter identification
- population theory
- quality control
- random errors
- random noise
- reliability
- sampling
- statistical analysis
- statistical distributions
- ∞ statistics
- ∞ Stieltjes integral
- stochastic processes
- subgroups
- system identification
- ∞ theories
- transition probabilities
- traveling salesman problem
- uncertain systems
- uniqueness theorem

probe method (forecasting)

- GS management methods
 - . **probe method (forecasting)**
 - predictions
 - . forecasting
 - . . . technological forecasting
 - . . . **probe method (forecasting)**
- RT Delphi method (forecasting)
 - estimating
- ∞ methodology
 - operations research
 - pattern method (forecasting)
 - planning
 - profile method (forecasting)
 - technology assessment

∞ **probes**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Galileo probe
 - gas detectors
 - measuring instruments
 - Pioneer 8 space probe
 - Pioneer 9 space probe
 - Pioneer 10 space probe
 - Pioneer 11 space probe
 - Pioneer Venus 1 spacecraft
 - Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 spacecraft
 - Pioneer Venus 2 transporter bus
 - Pioneer Venus spacecraft
 - radio probing
 - remote sensors
 - sondes
 - space probes
 - transducers

problem solving

- GS **problem solving**
 - . alternating direction implicit methods
 - . asymptotic methods
 - . iterative solution
 - . theorem proving
- RT approximation
 - backward differencing
 - computational grids
 - Crank-Nicholson method
 - decision making
 - decision support systems
 - Dining Philosophers Problem
 - existence theorems
 - group dynamics
 - homotropy

- Householder transformations
- ill-conditioned problems
 - (mathematics)
- ill-posed problems (mathematics)
- iteration
- learning theory
- management
- maze learning
- ∞ methodology
 - Newton methods
 - simplex method
- ∞ solution

∞ **problems**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Bolza problems
 - boundary value problems
 - Cauchy problem
 - Chapman-Ferraro problem
 - Dirichlet problem
 - four body problem
 - isoperimetric problem
 - many body problem
 - Mayer problem
 - Neumann problem
 - operational problems
 - Poincare problem
 - prelaunch problems
 - three body problem
 - tracking problem
 - traveling salesman problem
 - two body problem

procedures

- DEF Detailed instructions for the performance of a process or function.
- UF *methods*
- practices*
- GS **procedures**
 - . boundary integral method
 - . crew procedures (inflight)
 - . crew procedures (preflight)
 - . finite element method
 - . finite volume method
 - . . . Godunov method
 - . Glimm method
 - . optical correction procedure
 - . panel method (fluid dynamics)
- RT procurement policy
 - systems analysis

proceedings

- USE **conferences**
- congressional reports**

process control (industry)

- DEF The ways and means by which continuous manufacturing and other industrial processes are monitored and maintained to create products of planned, uniform dimension and quality.
- RT component reliability
 - ∞ control
 - group technology (manufacturing)
 - product development
 - quality control
 - sampling
 - specifications

process heat

- DEF Increase in enthalpy accompanying chemical reactions or phase transformations at constant pressure (heat of crystallization and heat of sublimation are examples).
- GS heat
 - . **process heat**
- RT heat generation

∞ **processes**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT autoregressive processes
 - isentropic processes
 - jet membrane process
 - Kraft process (woodpulp)
 - nonisentropy
 - nonisothermal processes
 - Ornstein-Uhlenbeck process

- product development
- quality control
- sol-gel processes
- space industrialization
- Umklapp process

∞ **processing**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT associative processing (computers)
 - batch processing
 - data processing
 - food processing
 - image processing
 - manufacturing
 - materials recovery
 - message processing
 - nuclear fuel reprocessing
 - optical data processing
 - photographic processing
 - production engineering
 - recycling
 - refining
 - retort processing
 - settling
 - signal processing
 - ultrasonic processing
 - wet spinning

processors (computers)

- USE **central processing units**

procurement

- GS **procurement**
 - . government procurement
 - . leasing
- RT contracts
 - equipment specifications
 - government/industry relations
- ∞ receiving
 - services
 - specifications
 - subcontracts

procurement management

- GS management
 - . **procurement management**
- RT allocations
 - budgeting
- ∞ budgets
 - commercial off-the-shelf products
 - commodities
 - federal budgets
 - financial management
 - inventory management
 - products
 - services

procurement policy

- GS policies
 - . **procurement policy**
- RT decisions
 - intellectual property management
 - procedures
 - regulations
 - rules

product development

- UF *engineering development*
- GS **product development**
 - . weapons development
- RT aircraft design
 - aircraft production
 - amplifier design
 - antenna design
 - breadboard models
 - commerce
 - commercial off-the-shelf products
 - commercialization
 - computer design
 - concurrent engineering
 - consumers
- ∞ design
- ∞ development
 - engine design
 - functional design specifications
 - helicopter design
 - inventions
 - lens design

- management
- market research
- marketing
- patent applications
- patent policy
- pilot plants
- process control (industry)
- ∞ processes
- ∞ production
 - production engineering
 - quality
 - quality control
 - rapid prototyping
 - reactor design
 - reliability
 - satellite design
 - solvent refined coal
 - space industrialization
 - spacecraft design
 - standardization
 - structural design
- ∞ **production**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT aircraft production
 - food production (in space)
 - fuel production
 - output
 - product development
 - production engineering
 - production planning
 - reserves
 - tools
- production costs**
 - DEF The process of fabrication, from raw materials through the finished products, including packaging and other prorated costs.
 - GS costs
 - . **production costs**
 - . . aircraft production costs
 - RT cost analysis
 - cost estimates
 - design to cost
 - life cycle costs
 - operating costs
- production engineering**
 - UF *production methods*
 - GS **production engineering**
 - . group technology (manufacturing)
 - . production planning
 - RT aircraft production
 - aircraft production costs
 - ∞ capacity
 - ∞ engineering
 - human factors engineering
 - laser applications
 - management
 - numerical control
 - ∞ operations
 - planning
 - ∞ processing
 - product development
 - ∞ production
 - productivity
 - products
 - scheduling
 - standardization
- production management**
 - GS management
 - . **production management**
 - RT aircraft production costs
 - employee relations
 - estimates
 - fabrication
 - group technology (manufacturing)
 - industrial management
 - manufacturing
 - quality control
 - reliability
 - resources
 - safety management
- total quality management
- production methods*
- USE **production engineering**
- production planning**
 - GS planning
 - . management planning
 - . . **production planning**
 - production engineering
 - . **production planning**
 - RT ∞ production
 - schedules
- productivity**
 - RT aircraft production costs
 - allowances
 - efficiency
 - matrix management
 - morale
 - production engineering
 - reliability
 - software reuse
 - workstations
- products**
 - GS **products**
 - . fission products
 - . gross national product
 - . petroleum products
 - . . asphalt
 - . . diesel fuels
 - . . gasoline
 - . . tars
 - . reaction products
 - . . combustion products
 - . . . soot
 - . . reaction intermediates
 - . commercial off-the-shelf products
 - . data products
 - RT by-products
 - commodities
 - manufacturing
 - output
 - procurement management
 - production engineering
 - quality control
 - resource allocation
 - services
 - space industrialization
- proficiency*
- USE **abilities**
- profile method (forecasting)**
 - GS management methods
 - . **profile method (forecasting)**
 - predictions
 - . forecasting
 - . . technological forecasting
 - . . . **profile method (forecasting)**
 - RT Delphi method (forecasting)
 - estimating
 - ∞ methodology
 - operations research
 - planning
 - probe method (forecasting)
 - technology assessment
- ∞ **profiles**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT airfoil profiles
 - angles (geometry)
 - curvature
 - delineation
 - distribution (property)
 - geometry
 - gradients
 - line shape
 - platforms
 - profilometers
 - search profiles
 - shapes
 - shock wave profiles
 - slopes
 - streamlining
 - topography
- wind profiles
- profilometers**
 - GS measuring instruments
 - . **profilometers**
 - RT ∞ profiles
 - roughness
 - shapes
 - surface properties
 - surface roughness
- progeny**
 - RT children
 - reproduction (biology)
- prognosis**
 - RT diagnosis
- Prognoz satellites**
 - GS artificial satellites
 - . Soviet satellites
 - . . **Prognoz satellites**
- program evaluation review technique*
- USE **PERT**
- program management*
- USE **project management**
- program reliability (computers)*
- USE **software reliability**
- program trend line analysis**
 - RT critical path method
 - management planning
 - PERT
 - programs
 - project management
- program verification (computers)**
 - RT checkout
 - computer programming
 - file maintenance (computers)
 - proving
 - software development tools
 - software reliability
 - systems analysis
 - ∞ tests
- programmable logic devices**
 - (added September 1992)
 - GS reconfigurable hardware
 - . **programmable logic devices**
 - . . field-programmable gate arrays
 - RT architecture (computers)
 - computer systems design
 - controllers
 - logic circuits
 - logic design
- programmed cell death*
- (added October 2000)
- USE **apoptosis**
- programmed instruction**
 - GS education
 - . **programmed instruction**
 - . . computer assisted instruction
 - RT compilers
 - computer programming
 - computer programs
- programmers**
 - GS personnel
 - . **programmers**
 - RT coders
 - computer programming
 - file maintenance (computers)
- ∞ **programming**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT computer programming
 - dynamic programming
 - file maintenance (computers)
 - linear programming
 - mathematical programming
 - microprogramming
 - multiprogramming
 - nonlinear programming
 - programming (scheduling)

- . . . Project SETI
- . . . Ranger project
- Agena B Ranger Program
- . . . Constellation program
- . . . Mars Surveyor 98 Program
- . . . New Horizons mission
- . . . Rover project
- . . . SAIL project
- . . . Saturn project
- . . . Scout project
- . . . Skylab program
- . . . Starprobe mission
- . . . Surveyor project
- . . . Synchronous Communications Satellite Proj
- . . . Tektite project
- . . . TIROS project
- . . . Titan project
- . . . Vanguard project
- . . . Viking Mars program
- . . . Voyager project
- . . New Zealand space program
- . . Pakistan space program
- . . Russian Space Program
- . . Saudi Arabian space program
- . . U.S.S.R. space program
- . . Ukrainian space program
- . Starsite program
- . TRAP program
- . university program
- RT bureaus (organizations)
- Committee on Space Research
- computer program integrity
- computer programs
- Earth Resources Information System
- investigation
- mission planning
- ∞ missions
- ∞ operations
- program trend line analysis
- research and development
- ∞ research projects
- SEASAT 1
- SEASAT satellites
- SEASAT-B satellite
- Solar Maximum Mission
- Synchronous Earth Observatory satellite
- user manuals (computer programs)

progress

- RT economics
- management
- planning
- ∞ properties

progressions

- GS analysis (mathematics)
- . calculus
- . . series (mathematics)
- . . . **progressions**
- . real variables
- . . series (mathematics)
- . . . **progressions**

prohibition

- RT legal liability
- penalties
- policies
- regulations

project management

- UF *program management*
- GS management
- . **project management**
- RT commerce
- contract management
- critical path method
- GERT
- interfaces
- management planning
- management systems
- mission planning
- multidisciplinary research
- PERT
- program trend line analysis
- projects
- research and development
- ∞ research projects

weapon system management

project planning

- GS planning
- . management planning
- . . **project planning**
- RT allocations
- budgeting
- decisions
- estimates
- forecasting
- goals
- management
- matrix management
- ∞ missions
- NASA Interactive Planning System
- operations research
- priorities
- projects
- risk management

Project SETI

DEF A program to search for extraterrestrial intelligence by means of radio communication. Used for Search for Extraterrestrial Intelligence and SETI.

- UF *Search for Extraterrestrial Intelligence SETI*
- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Project SETI**
- . projects
- . . **Project SETI**
- . space programs
- . . NASA space programs
- . . . **Project SETI**
- RT extraterrestrial intelligence
- radio communication
- radio signals

projectile cratering

- UF *hypervelocity cratering*
- GS cratering
- . **projectile cratering**
- RT Deep Impact Mission
- ejecta
- hypervelocity impact
- hypervelocity projectiles
- meteorite craters
- meteoritic damage
- meteoroid hazards
- Tempel 1 comet

projectile penetration

USE **terminal ballistics**

projectiles

DEF Objects, especially missiles, fired, thrown, launched, or otherwise projected in any manner, such as bullets, guided rocket missiles, sounding rockets, or pilotless airplanes. Originally, objects, such as bullets or artillery shells, projected by applied external forces.

- GS **projectiles**
- . hypervelocity projectiles
- . precision guided projectiles
- . Sabot projectiles
- RT ammunition
- ballistics
- bombs (ordnance)
- cartridges
- finned bodies
- gunfire
- guns (ordnance)
- incendiary ammunition
- nuclear weapons
- pyrotechnics
- shaped charges
- shrapnel
- terminal ballistics
- terradyamics
- warheads
- weapons

∞ **projection**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Bonne projection
- descriptive geometry

- drawings
- forecasting
- gnomonic projection
- graphic arts
- illuminating
- magnification
- predictions
- projectors
- trends

projective geometry

- GS geometry
- . Euclidean geometry
- . . **projective geometry**
- . . . Mercator projection
- RT analytic geometry
- descriptive geometry
- gnomonic projection
- reciprocal theorems

projectors

- SN (LIGHT AND IMAGE)
- RT beacons
- illuminating
- luminaires
- motion pictures
- photogrammetry
- photographic equipment
- photography
- printers
- ∞ projection
- searchlights

projects

- GS programs
- . **projects**
- . . Advent Project
- . . AgRISTARS project
- . . Alouette project
- . . Apollo project
- . . Apollo Soyuz test project
- . . Argus project
- . . ASSET project
- . . ATLIT project
- . . BIOS project
- . . Bumblebee project
- . . Centaur project
- . . Defender project
- . . Earth & Ocean Physics Applications Program
- . . Echo project
- . . eclipse project
- . . Experimental Reflector Orbital Shot Proj
- . . FIRE (climatology)
- . . Galileo project
- . . Gemini project
- . . Geosari project
- . . Harvard Radio Meteor Project
- . . Helios Project
- . . ISCCP Project
- . . Jupiter project
- . . Magellan project (NASA)
- . . Mars 69 project
- . . Mars 71 project
- . . Mercury project
- . . NEW MOONS project
- . . Nike project
- . . Nimbus project
- . . OPEN Project
- . . Pioneer project
- . . Project SETI
- . . Radio Attenuation Measurement project
- . . rand project
- . . Ranger project
- . . . Agena B Ranger Program
- . . CERES (experiment)
- . . Next Generation Space Telescope project
- . . Rover project
- . . SAIL project
- . . Saturn project
- . . Scanner project
- . . Scout project
- . . Seafarer project
- . . SQUID project
- . . Submarine Integrated Control project
- . . Success project

prokaryotes

- . . . Surface Meteorology and Solar Energy project
- . . . Surface Radiation Budget project
- . . . Surveyor project
- . . . Synchronous Communications Satellite Proj
- . . . Telstar project
- . . . Themis project
- . . . TIROS project
- . . . Titan project
- . . . Vanguard project
- . . . Voyager project
- . . . West Ford project
- RT bureaus (organizations)
- contracts
- estimating
- ∞ missions
- ∞ operations
- project management
- project planning
- ∞ research projects
- tasks
- teams

prokaryotes

- GS cells (biology)
- . **prokaryotes**
- RT bacteria
- biological evolution
- cytology
- eukaryotes
- molecular biology

prolate spheroids

- DEF Ellipsoids of revolutions, the longer axis of which is the axis of revolution.
- GS geometry
- . Euclidean geometry
- . . analytic geometry
- . . . spheroids
- . . . **prolate spheroids**
- RT oblate spheroids

prolateness

- RT shapes

Prolog (programming language)

- GS languages
- . programming languages
- . . **Prolog (programming language)**
- RT artificial intelligence
- computer programming
- expert systems

prolongation

- GS extensions
- . **prolongation**
- RT time

promethazine

- GS drugs
- . antihistaminics
- . . **promethazine**
- organic compounds
- . amines
- . . **promethazine**
- . cyclic compounds
- . . heterocyclic compounds
- . . . **promethazine**

Prometheus

- (added July 1995)
- DEF A natural satellite of Saturn, orbiting at a mean distance of 139,350 kilometers.
- GS celestial bodies
- . natural satellites
- . . Saturn satellites
- . . . **Prometheus**
- RT Saturn (planet)

promethium

- GS chemical elements
- . rare earth elements
- . . **promethium**
- . . . promethium isotopes
- metals
- . rare earth elements
- . . **promethium**

- . . . promethium isotopes

promethium 146

- USE **promethium isotopes**

promethium isotopes

- UF *promethium 146*
- GS chemical elements
- . nuclides
- . . isotopes
- . . . **promethium isotopes**
- . rare earth elements
- . . promethium
- . . . **promethium isotopes**
- metals
- . rare earth elements
- . . promethium
- . . . **promethium isotopes**

prominences

- GS **prominences**
- . solar prominences
- RT solar activity

promotion

- RT display devices
- increasing
- public relations
- upgrading

prone position

- RT rest
- sitting position
- supine position

Prony series

- GS analysis (mathematics)
- . calculus
- . . series (mathematics)
- . . . **Prony series**
- . real variables
- . . series (mathematics)
- . . . **Prony series**

proofs

- USE **proving**

∞ propagation

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- DEF The spreading abroad or sending forward, as of radiant energy. Used for propagators.
- UF *propagators*
- RT acoustic propagation
- attenuation
- crack propagation
- diffraction propagation
- diffusion
- electromagnetic radiation
- flame propagation
- propagation (extension)
- self propagation
- stress propagation
- transequatorial propagation
- transmission
- wave propagation

propagation (extension)

- GS **propagation (extension)**
- . crack propagation
- . flame propagation
- RT ∞ propagation

propagation modes

- GS modes
- . **propagation modes**
- . . whispering gallery modes
- RT antipodes
- circular waveguides
- electromagnetic surface waves
- evanescent waves
- field mode theory
- mode transformers
- multimode resonators
- propagation velocity
- shock wave interaction
- wave interaction
- wave propagation

- waveguides

propagation velocity

- GS rates (per time)
- . **propagation velocity**
- velocity
- . **propagation velocity**
- RT electromagnetic radiation
- group velocity
- phase velocity
- propagation modes
- wave propagation

propagators

- USE **propagation**

propane

- GS organic compounds
- . hydrocarbons
- . . aliphatic hydrocarbons
- . . . alkanes
- **propane**
- RT cyclopropane
- hydrocarbon fuels
- nitropropane

propargyl groups

- DEF Crosslinking agents for certain aromatic polyamides used as matrix resins in fiber composites.
- GS organic compounds
- . **propargyl groups**
- RT ethers
- getters
- phenyls

∞ propellant actuated devices

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT ejection seats
- explosive devices
- propellant actuated instruments
- rocket engines

propellant actuated instruments

- RT actuators
- controllers
- ∞ instruments
- measuring instruments
- ∞ propellant actuated devices

propellant additives

- GS additives
- . **propellant additives**
- . . propellant binders
- . . . solid rocket binders
- RT antiicing additives
- antioxidants
- catalysts
- composite propellants
- corrosion prevention
- gelled propellants
- inhibitors
- plasticizers
- storable propellants

propellant binders

- GS additives
- . propellant additives
- . . **propellant binders**
- . . . solid rocket binders
- binders (materials)
- . **propellant binders**
- . . solid rocket binders
- RT composite propellants
- glycidyl azide polymer
- rocket propellants
- solid propellants

propellant casting

- GS castings
- . **propellant casting**
- forming techniques
- . casting
- . . **propellant casting**

propellant chemistry

- RT ∞ chemistry
- solid propellant combustion

thermochemistry

propellant combustion

- GS combustion
 - . **propellant combustion**
 - . . solid propellant combustion
 - . . . solid propellant ignition
- RT axial modes
 - combustion efficiency
 - combustion stability
 - erosive burning
 - fuel combustion
 - hydrocarbon combustion
 - ignition
 - metal combustion
 - reacting flow
 - turbulent combustion
 - velocity coupling

propellant consumption

- (added June 1995)
- GS consumption
 - . **propellant consumption**
- RT burning rate
 - combustion efficiency
 - fuel consumption
 - propellant tanks
 - rocket propellants
 - solid propellant combustion

propellant decomposition

- GS decomposition
 - . **propellant decomposition**
- RT endothermic fuels
 - fuel corrosion
 - inhibitors
 - monopropellants
 - storable propellants

propellant evaporation

- GS phase transformations
 - . vaporizing
 - . . evaporation
 - . . . **propellant evaporation**
- RT evaporative cooling
 - storable propellants

propellant explosions

- DEF Detonations of propellants as a result of motor malfunction.
- GS explosions
 - . chemical explosions
 - . . **propellant explosions**
- RT detonation
 - implosions
 - rocket engines

propellant grains

- RT burning rate
- ∞ grains
 - solid propellants
 - solid rocket propellants

propellant mass ratio

- GS ratios
 - . mass ratios
 - . . **propellant mass ratio**
- RT payload mass ratio
 - pressure ratio
 - propulsion system performance
 - propulsive efficiency
 - specific impulse
 - stage separation

propellant oxidizers

USE **rocket oxidizers**

propellant properties

- GS **propellant properties**
 - . propellant sensitivity
 - . propellant storability
- RT chemical properties
 - elastic properties
 - mechanical properties
- ∞ physical properties
- ∞ properties
 - thermodynamic properties

propellant sensitivity

- GS propellant properties

. **propellant sensitivity**

- sensitivity
- RT **propellant sensitivity**
 - ignition temperature
 - impact resistance
 - shock resistance
 - spontaneous combustion
 - storable propellants

propellant sprays

- RT fuel injection
 - fuel sprays
 - liquid injection
 - liquid rocket propellants
 - sprayers

propellant storability

- GS propellant properties
 - . **propellant storability**
- RT fuel corrosion
 - inhibitors
 - storable propellants

propellant storage

- RT consumables (spacecraft)
 - expulsion bladders
 - fuel tank pressurization
 - fuel tanks
 - ground support equipment
 - handling equipment
 - missile storage
 - rocket propellants
 - space storage
 - storable propellants
- ∞ storage
 - underground storage

propellant tanks

- UF *rocket propellant tanks*
 - Shuttle Superlightweight Tank*
 - SLWT (propellant tank)*
- GS tanks (containers)
 - . **propellant tanks**
- RT cylindrical tanks
 - expulsion bladders
 - external tanks
 - fluid filled shells
 - fuel tank pressurization
 - fuel tanks
 - liquid filled shells
 - liquid propellant rocket engines
 - liquid sloshing
 - pressure vessels
 - propellant consumption
 - spherical tanks
 - storage tanks
 - tank geometry
 - ullage

propellant tests

- RT chemical compatibility
 - cold flow tests
 - corrosion tests
 - engine tests
 - fuel tests
 - interior ballistics
- ∞ materials tests
 - missile tests
 - propulsive efficiency
 - stability tests
- ∞ tests

propellant transfer

- GS fluid flow
 - . fuel flow
 - . . **propellant transfer**
- RT materials handling
 - . **propellant transfer**
- RT fuel control
 - fuel systems
 - liquid sloshing
 - refueling

propellants

DEF Any agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts, or any compounds or mixture of these; specifically, fuels, oxidants, or a combination or mixture of fuels and oxidants

used in propelling rockets. Propellants are commonly in either liquid or solid form.

GS **propellants**

- . colloidal propellants
- . double base propellants
- . . double base rocket propellants
- . . . gelled propellants
- . . . gelled rocket propellants
- . gun propellants
- . high energy propellants
- . . Domino propellants
- . high temperature propellants
- . hybrid propellants
- . hydrazine nitroform
- . hydrogen azides
- . nitrasol explosives
- . pentolite
- . RDX
- . rocket propellants
- . . gaseous rocket propellants
- . . liquid rocket propellants
- . . . cryogenic rocket propellants
- . . . gelled rocket propellants
- . . . hypergolic rocket propellants
- . . . monopropellants
- . . . RP-1 rocket propellants
- . . . slurry propellants
- . . . slush hydrogen
- . . . aerazine
- . . nitramine propellants
- . . solid rocket propellants
- . . . double base rocket propellants
- . . . HMX
- . . . HTPB propellants
- . . . metal propellants
- . . TAGN
- . . TATB
- . solid propellants
- . . case bonded propellants
- . . composite propellants
- . . nitramine propellants
- . . plastic propellants
- . . solid rocket propellants
- . . . double base rocket propellants
- . . . HMX
- . . . HTPB propellants
- . . . metal propellants
- . storable propellants
- . tetryl
- RT ammunition
 - ascent propulsion systems
 - auxiliary propulsion
 - ballistics
 - burning rate
 - cartridges
 - chemical fuels
- ∞ energy sources
 - explosives
 - fuel tanks
 - fuels
 - fulminates
 - guns (ordnance)
 - incendiary ammunition
 - oxetane polymers
- ∞ power supplies
 - propulsion
 - spacecraft power supplies
 - spacecraft propulsion
 - specific impulse
 - torpedoes

propeller blades

- GS airfoils
 - . **propeller blades**
- RT blade tips
 - ∞ blades
 - fan blades
 - feathering
 - propellers
 - prop-fan technology
 - rotary wings
 - synchrophasing

propeller drive

- GS mechanical drives
 - . **propeller drive**
 - . . helicopter propeller drive
- RT contrarotating propellers
 - marine propulsion

propeller efficiency

propellers
underwater propulsion

propeller efficiency
GS efficiency
. propulsive efficiency
. . . **propeller efficiency**
RT contrarotating propellers
power efficiency
propellers
prop-fan technology

propeller fans
GS propellers
. **propeller fans**
RT ducted fans
 ∞ fans
lift fans
prop-fan technology

propeller noise
(added July 1989)
GS elastic waves
. sound waves
. . . noise (sound)
. . . . aircraft noise
. **propeller noise**
. flow noise
. aerodynamic noise
. **propeller noise**
RT acoustic retrofitting
aeroacoustics
blade slap noise
engine noise
Flowcs Williams-Hawkings equation
mufflers
noise intensity
noise measurement
noise prediction (aircraft)
noise reduction
sound fields
sound transmission

propeller slipstreams
GS wakes
. aircraft wakes
. . . slipstreams
. . . . **propeller slipstreams**
. turbulent wakes
. . . slipstreams
. . . . **propeller slipstreams**
RT interference drag

propellers
GS **propellers**
. contrarotating propellers
. propeller fans
. shrouded propellers
. tilted propellers
. variable pitch propellers
RT actuator disks
feathering
propeller blades
propeller drive
propeller efficiency
ships

proper motion
(added July 2005)
DEF The motion of a celestial object perceived with respect to the celestial sphere.
GS motion
. **proper motion**
RT angular velocity
astrometry
astronomical coordinates
celestial reference systems
celestial sphere
stellar motions

∞ **properties**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *attributes*
RT acoustic properties
biodegradability
chemical properties
creep properties
dielectric properties
dynamic characteristics

elastic properties
electrical properties
electromagnetic properties
hydrophobicity
hygral properties
macroscopic equations
magnetic properties
 ∞ materials science
mechanical properties
optical properties
 ∞ physical properties
plastic properties
porosity
prejudices
progress
propellant properties
proximity
recoverability
regularity
shear properties
structural properties (geology)
surface properties
tensile properties
thermochemical properties
thermodynamic properties
thermophysical properties
transport properties
turbidity
virtual properties

propfan technology
USE **prop-fan technology**

prop-fan technology
DEF Technology of a small diameter, highly loaded, many-bladed variable pitch advanced turboprop.
UF *propfan technology*
RT propeller blades
propeller efficiency
propeller fans
turboprop engines

prophylaxis
RT diseases
immunology

propionic acid
GS acids
. carboxylic acids
. . . fatty acids
. . . . **propionic acid**
organic compounds
. carboxylic acids
. . . fatty acids
. . . . **propionic acid**

proportion
RT distributing ratios

proportional control
DEF Control of an aircraft, rocket or spacecraft in which the control surface deflection is proportional to the movement of the remote controls.
GS automatic control
. **proportional control**
RT ∞ control
control equipment
feedback control
off-on control
proportional navigation
servocontrol

proportional counters
GS ionization chambers
. **proportional counters**
measuring instruments
. counters
. . . radiation counters
. . . . **proportional counters**
. radiation measuring instruments
. . . radiation counters
. . . . **proportional counters**
RT anticoincidence detectors
dosimeters
Geiger counters

neutron counters

proportional limit
UF *elastic strength*
GS mechanical properties
. elastic properties
. . . **proportional limit**
range (extremes)
. **proportional limit**
RT critical loading
modulus of elasticity
stress-strain diagrams

proportional navigation
(added July 1998)
GS navigation
. **proportional navigation**
RT homing
interception
line of sight
missile control
proportional control
rendezvous guidance
terminal guidance

proposals
(added February 1992)
GS documents
. **proposals**
RT contracts
cost analysis
reports
research and development

proprioception
UF *kinesthesia*
GS perception
. sensory perception
. . . **proprioception**
. . . . autokinesis
RT gravity perception
kinesthesia

proprioceptors
GS anatomy
. sense organs
. . . **proprioceptors**
receptors (physiology)
. **proprioceptors**
RT baroreceptors
nervous system
sensitometry

propulsion
GS **propulsion**
. ascent propulsion systems
. auxiliary propulsion
. chemical propulsion
. . . hybrid propulsion
. descent propulsion systems
. electric propulsion
. . . electromagnetic propulsion
. . . . magnetic sails
. . . electrostatic propulsion
. . . . ion propulsion
. . . laser propulsion
. . . plasma propulsion
. . . solar electric propulsion
. jet propulsion
. low thrust propulsion
. . . electromagnetic propulsion
. . . . magnetic sails
. . . electrostatic propulsion
. . . . ion propulsion
. . . man operated propulsion systems
. . . photonic propulsion
. . . laser propulsion
. . . plasma propulsion
. . . solar propulsion
. . . . solar electric propulsion
. . . . solar thermal propulsion
. marine propulsion
. . . underwater propulsion
. . . . submarine propulsion
. nuclear propulsion
. . . fusion propulsion
. . . nuclear electric propulsion
. space station propulsion
. spacecraft propulsion
. . . electromagnetic propulsion

- . . . magnetic sails
- . . . electrostatic propulsion
- . . . ion propulsion
- . . . matter-antimatter propulsion
- . . . negative matter propulsion
- . . . photonic propulsion
- . . . laser propulsion
- . . . plasma propulsion
- . . . solar propulsion
- . . . solar electric propulsion
- . . . solar thermal propulsion
- RT aeronautical engineering
 - ∞ aircraft
 - ∞ astronautics
 - ∞ drives
 - engines
 - exhaust gases
 - fuel tank pressurization
 - fuel tanks
 - high impulse
 - locomotion
 - mass drivers
 - missiles
 - post boost propulsion system
 - propellants
 - propulsive efficiency
 - pulling
 - pushing
 - rocket propellants
 - solar sails
 - space flight
 - Space Shuttle Main Engine
 - space tugs
 - thrust
- propulsion system configurations**
 - GS **propulsion system configurations**
 - . ascent propulsion systems
 - . descent propulsion systems
 - RT aerodynamic configurations
 - aerospike engines
 - aircraft configurations
 - auxiliary propulsion
 - ∞ configurations
 - convertible fan-shaft engines
 - laser propulsion
 - launch vehicle configurations
 - missile configurations
 - post boost propulsion system
 - space station propulsion
 - spacecraft configurations
 - ∞ systems
 - topping cycle engines
- propulsion system performance**
 - RT cold flow tests
 - combustion efficiency
 - ∞ performance
 - power efficiency
 - propellant mass ratio
 - propulsive efficiency
 - rocket thrust
 - solar thermal propulsion
 - specific impulse
 - ∞ systems
 - systems health monitoring
 - thermodynamic efficiency
 - total impulse
- propulsive efficiency**
 - DEF The efficiency with which energy available for propulsion is converted into thrust by a rocket engine.
 - GS efficiency
 - . **propulsive efficiency**
 - . . propeller efficiency
 - RT combustion efficiency
 - engine tests
 - laser propulsion
 - multistage rocket vehicles
 - nozzle efficiency
 - power efficiency
 - propellant mass ratio
 - propellant tests
 - propulsion
 - propulsion system performance
 - specific impulse
 - thermodynamic efficiency
 - thrust programming

- total impulse
- propyl compounds**
 - RT ∞ chemical compounds
- propyl nitrate**
 - GS alkyl compounds
 - . **propyl nitrate**
 - . esters
 - . nitrate esters
 - . **propyl nitrate**
 - . nitrogen compounds
 - . nitrate esters
 - . . **propyl nitrate**
- propylene**
 - GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkenes
 - . . . **propylene**
- propylene oxide**
 - GS epoxy compounds
 - . **propylene oxide**
- prospecting*
 - USE **exploration**
- prostaglandins**
 - GS organic compounds
 - . lipids
 - . . steroids
 - . . . **prostaglandins**
 - . secretions
 - . endocrine secretions
 - . . hormones
 - . . . **prostaglandins**
 - RT biosynthesis
 - prostate gland
- prostate gland**
 - GS anatomy
 - . genitourinary system
 - . . reproductive systems
 - . . . sex glands
 - **prostate gland**
 - . . glands (anatomy)
 - . . sex glands
 - . . . **prostate gland**
 - RT bladder
 - prostaglandins
- prosthetic devices**
 - GS medical equipment
 - . **prosthetic devices**
 - . . artificial ears
 - RT walking machines
- protactinium**
 - GS chemical elements
 - . **protactinium**
 - . . protactinium isotopes
 - . metals
 - . **protactinium**
 - . . protactinium isotopes
- protactinium 234*
 - USE **protactinium isotopes**
- protactinium compounds**
 - GS **protactinium compounds**
 - . protactinium fluorides
 - RT ∞ chemical compounds
 - ∞ metal compounds
- protactinium fluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **protactinium fluorides**
 - . . halides
 - . . fluorides
 - . . . metal fluorides
 - **protactinium fluorides**
 - . . metal halides
 - . . . metal fluorides
 - **protactinium fluorides**
 - . . . **protactinium fluorides**
 - . . protactinium compounds

- . **protactinium fluorides**
- protactinium isotopes**
 - UF *protactinium 234*
 - GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **protactinium isotopes**
 - . protactinium
 - . . **protactinium isotopes**
 - . metals
 - . protactinium
 - . . **protactinium isotopes**
- protease**
 - GS biopolymers
 - . proteins
 - . . enzymes
 - . . . **protease**
 - . organic compounds
 - . proteins
 - . . enzymes
 - . . . **protease**
- protection**
 - GS **protection**
 - . acceleration protection
 - . circuit protection
 - . corrosion prevention
 - . environment protection
 - . eye protection
 - . meteoroid protection
 - . radiation protection
 - . . radiation shielding
 - . . . solar radiation shielding
 - . planetary protection
 - . thermal protection
 - . . planetary quarantine
 - RT accident prevention
 - airport security
 - civil defense
 - coatings
 - countermeasures
 - flying ejection seats
 - hazards
 - housings
 - insulation
 - prevention
 - protectors
 - ∞ resistance
 - safety
 - safety devices
 - shielding
 - warning
 - warning systems
- protective clothing**
 - GS clothing
 - . **protective clothing**
 - . . helmets
 - . . pressure suits
 - . . . space suits
 - extravehicular mobility units
 - . . vapor barrier clothing
 - RT armor
 - chemical defense
 - coveralls
 - emergency life sustaining systems
 - flight clothing
 - gloves
 - goggles
 - masks
 - safety devices
 - shoes
- protective coatings**
 - UF *ceramal protective coatings*
 - sprayed protective coatings*
 - GS coatings
 - . **protective coatings**
 - . . anodic coatings
 - . . ceramic coatings
 - . . primers (coatings)
 - . . refractory coatings
 - RT alkyd resins
 - aluminides
 - anodizing
 - carbon nitrides
 - cladding
 - ∞ construction materials

protectors

- corrosion
- desensitizing
- electroplating
- encapsulating
- finishes
- glass coatings
- glazes
- gold coatings
- HVOF thermal spraying
- inorganic coatings
- lacquers
- metal coatings
- nickel coatings
- optical coatings
- paints
- plastic coatings
- plating
- rubber coatings
- sprayed coatings
- surface finishing
- transgranular corrosion
- varnishes
- waterproofing
- zinc coatings

protectors

- GS **protectors**
 - . ear protectors
- RT bumpers
- ∞ containers
- enclosures
- fairings
- housings
- protection
- safety devices
- ∞ screens
- sheaths
- shielding

protein crystal growth

(added March 1989)

- GS growth
 - . crystal growth
 - . . **protein crystal growth**
- RT protein synthesis
- proteins
- space processing

protein denaturation

USE **biopolymer denaturation**

protein metabolism

- GS metabolism
 - . **protein metabolism**
 - . . lipid metabolism
- RT glucocorticoids
- protein synthesis
- synthetic food

protein synthesis

DEF Process by which protein molecules are formed.

- RT biological evolution
- chemical evolution
- protein crystal growth
- protein metabolism

proteinoids

- GS biopolymers
 - . proteins
 - . . **proteinoids**
- organic compounds
- . proteins
- . . **proteinoids**

proteins

- GS biopolymers
 - . **proteins**
 - . . albumins
 - . . aspartates
 - . . calmodulin
 - . . elastin
 - . . enzymes
 - . . . aldolase
 - . . . amidase
 - . . . carbonic anhydrase
 - . . . catalase
 - . . . cholinesterase
 - . . . cytochromes
 - . . . dehydrogenases

- . . . hexokinase
- . . . lysozyme
- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin
- . . . phosphatases
- . . . protease
- . . . renin
- . . . thrombin
- . . . trypsin
- . . fibrin
- . . globulins
- . . . fibrinogen
- . . . gamma globulin
- . . hemoglobin
- . . . carboxyhemoglobin
- . . . oxyhemoglobin
- . . keratins
- . . lipoproteins
- . . luminescent proteins
- . . melanin
- . . myoglobin
- . . myosins
- . . osteocalcin
- . . phytochrome
- . . proteinoids
- . . prothrombin
- . . protoproteins
- . . tumor suppressor proteins
- organic compounds

- . **proteins**
- . . albumins
- . . aspartates
- . . calmodulin
- . . elastin
- . . enzymes
- . . . aldolase
- . . . amidase
- . . . carbonic anhydrase
- . . . catalase
- . . . cholinesterase
- . . . cytochromes
- . . . dehydrogenases
- . . . hexokinase
- . . . lysozyme
- . . . nuclease
- . . . oxidase
- . . . papain
- . . . pepsin
- . . . phosphatases
- . . . protease
- . . . renin
- . . . thrombin
- . . . trypsin
- . . fibrin
- . . globulins
- . . . fibrinogen
- . . . gamma globulin
- . . hemoglobin
- . . . carboxyhemoglobin
- . . . oxyhemoglobin
- . . keratins
- . . lipoproteins
- . . luminescent proteins
- . . melanin
- . . myoglobin
- . . myosins
- . . osteocalcin
- . . phytochrome
- . . proteinoids
- . . prothrombin
- . . protoproteins
- . . tumor suppressor proteins

- RT adrenocorticotropin (ACTH)
- alanine
- biopolymer denaturation
- collagens
- cysteamine
- cysteine
- ∞ food
- macromolecules
- nucleic acids
- nucleotides
- ∞ nutrients
- peptides
- polynucleotides
- polypeptides
- protein crystal growth

- proteome
- protoplasm
- serums
- synthetic food

proteome

(added September 2001)

DEF An organism's protein complement as coded for by its genome.

- RT genome
- molecular biology
- proteins

Proteus

(added July 1995)

DEF A natural satellite of Neptune, orbiting at a mean distance of 117,600 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Neptune satellites
 - . . . **Proteus**
- RT Neptune (planet)

prothrombin

- GS biopolymers
 - . proteins
 - . . **prothrombin**
- organic compounds
- . proteins
- . . **prothrombin**
- RT thrombin

protium

USE **light water**

protobiology

- RT abiogenesis
- biological diversity
- biological evolution
- ∞ biology
- chemical evolution
- paleontology
- viruses

protocol (computers)

- GS **protocol (computers)**
 - . carrier sense multiple access
 - . Ethernet
- RT channels (data transmission)
- communication networks
- computer networks
- computer security
- data links
- data processing
- data transmission
- interoperability
- local area networks
- networks
- packet switching
- World Wide Web

protogalaxies

(added May 2002)

DEF Clouds of hydrogen gas and dark matter hypothesized to give rise to galaxies.

- UF *primordial galaxies*
- GS celestial bodies
 - . galaxies
 - . . **protogalaxies**
- RT galactic clusters
- galactic evolution
- gravitational collapse
- star formation

Proton 1 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . Proton satellites
 - . . . **Proton 1 satellite**

Proton 2 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . Proton satellites
 - . . . **Proton 2 satellite**

Proton 3 satellite

- GS artificial satellites
 - . Soviet satellites
 - . . Proton satellites

... **Proton 3 satellite**

Proton 4 satellite
 GS artificial satellites
 . Soviet satellites
 . . Proton satellites
 . . . **Proton 4 satellite**

proton beams
 GS beams (radiation)
 . particle beams
 . . **proton beams**
 RT neutron beams

proton belts
 GS particles
 . charged particles
 . . magnetically trapped particles
 . . . radiation belts
 **proton belts**
 corpuscular radiation
 radiation belts
 **proton belts**
 trapped particles
 magnetically trapped particles
 radiation belts
 **proton belts**
 RT ∞ belts
 inner radiation belt
 outer radiation belt

proton damage
 GS damage
 . **proton damage**

proton density (concentration)
 GS density (number/volume)
 . particle density (concentration)
 . . ion density (concentration)
 . . . **proton density (concentration)**
 magnetospheric proton density
 RT atmospheric density
 atom concentration
 plasma density
 space density

proton energy
 GS particle energy
 . **proton energy**
 RT activation energy
 electron energy
 ∞ energy
 kinetic energy
 surface energy

proton flux density
 SN (LIMITED TO PROTON EMISSION OR
 DETECTION RATE PER UNIT AREA)
 GS rates (per time)
 . flux density
 . . radiant flux density
 . . . particle flux density
 **proton flux density**
 RT irradiance
 radiancy
 radiation counters
 solar flux density

proton impact
 GS impact
 . **proton impact**
 RT electron impact
 point impact

proton irradiation
 GS irradiation
 . ion irradiation
 . . **proton irradiation**
 RT deuteron irradiation
 electron radiation

Proton launch vehicle
(added April 1995)
 GS launch vehicles
 . heavy lift launch vehicles
 . . **Proton launch vehicle**
 RT international cooperation
 Russian Space Program

space commercialization

proton magnetic resonance
 GS resonance
 . magnetic resonance
 . . nuclear magnetic resonance
 . . . **proton magnetic resonance**

proton masers
 GS stimulated emission devices
 . masers
 . . **proton masers**
 RT magnetometers

proton precession
 GS gyration
 . precession
 . . **proton precession**
 RT free vibration

proton precipitation
 GS particle precipitation
 . **proton precipitation**
 RT auroras
 electron precipitation
 particles
 ∞ precipitation
 radiation belts
 trapped particles
 upper atmosphere

proton protuberances
 GS protuberances
 . **proton protuberances**

proton resonance
 GS resonance
 . magnetic resonance
 . . nuclear magnetic resonance
 . . . **proton resonance**
 RT nuclear particles

Proton satellites
 GS artificial satellites
 . Soviet satellites
 . . **Proton satellites**
 . . . Proton 1 satellite
 . . . Proton 2 satellite
 . . . Proton 3 satellite
 . . . Proton 4 satellite
 RT U.S.S.R. space program

proton scattering
 GS nuclear reactions
 . **proton scattering**
 scattering
 . **proton scattering**
 RT ion scattering

proton telescopes
 USE **particle telescopes**

proton-antiproton interactions
(added June 1999)
 GS particle interactions
 . elementary particle interactions
 . . **proton-antiproton interactions**
 RT annihilation reactions
 antiprotons
 high energy interactions
 matter-antimatter propulsion

proton-proton reactions
 DEF Thermonuclear reactions in which two protons collide at very high velocities and combine to form deuterons. The resultant deuterons may capture other protons to form tritium and the latter may undergo proton capture to form helium. The proton-proton reactions are now believed to be the principal sources of energy within the sun and other stars of its class. A temperature of 5 million degrees Kelvin and high hydrogen (proton) concentrations are required for these reactions to proceed at rates compatible with energy emission by such stars.
 GS nuclear reactions
 . **proton-proton reactions**
 RT annihilation reactions
 ∞ interactions
 pomerons

thermonuclear reactions

protons
 DEF Positively charged subatomic particles having a mass of 1.67252 times 10 to the minus 24 gram, slightly less than that of an electron.
 GS particles
 . charged particles
 . . **protons**
 . . . recoil protons
 . . . solar protons
 . elementary particles
 . . fermions
 . . . **protons**
 recoil protons
 solar protons
 RT alpha particles
 antiprotons
 baryons
 cosmic rays
 deuterons
 flux density
 hydrogen ions
 ions
 nuclear particles
 nuclei (nuclear physics)
 nucleon potential
 nucleons
 positive ions
 radiation belts
 radiation shielding
 tritons

protoplanetary disks
(added March 2001)
 DEF Circumstellar disks from which planetary systems are created during star formation.
 RT accretion disks
 planetary evolution
 planets
 protoplanets
 solar system evolution
 stellar envelopes
 stellar evolution

protoplanets
 DEF Transition objects formed during primordial cloud condensation into stellar systems (stars, planets, etc.) which form the nucleus of planetary accretion. Used for planetesimals.
 UF *planetesimals*
 GS celestial bodies
 . **protoplanets**
 RT cosmology
 planetary environments
 planetary evolution
 planetary mass
 planets
 protoplanetary disks
 solar nebula
 solar orbits
 solar system
 stellar evolution

protoplasm
 RT proteins

protoplasts
 GS cells (biology)
 . **protoplasts**

protoproteins
 GS biopolymers
 . proteins
 . . **protoproteins**
 organic compounds
 . proteins
 . . **protoproteins**
 RT amino acids

protosolar nebula
(added June 2001)
 USE **solar nebula**

protostars
 GS celestial bodies
 . stars
 . . **protostars**
 . . . pre-main sequence stars
 T Tauri stars

prototypes

RT brown dwarf stars
solar nebula
star formation
stellar evolution
stellar mass accretion

prototypes

DEF Preliminary type, form, or instance of systems that serve as models for later stages or for the final, completed version of the systems.

RT breadboard models
∞ patterns
pilot plants
rapid prototyping

protozoa

GS animals
. protozoa
. . amoeba
. . . pelomyxa
. . Flagellata
. . . Euglena
. . . trypanosome
. . paramecia
microorganisms
. protozoa
. . amoeba
. . . pelomyxa
. . Flagellata
. . . Euglena
. . . trypanosome
. . paramecia
RT microspores
spores

protractors

GS measuring instruments
. protractors
RT angles (geometry)

protuberances

SN (COMPONENTS MOUNTED EXTERNAL TO THE STRUCTURE)
GS protuberances
. proton protuberances
RT aerodynamic configurations
aerodynamic interference
aircraft antennas
aircraft parts
airframes
∞ blisters
cowlings
domes (structural forms)
external store separation
external stores
fairings
fuel tanks
housings
nacelles
papillae
pitot tubes
radomes
∞ ridges
shells (structural forms)
vortex alleviation
wing-fuselage stores
winglets

proustite

GS arsenic compounds
. arsenides
. . proustite
minerals
. proustite

Provider aircraft

USE C-123 aircraft

proving

UF confirmation
demonstration
proofs
validation
verification (proving)
GS proving
. theorem proving
RT acceptability
error detection codes
evaluation
examination

mathematical logic
∞ measurement
program verification (computers)
∞ tests

provisioning

RT consumables (spacecrew supplies)
∞ food
life support systems
space rations
stowage (onboard equipment)

proximity

RT distance
∞ properties
tightness

proximity effect (electricity)

DEF Redistribution of current in a conductor caused by the presence of another conductor.

GS electrical properties
. inductance
. . proximity effect (electricity)
electromagnetic properties
. inductance
. . proximity effect (electricity)
RT ∞ effects
electricity
superconductors (materials)
volt-ampere characteristics

PRTR (reactor)

USE plutonium recycle test reactor

prussic acid

USE hydrocyanic acid

pseudomonas

GS microorganisms
. bacteria
. . pseudomonas

pseudonoise

RT random noise

pseudopotentials

DEF Factors in an approximate method for calculation of energy bands in solids by the use of approximation which includes the many body effect.

RT impurities
melting
semiconductors (materials)

pseudorandom sequences

RT random numbers
∞ signals

PSP (paints)

(added March 2001)

USE pressure sensitive paints

psychiatry

GS medical science
. psychiatry
. . neuropsychiatry
. . social psychiatry
RT brain
military psychology
psychology
psychotherapy

psychoacoustics

GS acoustics
. psychoacoustics
psychology
. psychophysics
. . psychoacoustics
RT auditory perception
auditory signals
bells
bioacoustics
noise intensity
psychological effects
psychological factors

psycholinguistics

DEF Study of linguistic behavior such as conditioning by psychological factors including the speaker's and listener's culturally deter-

mined categories of expression and comprehension.

GS linguistics
. psycholinguistics

RT intelligibility
phonemes
phonemics
robots
semantics
syllables
syntax

psychological effects

GS psychological effects
. desynchronization (biology)
. illusions
. . hallucinations
. . moon illusion
. . oculogravic illusions
. . optical illusion
. . . elevator illusion
. . jet lag
RT afterimages
aviation psychology
biological effects
boredom
comfort
confidence
disorientation
∞ effects
emotions
environmental engineering
environments
frustration
human factors engineering
human reactions
humidity
military psychology
moods
psychoacoustics
reaction time
space adaptation syndrome
space psychology
stress (biology)
stress (psychology)
Taylor manifest anxiety scale

psychological factors

RT astronaut performance
aviation psychology
emotional factors
flight stress (biology)
habits
moods
permissivity
psychoacoustics
psychosomatics
reward (psychology)
sex factor
space psychology
∞ stimuli
stress (psychology)

psychological indexes

USE psychological tests

psychological sets

GS psychology
. psychological sets

psychological tests

UF psychological indexes
GS psychological tests
. Rorschach tests
RT certification
environmental tests
intelligence tests
limen
military psychology
personality tests
pilot selection
psychometrics
ratios
Skinner boxes
Taylor manifest anxiety scale
∞ tests

psychology

DEF The science which studies the functions of the mind, such as sensation, perception,

memory, thought, and, more broadly the behavior of an organism in relation to its environment.

- GS **psychology**
 - . aviation psychology
 - . cognitive psychology
 - . military psychology
 - . psychological sets
 - . psychophysics
 - . . psychoacoustics
 - . space psychology
- RT biofeedback
- boredom
- brain
- cybernetics
- detachment
- diagnosis
- disorders
- disorientation
- emotional factors
- emotions
- extroversion
- frustration
- inspiration
- intellect
- introversion
- morale
- prejudices
- psychiatry
- psychometrics
- psychotherapy
- Rorschach tests
- stress (psychology)
- subliminal stimuli

psychometrics

- RT diagnosis
- education
- military psychology
- norms
- personality tests
- psychological tests
- psychology
- psychomotor performance
- psychophysics
- psychosomatics
- Skinner boxes

psychomotor performance

DEF Of or pertaining to muscular action ensuing directly from a mental process, as in the coordinated manipulation of aircraft or spacecraft controls.

- GS sensorimotor performance
 - . **psychomotor performance**
 - . . psychosomatics
- RT abilities
- biocontrol systems
- human performance
- human reactions
- mental performance
- operator performance
- physiological tests
- pilot performance
- psychometrics
- reaction time
- workloads (psychophysiology)

psychopharmacology

DEF The science that deals with the action of drugs on mental function.

- GS medical science
 - . pharmacology
 - . . **psychopharmacology**
- RT central nervous system
- central nervous system depressants
- central nervous system stimulants
- drugs
- life sciences
- medical science
- ∞ medicine
- nervous system
- psychotropic drugs

psychophysics

- GS psychology
 - . **psychophysics**
 - . . psychoacoustics
- RT ∞ physics
- psychometrics

∞ science

psychophysiology

- GS physiology
 - . **psychophysiology**
- RT evoked response (psychophysiology)
- information processing (biology)
- ∞ science
- workloads (psychophysiology)

psychoses

- GS **psychoses**
 - . psychotic depression
 - . schizophrenia
- RT detachment
- disorders
- fear
- irrationality
- neuroses

psychosomatics

- GS sensorimotor performance
 - . psychomotor performance
 - . . **psychosomatics**
- RT psychological factors
- psychometrics

psychotherapy

- GS therapy
 - . **psychotherapy**
- RT convulsions
- Gestalt theory
- health
- mental health
- neuropsychiatry
- psychiatry
- psychology
- psychotropic drugs

psychotic depression

- GS psychoses
 - . **psychotic depression**
- RT ∞ depression
- neurotic depression

psychotropic drugs

- GS drugs
 - . **psychotropic drugs**
 - . . marijuana
- RT central nervous system
- narcotics
- neurophysiology
- physiochemistry
- psychopharmacology
- psychotherapy
- sedatives

psychrometers

DEF Instruments for measuring humidity through the use of wet and dry bulb thermometers.

- GS measuring instruments
 - . moisture meters
 - . . hygrometers
 - . . . **psychrometers**
- RT atmospheric moisture
- chemical analysis
- humidity
- humidity measurement
- meteorological instruments

psychrophiles

- RT mesophiles
- microorganisms
- thermophiles

PTM (modulation)

USE **pulse modulation**

Ptolemaeus Crater

- GS craters
 - . lunar craters
 - . . **Ptolemaeus Crater**
- RT meteorite craters

p-type semiconductors

- GS semiconductors (materials)
 - . **p-type semiconductors**
- RT holes (electron deficiencies)
- indium aluminum arsenides

semiconductor junctions

public address systems

- RT ∞ systems
- warning systems

public health

- GS biophysics
 - . health physics
 - . . **public health**
- health
 - . health physics
 - . . **public health**
- RT hazardous material disposal (in space)
- hygiene
- medical services
- nonpoint sources
- occupational diseases
- oral hygiene
- pollution
- sanitation
- urban planning

public law

- GS law (jurisprudence)
 - . **public law**
 - . . liabilities
 - . . . legal liability
 - . . penalties
- RT air law
- insurance (contracts)

public relations

- RT ∞ cooperation
- improvement
- promotion
- upgrading

public speaking

- UF *oratory*
- RT lectures
- speech

publications

USE **documents**

Puck

(*added July 1995*)
 DEF A natural satellite of Uranus, orbiting at a mean distance of 86,010 kilometers.

- GS celestial bodies
 - . natural satellites
 - . . Uranus satellites
 - . . . **Puck**
- RT Uranus (planet)

Puerto Rico

- GS landforms
 - . islands
 - . . West Indies
 - . . . **Puerto Rico**
- nations
- . United States
- . . **Puerto Rico**

pulleys

- RT ∞ belts
- blocks
- idlers
- rollers
- wheels
- winches

pulling

- RT ∞ drawing
- ∞ force
- propulsion
- traction

pulling (frequency stability)

USE **frequency pulling**

pulmonary circulation

- GS circulation
 - . blood circulation
 - . . **pulmonary circulation**
- RT alveoli
- artificial cardiac pacemaker
- blood pumps
- heart implantation

pulmonary functions

lungs
respiratory system

pulmonary functions

RT alveoli
∞ functions
lungs

pulmonary lesions

GS diseases
. **pulmonary lesions**
injuries
. lesions
. . . **pulmonary lesions**
RT lung morphology
lungs
occupational diseases
respiratory diseases

pulsar magnetospheres

(added July 1988)
GS stellar magnetospheres
. **pulsar magnetospheres**
RT magnetic fields
∞ magnetospheres
pulsars
stellar atmospheres
stellar magnetic fields

pulsars

GS celestial bodies
. radio sources (astronomy)
. . . radio stars
. . . **pulsars**
. stars
. . . neutron stars
. . . **pulsars**
. . . radio stars
. . . **pulsars**
RT degenerate matter
gamma ray sources (astronomy)
magnetars
pulsar magnetospheres
quasars
radiation sources
radio astronomy
radio bursts
starquakes
supernova remnants

pulsating flow

USE **unsteady flow**

pulse (cardiovascular)

USE **heart rate**

pulse amplitude

DEF A general term indicating the magnitude of a pulse. Used for pulse height.
UF *pulse height*
GS amplitudes
. **pulse amplitude**
waveforms
. **pulse amplitude**
RT amplitude distribution analysis
electric pulses
photopeak
pulsed radiation
sawtooth waveforms
square waves

pulse amplitude modulation

UF *PAM (modulation)*
GS coding
. signal encoding
. . . pulse modulation
. . . **pulse amplitude modulation**
modulation
. pulse modulation
. . . **pulse amplitude modulation**
RT modems
P.A.C.M. telemetry

pulse charging

DEF Rapid and efficient method for charging electric batteries.
RT battery chargers
electric batteries
electric charge

storage batteries

pulse code modulation

DEF Any modulation which involves a pulse code. Used for PCM (modulation).
UF *PCM (modulation)*
GS coding
. signal encoding
. . . pulse modulation
. . . . **pulse code modulation**
. . . . delta modulation
. . . . differential pulse code modulation
modulation
. pulse modulation
. . . **pulse code modulation**
. . . delta modulation
. . . differential pulse code modulation
RT biternary code
decommutators
P.A.C.M. telemetry
PCM telemetry
unified S band

pulse communication

UF *digital communication*
GS telecommunication
. **pulse communication**
. . digital spacecraft television
RT bit error rate
communication networks
data transmission
delta modulation
differential pulse code modulation
digital television
electromagnetic missiles
electromagnetic pulses
frequency division multiplexing
modems
multiple access
multiplexing
orthogonal multiplexing theory
radio communication
radio transmission
satellite transmission
signal transmission
space communication
telegraph systems
telemetry
time division multiple access

pulse compression

DEF The coding and processing of a signal pulse of long time duration to one of short time duration and high range resolution, while maintaining the benefits of high pulse energy.
RT coding
compressing
radar

pulse detonation engines

(added March 2001)
DEF Rocket engines that operate by injecting fuel and oxidizer into long chambers and igniting the mixture with a spark plug or similar device. Quasi-steady thrust levels can be achieved by repeating this cycle at relatively high frequency and/or using more than one combustion chamber operating out of phase.
UF *PDE (engines)*
PDRE (engines)
PDWE (engines)
pulse detonation wave engines
GS engines
. rocket engines
. . liquid propellant rocket engines
. . . **pulse detonation engines**
RT air breathing engines
detonation

pulse detonation wave engines

(added March 2001)
USE **pulse detonation engines**

pulse diffraction

GS diffraction
. **pulse diffraction**
RT holographic optical elements
plasma jets
pulsed radiation

wave propagation

pulse Doppler radar

DEF A pulse radar system which utilizes the Doppler effect for obtaining information about the target (not including simple resolution from fixed targets).
GS radar
. Doppler radar
. . . **pulse Doppler radar**
. . . monopulse radar
. . . Shuttle Imaging Radar
. pulse radar
. . . **pulse Doppler radar**
. . . monopulse radar
. . . Shuttle Imaging Radar
RT cancellation circuits
coherent radar

pulse duration

DEF The time interval between the first and last instances at which the instantaneous amplitude reaches a stated fraction of the peak pulse amplitude. Used for light duration and pulse width.
UF *light duration*
pulse width
GS waveforms
. **pulse duration**
RT electric pulses
laser outputs
maser outputs
pulse repetition rate
pulsed radiation
sawtooth waveforms
square waves
time signals
ultrashort pulsed lasers

pulse duration modulation

DEF A form of pulse time modulation in which the duration of a pulse is varied. Used for PDM (modulation), pulse width modulation, and PWM (modulation).
UF *PDM (modulation)*
pulse width modulation
PWM (modulation)
GS coding
. signal encoding
. . . pulse modulation
. . . . pulse time modulation
. . . . **pulse duration modulation**
modulation
. pulse modulation
. . . pulse time modulation
. . . **pulse duration modulation**
RT modems

pulse frequency modulation

DEF A form of pulse time modulation in which the pulse repetition rate is the characteristic varied. Used for PFM (modulation).
UF *PFM (modulation)*
GS coding
. signal encoding
. . . frequency modulation
. . . . **pulse frequency modulation**
. . . pulse modulation
. . . . **pulse frequency modulation**
modulation
. frequency modulation
. . . **pulse frequency modulation**
. pulse modulation
. . . **pulse frequency modulation**
RT communication equipment
differential pulse code modulation
modems

pulse frequency modulation telemetry

GS telecommunication
. radio communication
. . . radio telemetry
. . . . **pulse frequency modulation**
telemetry
. telemetry
. . . radio telemetry
. . . . **pulse frequency modulation**
telemetry
transmission
. signal transmission

- . . . telemetry
- radio telemetry
- **pulse frequency modulation telemetry**
- RT communication equipment
- frequency modulation
- modulation
- pulse modulation
- radio transmission
- signal encoding
- pulse generators**
- RT compulsators
- electric pulses
- function generators
- ∞ generators
- Hartmann-Sprenger tubes
- impulse generators
- laser cavities
- lasers
- plasma generators
- pulse repetition rate
- pulsed radiation
- shock wave generators
- pulse heating**
- GS hardening (materials)
- . **pulse heating**
- heat treatment
- . annealing
- . . **pulse heating**
- heating
- . transient heating
- . . **pulse heating**
- RT laser heating
- simulated annealing
- pulse height*
- USE **pulse amplitude**
- pulse modulation**
- DEF Modulation of a carrier by a pulse train. Modulation of one or more characteristics of a pulse carrier.
- GS coding
- . signal encoding
- . . **pulse modulation**
- . . . pulse amplitude modulation
- . . . pulse code modulation
- delta modulation
- differential pulse code modulation
- . . . pulse frequency modulation
- . . . pulse time modulation
- pulse duration modulation
- pulse position modulation
- modulation
- . **pulse modulation**
- . . pulse amplitude modulation
- . . pulse code modulation
- . . . delta modulation
- . . . differential pulse code modulation
- . . pulse frequency modulation
- . . pulse time modulation
- . . . pulse duration modulation
- . . . pulse position modulation
- RT amplitude modulation
- demodulation
- demodulators
- electric pulses
- electromagnetic missiles
- electromagnetic pulses
- frequency modulation
- light modulation
- modems
- modulators
- phase modulation
- pulse frequency modulation telemetry
- pulsed radiation
- radio telemetry
- time division multiplexing
- trigatrons
- pulse position modulation**
- DEF A form of pulse time modulation in which the position in time of a pulse is varied. Also called pulse phase modulation. Used for PPM (modulation).
- UF *PPM (modulation)*
- GS coding

- . signal encoding
- . . pulse modulation
- . . . pulse time modulation
- **pulse position modulation**
- modulation
- . pulse modulation
- . . pulse time modulation
- . . . **pulse position modulation**
- RT modems
- pulse radar**
- DEF A type of radar, designed to facilitate range measurement, in which the transmitted energy is emitted in periodic short pulses.
- GS radar
- . **pulse radar**
- . . pulse Doppler radar
- . . . monopulse radar
- . . . Shuttle Imaging Radar
- RT coherent radar
- continuous wave radar
- Doppler radar
- echo suppressors
- electromagnetic pulses
- meteorological radar
- multistatic radar
- polystation doppler tracking system
- search radar
- surveillance radar
- synchronizers
- tracking radar
- pulse rate**
- SN (FOR CARDIOVASCULAR PULSE, USE HEART RATE)
- UF *chronotrons*
- GS rates (per time)
- . **pulse rate**
- . . pulse repetition rate
- RT electric pulses
- picosecond pulses
- pulsed radiation
- pulse recorders*
- USE **counters**
- pulse repetition rate**
- GS rates (per time)
- . pulse rate
- . . **pulse repetition rate**
- RT frequency response
- optical pumping
- pulse duration
- pulse generators
- pulsed lasers
- pulse time modulation**
- DEF Modulation in which the values of instantaneous samples of the modulating wave are caused to modulate the time of occurrence of some characteristic of a pulse carrier. Used for PTM (modulation).
- UF *PTM (modulation)*
- GS coding
- . signal encoding
- . . pulse modulation
- . . . **pulse time modulation**
- pulse duration modulation
- pulse position modulation
- modulation
- . pulse modulation
- . . **pulse time modulation**
- . . . pulse duration modulation
- . . . pulse position modulation
- pulse width*
- USE **pulse duration**
- pulse width amplitude converters**
- RT ∞ converters
- frequency converters
- pulse width modulation*
- USE **pulse duration modulation**
- pulsed arcjet engines*
- (added March 2001)
- USE **pulsed jet engines**
- pulsed inductive thrusters**
- (added April 2001)

- DEF Electromagnetic propulsion devices that accelerate a plasma propellant by the JxB Lorentz force, and in which the driving current in the plasma is induced, rather than being introduced through electrodes.
- UF *PIT (rocket engines)*
- GS engines
- . rocket engines
- . . electric rocket engines
- . . . plasma engines
- **pulsed inductive thrusters**
- RT electromagnetic propulsion
- plasma propulsion
- spacecraft propulsion
- ∞ thrusters
- pulsed jet engines**
- DEF Arcjet engines that produce thrust by ejecting a pulsed, high velocity plasma out of a conventional supersonic nozzle. The pulsed arcjet geometry consists of a narrow cylindrical chamber or capillary upstream of the nozzle convergent section. A power supply is used to charge the capacitors of a pulse-forming-network. The power supply ramps up the voltage on the capacitors until the breakdown voltage of the propellant between the electrodes is reached, at which point an arc discharge initiates in the capillary between the electrodes.
- UF *pulsed arcjet engines*
- GS engines
- . rocket engines
- . . electric rocket engines
- . . . electrothermal engines
- arc jet engines
- **pulsed jet engines**
- RT plasma engines
- resistojet engines
- pulsed laser deposition**
- (added December 1992)
- GS deposition
- . laser deposition
- . . **pulsed laser deposition**
- utilization
- . laser applications
- . . laser deposition
- . . . **pulsed laser deposition**
- RT crystal growth
- epitaxy
- excimer lasers
- laser heating
- pulsed lasers
- superconducting films
- vapor deposition
- pulsed lasers**
- GS stimulated emission devices
- . lasers
- . . **pulsed lasers**
- . . . Q switched lasers
- . . . ultrashort pulsed lasers
- . . . ultraviolet lasers
- RT argon lasers
- carbon dioxide lasers
- gas lasers
- glass lasers
- inertial fusion (reactor)
- laser heating
- laser target interactions
- laser welding
- nitrogen lasers
- pulse repetition rate
- pulsed laser deposition
- ruby lasers
- semiconductor lasers
- TEA lasers
- tube lasers
- waveguide lasers
- pulsed plasma thrusters**
- (added April 2001)
- DEF Electromagnetic propulsion devices in which electrical power is used to ablate, ionize, and electromagnetically accelerate atoms and molecules from a block of solid propellant material.
- UF *PPT (rocket engines)*
- GS engines
- . rocket engines

pulsed radiation

- . . electric rocket engines
- . . . plasma engines
- **pulsed plasma thrusters**

RT electromagnetic propulsion
plasma propulsion
spacecraft propulsion
∞ thrusters

pulsed radiation

GS **pulsed radiation**

- . electromagnetic pulses
- . . system generated electromagnetic pulses

RT continuous radiation
corpuscular radiation
elastic waves
electromagnetic radiation
gamma ray lasers
laser damage
lasers
picosecond pulses
pulse amplitude
pulse diffraction
pulse duration
pulse generators
pulse modulation
pulse rate
∞ radiation
∞ rays

pulsejet engines

DEF Compressorless jet engines in which combustion takes place intermittently producing thrust by a series of explosions, commonly occurring at the approximate resonance frequency of the engine.

- GS engines
- . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - ramjet engines
 - **pulsejet engines**
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - ramjet engines
 - **pulsejet engines**
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - ramjet engines
 - **pulsejet engines**

RT detonation
firing (igniting)
V-1 missile

pulses

DEF Short-wave trains of mechanical vibration.

- GS **pulses**
- . electric pulses
 - . electromagnetic pulses
 - . . system generated electromagnetic pulses
 - . geomagnetic pulsations
 - . . geomagnetic micropulsations
 - . micropulsations
 - . . geomagnetic micropulsations
 - . picosecond pulses
 - . pressure pulses

RT amplitudes
intermittency
solitary waves

pultrusion

DEF Process of pulling continuous lengths of resin impregnated fiber through a shaped, heated die to produce lengths of reinforced plastic.

- GS forming techniques
- . extruding
 - . . **pultrusion**

RT casting
composite structures
dies
epoxy matrix composites
fiber composites
glass fiber reinforced plastics
hot working
polymer matrix composites

- preimpregnation
- pressing (forming)
- resin matrix composites

pulverizing

USE **grinding (comminution)**

pumice

DEF A light-colored, vesicular, glassy rock commonly having the composition of a rhyolite.

- GS rocks
- . igneous rocks
 - . . . **pumice**

RT abrasives
obsidian
powder (particles)
soils

pump impellers

- GS rotating bodies
- . rotors
 - . . impellers
 - . . . **pump impellers**
- RT centrifugal compressors
centrifugal pumps

pump seals

- GS seals (stoppers)
- . **pump seals**
- RT gaskets
∞ glands
glands (seals)
hermetic seals
labyrinth seals
molecular pumps

∞ pumping

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT blowing
compressed air
compressing
cryopumping
drainage
electron pumping
jet pumps
laser pumping
magnetic pumping
maser pumping
materials handling
nuclear pumping
optical pumping
plasma pumping
pumps
purging
windmills (windpowered machines)
windpowered pumps

pumps

- SN (LIMITED TO PUMPS FOR MATERIALS--EXCLUDES HEAT PUMPS)
- UF *hydraulic pumps*
- GS **pumps**
- . axial flow pumps
 - . . turbine pumps
 - . blood pumps
 - . centrifugal pumps
 - . diffusion pumps
 - . electromagnetic pumps
 - . fuel pumps
 - . jet pumps
 - . rams (pumps)
 - . vacuum pumps
 - . . condensation pumps
 - . . ion pumps
 - . . molecular pumps
 - . viscopumps
 - . windpowered pumps

RT bellows
centrifugal compressors
ejectors
feed systems
heat pumps
hydraulic equipment
impellers
injectors
lubrication systems
materials handling
packings (seals)
pipelines

- preburners
- ∞ pumping
- siphons
- stators
- turbomachinery
- vaneless diffusers

punched cards

DEF Cards on which a pattern of holes or cuts is used to represent data.

- GS cards
- . **punched cards**
- RT computer storage devices
data recorders
data recording
data storage
readers

punched tapes

DEF Tapes on which a pattern of holes or cuts is used to represent data.

- RT automatic typewriters
computer storage devices
data recording
magnetic tapes
readers
- ∞ tapes

punches

- RT dies
machine tools
molds
platens
presses
stamping

puncturing

USE **piercing**

pupa

- RT insects
larvae

pupil size

RT pupillometry

pupillometry

- RT biometrics
dark adaptation
light adaptation
- ∞ measurement
pupil size

pupils

- GS anatomy
- . sense organs
 - . . eye (anatomy)
 - . . . **pupils**
- RT vision

purging

- RT circulation
clearing
decontamination
degassing
distillation
evacuating (vacuum)
flushing
outgassing
- ∞ pumping
purification
relieving
- ∞ separation
venting

purification

- UF *purifiers*
- GS **purification**
- . air purification
- RT aeration
antiseptics
beneficiation
chemical sterilization
cleaning
crystallization
decontamination
demineralizing
desalinization
dissipation
distillation

- elimination
elution
enrichment
flushing
getters
pasteurizing
polynuclear organic compounds
potable water
purging
purity
rectification
∞ reduction
reduction (chemistry)
refining
scavenging
∞ separation
sewage treatment
solvent extraction
spacecraft sterilization
sterilization
sublimation
ultrapure metals
upgrading
washing
water treatment
zone melting
- purifiers*
USE **purification**
- purines**
GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . . **purines**
. adenines
. xanthines
. caffeine
. guanines
. uric acid
- purity**
RT clarity
concentration (composition)
contaminants
contamination
decontamination
dilution
fineness
pollution
potable liquids
purification
quality
trace contaminants
ultrapure metals
water pollution
- purposes**
RT goals
- pursuit tracking**
GS tracking (position)
. **pursuit tracking**
RT infrared tracking
pursuit-evasion games
radar tracking
satellite interceptors
- pursuit-evasion games**
(added October 1998)
GS games
. **pursuit-evasion games**
RT differential games
evasive actions
interception
optimal control
pursuit tracking
trajectory optimization
zero sum games
- pushbroom sensor modes**
DEF Spacecraft instrument arrangements in which large numbers of detectors comprising linear arrays are swept by the forward motion of the spacecraft to attain increased fidelity and high sensitivity in the data captured.
GS modes
. **pushbroom sensor modes**
RT arrays
electro-optics
- image processing
linear arrays
photodiodes
- pushing**
RT ∞ force
propulsion
- push-pull amplifiers**
DEF Amplifiers in which there are two identical signal branch circuits so as to operate in phase opposition and with input and output connections each balanced to ground. Used for balanced amplifiers.
UF *balanced amplifiers*
GS amplifiers
. **push-pull amplifiers**
RT phase modulation
power amplifiers
- PWM (modulation)*
USE **pulse duration modulation**
- pycnometers**
RT density (mass/volume)
- pylon mounting**
RT aerodynamic configurations
aircraft structures
columns (supports)
rigid mounting
structural members
supports
wind tunnel models
- pylons**
GS supports
. **pylons**
RT columns (supports)
structural members
struts
towers
- Pyramid Lake (NV)**
GS lakes
. **Pyramid Lake (NV)**
RT Nevada
water management
water resources
- pyramidal bodies**
RT ∞ bodies
pyramids
reentry vehicles
- pyramids**
GS geometry
. Euclidean geometry
. . polyhedrons
. . . **pyramids**
RT frustums
pyramidal bodies
- pyranometers**
DEF Actinometers which measure the combined intensity of incoming direct solar radiation and diffuse sky radiation. The pyranometers consist of a recorder and a radiation sensing element which is mounted so that it views the entire sky. Sometimes called solarimeters.
GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . **pyranometers**
RT photometers
radiometers
sky radiation
- pyrazines**
DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 4 positions.
GS **pyrazines**
. azines
. . cyanurates
. . cyanuric acid
. . meclizine
. . methylene blue
- . . phenothiazines
- Pyrenees Mountains (Europe)**
GS landforms
. mountains
. . **Pyrenees Mountains (Europe)**
RT Andorra
France
Spain
- pyrenes**
GS organic compounds
. hydrocarbons
. . **pyrenes**
- Pyrex (trademark)*
USE **borosilicate glass**
- pyridine nucleotides**
GS organic compounds
. nucleotides
. . **pyridine nucleotides**
phosphorus compounds
. phosphates
. . **pyridine nucleotides**
- pyridines**
DEF Compounds that contain a six-membered heterocyclic ring containing one nitrogen atom.
GS bases (chemical)
. **pyridines**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **pyridines**
RT Karl Fischer reagent
piperidine
quinoline
- pyridoxine**
UF *vitamin B 6*
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **pyridoxine**
vitamins
. **pyridoxine**
- pyrimidines**
DEF Compounds that contain a six-membered heterocyclic ring containing nitrogen atoms in the 1 and 3 positions.
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **pyrimidines**
. . . . alloxan
. . . . thymidine
. . . . thymine
. . . . uracil
- pyrites**
GS chalcogenides
. sulfides
. . **pyrites**
iron compounds
. **pyrites**
minerals
. **pyrites**
sulfur compounds
. sulfides
. . **pyrites**
- Pyroceram (trademark)**
GS ceramics
. **Pyroceram (trademark)**
glass
. **Pyroceram (trademark)**
- pyroelectricity**
GS electrical properties
. **pyroelectricity**
thermodynamic properties
. thermophysical properties
. . **pyroelectricity**
RT piezoelectricity
polarization (charge separation)
- pyrogen**
GS gases

pyroheliometers

. flammable gases

. . . **pyrogen**

RT torches

pyrographalloy

USE **composite materials**
pyrolytic graphite
refractory materials

pyroheliometers

DEF Actinometers which measure the intensity of direct solar radiation, consisting of a radiation sensing element enclosed in a casing which is closed except for a small aperture, through which the direct solar rays enter, and a recorder unit. Used for heliometry.

UF *heliometry*

GS measuring instruments

. heliometers

. . . **pyroheliometers**

optical equipment

. heliometers

. . . **pyroheliometers**

telescopes

. heliometers

. . . **pyroheliometers**

pyrohydrolysis

DEF Decomposition by the action of heat and water vapor.

GS chemical reactions

. **pyrohydrolysis**

RT pyrolysis

pyrolysis

DEF Chemical decomposition by the action of heat.

GS chemical reactions

. cracking (chemical engineering)

. . . **pyrolysis**

. thermal decomposition

. . . **pyrolysis**

decomposition

. cracking (chemical engineering)

. . . **pyrolysis**

. thermal decomposition

. . . **pyrolysis**

RT ablation

endothermic reactions

exothermic reactions

pyrohydrolysis

thermal absorption

thermal degradation

thermal instability

thermogravimetry

pyrolytic graphite

UF *pyrographalloy*

GS carbonaceous materials

. graphite

. . . **pyrolytic graphite**

minerals

. graphite

. . . **pyrolytic graphite**

pyrolytic materials

. **pyrolytic graphite**

RT heat shielding

pyrolytic materials

GS **pyrolytic materials**

. pyrolytic graphite

RT ablative materials

ceramics

∞ materials

refractory coatings

refractory materials

pyrometallurgy

RT aerothermochemistry

alloying

chlorination

∞ converters

heat balance

metal working

∞ metallurgy

refining

sintering

sublimation

thermochemistry

pyrometers

DEF Instruments that measure high temperature, e.g., of molten lavas, by electrical or optical means.

GS measuring instruments

. temperature measuring instruments

. . . **pyrometers**

. . . radiation pyrometers

. . . thermocouple pyrometers

RT temperature measurement

pyrometry

USE **temperature measurement**

pyrophoric materials

RT explosives

flammability

hypergolic rocket propellants

igniters

ignition temperature

∞ materials

metal combustion

solid propellant ignition

spontaneous combustion

pyrophyllite

DEF A white, greenish, gray, or brown phyllosilicate mineral that resembles talc.

GS aluminum compounds

. aluminum silicates

. . . **pyrophyllite**

minerals

. **pyrophyllite**

silicon compounds

. silicates

. . . aluminum silicates

. . . **pyrophyllite**

RT aluminum oxides

pyrotechnics

UF *fireworks*

GS **pyrotechnics**

. HMX

RT ammunition

bombs (ordnance)

chemical fuels

double base propellants

explosives

∞ flares

grenades

illuminating

incendiary ammunition

initiators (explosives)

ordnance

plastic propellants

projectiles

RDX

∞ rockets

∞ signals

thermites

pyroxenes

DEF A group of dark, rock-forming silicate minerals.

GS chalcogenides

. oxides

. . . **pyroxenes**

. . . enstatite

minerals

. **pyroxenes**

. . enstatite

silicon compounds

. silicates

. . **pyroxenes**

. . . enstatite

RT eclogite

igneous rocks

regolith

rocks

soils

pyroxylin

USE **cellulose nitrate**

pyrrhotite

DEF A common reddish-brown to bronze hexagonal mineral.

GS chalcogenides

. sulfides

. . . **pyrrhotite**

. . . troilite

iron compounds

. **pyrrhotite**

. . troilite

minerals

. **pyrrhotite**

. . troilite

sulfur compounds

. sulfides

. . . **pyrrhotite**

. . . troilite

pyrroles

DEF Compounds that contain a five-membered heterocyclic ring containing one nitrogen atom.

GS organic compounds

. cyclic compounds

. . heterocyclic compounds

. . . azoles

. . . . **pyrroles**

. . . . carbazoles

RT indoles

methoxy systems

polypyrroles

thiophenes

Pyrrones (trademark)

GS nitrogen compounds

. nitrogen polymers

. . . **Pyrrones (trademark)**

RT ∞ polymers

pyruvates

RT organic liquids

Q

Q devices

- RT magnetic mirrors
- plasma pinch
- zeta pinch

Q factors

- UF *high Q*
- quality factors*
- RT figure of merit
- resonant vibration
- spectral resolution
- tuning

Q switched lasers

DEF A device for producing very short (about 30 ns) intense laser pulses by enhancing the storage and dumping of electronic energy in and out of the lasing medium.

- GS stimulated emission devices
 - . lasers
 - . . . pulsed lasers
 - . . . **Q switched lasers**
- RT argon lasers
- carbon dioxide lasers
- chemical lasers
- gas lasers
- ruby lasers
- semiconductor lasers
- solid state lasers

Q values (nuclear physics)

- GS value
 - . **Q values (nuclear physics)**
- RT fusion reactors
- storage rings (particle accelerators)
- thermonuclear reactions
- tokamak devices

QAM (modulation)

USE **quadrature amplitude modulation**

Qatar

- (added February 1989)
- GS nations
 - . **Qatar**
- RT Asia

QBO (climatology)

(added May 2001)

USE **quasi-biennial oscillation**

QCD

USE **quantum chromodynamics**

QH-50 helicopter

- UF *Dash helicopter*
- DSN helicopter*
- Gyrodyne DSN-3 helicopter*
- Gyrodyne military aircraft*
- GS Gyrodyne aircraft
 - . **QH-50 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . . helicopters
 - military helicopters
 - **QH-50 helicopter**

QHE (electronics)

(added July 2000)

USE **quantum Hall effect**

QPSK

USE **quadrature phase shift keying**

QSO (radio sources)

USE **quasars**

Quadrantid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Quadrantid meteoroids**
 - . meteoroids
 - . . **Quadrantid meteoroids**

quadrants

- GS geometry
 - . Euclidean geometry
 - . . analytic geometry

. . . quadrants

quadrature phase shift keying

USE **quadrature phase shift keying**

quadratic equations

- GS algebra
 - . nonlinear equations
 - . . **quadratic equations**
 - analysis (mathematics)
 - . real variables
 - . . nonlinear equations
 - . . . **quadratic equations**
 - field theory (algebra)
 - . **quadratic equations**
- RT ∞ equations
- polynomials

quadratic programming

- GS optimization
 - . mathematical programming
 - . . **quadratic programming**
 - research
 - . **quadratic programming**
- RT ∞ programming

quadrature amplitude modulation

(added August 1991)

DEF Amplitude modulation in which the signal is 90 degrees out of phase with the carrier which it modulates.

- UF *QAM (modulation)*
- GS coding
 - . signal encoding
 - . . amplitude modulation
 - . . . **quadrature amplitude modulation**
 - modulation
 - . amplitude modulation
 - . . **quadrature amplitude modulation**
- RT phase shift keying
- quadrature phase shift keying

quadrature approximation

USE **quadratures**

quadrature phase shift keying

(added May 1991)

- UF *QPSK*
- quadrature phase shift keying*
- GS coding
 - . signal encoding
 - . . phase modulation
 - . . . phase shift keying
 - **quadrature phase shift keying**
 - keying
 - . phase shift keying
 - . . **quadrature phase shift keying**
 - modulation
 - . phase modulation
 - . . phase shift keying
 - . . . **quadrature phase shift keying**
- RT binary phase shift keying
- quadrature amplitude modulation
- satellite transmission

quadratures

DEF Elongations of 90 deg., usually specified as east or west in accordance with the direction of the body from the sun. The moon is a quadrature at first and last quarters. The situation of two periodic quantities differing by a quarter of a cycle. Used for quadrature approximation.

- UF *quadrature approximation*
- RT circular orbits
- orbit calculation
- orbital mechanics
- orbits
- space mechanics

quadrupole lenses

USE **magnetic lenses**

quadrupole networks

- GS networks

. quadrupole networks

quadrupoles

DEF A linear accelerator having four longitudinal vanes in its resonating cavity, which are shaped to create RF electric fields that simultaneously accelerate, bunch, and focus the charged particle beam.

- RT ∞ dipoles
- nuclear quadrupole resonance
- polarity

quail missile

- GS decoys
 - . **quail missile**
 - missiles
 - . air to surface missiles
 - . . **quail missile**
- RT countermeasures
- turbojet engines

qualifications

- RT certification
- contractors
- education
- experience
- fitness
- personality tests
- personnel
- ∞ tests

qualitative analysis

DEF An analysis in which some or all of the components of a sample are identified.

- GS chemical tests
 - . chemical analysis
 - . . **qualitative analysis**
- RT analytical chemistry
- electrophotometry
- flame spectroscopy
- gas analysis
- inductively coupled plasma mass spectrometry
- mass spectrometers
- microanalysis
- neutron activation analysis
- quantitative analysis
- spectroscopic analysis

quality

- GS **quality**
 - . environmental quality
 - . . air quality
 - . . water quality
 - . riding quality
- RT accuracy
- adequacy
- appearance
- computer systems performance
- concentration (composition)
- consistency
- contaminants
- controllability
- durability
- evaluation
- figure of merit
- fineness
- flight characteristics
- ∞ grade
- impurities
- ∞ materials tests
- ∞ performance
- pollution
- precision
- product development
- purity
- reliability
- ∞ resistance
- specifications
- stability
- ∞ tests
- total quality management
- upgrading
- validity
- variability

quality control

DEF An aggregate of functions designed to insure adequate quality in manufactured prod-

quantiles

ucts by initial critical study of engineering design, materials, processes, equipment, and workmanship followed by periodic inspection and analysis. Used for reliability control.

UF *reliability control*
GS **quality control**
. Taguchi methods
. total quality management
RT accelerated life tests
acceptability
aircraft reliability
assurance
average
Bayes theorem
burn-in
certification
chemical tests
circuit reliability
component reliability
confidence
confidence limits
construction
∞ control
correlation
correlation coefficients
covariance
data sampling
degrees of freedom
electrical properties
electronic equipment tests
error detection codes
errors
estimates
estimating
experiment design
extrapolation
hypotheses
infrared inspection
inspection
least squares method
lessons learned
linear prediction
low temperature tests
Mann-Whitney-Wilcoxon U test
∞ materials tests
mean
median (statistics)
mode (statistics)
nondestructive tests
normalizing (statistics)
operations research
optimization
orthogonal functions
orthogonality
precision
probability theory
process control (industry)
∞ processes
product development
production management
products
random errors
random sampling
range (extremes)
regression analysis
regression coefficients
reliability
reliability engineering
sampling
scheduling
sequential analysis
spacecraft reliability
specifications
standard deviation
standardization
standards
static tests
statistical analysis
statistical correlation
statistical distributions
statistical tests
structural reliability
∞ systems
task complexity
tasks
∞ tests
tolerances (mechanics)
ultrasonic flaw detection
value engineering

variability
variance (statistics)
wear tests

quality factors
USE **Q factors**

quantiles

DEF The values that mark frequency distribution interval boundaries that are determined by arranging a set of N observations in order of magnitude and marking off equal parts (N/P) of the total population P.

GS statistical analysis
. **quantiles**
RT mathematical models
statistical distributions
∞ statistics
symmetry

quantitative analysis

GS chemical tests
. chemical analysis
. . **quantitative analysis**
. . . Kjeldahl method
. . . Van Slyke method
RT analytical chemistry
chromatography
electrophotometry
gas analysis
gravimetry
iodimetry
Karl Fischer reagent
microanalysis
neutron activation analysis
polarography
qualitative analysis
radiochemical separation
spectroscopic analysis
volumetric analysis

quantity
USE **amount**

quantization
USE **measurement**

quantizer
USE **counters**

quantum amplifiers

GS amplifiers
. **quantum amplifiers**
RT lasers
light amplifiers
two-wavelength lasers
ultrashort pulsed lasers
ultraviolet lasers

quantum cascade lasers

(added February 2003)

DEF Semiconductor injection lasers in which light is generated by electrons making optical transitions between subbands within one band of a semiconductor heterostructure; these subbands result from the quantization of this motion in coupled quantum wells.

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . semiconductor lasers
. . . . **quantum cascade lasers**
. . solid state lasers
. . . **quantum cascade lasers**
stimulated emission devices
. lasers
. . injection lasers
. . . **quantum cascade lasers**
. . semiconductor lasers
. . . **quantum cascade lasers**
. . solid state lasers
. . . **quantum cascade lasers**
RT heterojunctions
infrared lasers
quantum well lasers
quantum wells

quantum chemistry

GS physical chemistry
. **quantum chemistry**

RT ∞ chemistry
molecular orbitals
nuclear chemistry
quantum mechanics

quantum chromodynamics

DEF A gauge theory describing the interaction between quarks and gluons. Used for color (particle physics) and QCD.

UF *color (particle physics)*
QCD
GS field theory (physics)
. gauge theory
. . **quantum chromodynamics**
RT ∞ dynamics
gluons
instantons
leptons
particle interactions
quantum mechanics
quark models
quarks
standard model (particle physics)
string theory
strong interactions (field theory)
∞ theories

quantum communication

(added March 2000)

DEF Any form of communication that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to transmit, protect or authenticate information, or to perform distributed computational tasks.

GS telecommunication
. communication
. . **quantum communication**
RT communication theory
optical communication
quantum computation

quantum computation

(added March 2000)

DEF Any form of information processing that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to perform computational tasks.

UF *quantum computing*
GS computation
. **quantum computation**
RT quantum communication
quantum computers
quantum cryptography
quantum mechanics
Turing machines

quantum computers

(added March 2000)

DEF Devices capable of performing quantum computations. There are many proposals for the physical basis of quantum computers. The 0 and 1 of a quantum bit (i.e., qubit) could be the ground and excited states of an atom in a linear ion trap; the polarizations of photons interacting in an optical cavity; or the excess of one nuclear spin state over another in a liquid sample in an NMR machine.

GS data processing equipment
. computers
. . **quantum computers**
RT quantum computation

quantum computing

(added March 2000)

USE **quantum computation**

quantum counters

GS measuring instruments
. counters
. . radiation counters
. . . **quantum counters**
. radiation measuring instruments
. . radiation counters
. . . **quantum counters**
RT squid (detectors)

quantum cryptography

(added March 2000)

DEF Any form of cryptography that depends

for its security on coherent quantum-mechanical effects (quantum interference or quantum entanglement).

- GS cryptography
 - . **quantum cryptography**
- RT computer information security
 - quantum computation

quantum dots

(added October 1997)

DEF Small (30 nm to 1 micron) metal or semiconductor structures that hold a discrete number of electrons; the number of electrons can be altered by modifying the electrostatic environment of the dot.

- GS nanostructures (devices)
 - . **quantum dots**
- RT electron tunneling
 - nanotechnology
 - nonlinear optics
 - quantum electronics
 - quantum wells
 - quantum wires
 - semiconductor devices
 - semiconductor lasers
 - single electron transistors

quantum efficiency

DEF A measure of the efficiency of conversion or utilization of light or some other form of energy.

- RT energy conversion efficiency
 - energy technology
 - heterojunction devices
 - laser outputs
 - solar cells
 - volt-ampere characteristics

quantum electrodynamics

- GS electrodynamics
 - . **quantum electrodynamics**
 - mechanics (physics)
 - . quantum mechanics
 - . . **quantum electrodynamics**
- RT electromagnetic fields
 - Feynman diagrams
 - field theory (physics)
 - Landau-Ginzburg equations
 - resonance fluorescence
 - self consistent fields

quantum electronics

DEF The area of physics dealing with the effects of quantum mechanics on the behavior of electrons in matter, and their interactions with photons. The field also encompasses the basic processes of laser operation where photons are interacting with electrons.

- RT coherent electromagnetic radiation
 - ∞ electronics
 - laser applications
 - lasers
 - nanofabrication
 - nanostructures (devices)
 - nanotechnology
 - nanowires
 - quantum dots
 - quantum Hall effect
 - quantum mechanics
 - quantum optics
 - quantum theory
 - quantum wires
 - resonant tunneling
 - resonant tunneling diodes
 - ∞ solid state physics
 - tunnel junctions

quantum generators

- USE **stimulated emission devices**

quantum Hall effect

(added July 2000)

DEF Phenomenon where the Hall resistance of a two-dimensional electron system at low temperature and high magnetic fields, becomes quantized as $h/(e^2)$, where h is Planck's constant, e is the electronic charge, and j is either an integer or a rational fraction.

- UF **QHE (electronics)**
- GS galvanomagnetic effects

- . Hall effect
- . . **quantum Hall effect**
- RT electron gas
 - Hall resistance
 - magnetic effects
 - quantum electronics
 - semiconductor devices
 - superlattices

quantum mechanics

- GS mechanics (physics)
 - . **quantum mechanics**
 - . . Pauli exclusion principle
 - . . quantum electrodynamics
- RT atomic interactions
 - Bethe-Salpeter equation
 - Born approximation
 - density functional theory
 - Dyson theory
 - electromagnetic interactions
 - energy distribution
 - Fermi-Dirac statistics
 - function space
 - group velocity
 - Hylleraas coordinates
 - light-cone expansion
 - Orr-Sommerfeld equations
 - phase velocity
 - quantum chemistry
 - quantum chromodynamics
 - quantum computation
 - quantum electronics
 - quantum optics
 - Racah coefficient
 - relativity
 - squeezed states (quantum theory)
 - statistical mechanics
 - strangeness
 - U spin space
 - wave packets
 - Wigner coefficient

quantum numbers

DEF A number assigned to one of the various values of a quantized quantity in its discrete range. The quantum numbers arise from the mathematics of the wave equations. When the quantity has a quantum, the quantum number is the number of such quanta. A state may be described by giving a sufficient set of compatible numbers. In the customary formulations, each quantum number is either an integer (which may be positive, negative, or zero) or an odd half-integer.

- RT angular momentum
 - electrons
 - energy levels
 - nuclear spin
- ∞ numbers
 - parity
 - selection rules (nuclear physics)

quantum optics

- RT atom optics
 - nonlinear optics
- ∞ optics
 - physical optics
 - quantum electronics
 - quantum mechanics
 - quantum theory

quantum statistics

- UF **Bose-Einstein statistics**
- RT bosons
 - Fermi-Dirac statistics
 - fermions
 - many body problem
- ∞ statistics
 - superfluidity
 - Thomas-Fermi model

quantum theory

DEF The theory first stated by Max Planck (before the Physical Society of Berlin on December 14, 1900) that all electromagnetic radiation is emitted and absorbed in quanta, each of magnitude $h\nu$, h being the Planck constant and ν the frequency of the radiation. Used for Wightman theory.

- UF **Wightman theory**

- GS theoretical physics
 - . **quantum theory**
 - . . Bohr theory
- RT angular momentum
 - atomic theory
 - charm (particle physics)
 - de Broglie wavelengths
 - Dirac equation
 - electroweak model
 - elementary particles
 - emission
 - energy levels
 - field theory (physics)
 - flavor (particle physics)
 - forbidden transitions
 - ground state
 - Hamiltonian functions
 - Klein-Dunham potential
 - magnetic monopoles
 - Mandelstam representation
 - nuclear physics
 - nuclear spin
 - parity
 - perturbation theory
 - photons
 - physical optics
 - Planck's constant
 - quantum electronics
 - quantum optics
 - ∞ radiation
 - radiation laws
 - Schumann-Runge bands
 - squeezed states (quantum theory)
 - standard model (particle physics)
 - statistical distributions
 - statistical mechanics
 - string theory
 - supergravity
 - supersymmetry
 - ∞ theories
 - wave equations

quantum well infrared photodetectors

(added August 2007)

DEF Infrared photodetectors made from semiconductor materials which contain one or more quantum wells.

- UF **QWIP**
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . **quantum well infrared photodetectors**
 - measuring instruments
 - . optical measuring instruments
 - . . photometers
 - . . . **quantum well infrared photodetectors**
 - radiation measuring instruments
 - . . actinometers
 - . . . radiometers
 - infrared detectors
 - **quantum well infrared photodetectors**
 - . . infrared instruments
 - . . . infrared detectors
 - **quantum well infrared photodetectors**
 - . . photometers
 - . . . **quantum well infrared photodetectors**
 - optical equipment
 - . optical measuring instruments
 - . . photometers
 - . . . **quantum well infrared photodetectors**
- RT focal plane devices
 - gallium arsenides
 - quantum wells
 - thermal mapping
 - thermography

quantum well lasers

(added September 1993)

- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . semiconductor lasers
 - **quantum well lasers**

quantum wells

- . . solid state lasers
- . . . **quantum well lasers**
- stimulated emission devices
- . lasers
- . . semiconductor lasers
- . . . **quantum well lasers**
- . . solid state lasers
- . . . **quantum well lasers**

RT energy gaps (solid state)
heterojunction devices
indium gallium arsenides
indium phosphides
laser materials
quantum cascade lasers
quantum wells
waveguide lasers

quantum wells

DEF Effective potential wells created by a minimum in the conduction band or a maximum in the valence band that arises when a smaller band-gap semiconductor is sandwiched between a larger band-gap semiconductor.

GS potential energy

- . electric potential
- . . **quantum wells**
- . . . photoexcitation

RT band structure of solids
binding energy
blue shift
conduction bands
conduction electrons
energy bands
energy gaps (solid state)
gaps
heterojunction devices
heterojunctions
quantum cascade lasers
quantum dots
quantum well infrared photodetectors
quantum well lasers
quantum wires
resonant tunneling
resonant tunneling diodes
valence

quantum wires

(added October 1997)

GS nanostructures (devices)

- . nanowires
- . . **quantum wires**

RT nanotechnology
nonlinear optics
quantum dots
quantum electronics
quantum wells
semiconductor devices
semiconductor lasers

Quaoar

(added October 2002)

DEF Kuiper Belt object about 1,250 km in diameter and about 43 Astronomical Units from the Sun.

GS celestial bodies

- . asteroids
- . . **Quaoar**
- . trans-Neptunian objects
- . . **Quaoar**

RT asteroid belts
Kuiper belt
solar system

quark models

GS models

- . **quark models**
- . . quark parton model

RT flavor (particle physics)
particle theory
quantum chromodynamics
quarks
standard model (particle physics)

quark parton model

DEF A theoretical model which summarizes our understanding of how protons and neutrons are made up of the fundamental subparticles called quarks.

GS models

- . quark models

. . **quark parton model**

RT hadrons
inelastic scattering
leptons
nuclear models
partons
quarks

quarks

GS particles

- . elementary particles
- . . hypothetical particles
- . . . **quarks**

RT flavor (particle physics)
gluons
instantons
partons
quantum chromodynamics
quark models
quark parton model

quarries

USE **mines (excavations)**

quartic equations

GS algebra

- . nonlinear equations
- . . **quartic equations**
- analysis (mathematics)
- . real variables
- . . nonlinear equations
- . . . **quartic equations**

RT ∞ equations

quartiles

RT probability density functions
statistical analysis
statistical distributions

quartz

DEF Crystalline silica, an important rock-forming mineral.

GS chalcogenides

- . oxides
- . . dioxides
- . . . silicon dioxide
- **quartz**
- coesite
- stishovite
- . . silicon oxides
- . . . silicon dioxide
- **quartz**
- coesite
- stishovite
- minerals
- . **quartz**
- . . coesite
- . . stishovite
- silicon compounds
- . silicon oxides
- . . silicon dioxide
- . . . **quartz**
- coesite
- stishovite

RT abrasives
felsite
flint
igneous rocks
rocks
sands
soils

quartz crystals

GS crystals

- . **quartz crystals**

RT frequency control
frequency stability
radio transmitters
silicon dioxide

quartz lamps

GS lighting equipment

- . luminaires
- . . **quartz lamps**

quartz transducers

GS transducers

- . **quartz transducers**

RT piezoelectric crystals

pressure sensors

quartzite

GS rocks

- . metamorphic rocks
- . . **quartzite**

quasars

UF *QSO (radio sources)*
quasi-stellar radio sources

GS celestial bodies

- . radio sources (astronomy)
- . . **quasars**

RT active galactic nuclei
active galaxies
blazars
extragalactic radio sources
galaxies
gravitational collapse
irregular galaxies
pulsars
radio astronomy
radio bursts
radio emission
radio galaxies
radio jets (astronomy)
radio stars
stars
x ray spectra

Quasat

SN (QUASAR SATELLITE)

GS artificial satellites

- . scientific satellites
- . . astronomical satellites
- . . . **Quasat**
- observatories
- . astronomical observatories
- . . astronomical satellites
- . . . **Quasat**

RT European space programs
NASA programs
radio astronomy
radio telescopes
spaceborne astronomy
very long base interferometry

quasi-biennial oscillation

(added May 2001)

DEF A natural, quasi-periodic (2-2.5 years) oscillation of the zonal (east-west) stratospheric winds over the equatorial region. The quasi-biennial oscillation (QBO) affects stratospheric temperatures and trace gases (including ozone) and influences the response of the stratosphere to volcanic eruptions.

UF *QBO (climatology)*

GS oscillations

- . **quasi-biennial oscillation**
- variations
- . periodic variations
- . . **quasi-biennial oscillation**

RT annual variations
atmospheric circulation
atmospheric temperature
climatology
el Nino
equatorial atmosphere
ozone
Southern Oscillation
tropical meteorology
zonal flow (meteorology)

quasilinearity

USE **nonlinearity**

quasi-particles

USE **elementary excitations**

quasi-steady states

RT equilibrium flow
fluid dynamics
nonequilibrium flow
steady flow
steady state creep

uniform flow

quasi-stellar radio sources
USE **quasars**

quaternary alloys

GS alloys
. **quaternary alloys**
RT alloying

Quaternary period

(*added May 2001*)
DEF A period (sub-era) within the Cenozoic era, beginning about two million years ago and extending to the present. It is divided into two epochs--Holocene and Pleistocene.

GS Cenozoic Era
. **Quaternary period**
. . Holocene epoch
. . Pleistocene epoch
RT geochronology
Tertiary Period

quaternions

RT classical mechanics
number theory

Quebec

GS nations
. Canada
. . **Quebec**

quefrecies

DEF In cepstral analysis, the frequency of periodic ripples in a spectra of a signal that contains echoes. Quefrecies are expressed in cycles per hertz or in seconds.

GS frequencies
. acoustic frequencies
. . audio frequencies
. . . **quefrecies**
RT cepstra

∞ quenching

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT extinguishing
quenching (atomic physics)
quenching (cooling)
rapid quenching (metallurgy)

quenching (atomic physics)

DEF Phenomena in which very strong electric fields cause the orbit of an electron or atom to precess rapidly so the average magnetic moment associated with its orbit angular momentum is reduced to zero.

GS gyration
. precession
. . **quenching (atomic physics)**
RT angular momentum
laser cooling

magnetic moments
particle spin
∞ physics
∞ quenching

quenching (cooling)

DEF Rapid cooling as in metallurgy. Used for flame quenching.

UF *flame quenching*
GS cooling
. **quenching (cooling)**
. . rapid quenching (metallurgy)

RT baths
combustion
dipping
extinguishing
hardening (materials)
heat treatment
microstructure
∞ quenching
submerging
supercooling
supersaturation
thermomechanical treatment
water immersion

query languages

DEF Command languages used to search and retrieve information.

GS languages
. command languages
. . **query languages**
RT human-computer interface
information retrieval

Questol aircraft

(*added December 1990*)
SN (EXPERIMENTAL STOL TRANSPORT RESEARCH AIRPLANE)
UF *experimental STOL transport rsch airplane*

GS research vehicles
. research aircraft
. . **Questol aircraft**
V/STOL aircraft
. short takeoff aircraft
. . **Questol aircraft**
RT ∞ aircraft
NASA programs

queueing theory

RT ARPA computer network
bunching
mathematical models
operations research
statistical analysis
stochastic processes
∞ theories

quiet engine program

GS programs
. NASA programs
. . **quiet engine program**

RT aircraft engines
engine noise
jet aircraft noise
jet engines
noise reduction

QuikSCAT satellite

(*added May 2003*)
DEF A remote sensing satellite designed to measure wind speed and direction over the global oceans and to monitor coastal zones and polar regions. Launched in June 1999.

GS artificial satellites
. scientific satellites
. . **QuikSCAT satellite**
RT ocean dynamics
scatterometers
wind measurement

quinoline

GS bases (chemical)
. **quinoline**
nitrogen compounds
. **quinoline**
organic compounds
. **quinoline**
RT alkaloids
drugs
pyridines

quinones

(*added November 1992*)
UF *benzoquinone chinone*
GS organic compounds
. **quinones**
RT ketones

quinoxalines

DEF A group of heterocyclic compounds consisting of a benzene ring condensed with a diazine ring.

GS organic compounds
. hydrocarbons
. . **quinoxalines**
plastics
. synthetic resins
. . thermoplastic resins
. . . **quinoxalines**
resins
. synthetic resins
. . thermoplastic resins
. . . **quinoxalines**
RT polymerization

quotients

RT dividing (mathematics)

QWIP

(*added August 2007*)
USE **quantum well infrared photodetectors**

R

R Coronae Borealis stars

- UF *RCB stars*
- GS celestial bodies
 - . stars
 - supergiant stars
 - **R Coronae Borealis stars**
 - variable stars
 - irregular variable stars
 - **R Coronae Borealis stars**
- RT carbon stars
 - . cool stars
 - . dust
 - . stellar envelopes
 - . stellar mass ejection

R5D aircraft

- USE **C-54 aircraft**

R7V aircraft

- USE **C-121 aircraft**

RA-28 engine

- GS engines
 - . air breathing engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - **RA-28 engine**
 - . internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - **RA-28 engine**
 - . turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - **RA-28 engine**

rabbits

- GS animals
 - . vertebrates
 - mammals
 - rodents
 - **rabbits**

Racah coefficient

- RT angular momentum
 - . coefficients
 - . coupling
 - . quantum mechanics
 - . transformations (mathematics)

race factors

- RT anthropology
 - . culture (social sciences)
 - . ethnic factors
 - . human beings
 - . human performance
 - . races (anthropology)
 - . social factors
 - . sociology
- ∞ variable

races (anthropology)

- RT American Indians
 - . anthropology
 - . culture (social sciences)
 - . human beings
 - . minorities
 - . race factors

racetracks (particle accelerators)

- RT ∞ accelerators
 - . electromagnets
 - . magnetic fields
 - . particle acceleration
 - . particle accelerators
 - . particle trajectories

∞ racks

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT racks (frames)
- . racks (gears)

racks (frames)

- RT ∞ racks
- ∞ shelves

- ∞ storage
- . supports

racks (gears)

- GS gears
 - **racks (gears)**
- RT ∞ racks
 - . translational motion

racon beacons

- USE **radar beacons**

radant

- GS antennas
 - . directional antennas
 - radar antennas
 - **radant**
- . radar equipment
 - radar antennas
 - **radant**
- RT radar filters
 - . radomes
 - . slot antennas
 - . waveguide antennas

radar

(added January 1991)
 DEF A method, system or technique of using beamed, reflected, and timed radio waves for detecting, locating, or tracking objects (such as rockets), for measuring altitude, etc., in any of various activities, such as air traffic control or guidance. The electronic equipment or apparatus used to generate, transmit, receive, and usually, to display radio scanning or locating waves, a radar set. Used for radio detection and ranging.

- UF *radio detection and ranging*

- GS **radar**
 - . airborne radar
 - airborne surveillance radar
 - . coherent radar
 - . continuous wave radar
 - . Doppler radar
 - multistatic radar
 - pulse Doppler radar
 - monopulse radar
 - Shuttle Imaging Radar
 - . ground penetrating radar
 - . imaging radar
 - Shuttle Imaging Radar
 - . incoherent scatter radar
 - EISCAT radar system (Europe)
 - . infrared radar
 - . landing radar
 - . meteorological radar
 - . moving target indicators
 - . multispectral radar
 - . optical radar
 - differential absorption lidar
 - . pulse radar
 - pulse Doppler radar
 - monopulse radar
 - Shuttle Imaging Radar
 - . radar measurement
 - . range and range rate tracking
 - . satellite-borne radar
 - . search radar
 - over-the-horizon radar
 - . secondary radar
 - . space based radar
 - Shuttle Imaging Radar
 - . surveillance radar
 - airborne surveillance radar
 - Cobra Dane (radar)
 - multistatic radar
 - . synthetic aperture radar
 - Shuttle Imaging Radar
 - side-looking radar
 - . tracking radar
 - Cobra Dane (radar)
 - TRADEX radar system
 - . Venus orbiting imaging radar (spacecraft)

- RT aircraft instruments
 - . cancellation circuits
 - . circumlunar communication
 - . collision avoidance

- . display devices
- . distance measuring equipment
- . electromagnetic radiation
- . flight instruments
- . instrument landing systems
- . lunar communication
- . microwave absorption
- . navigation instruments
- . night flights (aircraft)
- . pulse compression
- . radar detection
- . radar scatterometers

radar absorbers

- GS absorbers (materials)
 - **radar absorbers**
 - antiradar coatings
- RT countermeasures
 - . electromagnetic absorption
 - . microwave absorption
 - . stealth technology

radar altimeters

- USE **radio altimeters**

radar antennas

- GS antennas
 - . directional antennas
 - **radar antennas**
 - radant
 - . radar equipment
 - **radar antennas**
 - radant
- RT aircraft antennas
 - . diplexers
 - . dipole antennas
 - . doghouses (electronics)
 - . high resolution coverage antennas
 - . horn antennas
 - . lens antennas
 - . microwave antennas
 - . parabolic antennas
 - . radomes
 - . reflector antennas
 - . Schwarzschild antennas
 - . sidelobe reduction
 - . slot antennas
 - . steerable antennas

radar approach control

- UF *RAPCON (control)*
- GS approach control
 - **radar approach control**
 - . ground based control
 - air traffic control
 - **radar approach control**
 - . traffic control
 - air traffic control
 - **radar approach control**
- RT airborne radar approach
 - . aircraft guidance
 - . approach indicators
- ∞ control
 - . instrument landing systems
 - . landing aids
 - . landing instruments
 - . landing radar
 - . radarscopes
 - . surveillance radar

radar astronomy

DEF The study of celestial bodies within the solar system by means of radiation originating on Earth but reflected from the body under observation.

- GS astronomy
 - **radar astronomy**
- RT radio astronomy

radar attenuation

- GS attenuation
 - . wave attenuation
 - **radar attenuation**
- RT atmospheric attenuation
 - . electromagnetic absorption
 - . electromagnetic wave transmission
 - . radio attenuation
 - . sidelobe reduction
 - . signal transmission

transmission
 wave propagation

radar beacons
 DEF Beacons transmitting characteristic signals on radar frequency, permitting crafts to determine their bearings and sometimes the range of the beacons. Used for racon beacons.
 UF *racon beacons*
 GS navigation aids
 . beacons
 . . **radar beacons**
 . . . discrete address beacon system
 radar equipment
 . **radar beacons**
 . . discrete address beacon system

RT aircraft communication
 compasses
 position (location)
 solar compasses
 transponders

radar beams
 GS beams (radiation)
 . **radar beams**

RT beamforming
 pencil beams

radar clutter maps
 GS maps
 . **radar clutter maps**

radar corner reflectors
 UF *luneberg lenses*
 GS radar equipment
 . radar reflectors
 . . **radar corner reflectors**
 reflectors
 . radar reflectors
 . . **radar corner reflectors**

RT reflector antennas
 retroreflectors

radar cross sections
 DEF The ratios of power returned in a radar echo to power received by the target reflecting the signal.
 RT angels (radar)
 computational electromagnetics
 ∞ cross sections
 low observable reentry vehicles
 moving target indicators
 stealth technology

radar data
 RT ∞ data
 microwave photography
 video data

radar detection
 GS detection
 . **radar detection**

RT coherent radar
 continuous wave radar
 digital radar systems
 Doppler radar
 electronic countermeasures
 electronic warfare
 multistatic radar
 optical radar
 over-the-horizon radar
 radar
 radar target scatter site program
 radarscopes
 resolution cell
 satellite-borne radar
 search radar
 signal detection
 space-time adaptive processing
 stealth technology

radar direction finders
 USE **radio direction finders**

radar displays
 USE **radarscopes**

radar echoes
 UF *radar reflections*
 GS echoes

. **radar echoes**
 . . angels (radar)
 . . clutter
 . . lunar radar echoes
 . . solar radar echoes
 . . Venus radar echoes

RT airborne radar
 auroral echoes
 chaff
 ghosts
 glint
 targets

radar equipment
 GS **radar equipment**
 . doghouses (electronics)
 . radar antennas
 . . radant
 . radar beacons
 . . discrete address beacon system
 . radar filters
 . radar receivers
 . radar reflectors
 . . radar corner reflectors
 . radar transmitters
 . radarscopes
 . . plan position indicators
 . retroreflectors

RT airborne equipment
 airborne radar
 airport surface detection equipment
 automated radar terminal system
 digital radar systems
 diplexers
 distance measuring equipment
 Doppler radar
 ∞ equipment
 jammers
 look angles (electronics)
 onboard equipment
 parabolic antennas
 radio equipment
 radomes
 range finders
 servomechanisms
 synthetic aperture radar
 transponders

radar filters
 GS electromagnetic wave filters
 . electric filters
 . . **radar filters**
 radar equipment
 . **radar filters**

RT ∞ filters
 FIR filters
 microwave filters
 radant
 radio filters
 space-time adaptive processing
 waveguide filters

radar geology
 DEF The application of imaging radar to geologic problems.
 GS geology
 . **radar geology**

RT geological surveys
 ground penetrating radar
 Mars Reconnaissance Orbiter
 Shuttle Imaging Radar

radar homing missiles
 DEF Radar-following missiles designed to attack radar transmitters.
 GS missiles
 . **radar homing missiles**

RT military technology
 missile control
 missile systems
 target recognition

radar imagery
 GS imagery
 . **radar imagery**

RT airborne radar
 change detection
 image analysis
 imaging radar
 imaging techniques

infrared radar
 lunar equator
 Magellan spacecraft (NASA)
 Priroda module
 radar maps
 resolution cell
 Shuttle Imaging Radar
 side-looking radar
 x ray imagery

radar maps
 GS maps
 . **radar maps**

RT airborne radar
 digital elevation models
 map matching guidance
 meteorological charts
 radar imagery

radar measurement
 UF *radar sounding*
 GS radar
 . **radar measurement**

RT altimetry
 differential absorption lidar
 distance measuring equipment
 ∞ measurement
 radio altimeters
 rangefinding
 satellite altimetry

radar navigation
 GS navigation
 . **radar navigation**

RT air navigation
 air traffic control
 aircraft guidance
 all-weather air navigation
 automatic flight control
 celestial navigation
 collision avoidance
 dead reckoning
 distance
 distance measuring equipment
 Doppler navigation
 Doppler radar
 Doppler-Fizeau effect
 ground based control
 inertial navigation
 interplanetary navigation
 map matching guidance
 radarscopes
 radio navigation
 satellite navigation systems
 space navigation
 surface navigation
 Tacan

radar networks
 DEF A series of tracking stations each of which can individually or jointly track a target by utilizing an interchange of radar information. Used for multiradar tracking.
 UF *multiradar tracking*
 GS networks
 . tracking networks
 . . **radar networks**

RT Doppler radar
 polystation doppler tracking system
 tracking stations

radar observation
 USE **radar tracking**

radar photography
 GS imagery
 . photography
 . . multispectral photography
 . . . **radar photography**

RT black and white photography
 microwave photography
 radarscopes
 spectral reconnaissance
 ultraviolet photography

radar range
 DEF The distance from a radar to a target as measured by the radar. The maximum distance at which a radar set is effective in detecting targets.

radar receivers

GS distance
. **radar range**

RT continuous wave radar
optical slant range
over-the-horizon radar
radio range

radar receivers

GS radar equipment
. **radar receivers**
receivers
. **radar receivers**

RT airborne radar
digital radar systems
electromagnetic noise
microwave sensors
radio receivers
repeaters

radar reception

GS signal reception
. **radar reception**

RT radio reception
∞ receiving
sidelobe reduction

radar reflections
USE **radar echoes**

radar reflectors

DEF Devices capable of or intended for reflecting radar signals.

GS radar equipment
. **radar reflectors**
. . radar corner reflectors
reflectors
. **radar reflectors**
. . radar corner reflectors

RT parabolic antennas
parabolic reflectors
radio echoes
reflector antennas
sidelobe reduction

radar resolution

GS resolution
. **radar resolution**

RT angular resolution
display devices
high resolution coverage antennas
sidelobe reduction
spectral resolution

radar scanning

DEF The action or process of moving or directing a searching radar beam.

GS scanning
. **radar scanning**

RT conical scanning
digital radar systems
frequency scanning
meteorological radar
multiple beam interval scanners
panoramic scanning
radio tracking
side-looking radar
surveillance

radar scattering

GS scattering
. **radar scattering**

RT EISCAT radar system (Europe)
incoherent scatter radar
incoherent scattering
radar target scatter site program
scatterometers

radar signatures

GS signatures
. **radar signatures**

RT Cobra Dane (radar)
detection
imagery
microwave signatures
signature analysis
stealth technology

target recognition

radar sounding
(added February 2009)
USE **radar measurement**

radar target scatter site program

UF *RATSCAT program*

GS programs
. **radar target scatter site program**
targets
. radar targets
. . **radar target scatter site program**

RT radar detection
radar scattering

radar targets

DEF Objects which reflect a sufficient amount of a radar signal to produce an echo signal on the radar screen.

GS targets
. **radar targets**
. . radar target scatter site program

RT airborne radar
digital radar systems
early warning systems
multiple target tracking
radial velocity

radar tracking

UF *radar observation*

GS tracking (position)
. **radar tracking**

RT automated radar terminal system
Ballistic Missile Early Warning System
compensatory tracking
digital radar systems
Doppler radar
early warning systems
meteorological radar
monopulse radar
moving target indicators
multiple target tracking
pursuit tracking
radio tracking
range and range rate tracking
rangefinding
rawinsondes
search radar
slewing
spacecraft tracking
surveillance radar
threat evaluation
tracking radar
transponder control group

radar transmission

GS transmission
. electromagnetic wave transmission
. . **radar transmission**
. signal transmission
. . **radar transmission**

RT atmospheric attenuation
digital radar systems
EISCAT radar system (Europe)
electromagnetic pulses
radio transmission
radome materials
wave attenuation
wave propagation

radar transmitters

GS radar equipment
. **radar transmitters**
transmitters
. **radar transmitters**

Radarsat

DEF A civilian remote sensing satellite that will be polar orbiting and is jointly being developed by Canada and the United Kingdom with NASA providing the launch. In addition to a synthetic aperture radar, it may carry other instruments such as the Advanced Along Track Scanning Radiometer (AATSR) and the Advanced Radar Altimeter (ARA)/Ocean Wave Spectrometer (OWS). Launch is planned for 1994.

GS Canadian spacecraft
. **Radarsat**

RT Canadian space program
synthetic aperture radar

radarscopes

DEF The cathode ray oscilloscopes used in radar sets, which display the received signal in such a manner as to indicate things such as range or bearing. Used for radar displays.

UF *radar displays*

GS display devices
. **radarscopes**
. . plan position indicators
radar equipment
. **radarscopes**
. . plan position indicators

RT aircraft guidance
indicating instruments
microwave imagery
microwave photography
radar approach control
radar detection
radar navigation
radar photography
surveillance radar

radial distribution

GS distribution (property)
. **radial distribution**

RT Rayleigh distribution
star distribution
wind profiles

radial drainage patterns
USE **drainage patterns**

radial flow

GS fluid flow
. **radial flow**

RT axial flow
centrifugal compressors
diffusion
flow geometry
gas flow
heat transmission
two dimensional flow

radial velocity

DEF In radar, that vector component of the velocity of a moving target that is directed away from or toward the ground station.

GS rates (per time)
. **radial velocity**
velocity
. **radial velocity**

RT astronomical spectroscopy
blue shift
Doppler effect
radar targets
red shift
velocity measurement

radiance

SN (DIRECTIONAL EMISSION RATE PER UNIT AREA OF RADIATION)

DEF In radiometry, a measure of the intrinsic radiant intensity emitted by a radiator in a given direction. It is the irradiance (radiant flux density) produced by radiation from the source upon a unit surface area oriented normal to the line between source and receiver, divided by the solid angle subtended by the source at the receiving surface. It is assumed that the medium between the radiator and receiver is perfectly transparent; therefore radiance is independent of attenuation between source and receiver.

GS electromagnetic properties
. optical properties
. . **radiance**
rates (per time)
. flux density
. . radiant flux density
. . . **radiance**

RT black body radiation
brightness
emissivity
emittance
glare
incandescence
∞ intensity
irradiance

lumens
 luminosity
 neutron flux density
 solar flux density
 transmissometers
 visibility

radiancy

SN (EMISSION RATE PER UNIT AREA OF RADIATION)
 DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere.
 GS rates (per time)
 . flux density
 . . radiant flux density
 . . . **radiancy**
 RT electron flux density
 illuminance
 luminous intensity
 neutron flux density
 particle flux density
 proton flux density
 solar flux density

radiant cooling

GS cooling
 . **radiant cooling**
 RT radiative heat transfer
 surface cooling

radiant energy

USE **radiation**

radiant flux density

SN (DYNES/CM-SEC AS DISTINGUISHED FROM RADIATION PRESSURE--DYNES/SQ CM)
 DEF The rate of radiant energy emission from a unit area of a source in all the radial directions of the overspreading hemisphere. Used for power density (electromagnetic), radiant intensity, and radiation intensity.
 UF *power density (electromagnetic)*
radiant intensity
radiation intensity
 GS rates (per time)
 . flux density
 . . **radiant flux density**
 . . . irradiance
 illuminance
 solar constant
 . . . lumens
 . . . luminous intensity
 illuminance
 luminance
 . . . particle flux density
 . . . electron flux density
 . . . neutron flux density
 . . . proton flux density
 . . radiance
 . . radiancy
 . . solar flux density
 . . . solar constant
 RT BL Lacertae objects
 brightness
 brightness distribution
 CERES (experiment)
 dosimeters
 emissivity
 emittance
 far fields
 flux (rate)
 gamma ray bursts
 laser outputs
 luminosity
 maser outputs
 mass to light ratios
 post-blast nuclear radiation
 ∞ radiation
 radiation counters
 radiation pressure
 radio spectra
 scattering functions
 solar reflectors
 sound intensity
 view effects

radiant heating

UF *radiation heating*
 GS heating

. radiant heating

RT ∞ energy
 gas heating
 ∞ radiation
 radiative heat transfer
 radiative transfer
 solar heating

radiant intensity

USE **radiant flux density**

∞ radiation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF The process by which energy is emitted or transferred in the form of photons or electromagnetic waves. Used for radiant energy and radiation emission.
 UF *radiant energy*
radiation emission
 RT alpha particles
 antenna radiation patterns
 artificial radiation belts
 atmospheric radiation
 background noise
 background radiation
 base heating
 beams (radiation)
 black body radiation
 Cerenkov radiation
 circumsolar radiation
 coherent acoustic radiation
 coherent electromagnetic radiation
 coherent radiation
 continuous radiation
 corpuscular radiation
 cosmic rays
 cyclotron radiation
 diffuse radiation
 Earth radiation budget experiment
 elastic waves
 electromagnetic noise
 electromagnetic radiation
 electron radiation
 emission
 extraterrestrial radiation
 extreme ultraviolet radiation
 fallout
 far infrared radiation
 far ultraviolet radiation
 flux (rate)
 flux density
 galactic radiation
 gamma rays
 geophysics
 gravitational waves
 harmonic radiation
 heating
 incident radiation
 infrared radiation
 inner radiation belt
 interstellar radiation
 ion cyclotron radiation
 ionizing radiation
 irradiation
 Kirchhoff law of radiation
 light (visible radiation)
 long wave radiation
 longitudinal waves
 lunar radiation
 Lyman alpha radiation
 Lyman beta radiation
 microwaves
 modulated continuous radiation
 monochromatic radiation
 near infrared radiation
 near ultraviolet radiation
 nonthermal radiation
 nuclear medicine
 nuclear radiation
 nucleon potential
 outer radiation belt
 photons
 photosynthetically active radiation
 plane waves
 planetary radiation
 plasma radiation
 polarized electromagnetic radiation
 polarized radiation

post-blast nuclear radiation
 pulsed radiation
 quantum theory
 radiant flux density
 radiant heating
 radiation absorption
 radiation belts
 radiation chemistry
 radiation counters
 radiation damage
 radiation detectors
 radiation distribution
 radiation dosage
 radiation effects
 radiation hardening
 radiation hazards
 radiation injuries
 radiation laws
 radiation measurement
 radiation measuring instruments
 Radiation Meteoroid spacecraft
 radiation pressure
 radiation protection
 radiation pyrometers
 radiation shielding
 radiation sickness
 radiation sources
 radiation spectra
 radiation therapy
 radiation tolerance
 radiation transport
 radiation trapping
 radiative transfer
 radioactivity
 radiology
 reflected waves
 relic radiation
 resonance fluorescence
 self absorption
 short wave radiation
 silicon radiation detectors
 sky radiation
 solar corpuscular radiation
 solar radiation
 Solar Radiation 1 satellite
 Solar Radiation 3 satellite
 solar radiation shielding
 solar wind
 sound waves
 spectral emission
 standing waves
 stellar radiation
 Stokes law of radiation
 stratosphere radiation
 synchrotron radiation
 temperature effects
 terrestrial radiation
 thermal radiation
 TRAP program
 tropospheric radiation
 ultrasonic radiation
 ultraviolet radiation
 Volterra equations
 x ray sources

radiation absorption

GS energy absorption
 . **radiation absorption**
 . . electromagnetic absorption
 . . . auroral absorption
 . . . gamma ray absorption
 . . . infrared absorption
 . . . microwave absorption
 . . . multiphoton absorption
 . . . photoabsorption
 . . . polar cap absorption
 . . . ultraviolet absorption
 . . . x ray absorption
 . . molecular absorption
 . . self absorption
 RT ∞ absorption
 absorption cross sections
 atmospheric attenuation
 gamma ray absorptiometry
 Goly detector cells
 gray gas
 interstellar extinction
 material absorption
 neutron absorbers

Radiation and Meteoroid satellite

- nuclear reactions
- photon absorptiometry
- ∞ radiation
- radiation chemistry
- stopping power

Radiation and Meteoroid satellite

- GS artificial satellites
- . geophysical satellites
- . . **Radiation and Meteoroid satellite**

radiation belts

DEF Envelopes of charged particles trapped in the magnetic field of a spatial body. Used for geomagnetically trapped particles and Van Allen radiation belts.

- UF *geomagnetically trapped particles*
- Van Allen radiation belts*

- GS particles
- . charged particles
- . . magnetically trapped particles
- . . . **radiation belts**
- artificial radiation belts
- inner radiation belt
- outer radiation belt
- proton belts
- . corpuscular radiation
- . . **radiation belts**
- . . . artificial radiation belts
- . . . inner radiation belt
- . . . outer radiation belt
- . . . proton belts
- . trapped particles
- . . magnetically trapped particles
- . . . **radiation belts**
- artificial radiation belts
- inner radiation belt
- outer radiation belt
- proton belts

- RT aerospace environments

- ∞ belts
- cosmic rays
- Earth atmosphere
- Earth magnetosphere
- electron density (concentration)
- electron precipitation
- electron trajectories
- electrons
- elementary particles
- entrapment
- exosphere
- extraterrestrial radiation
- ionizing radiation
- ionospheric drift
- magnetic fields
- mirror point
- plasmas (physics)
- proton precipitation
- protons
- ∞ radiation
- solar radiation
- trapping
- upper atmosphere

radiation chemistry

DEF The branch of chemistry concerned with the chemical effects, including decomposition, of energetic radiation or particles of matter.

- GS **radiation chemistry**
- . photodecomposition
- . photodissociation
- . photolysis
- . radiolysis

- RT ∞ chemistry
- electromagnetic radiation
- ∞ radiation
- radiation absorption

radiation counters

DEF Instruments used for detecting or measuring moving subatomic particles by a counting process. Used for ionization counters, particle counters, and particle detectors.

- UF *ionization counters*
- particle counters*
- particle detectors*

- GS measuring instruments
- . counters
- . . **radiation counters**
- . . . Cerenkov counters

- . . . electron counters
- . . . Geiger counters
- . . . neutron counters
- neutron spectrometers
- . . . particle telescopes
- . . . proportional counters
- . . . quantum counters
- . . . scintillation counters
- . . . spark chambers
- . radiation measuring instruments
- . . **radiation counters**
- . . . Cerenkov counters
- . . . electron counters
- . . . Geiger counters
- . . . neutron counters
- neutron spectrometers
- . . . particle telescopes
- . . . proportional counters
- . . . quantum counters
- . . . scintillation counters
- . . . spark chambers

- RT anticoincidence detectors
- bubble chambers
- channel multipliers
- cloud chambers
- coincidence circuits
- dosimeters
- electrostatic probes
- fluence
- gas discharge tubes
- hodoscopes
- ion traps (instrumentation)
- ionization chambers
- ionizing radiation
- nuclear emulsions
- particle flux density
- proton flux density
- radiant flux density
- ∞ radiation
- scintillating fibers
- spectrometers

radiation damage

- GS damage
- . **radiation damage**
- . . laser damage
- . radiation effects
- . . **radiation damage**
- . . . laser damage

- RT ionizing radiation
- ∞ radiation
- single event upsets

radiation detectors

- GS measuring instruments
- . radiation measuring instruments
- . . **radiation detectors**
- . . . dosimeters
- threshold detectors (dosimeters)
- . . . Golay detector cells
- . . . silicon radiation detectors

- RT ∞ detectors
- Geiger counters
- health physics
- multi-anode microchannel arrays
- ∞ radiation
- satellite-borne instruments
- Vela satellites

radiation distribution

- UF *radiation fields*
- GS distribution (property)
- . **radiation distribution**
- . . antenna radiation patterns
- . . . sidelobes
- . . diffraction patterns
- . . . Kossel pattern
- . . . rainbows
- RT corpuscular radiation
- elastic waves
- electromagnetic radiation
- field theory (physics)
- flux density
- null zones
- ∞ patterns
- ∞ radiation
- vertical distribution

- wave dispersion

radiation dosage

DEF The amount of radiation absorbed by a material, system, or tissue in a given amount of time; usually measured in units as roentgen. Used for radiation exposure.

- UF *radiation exposure*
- GS dosage
- . **radiation dosage**
- RT biological effects
- dosimeters
- exposure
- health physics
- irradiation
- ∞ radiation
- single event upsets

radiation effects

- GS **radiation effects**
- . radiation damage
- . . laser damage
- . radiation injuries
- . radiolysis
- . single event upsets
- RT apoptosis
- biological effects
- blackout (propagation)
- Bragg curve
- CRRES (satellite)
- damage
- dosimeters
- ∞ effects
- electron radiation
- fallout
- gamma rays
- health physics
- hematopoiesis
- irradiation
- mechanical properties
- mutagenesis
- neutrons
- nuclear explosion effect
- nuclear radiation
- nuclear vulnerability
- particle tracks
- physiological effects
- post-blast nuclear radiation
- Poynting-Robertson effect
- preserving
- ∞ radiation
- radioactive contaminants
- space based radar
- sterilization effects

radiation emission

- USE **radiation**

radiation exposure

- USE **radiation dosage**

radiation fields

- USE **radiation distribution**

radiation hardening

- GS hardening (systems)
- . **radiation hardening**
- RT antennas
- electronic equipment
- ∞ radiation

radiation hazards

- GS hazards
- . **radiation hazards**
- RT dermatitis
- dosimeters
- electromagnetic radiation
- fallout
- flux density
- hazardous materials
- hazardous wastes
- health physics
- ionizing radiation
- laser damage
- mutations
- nuclear explosion effect
- nuclear explosions
- nuclear radiation
- occupational diseases
- operational hazards

- ∞ radiation
 - radioactive contaminants
 - radioactive materials
 - radioactive wastes
 - radioactivity
 - reactor safety
 - space weather
 - radiation heating*
 - USE **radiant heating**
 - radiation injuries**
 - GS injuries
 - . **radiation injuries**
 - radiation effects
 - . **radiation injuries**
 - RT burns (injuries)
 - health physics
 - ∞ radiation
 - radiation intensity*
 - USE **radiant flux density**
 - radiation laws**
 - GS laws
 - . **radiation laws**
 - . . . Kirchhoff law of radiation
 - . . . Stefan-Boltzmann law
 - . . . Stokes law of radiation
 - RT electromagnetic radiation
 - quantum theory
 - ∞ radiation
 - radiation measurement**
 - RT dosage
 - dosimeters
 - irradiation
 - ∞ measurement
 - ∞ radiation
 - sensitometry
 - radiation measuring instruments**
 - UF *photoelectromagnetic detectors*
 - photosensors*
 - radiation meters*
 - GS measuring instruments
 - . **radiation measuring instruments**
 - . . . actinometers
 - infrared spectrometers
 - filter wheel infrared spectrometers
 - pyranometers
 - radiometers
 - Dicke radiometers
 - infrared detectors
 - FLIR detectors
 - infrared radiometers
 - Advanced Very High Resolution Radiometer
 - infrared scanners
 - visible infrared spin scan radiometer
 - quantum well infrared photodetectors
 - microwave radiometers
 - Advanced Microwave Sounding Unit
 - passive L-band radiometers
 - pressure modulator radiometers
 - spectroradiometers
 - MISR (radiometry)
 - MODIS (radiometry)
 - solar spectrometers
 - spectroheliographs
 - spectrophotometers
 - infrared spectrophotometers
 - ultraviolet spectrophotometers
 - ultraviolet detectors
 - ultraviolet spectrometers
 - high dispersion spectrographs
 - Total Ozone Mapping Spectrometer
 - ultraviolet spectrophotometers
 - x ray detectors
 - bolometers
 - Ebert spectrometers
 - electrostatic probes
 - Fabry-Perot spectrometers
 - hodoscopes
 - infrared instruments
 - RT ∞ detectors
 - Earth radiation budget experiment
 - health physics
 - ionization chambers
 - monitors
 - nuclear emulsions
 - optical measuring instruments
 - ∞ radiation
 - safety devices
 - solar instruments
 - Vela satellites
 - view effects
 - radiation medicine*
 - USE **nuclear medicine**
 - Radiation Meteoroid spacecraft**
 - RT meteoroids
 - ∞ radiation
 - ∞ spacecraft
 - spacecraft configurations
 - radiation meters*
 - USE **radiation measuring instruments**
 - radiation noise*
 - USE **electromagnetic noise**
 - radiation pressure**
 - SN (DYNES/SQ CM AS DISTINGUISHED FROM RADIANT FLUX DENSITY--DYNES/CM-SEC)
 - DEF Pressure exerted upon any material body by electromagnetic radiation incident upon it.
 - GS pressure
 - . **radiation pressure**
 - . . electron pressure
 - . . lumens
 - . . luminous intensity
 - . . illuminance
 - . . luminance
 - . . sound pressure
 - RT baroclinic waves
 - Bessel-Bredichin theory
 - comet tails
 - corpuscular radiation
 - elastic waves
 - electromagnetic radiation
 - . . . infrared detectors
 - FLIR detectors
 - infrared radiometers
 - Advanced Very High Resolution Radiometer
 - infrared scanners
 - visible infrared spin scan radiometer
 - quantum well infrared photodetectors
 - infrared interferometers
 - infrared spectrometers
 - filter wheel infrared spectrometers
 - infrared spectrophotometers
 - photometers
 - electrophotometers
 - ultraviolet spectrometers
 - high dispersion spectrographs
 - Total Ozone Mapping Spectrometer
 - quantum well infrared photodetectors
 - ultraviolet spectrophotometers
 - radiation counters
 - Cerenkov counters
 - electron counters
 - Geiger counters
 - neutron counters
 - neutron spectrometers
 - particle telescopes
 - proportional counters
 - quantum counters
 - scintillation counters
 - spark chambers
 - radiation detectors
 - dosimeters
 - threshold detectors (dosimeters)
 - Golay detector cells
 - silicon radiation detectors
 - riometers
- Kohoutek comet
- particle flux density
- perturbation
- photophoresis
- radiant flux density
- ∞ radiation
- solar flux density
- solar radiation
- solar wind
- stellar winds
- radiation protection**
- GS protection
 - . **radiation protection**
 - . . radiation shielding
 - . . . solar radiation shielding
- RT antiradiation drugs
- cysteamine
- health physics
- ∞ radiation
- synchrotron radiation
- thermal protection
- visors
- radiation pyrometers**
- GS measuring instruments
 - . temperature measuring instruments
 - . . pyrometers
 - . . . **radiation pyrometers**
- RT bolometers
- circumsolar telescopes
- optical pyrometers
- ∞ radiation
- temperature measurement
- thermocouple pyrometers
- radiation resistance*
- USE **radiation tolerance**
- radiation shielding**
- UF *nuclear shielding*
- GS protection
 - . radiation protection
 - . . **radiation shielding**
 - . . . solar radiation shielding
 - shielding
 - . **radiation shielding**
 - . . solar radiation shielding
- RT absorbers (materials)
- attenuators
- Boral
- electromagnetic absorption
- electromagnetic shielding
- gamma rays
- ∞ insulated structures
- magnetic shielding
- neutron absorbers
- neutron flux density
- neutrons
- nuclear reactors
- protons
- ∞ radiation
- radio frequency shielding
- reactor materials
- reflectors
- safety devices
- space based radar
- spacecraft shielding
- stopping power
- Tower Shielding Reactor 2
- radiation sickness**
- DEF A syndrome following intense acute exposure to ionizing radiation. It is characterized by nausea and vomiting a few hours after exposure. Further symptoms include bloody diarrhea, hemorrhage under the skin (and internally), epilation (hair falling out), and a decrease in blood cell level.
- GS diseases
 - . **radiation sickness**
- RT antiradiation drugs
- dermatitis
- health physics
- ∞ radiation
- radiopathology
- radiation sources**
- UF *coherent sources*
- GS **radiation sources**

radiation spectra

- . monochromators
 - . neutron sources
 - . point sources
 - RT corpuscular radiation
 - duochromators
 - electromagnetic radiation
 - electron sources
 - extragalactic radio sources
 - ∞ generators
 - heat sources
 - interstellar masers
 - ion sources
 - light sources
 - pulsars
 - ∞ radiation
 - radio sources (astronomy)
 - radioactive materials
 - sound generators
 - ∞ sources
 - spectral counterparts (astronomy)
 - x ray stars
- radiation spectra**
- GS spectra
 - . **radiation spectra**
 - . . . absorption spectra
 - . . . Fraunhofer lines
 - . . . Herzberg bands
 - . . . telluric lines
 - . . . electromagnetic spectra
 - . . . gamma ray spectra
 - . . . infrared spectra
 - . . . line spectra
 - Balmer series
 - D lines
 - electronic spectra
 - Fraunhofer lines
 - H lines
 - H alpha line
 - H beta line
 - H gamma line
 - K lines
 - Lyman spectra
 - Paschen series
 - Rydberg series
 - telluric lines
 - . . . radio spectra
 - microwave spectra
 - . . . Raman spectra
 - . . . stellar spectra
 - solar spectra
 - . . . UVB spectra
 - . . . ultraviolet spectra
 - . . . vibrational spectra
 - . . . visible spectrum
 - . . . x ray spectra
 - . . emission spectra
 - RT astronomical spectroscopy
 - Cosmic Background Explorer satellite
 - energy spectra
 - mass spectra
 - noise spectra
 - plasma spectra
 - ∞ radiation
- radiation therapy**
- UF *radiotherapy*
 - GS therapy
 - . **radiation therapy**
 - RT cancer
 - medical science
 - pathology
 - ∞ radiation
- radiation tolerance**
- UF *radiation resistance*
 - radiosensitivity*
 - GS sensitivity
 - . **radiation tolerance**
 - tolerances (physiology)
 - . **radiation tolerance**
 - RT human tolerances
 - irradiation
 - ∞ radiation
 - ∞ resistance
 - tolerances (mechanics)
- radiation transport**
- DEF The study of radiation from emission to absorption.

- RT exploding wires
 - ∞ radiation
 - radiative transfer
 - transport properties
- radiation trapping**
- DEF Confinement of radiation with a magnetic field.
 - RT argon
 - Earth magnetosphere
 - excitation
 - metastable state
 - plasma physics
 - ∞ radiation
- radiative forcing**
- (added August 2009)
 - DEF Stratospherically adjusted radiative flux change at the Earth's troposphere as influenced by a natural or anthropomorphic climate factor.
 - GS environment effects
 - . **radiative forcing**
 - RT aerosols
 - air pollution
 - atmospheric heating
 - atmospheric radiation
 - atmospheric temperature
 - climate change
 - climatology
 - Earth albedo
 - Earth radiation budget
 - global warming
 - greenhouse effect
- radiative heat transfer**
- GS radiative transfer
 - . **radiative heat transfer**
 - transmission
 - . heat transmission
 - . . heat transfer
 - . . . **radiative heat transfer**
 - RT concentrators
 - convective heat transfer
 - cooling fins
 - heat radiators
 - infrared reflection
 - near infrared radiation
 - radiant cooling
 - radiant heating
 - satellite temperature
 - spacecraft radiators
 - Stefan-Boltzmann law
 - surface cooling
 - thermohydraulics
 - Trombe walls
 - view effects
- radiative lifetime**
- RT decay
 - half life
- radiative recombination**
- GS recombination reactions
 - . electron recombination
 - . . **radiative recombination**
 - . electron-ion recombination
 - . . **radiative recombination**
 - RT airglow
 - atomic recombination
 - carrier injection
 - deionization
 - lightning
- radiative transfer**
- GS **radiative transfer**
 - . radiative heat transfer
 - RT atmospheric correction
 - cosmic rays
 - electromagnetic radiation
 - energy transfer
 - extraterrestrial radiation
 - galactic radiation
 - heat transfer
 - heat transmission
 - interstellar radiation
 - near infrared radiation
 - planetary atmospheres
 - polarized electromagnetic radiation
 - radiant heating

- ∞ radiation
 - radiation transport
 - radio bursts
 - radio stars
 - solar radiation
 - stellar atmospheres
 - stellar radiation
 - Surface Meteorology and Solar Energy project
 - Surface Radiation Budget project
- radiators**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - DEF Any sources of radiant energy, especially electromagnetic radiation. Devices that dissipate the heat from something as from water or oil, not necessarily by radiation only.
 - RT antennas
 - heat radiators
 - sound transducers
 - thermosiphons
- radicals**
- GS **radicals**
 - . amino radical
 - . formyl ions
 - . free radicals
 - . . hydroxyl radicals
 - . methylidyne
 - . vanadyl radical
 - . vinyl radical
 - RT ∞ roots
- radii**
- UF *radius*
 - GS dimensions
 - . **radii**
 - . . Larmor radius
 - geometry
 - . Euclidean geometry
 - . . **radii**
 - . . . Larmor radius
 - RT circles (geometry)
 - circumferences
 - diameters
 - lines (geometry)
 - radio frequencies
 - segments
- radio altimeters**
- DEF Devices that measure the altitude of a craft above the terrain by measuring the elapsed time between transmission of radio waves from the craft and the reception of the same waves reflected from the terrain. Used for radar altimeters.
 - UF *radar altimeters*
 - GS flight instruments
 - . **radio altimeters**
 - measuring instruments
 - . distance measuring equipment
 - . . altimeters
 - . . . **radio altimeters**
 - RT aircraft instruments
 - automatic pilots
 - instrument landing systems
 - radar measurement
- radio antennas**
- GS antennas
 - . **radio antennas**
 - . . microwave antennas
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - radio equipment
 - . **radio antennas**
 - . . microwave antennas
 - . . . horn antennas
 - . . . lens antennas
 - . . . rectennas
 - . . . spacetennas
 - RT aircraft antennas
 - backfire antennas
 - directional antennas
 - omnidirectional antennas
 - reception diversity

reflector antennas
 rhombic antennas
 satellite antennas
 Schwarzschild antennas
 two reflector antennas
 whip antennas

radio astronomy

DEF The study of celestial objects through observation of radiofrequency waves emitted or reflected by these objects. Specifically, the study of celestial objects by measurement of the radiation emitted by them in the radiofrequency range of the electromagnetic spectrum.

- GS astronomy
 - . **radio astronomy**
- RT astronomical interferometry
 astronomical observatories
 astronomical spectroscopy
 brightness distribution
 brightness temperature
 coronal holes
 cosmic microwave background radiation
 extragalactic radio sources
 extraterrestrial radio waves
 gamma ray astronomy
 IUE
 linear polarization
 Maffei galaxies
 Michelson interferometers
 phase switching interferometers
 pulsars
 quasars
 Quasat
 radar astronomy
 radio jets (astronomy)
 SAS-1
 SAS-2
 SAS-3
- ∞ science
 - Sunyaev-Zeldovich effect
 - very high frequency radio equipment
 - Very Large Array (VLA)
 - very long base interferometry
 - Very Long Baseline Array (VLBA)

Radio Astronomy Explorer 2
 USE **Explorer 49 satellite**

Radio Astronomy Explorer B
 USE **Explorer 49 satellite**

Radio Astronomy Explorer satellite

- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Radio Astronomy Explorer satellite**

radio attenuation

- UF *radio signal attenuation*
- GS attenuation
 - . wave attenuation
 - . . **radio attenuation**
- RT atmospheric attenuation
 electromagnetic absorption
 electromagnetic wave transmission
 ground effect (communications)
 radar attenuation
 signal transmission
 transhorizon radio propagation
 transmission
 wave propagation

Radio Attenuation Measurement project

- UF *RAM project*
- GS programs
 - . projects
 - . . **Radio Attenuation Measurement project**

radio auroras

- GS atmospheric radiation
 - . auroras
 - . . **radio auroras**
- RT ∞ disturbances
 ionospherics
 nightglow

solar activity

radio beacons

DEF Transmitters together with their associated equipment, that emit signals enabling the determination, by means of suitable receiving equipment, of direction, distance, or position with respect to the beacon. Used for radio ranges.

- UF *radio ranges*
- GS navigation aids
 - . beacons
 - . . **radio beacons**
 - . . . omnidirectional radio ranges
 - self calibrating omnirange radio equipment
 - . radio transmitters
 - . . **radio beacons**
 - . . . omnidirectional radio ranges
 - self calibrating omnirange transmitters
 - . radio transmitters
 - . . **radio beacons**
 - . . . omnidirectional radio ranges
 - self calibrating omnirange
- RT airport beacons
 Beacon Collision Avoidance System
 homing devices
 instrument landing systems
 landing aids
- ∞ markers
 - night flights (aircraft)
 - ORBIS
 - ORBIS CAL satellite
 - ranges (facilities)
 - solar compasses

radio broadcasting

USE **broadcasting**

radio bursts

- GS bursts
 - . **radio bursts**
 - . . solar radio bursts
 - . . . type 2 bursts
 - . . . type 3 bursts
 - . . . type 4 bursts
 - . . . type 5 bursts
 - electromagnetic radiation
 - . radio waves
 - . . extraterrestrial radio waves
 - . . . **radio bursts**
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - . . radio emission
 - . . . **radio bursts**
 - solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - emission
 - . radio emission
 - . . **radio bursts**
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
 - extraterrestrial radiation
 - . extraterrestrial radio waves
 - . . **radio bursts**
 - . . . solar radio bursts
 - type 2 bursts
 - type 3 bursts
 - type 4 bursts
 - type 5 bursts
- RT ∞ disturbances
 pulsars
 quasars
 radiative transfer
 solar radio emission
 stellar radiation

radio communication

- GS telecommunication
 - . **radio communication**

- . . radio relay systems
- . . . code division multiple access
- . . . time division multiple access
- . . radio telegraphy
- . . radio telemetry
- . . . pulse frequency modulation telemetry
- . . telephony
- RT access control
 aircraft communication
 blackout (propagation)
 broadcasting
 circumlunar communication
 code division multiplexing
 communication equipment
 communication networks
 Fleet Satellite Communication System
 frequency division multiple access
 frequency division multiplexing
 ground-air-ground communication
 interplanetary communication
 interstellar communication
 land mobile satellite service
 lunar communication
 Marisat 1 satellite
 Marisat satellites
 mobile communication systems
 MSAT
 NASCOM network
 point to point communication
 Project SETI
 pulse communication
 radiotelephones
 reentry communication
 satellite communication
 ship to shore communication
 space communication
 spacecraft communication
 telegraph systems
 telemetry
 television systems
 transoceanic communication
 underground communication
 vocoders
 voice communication

radio control

DEF Remote control of a pilotless airplane, rocket, or spacecraft by means of radio signals that activate controlling devices.

- GS remote control
 - . **radio control**
- RT aircraft control
 automatic control
- ∞ control
 Deep Space Instrumentation Facility
 ground based control
 missile control
 spacecraft control

radio detection and ranging

USE **radar**

radio direction finders

DEF Radio receiving sets, together with associated equipment, used to determine the direction from which a radio signal is transmitted. Used for direction finders (radio) and radar direction finders.

- UF *direction finders (radio)*
radar direction finders
- GS display devices
 - . position indicators
 - . . **radio direction finders**
 - . measuring instruments
 - . indicating instruments
 - . . position indicators
 - . . . **radio direction finders**
 - . navigation aids
 - . beacons
 - . . **radio direction finders**
 - . navigation instruments
 - . . **radio direction finders**
- RT aircraft equipment
 compasses
 direction finding
 flight instruments
 gyrocompasses
 homing
 homing devices

radio echoes

radiogoniometers
VHF omnirange navigation

radio echoes

UF *radio reflection*
GS echoes
. **radio echoes**
RT angels (radar)
auroral echoes
ghosts
Harvard Radio Meteor Project
infrared reflection
lunar echoes
radar reflectors
ultraviolet reflection

radio electronics

RT ∞ electronics

radio emission

GS electromagnetic radiation
. radio waves
. . **radio emission**
. . . CN emission
. . . hydroxyl emission
. . . radio bursts
. . . . solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts
emission
. **radio emission**
. . CN emission
. . hydroxyl emission
. . radio bursts
. . . solar radio bursts
. . . . type 2 bursts
. . . . type 3 bursts
. . . . type 4 bursts
. . . . type 5 bursts
. . . solar radio emission
. . . . solar radio bursts
. type 2 bursts
. type 3 bursts
. type 4 bursts
. type 5 bursts
RT extragalactic radio sources
extraterrestrial radio waves
quasars
radio jets (astronomy)

radio equipment

GS **radio equipment**
. radio antennas
. . microwave antennas
. . . horn antennas
. . . lens antennas
. . . rectennas
. . . spacetennas
. radio filters
. radio receivers
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
. radio telescopes
. . kilometer wave orbiting telescope
. . Very Large Array (VLA)
. . Very Long Baseline Array (VLBA)
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . self calibrating omnirange
. . radiometeorographs
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . radiotelephones
. . sonobuoys
. . transmitter receivers
. reception diversity
. spacecraft antennas
. transponders
. very high frequency radio equipment

RT airborne equipment
antennas
broadcasting
communication equipment
crystal filters
cylindrical antennas
jammers
near fields
onboard equipment
radar equipment

radio filters

GS electromagnetic wave filters
. electric filters
. . **radio filters**
radio equipment
. **radio filters**
RT crystal filters
∞ filters
interference grating
microwave filters
radar filters
tunable filters

radio frequencies

DEF Frequencies at which coherent electromagnetic radiation of energy is useful for communications purposes.

GS frequencies
. **radio frequencies**
. . extremely low frequencies
. . high frequencies
. . intermediate frequencies
. . low frequencies
. . . very low frequencies
. . microwave frequencies
. . . C band
. . . extremely high frequencies
. . . P band
. . . superhigh frequencies
. . ultrahigh frequencies
. . . P band
. . . very high frequencies
. . . P band

RT audio frequencies
carrier frequencies
radii

radio frequency discharge

GS electric current
. electric discharges
. . **radio frequency discharge**
RT electrodeless discharges
electron emission
ring discharge

radio frequency heating

GS heating
. **radio frequency heating**
RT induction heating
plasma heating
VASIMR (propulsion system)

radio frequency impedance probes

GS measuring instruments
. impedance probes
. . **radio frequency impedance probes**
RT impedance measurement
ion probes
microwave probes
plasma probes

radio frequency interference

DEF Degradation of the reception of a wanted signal caused by radio frequency disturbance.

UF *radio interference*
GS electromagnetic interference
. **radio frequency interference**
. . blackout (propagation)
. . . polar radio blackout
. . . chirp
. . . chirp signals
. . electromagnetic noise
. . . atmospheric
. . . . ionospheric
. dawn chorus
. hiss

. . . . sudden enhancement of
atmospherics
. . . . whistlers
. . . cosmic noise
. . . ionospheric noise
. . . . whistlers
. . . shot noise
. . . white noise
. . . . thermal noise
. . cochannel interference
. . ionospheric cross modulation

RT clutter
cross coupling
electromagnetic compatibility
electronic countermeasures
electronic warfare
extraterrestrial radio waves
∞ interference
interference grating
interference immunity
jamming
noise generators
noise storms
signal fading

radio frequency ion thruster engines

USE **RIT engines**

radio frequency noise

USE **electromagnetic noise**

radio frequency radiation

USE **radio waves**

radio frequency shielding

GS shielding
. electromagnetic shielding
. . **radio frequency shielding**
RT radiation shielding
spacecraft shielding

radio galaxies

GS celestial bodies
. galaxies
. . active galaxies
. . . **radio galaxies**
. . radio sources (astronomy)
. . extragalactic radio sources
. . . **radio galaxies**
RT active galactic nuclei
blazars
disk galaxies
Maffei galaxies
quasars

radio horizons

DEF Loci or points at which direct rays from a radio transmitter become tangential to the Earth's surface.

GS horizon
. **radio horizons**
RT horizon scanners

radio interference

USE **radio frequency interference**

radio interferometers

DEF Interferometers operating at radio frequencies. Radio interferometers are used in radio astronomy and in satellite tracking.

GS measuring instruments
. interferometers
. . **radio interferometers**
RT astrophysics
Orion (radio interferometry network)
very long base interferometry

radio jets (astronomy)

DEF Jets of energetic particles occurring in radio galaxies and quasars usually emitted from the nuclear (active) region of the extragalactic radio source.

GS celestial bodies
. radio sources (astronomy)
. . extragalactic radio sources
. . . **radio jets (astronomy)**
particles
. charged particles
. plasma jets
. . **radio jets (astronomy)**

- RT astrophysics
energetic particles
extraterrestrial radiation
extraterrestrial radio waves
galactic nuclei
galactic radio waves
quasars
radio astronomy
radio emission
- radio meteorology**
GS meteorology
. **radio meteorology**
RT atmospheric
meteorological radar
radiosondes
- radio meteors**
DEF Meteors which have been detected by the reflection of radio signals from the meteor trails of relatively high ion density (ion columns).
GS celestial bodies
. meteoroids
. . **radio meteors**
RT atmospheric ionization
meteor trails
- radio navigation**
DEF Navigation based upon the reception of radio signals.
GS navigation
. **radio navigation**
. . hyperbolic navigation
. . . Decca navigation
. . . LORAC navigation system
. . . loran
. . . . loran C
. . . . loran D
. . . Shoran
. . Tacan
. . VHF omnirange navigation
RT air navigation
air traffic control
aircraft guidance
all-weather air navigation
astronavigation
automatic flight control
celestial navigation
collision avoidance
dead reckoning
distance measuring equipment
Doppler navigation
flight control
guidance (motion)
homing devices
inertial navigation
interplanetary navigation
navigation aids
omnidirectional radio ranges
positioning
radar navigation
satellite navigation systems
solar compasses
space navigation
surface navigation
- radio observation**
GS observation
. **radio observation**
RT space observations (from Earth)
- radio occultation**
GS occultation
. **radio occultation**
RT atmospheric composition
atmospheric pressure
atmospheric temperature
planetary atmospheres
space probes
spacecraft trajectories
- radio physics**
RT ∞ physics
 ∞ science
theoretical physics
- radio probing**
RT measuring instruments
- ∞ probes
- radio propagation*
USE **radio transmission**
- radio range**
SN (EXCLUDES RADIO BEACONS)
GS distance
. **radio range**
range (extremes)
. frequency ranges
. . **radio range**
RT radar range
- radio ranges*
USE **radio beacons**
- radio receivers**
GS communication equipment
. **radio receivers**
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
radio equipment
. **radio receivers**
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
receivers
. **radio receivers**
. . superheterodyne receivers
. . transmitter receivers
. . whistler recorders
RT data links
directors (antenna elements)
electromagnetic noise
intermediate frequency amplifiers
loudspeakers
Orion (radio interferometry network)
parasitic elements (antennas)
radar receivers
reception diversity
television reception
transponders
tuners
- radio reception**
GS signal reception
. **radio reception**
RT homodyne reception
radar reception
 ∞ receiving
reception diversity
scatter propagation
television reception
- radio reflection*
USE **radio echoes**
- radio relay systems**
GS telecommunication
. radio communication
. . **radio relay systems**
. . . code division multiple access
. . . time division multiple access
RT communication equipment
communication satellites
data links
Defense Communications Satellite System
Earth terminal measurement system
Earth terminals
Global Tracking Network
Molniya satellites
MSAT
orbit spectrum utilization
 ∞ relay
 ∞ systems
TDR satellites
- radio scattering**
GS scattering
. **radio scattering**
. . microwave scattering
RT atmospheric diffusion
atmospheric scattering
scatter propagation
signal fading
- signal transmission
- radio signal attenuation*
USE **radio attenuation**
- radio signal propagation*
USE **radio transmission**
- radio signals**
RT broadcasting
Project SETI
Rayleigh fading
signal distortion
signal mixing
 ∞ signals
transhorizon radio propagation
whistlers
- radio sources (astronomy)**
SN (LIMITED TO EXTRATERRESTRIAL RADIO SOURCES)
DEF Celestial objects that emit radio waves.
GS celestial bodies
. **radio sources (astronomy)**
. . Cassiopeia A
. . extragalactic radio sources
. . . radio galaxies
. . . radio jets (astronomy)
. . . quasars
. . radio stars
. . . pulsars
RT BL Lacertae objects
blazars
CN emission
extraterrestrial radio waves
galactic nuclei
galaxies
gamma ray sources (astronomy)
hydroxyl emission
irregular galaxies
Maffei galaxies
Milky Way Galaxy
radiation sources
 ∞ sources
spectral counterparts (astronomy)
- radio spectra**
DEF Frequencies of electromagnetic radiation usable for radio communication.
GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **radio spectra**
. . . . microwave spectra
RT carrier waves
electromagnetic noise
H I regions
radiant flux density
- radio spectroscopy**
GS spectroscopy
. **radio spectroscopy**
RT astronomical spectroscopy
ultraviolet spectra
ultraviolet spectroscopy
x ray spectroscopy
- radio stars**
GS celestial bodies
. radio sources (astronomy)
. . **radio stars**
. . . pulsars
. . stars
. . **radio stars**
. . . pulsars
RT quasars
radiative transfer
stellar radiation
- radio telegraphy**
GS telecommunication
. radio communication
. . **radio telegraphy**
RT communication equipment
keying
Morse code
- radio telemetry**
GS telecommunication
. radio communication
. . **radio telemetry**

radio telescopes

- . . . pulse frequency modulation telemetry
- . telemetry
- . . . **radio telemetry**
- . . . pulse frequency modulation telemetry
- transmission
- . signal transmission
- . . . telemetry
- . . . **radio telemetry**
- pulse frequency modulation telemetry
- RT communication equipment
- data transmission
- extraterrestrial communication
- ground support equipment
- measuring instruments
- pulse modulation
- radiometeorographs
- radiosondes
- space communication
- wireless communication

radio telescopes

DEF Devices for receiving, amplifying, and measuring the intensity of radio waves originating outside the Earth's atmosphere or reflected from a body outside the atmosphere.

- GS radio equipment
- . **radio telescopes**
- . . kilometer wave orbiting telescope
- . . Very Large Array (VLA)
- . . Very Long Baseline Array (VLBA) telescopes
- . **radio telescopes**
- . . kilometer wave orbiting telescope
- . . Very Large Array (VLA)
- . . Very Long Baseline Array (VLBA)
- RT antennas
- Jodrell Bank Observatory
- optical equipment
- phase switching interferometers
- Quasat

radio tracking

- GS tracking (position)
- . **radio tracking**
- . . wildlife radiolocation
- RT radar scanning
- radar tracking
- range and range rate tracking
- rangefinding
- rawinsondes
- spacecraft tracking

radio transmission

DEF The transmission of signals by means of radiated electromagnetic waves other than light or heat waves. Used for radio propagation and radio signal propagation.

- UF *radio propagation*
- radio signal propagation*
- GS transmission
- . electromagnetic wave transmission
- . . **radio transmission**
- . . . double sideband transmission
- . . . ionospheric propagation
- ionospheric F-scatter propagation
- . . . microwave transmission
- . . . multipath transmission
- . . . short wave radio transmission
- . . . single sideband transmission
- . . . spread spectrum transmission
- . . . transequatorial propagation
- . . . transhorizon radio propagation
- . signal transmission
- . . **radio transmission**
- . . . double sideband transmission
- . . . ionospheric propagation
- ionospheric F-scatter propagation
- . . . microwave transmission
- . . . multipath transmission
- . . . short wave radio transmission
- . . . single sideband transmission
- . . . spread spectrum transmission
- . . . transequatorial propagation
- . . . transhorizon radio propagation
- RT antipodes

- atmospheric attenuation
- broadcasting
- code division multiplexing
- companding
- data transmission
- Earth-ionosphere waveguide
- F region
- frequency reuse
- frequency shift keying
- magnetoionics
- modulation
- multiplexing
- packet switching
- pulse communication
- pulse frequency modulation telemetry
- radar transmission
- radome materials
- satellite transmission
- scatter propagation
- Seafarer project
- Sommerfeld approximation
- Symphonie satellites
- Voice of America
- wave attenuation
- wave propagation

radio transmitters

DEF Devices for producing radio-frequency power, for purposes of radio transmission.

- GS radio equipment
- . **radio transmitters**
- . . radio beacons
- . . . omnidirectional radio ranges
- self calibrating omnirange
- . . radiometeorographs
- . . radiosondes
- . . . ionosondes
- . . . rawinsondes
- . . radiotelephones
- . . sonobuoys
- . . transmitter receivers
- transmitters
- . **radio transmitters**
- . . radio beacons
- . . . omnidirectional radio ranges
- self calibrating omnirange
- . . radiometeorographs
- . . radiosondes
- . . . ionosondes
- . . . rawinsondes
- . . radiotelephones
- . . sonobuoys
- . . transmitter receivers
- RT multichannel communication
- quartz crystals
- television transmission
- transponders
- wildlife radiolocation

radio wave refraction

- GS refraction
- . atmospheric refraction
- . . **radio wave refraction**
- RT wave dispersion

radio waves

DEF Waves produced by oscillation of an electric charge at a frequency useful for radio communication. Used for radio frequency radiation.

- UF *radio frequency radiation*
- GS electromagnetic radiation
- . **radio waves**
- . . decametric waves
- . . extraterrestrial radio waves
- . . . galactic radio waves
- North Polar Spur (astronomy)
- . . . radio bursts
- solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . . solar radio emission
- solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts

- . . . cosmic microwave background radiation
- . . long wave radiation
- . . radio emission
- . . . CN emission
- . . . hydroxyl emission
- . . . radio bursts
- solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- solar radio emission
- solar radio bursts
- type 2 bursts
- type 3 bursts
- type 4 bursts
- type 5 bursts
- . . short wave radiation
- . . . microwaves
- . . . centimeter waves
- cosmic microwave background radiation
- decimeter waves
- microwave emission
- millimeter waves
- submillimeter waves
- . . sky waves
- . . . whistlers
- RT atmospheric
- coherent electromagnetic radiation
- electromagnetic noise
- electromagnetic surface waves
- extraterrestrial radiation
- far infrared radiation
- frequencies
- ground wave propagation
- monochromatic radiation
- multipath transmission
- nonthermal radiation
- planetary radiation
- polarized electromagnetic radiation
- scatter propagation
- solar radiation
- solitary waves
- thermal radiation
- transverse waves
- traveling waves
- tropospheric waves

radioactive age determination

- UF *radioactive dating*
- RT ∞ aging
- fossils
- geochronology
- half life
- ∞ measurement
- radiochemistry
- radiogenic materials
- time measurement

radioactive contaminants

- GS contaminants
- . **radioactive contaminants**
- RT atmospheric composition
- fallout
- nuclear radiation
- radiation effects
- radiation hazards

radioactive dating

USE **radioactive age determination**

∞ radioactive debris

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT debris
- fallout
- radioactive materials
- radioactive wastes
- radiogenic materials

radioactive decay

DEF The spontaneous transformation of a nuclide into one or more nuclides accompanied by the release of radiation.

- GS decay
- . **radioactive decay**
- . . alpha decay

. . neutron emission
 nuclear reactions
 . **radioactive decay**
 . . alpha decay
 . . neutron emission
 RT emission
 gamma ray beams
 gamma rays
 half life
 hypernuclei
 nuclear fission
 nuclear radiation
 particle decay
 photoproduction
 post-blast nuclear radiation
 radioactivity
 radiogenic materials
 thermonuclear reactions
 vector currents

*radioactive elements*USE **radioactive isotopes****radioactive isotopes**

UF *radioactive elements*
radioactive nuclides
radionuclides
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **radioactive isotopes**
 astatine isotopes
 beryllium 7
 beryllium 9
 beryllium 10
 carbon 14
 cerium 137
 cerium 144
 cesium 134
 cesium 137
 cesium 144
 cobalt 58
 cobalt 60
 copper isotopes
 gold 198
 indium isotopes
 iodine 125
 iodine 131
 iodine 132
 iron 59
 krypton 85
 niobium 95
 nitrogen 16
 phosphorus 32
 polonium 208
 polonium 209
 polonium 210
 potassium 38
 potassium 40
 rubidium 86
 sodium 22
 sodium 24
 strontium 85
 strontium 88
 strontium 89
 strontium 90
 transuranium elements
 americium
 americium isotopes
 americium 241
 berkelium
 californium
 californium isotopes
 curium
 curium isotopes
 curium 242
 curium 244
 einsteinium
 fermium
 lawrencium
 mendelevium
 neptunium
 neptunium isotopes
 nobelium
 plutonium
 plutonium isotopes
 plutonium 238
 plutonium 239
 plutonium 240

. plutonium 241
 plutonium 244
 sergenium
 tritium
 uranium 232
 uranium 233
 uranium 238
 xenon 133
 xenon 135
 zirconium 95
 RT actinide series
 arsenic isotopes
 gold isotopes
 isotope effect
 isotopic labeling
 radiocardiography
 radioisotope batteries
 radioisotope heat sources
 radiophosphors
 rhenium isotopes

radioactive materials

RT actinide series
 fissile fuels
 fission products
 fissionable materials
 ionizing radiation
 isotopes
 ∞ materials
 nuclear fission
 nuclear radiation
 radiation hazards
 radiation sources
 ∞ radioactive debris
 radioactivity
 radiobiology
 radiochemistry
 uranium plasmas

*radioactive nuclides*USE **radioactive isotopes****radioactive wastes**

UF *nuclear wastes*
 GS wastes
 . **radioactive wastes**
 RT contamination
 decommissioning
 environment pollution
 environment protection
 environmental surveys
 fission products
 hazardous material disposal (in space)
 nonpoint sources
 plasma core reactors
 poisoning (reaction inhibition)
 pollution
 radiation hazards
 ∞ radioactive debris
 radiochemistry
 radiogenic materials
 soil pollution
 solid wastes
 waste disposal

radioactivity

DEF Spontaneous disintegration of atomic nuclei with emission of corpuscular or electromagnetic radiations. The number of spontaneous disintegrations per unit mass and per unit time of a given unstable (radioactive) element, usually measured in curies.

RT ∞ activity
 alpha particles
 emission
 fallout
 fission products
 gamma rays
 geochemistry
 geophysics
 half life
 ionizing radiation
 nuclear radiation
 particle production
 post-blast nuclear radiation
 ∞ radiation
 radiation hazards
 radioactive decay
 radioactive materials

radiochemistry

radiobiology

DEF The study of the effects produced on living organisms by radiation.
 GS medical science
 . nuclear medicine
 . . **radiobiology**
 RT antiradiation drugs
 ∞ biology
 biomagnetism
 dosimeters
 health physics
 immunoassay
 irradiation
 ∞ medicine
 nuclear radiation
 radioactive materials
 radiochemistry
 radioimmunoassay

radiocardiography

DEF The technique of recording an intravenously injected radioisotope in the heart chambers.
 GS bioengineering
 . biometrics
 . . **radiocardiography**
 RT cardiology
 radioactive isotopes

radiochemical separation

GS radiochemistry
 . **radiochemical separation**
 RT chemical reactions
 quantitative analysis
 ∞ separation

radiochemistry

UF *reactor chemistry*
 GS **radiochemistry**
 . radiochemical separation
 RT chemical analysis
 ∞ chemistry
 ionizing radiation
 isotopic labeling
 nuclear chemistry
 nuclear radiation
 nuclear research
 radioactive age determination
 radioactive materials
 radioactive wastes
 radioactivity
 radiobiology

radiogenic materials

RT nuclear reactions
 radioactive age determination
 ∞ radioactive debris
 radioactive decay
 radioactive wastes
 transmutation

radiogoniometers

GS measuring instruments
 . goniometers
 . . **radiogoniometers**
 RT radio direction finders

radiography

UF *cinelfluorography*
cineradiography
 GS imagery
 . **radiography**
 . . angiography
 . . autoradiography
 . . neutron radiography
 . . tomography
 . . . computer aided tomography
 . . . urography
 RT Bragg angle
 crystallography
 ∞ flash
 irradiation
 lixiscopes
 ∞ materials tests
 metallography
 nondestructive tests
 photography
 pneumography

radioimmunoassay

- radiology
- x ray analysis
- x ray apparatus
- x ray astronomy
- x ray diffraction
- x ray fluorescence
- x ray imagery
- x ray inspection
- x ray spectroscopy
- x ray telescopes
- x ray tubes
- x rays

radioimmunoassay

DEF A medical diagnostic procedure for the components (hormones and immunoglobulins primarily) as well as pharmaceuticals in the blood. The RIA is based on the antigen antibody reactions.

- GS immunoassay
 - . **radioimmunoassay**
- RT antigens
- assaying
- biochemistry
- immunology
- radiobiology

radioisotope batteries

- UF *atomic batteries*
- GS electric generators
 - . direct power generators
 - . . . **radioisotope batteries**
 - . . . SNAP 7
 - . . . SNAP 9A
 - . . . SNAP 11
 - . . . SNAP 13
 - . . . SNAP 15
 - . . . SNAP 17
 - . . . SNAP 19
 - . . . SNAP 21
 - . . . SNAP 23
 - . . . SNAP 27
 - . . . SNAP 29
- RT electric batteries
- fission electric cells
- nuclear auxiliary power units
- radioactive isotopes
- radioisotope heat sources
- thermionic converters
- thermoelectric generators

radioisotope heat sources

(added December 2002)

DEF Heat sources comprised of encapsulated radioactive isotopes; often used as heat units in thermoelectric generators.

- UF *General Purpose Heat Sources*
GPHS (nucleonics)
- GS heat sources
 - . **radioisotope heat sources**
- RT radioactive isotopes
- radioisotope batteries
- thermoelectric power generation

radiology

- GS medical science
 - . **radiology**
- RT aerospace medicine
- ∞ medicine
- ∞ radiation
- radiography
- x ray analysis
- x rays

radiolysis

- GS chemical reactions
 - . photochemical reactions
 - . . . **radiolysis**
 - decomposition
 - . **radiolysis**
 - dissociation
 - . **radiolysis**
 - radiation chemistry
 - . **radiolysis**
 - radiation effects
 - . **radiolysis**
- RT photolysis

radiometeorographs

- GS measuring instruments

- . meteorological instruments
- . . **radiometeorographs**
- radio equipment
- . radio transmitters
- . . **radiometeorographs**
- recording instruments
- . **radiometeorographs**
- transmitters
- . radio transmitters
- . . **radiometeorographs**
- RT radio telemetry
- radiosondes

radiometers

DEF Instruments for detecting and, usually, measuring radiant energy.

- GS measuring instruments
- . radiation measuring instruments
- . . actinometers
- . . . **radiometers**
- Dicke radiometers
- infrared detectors
- FLIR detectors
- infrared radiometers
- Advanced Very High Resolution Radiometer
- infrared scanners
- visible infrared spin scan radiometer
- quantum well infrared photodetectors
- microwave radiometers
- Advanced Microwave Sounding Unit
- passive L-band radiometers
- pressure modulator radiometers
- spectroradiometers
- MISR (radiometry)
- MODIS (radiometry)
- RT bolometers
- forest fire detection
- horizon scanners
- infrared photography
- infrared tracking
- Knudsen gages
- photometers
- pyranometers
- radiometric resolution
- spectrophotometers
- thermistors
- ultraviolet detectors
- x ray detectors

radiometric correction

DEF An effort to correct the intensity range of an image. Used for radiometric rectification.

- UF *radiometric rectification*
- RT image enhancement
- infrared radiometers
- multispectral band scanners
- vegetative index

radiometric rectification

- USE **radiometric correction**

radiometric resolution

DEF The sensitivity of the sensor to distinguish between gray levels.

- GS resolution
- . **radiometric resolution**
- RT multispectral band scanners
- radiometers
- remote sensors
- spectral resolution

radionuclides

- USE **radioactive isotopes**

radiopathology

- GS medical science
 - . **radiopathology**
- RT antiradiation drugs
- nuclear medicine
- radiation sickness

radiophosphors

- GS phosphors
 - . **radiophosphors**

- RT radioactive isotopes

radioprotective agents

- USE **antiradiation drugs**

radiosensitivity

- USE **radiation tolerance**

radiosondes

DEF Instruments, usually balloonborne, for the simultaneous measurement and transmission of meteorological data while moving vertically through the atmosphere.

- GS measuring instruments
- . meteorological instruments
- . . **radiosondes**
- . . . ionosondes
- . . . rawinsondes
- . sondes
- . . **radiosondes**
- . . . ionosondes
- . . . rawinsondes
- radio equipment
- . radio transmitters
- . . **radiosondes**
- . . . ionosondes
- . . . rawinsondes
- transmitters
- . radio transmitters
- . . **radiosondes**
- . . . ionosondes
- . . . rawinsondes

- RT Arcas rocket vehicles
- balloon sounding
- balloon-borne instruments
- dropsondes
- meteorological balloons
- radio meteorology
- radio telemetry
- radiometeorographs
- ROBIN balloons
- satellite sounding
- sounding rockets

radiotelephones

- GS radio equipment
- . radio transmitters
- . . **radiotelephones**
- receivers
- . **radiotelephones**
- telecommunication
- . **radiotelephones**
- telephones
- . **radiotelephones**
- transmitters
- . radio transmitters
- . . **radiotelephones**
- RT echo suppressors
- radio communication
- telephony
- voice communication

radiotherapy

- USE **radiation therapy**

radium

- GS chemical elements
- . actinide series
- . . **radium**
- . . . radium isotopes
- radium 226
- metals
- . actinide series
- . . **radium**
- . . . radium isotopes
- radium 226

radium 226

- GS chemical elements
- . actinide series
- . . radium
- . . . radium isotopes
- **radium 226**
- . nuclides
- . . isotopes
- . . . radium isotopes
- **radium 226**
- metals
- . actinide series
- . . radium

- ... radium isotopes
- ... **radium 226**
- radium isotopes**
 - GS chemical elements
 - . actinide series
 - . radium
 - ... **radium isotopes**
 - ... radium 226
 - . nuclides
 - . isotopes
 - ... **radium isotopes**
 - ... radium 226
 - metals
 - . actinide series
 - . radium
 - ... **radium isotopes**
 - ... radium 226
- radius*
- USE **radii**
- radome materials**
 - GS dielectrics
 - . **radome materials**
 - RT electromagnetic wave transmission
 - ∞ materials
 - radar transmission
 - radio transmission
 - radomes
 - transparence
- radomes**
 - DEF Dielectric housings for antennas.
(From RAdar DOME. Pronounced ray-domes.)
 - GS housings
 - . **radomes**
 - shells (structural forms)
 - . domes (structural forms)
 - ... **radomes**
 - RT inflatable structures
 - protuberances
 - radant
 - radar antennas
 - radar equipment
 - radome materials
- radon**
 - GS chemical elements
 - . rare gases
 - ... **radon**
 - ... radon isotopes
 - gases
 - . rare gases
 - ... **radon**
 - ... radon isotopes
- radon isotopes**
 - UF *thoron*
 - GS chemical elements
 - . nuclides
 - . isotopes
 - ... **radon isotopes**
 - . rare gases
 - . radon
 - ... **radon isotopes**
 - gases
 - . rare gases
 - . radon
 - ... **radon isotopes**
- Raduga satellite**
 - DEF A Soviet communications satellite in geostationary orbit for radio and TV transmission.
 - GS artificial satellites
 - . communication satellites
 - ... **Raduga satellite**
 - . Soviet satellites
- ... **Raduga satellite**
- RAE 1*
- USE **Explorer 49 satellite**
- RAE 2*
- USE **Explorer 49 satellite**
- RAE B*
- USE **Explorer 49 satellite**
- RAE-1*
- USE **Explorer 38 satellite**
- Raffaello Logistics Module (ISS)*
(added April 2005)
- USE **Multi-Purpose Logistics Modules**
- rafts**
 - GS **rafts**
 - . life rafts
 - RT floats
 - lifeboats
 - survival equipment
- rail transportation**
 - UF *railroads*
 - GS transportation
 - . **rail transportation**
 - RT automated guideway transit vehicles
 - automated transit vehicles
 - locomotives
 - magnetic levitation vehicles
 - marine transportation
 - rails
 - rapid transit systems
 - surface vehicles
 - urban transportation
- railgun accelerators**
 - DEF Linear dc motors consisting of a pair of rigid, field-producing rails, and a movable conducting armature.
 - RT ∞ accelerators
 - hypervelocity guns
 - hypervelocity launchers
 - mass drivers
 - nuclear fusion
 - particle accelerators
 - spacecraft launching
- railroad humping tests**
 - RT cargo
 - impact acceleration
 - materials handling
 - shock tests
 - ∞ tests
- railroads*
- USE **rail transportation**
- rails**
 - RT rail transportation
 - rapid transit systems
 - surface vehicles
- rain**
 - GS precipitation (meteorology)
 - . **rain**
 - ... acid rain
 - RT aquifers
 - cloud seeding
 - condensation nuclei
 - flood predictions
 - hydrology
 - hydrology models
 - limnology
 - precipitation measurement
 - rainbows
 - raindrops
 - rainstorms
 - ∞ showers
 - thunderstorms
 - TRMM satellite
 - watersheds
- rain erosion**
 - DEF The wearing away of the land by rain.
 - GS erosion
 - . **rain erosion**
 - RT landslides
- mud
- sands
- soil erosion
- rain forests**
 - GS resources
 - . Earth resources
 - . forests
 - ... **rain forests**
 - RT canopies (vegetation)
 - geobotany
 - plants (botany)
 - ∞ showers
 - tropical regions
 - vegetation
- rain gages**
 - UF *pluviographs*
 - GS measuring instruments
 - . meteorological instruments
 - ... **rain gages**
 - RT precipitation measurement
- rain impact damage**
 - GS damage
 - . impact damage
 - ... **rain impact damage**
 - RT arroyos
 - erosion
 - soil erosion
 - water erosion
- rainbows**
 - GS distribution (property)
 - . radiation distribution
 - . diffraction patterns
 - ... **rainbows**
 - RT halos
 - light transmission
 - rain
- raindrops**
 - GS particles
 - . drops (liquids)
 - ... **raindrops**
 - RT drop size
 - falling spheres
 - rain
 - rainmaking
- rainmaking**
 - GS weather modification
 - . **rainmaking**
 - RT climatology
 - cloud seeding
 - precipitation (meteorology)
 - raindrops
 - water resources
- rainstorms**
 - GS storms
 - . storms (meteorology)
 - ... **rainstorms**
 - ... thunderstorms
 - RT acid rain
 - flood control
 - flood predictions
 - hailstorms
 - precipitation (meteorology)
 - rain
 - ∞ showers
 - storm damage
 - storm enhancement
 - storm suppression
 - tornadoes
- ∞ **rakes**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT pressure sensors
 - slopes
- ∞ **ram**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT antiradar coatings
 - rams (presses)

ram accelerators

rams (pumps)

ram accelerators

(added July 1994)

UF *ramjet-in-tube accelerators*

RT ∞ accelerators

detonation waves

hypervelocity guns

hypervelocity launchers

ramjet engines

RAM B launch vehicle

GS launch vehicles

. **RAM B launch vehicle**

rocket vehicles

. multistage rocket vehicles

. . **RAM B launch vehicle**

RT solid propellant rocket engines

TX-354 engine

ram effect (hydrodynamics)

USE **hydrodynamic ram effect**

RAM project

USE **Radio Attenuation Measurement project**

Raman effect

USE **Raman spectra**

Raman lasers

GS stimulated emission devices

. lasers

. . **Raman lasers**

Raman scattering

USE **Raman spectra**

Raman spectra

DEF Spectra of the modified frequencies resulting from inelastic scattering when matter is irradiated by a monochromatic beam of radiant energy. Used for Raman effect and Raman scattering.

UF *Raman effect*

Raman scattering

GS molecular properties

. molecular spectra

. . **Raman spectra**

scattering

. wave scattering

. . electromagnetic scattering

. . . **Raman spectra**

spectra

. molecular spectra

. . **Raman spectra**

. radiation spectra

. . electromagnetic spectra

. . . **Raman spectra**

RT absorption spectra

emission spectra

light (visible radiation)

line spectra

molecular rotation

nonlinear optics

vibrational spectra

Raman spectroscopy

UF *coherent anti-Stokes Raman spectroscopy*

GS spectroscopy

. molecular spectroscopy

. . **Raman spectroscopy**

RT astronomical spectroscopy

infrared spectroscopy

laser-induced breakdown

spectroscopy

line spectra

optogalvanic spectroscopy

Rayleigh scattering

spectroscopic analysis

ramjet engines

DEF Jet engines with no mechanical compressor consisting of specially shaped tubes or ducts open at both ends, the air necessary for combustion being shoved into the duct and compressed by the forward motion of the engine, where the air passes through a diffuser and is mixed with fuel and burned, the exhaust

gases issuing in a jet from the rear opening. Ramjet engines cannot operate under static conditions. Often called ramjets. Used for athodyds.

UF *athodyds*

GS engines

. air breathing engines

. . gas turbine engines

. . . jet engines

. . . . **ramjet engines**

. integral rocket ramjets

. low volume ramjet engines

. pulsejet engines

. supersonic combustion ramjet

engines

. turboramjet engines

. internal combustion engines

. . gas turbine engines

. . . jet engines

. . . . **ramjet engines**

. integral rocket ramjets

. low volume ramjet engines

. pulsejet engines

. supersonic combustion ramjet

engines

. turboramjet engines

. turbine engines

. . gas turbine engines

. . . jet engines

. . . . **ramjet engines**

. integral rocket ramjets

. low volume ramjet engines

. pulsejet engines

. supersonic combustion ramjet

engines

. turboramjet engines

RT dump combustors

hydrogen fuels

Meteor 1 rocket vehicle

Navaho missile

ram accelerators

rocket-based combined-cycle engines

Saenger space transportation system

supersonic low altitude missile

turbojet engines

ramjet missiles

GS missiles

. **ramjet missiles**

. . Navaho missile

. . supersonic low altitude missile

RT air to air missiles

antiaircraft missiles

supersonic combustion ramjet

engines

surface to air missiles

surface to surface missiles

ramjet-in-tube accelerators

USE **ram accelerators**

ramp functions

GS functions (mathematics)

. **ramp functions**

RT dynamic response

frequency response

∞ ramps

reaction time

slopes

step functions

∞ ramps

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT ramp functions

ramps (structures)

ramps (structures)

RT bridges (structures)

crossings

highways

intake systems

intersections

∞ parking

∞ ramps

slopes

wheelchairs

rams (presses)

GS presses

. **rams (presses)**

RT hammers

platens

plungers

∞ ram

rams (pumps)

GS pumps

. **rams (pumps)**

RT plungers

∞ ram

water hammer

Ramsauer effect

RT ∞ effects

electron scattering

∞ interference

negative resistance devices

rare gases

scattering cross sections

rand project

GS programs

. projects

. . **rand project**

RT operations research

random access

DEF The process of obtaining data from, or placing data into, storage when there is no sequential relation governing the access time to successive storage location.

RT Aloha system

computer storage devices

input/output routines

random access memory

random processes

VSAT (network)

random access memory

GS computer components

. computer storage devices

. . **random access memory**

. . . carbon nanotube based memory

. . . core storage

memory (computers)

. **random access memory**

. . carbon nanotube based memory

. . core storage

RT random access

random distributions

USE **statistical distributions**

random errors

DEF Errors that are not systematic, are not erratic, and are not mistakes.

GS errors

. **random errors**

RT BCH codes

∞ dispersion

probability theory

quality control

sampling

stochastic processes

systematic errors

random loads

GS loads (forces)

. **random loads**

. . gust loads

RT contact loads

dynamic loads

impact loads

static loads

structural design criteria

transient loads

variable amplitude loading

random noise

DEF Oscillations whose instantaneous amplitudes occur, as a function of time according to a normal (Gaussian) curve. Used for Gaussian noise.

UF *Gaussian noise*

GS **random noise**

. random signals

RT background noise

channel noise

communication theory

- electromagnetic noise
- ∞ noise
 - noise (sound)
 - noise generators
 - noise spectra
 - probability theory
 - pseudonoise
 - signal to noise ratios
 - stochastic processes
 - white noise
- random numbers**
 - DEF Expressions formed by sets of digits selected from a sequence of digits in which each successive digit is equally likely to be any of the digits.
 - RT mathematical tables
 - ∞ numbers
 - pseudorandom sequences
- random positioning machines*
(added July 2000)
- USE **clinostats**
- random processes**
 - GS stochastic processes
 - . **random processes**
 - .. random walk
 - RT communication theory
 - information theory
 - intermittency
 - Markov processes
 - Monte Carlo method
 - random access
 - statistical analysis
- random sampling**
 - DEF The process of selecting units for a sample of size n in such a manner that all combinations of n units under consideration have an equal or ascertainable chance of being selected as the sample.
 - GS sampling
 - . **random sampling**
 - RT quality control
- random signals**
 - GS random noise
 - . **random signals**
 - RT noise spectra
 - signal to noise ratios
 - ∞ signals
 - stochastic processes
- random variables**
 - DEF Variables characterized by random behavior in assuming their different possible values. Mathematically, they are described by their probability distribution, which specifies the possible values of a random variable together with the probability associated (in an appropriate sense) with each value. Random variables are said to be continuous if their possible values extend over a continuum and discrete if their possible values are separated by finite intervals.
 - RT functions (mathematics)
 - Shannon-Wiener measure
 - ∞ statistics
 - ∞ variable
- random vibration**
 - GS vibration
 - . **random vibration**
 - RT bending vibration
 - flutter
 - forced vibration
 - lattice vibrations
 - linear vibration
 - missile vibration
 - noise (sound)
 - self induced vibration
 - structural vibration
 - torsional vibration
- random walk**
 - GS stochastic processes
 - . random processes
 - .. **random walk**
 - RT Markov chains
- Monte Carlo method
- ∞ **range**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT distance
 - orbital position estimation
 - range (extremes)
 - ranges (facilities)
- range (extremes)**
 - UF *extrema*
 - Gumbel theory*
 - GS **range (extremes)**
 - . dynamic range
 - . frequency ranges
 - .. octaves
 - .. radio range
 - .. subaudible frequencies
 - . proportional limit
 - . Roche limit
 - RT confidence limits
 - constraints
 - distance
 - domains
 - dynamic characteristics
 - errors
 - functions (mathematics)
 - heterogeneity
 - horizon
 - integral equations
 - ∞ limits
 - maxima
 - mean
 - minima
 - optimization
 - quality control
 - ∞ range
 - sensitivity
 - standard deviation
 - statistical tests
 - tolerances (mechanics)
 - tolerances (physiology)
 - ∞ travel
 - variability
 - variance (statistics)
- range and range rate tracking**
 - GS distance
 - . **range and range rate tracking**
 - radar
 - . **range and range rate tracking**
 - tracking (position)
 - . **range and range rate tracking**
 - RT Global Tracking Network
 - missile tracking
 - optical tracking
 - radar tracking
 - radio tracking
 - satellite tracking
 - STDN (network)
- range control*
- USE **trajectory control**
- range errors**
 - SN (EXCLUDES ERRORS IN DISTANCE TRAVELED--LIMITED TO ERRORS IN DISTANCE MEASUREMENT)
 - DEF Errors in radar range measurement due to the propagation of radio energy through a nonhomogeneous atmosphere. These errors are due to the fact that the velocity of radio wave propagation varies with the index of refraction and that ray travel is not in straight lines through actual atmospheres. The resulting range errors are generally insignificant.
 - GS errors
 - . **range errors**
 - RT accuracy
 - boresight error
 - distance measuring equipment
 - error analysis
 - error signals
- range finders**
 - UF *range indicators*
 - GS measuring instruments
 - . distance measuring equipment
 - .. **range finders**
- ... optical range finders
- ... laser range finders
- RT altimeters
 - fire control
 - geodimeters
 - laser ranger/tracker
 - lunar rangefinding
 - navigation aids
 - position indicators
 - radar equipment
 - rangefinding
 - sound localization
 - space perception
 - stadimeters
 - tellurometers
- range indicators*
- USE **range finders**
- range measurement*
- USE **rangefinding**
- range resources**
 - GS resources
 - . Earth resources
 - .. **range resources**
- range safety**
 - GS safety
 - . **range safety**
 - RT aerospace safety
 - impact prediction
 - missile ranges
 - test ranges
 - trajectory control
- rangefinding**
 - UF *range measurement*
 - ranging*
 - GS **rangefinding**
 - . airborne range and orbit determination
 - . laser ranging
 - . lunar rangefinding
 - . sound ranging
 - .. satellite laser ranging
 - RT ballistic cameras
 - laser ranger/tracker
 - Marots (ESA)
 - ∞ measurement
 - radar measurement
 - radar tracking
 - radio tracking
 - range finders
 - tracking (position)
- rangelands**
 - DEF Land providing forage for domestic and wild animals, wildlife cover, recreation opportunities, and vegetation for watershed protection.
 - GS land
 - . **rangelands**
 - RT cattle
 - grasslands
 - grazing
 - livestock
 - rural areas
 - rural land use
- Rangemaster aircraft*
- USE **G-1 aircraft**
- Ranger 1 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - .. Ranger lunar probes
 - ... **Ranger 1 lunar probe**
 - unmanned spacecraft
 - . space probes
 - .. lunar probes
 - ... Ranger lunar probes
 - ... **Ranger 1 lunar probe**
- Ranger 2 lunar probe**
 - GS lunar spacecraft
 - . lunar probes
 - .. Ranger lunar probes
 - ... **Ranger 2 lunar probe**
 - unmanned spacecraft

Ranger 3 lunar probe

- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 2 lunar probe**

Ranger 3 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . . Ranger lunar probes
- **Ranger 3 lunar probe**
- unmanned spacecraft
- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 3 lunar probe**

Ranger 4 lunar probe

- GS lunar spacecraft
 - . lunar probes
 - . . . Ranger lunar probes
 - **Ranger 4 lunar probe**
 - unmanned spacecraft
 - . space probes
 - . . . lunar probes
 - Ranger lunar probes
 - **Ranger 4 lunar probe**
- RT Atlas Agena B launch vehicle

Ranger 5 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . . Ranger lunar probes
- **Ranger 5 lunar probe**
- unmanned spacecraft
- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 5 lunar probe**

Ranger 6 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . . Ranger lunar probes
- **Ranger 6 lunar probe**
- unmanned spacecraft
- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 6 lunar probe**

Ranger 7 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . . Ranger lunar probes
- **Ranger 7 lunar probe**
- unmanned spacecraft
- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 7 lunar probe**

Ranger 8 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . . Ranger lunar probes
- **Ranger 8 lunar probe**
- unmanned spacecraft
- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 8 lunar probe**

Ranger 9 lunar probe

- GS lunar spacecraft
- . lunar probes
- . . . Ranger lunar probes
- **Ranger 9 lunar probe**
- unmanned spacecraft
- . space probes
- . . . lunar probes
- Ranger lunar probes
- **Ranger 9 lunar probe**

Ranger block 3 television system

- GS communication equipment
- . spacecraft television
- . . . **Ranger block 3 television system**
- telecommunication
- . spacecraft television

- . . . **Ranger block 3 television system**
- television systems
- . spacecraft television
- . . . **Ranger block 3 television system**

RT ∞ systems

Ranger lunar landing vehicles

- GS lunar spacecraft
 - . lunar probes
 - . . . Ranger lunar probes
 - **Ranger lunar landing vehicles**
 - unmanned spacecraft
 - . space probes
 - . . . lunar probes
 - Ranger lunar probes
 - **Ranger lunar landing vehicles**
- RT BE-3 engine
 - ∞ vehicles

Ranger lunar probes

- UF *Ranger satellites*
 - GS lunar spacecraft
 - . lunar probes
 - . . . **Ranger lunar probes**
 - Ranger 1 lunar probe
 - Ranger 2 lunar probe
 - Ranger 3 lunar probe
 - Ranger 4 lunar probe
 - Ranger 5 lunar probe
 - Ranger 6 lunar probe
 - Ranger 7 lunar probe
 - Ranger 8 lunar probe
 - Ranger 9 lunar probe
 - Ranger lunar landing vehicles
 - unmanned spacecraft
 - . space probes
 - . . . lunar probes
 - **Ranger lunar probes**
 - Ranger 1 lunar probe
 - Ranger 2 lunar probe
 - Ranger 3 lunar probe
 - Ranger 4 lunar probe
 - Ranger 5 lunar probe
 - Ranger 6 lunar probe
 - Ranger 7 lunar probe
 - Ranger 8 lunar probe
 - Ranger 9 lunar probe
 - Ranger lunar landing vehicles
- RT Atlas Agena B launch vehicle

Ranger project

- GS programs
 - . NASA programs
 - . . . NASA space programs
 - **Ranger project**
 - Agena B Ranger Program
 - projects
 - . . . **Ranger project**
 - Agena B Ranger Program
 - space programs
 - . . . NASA space programs
 - **Ranger project**
 - Agena B Ranger Program
- RT Agena B rocket vehicle
 - Agena rocket vehicles
 - Atlas launch vehicles
 - lunar photographs
 - lunar photography
 - lunar probes

Ranger satellites

USE **Ranger lunar probes**

ranges (facilities)

- GS **ranges (facilities)**
 - . test ranges
 - . . . ballistic ranges
 - missile ranges
- RT radio beacons
 - ∞ range

ranging

USE **rangefinding**

rank tests

- GS statistical analysis
- . statistical tests
- . . . **rank tests**

RT ∞ tests

Rankine cycle

DEF An ideal thermodynamic cycle consisting of heat addition at constant pressure, isentropic expansion, heat rejection at constant pressure, and isentropic compression; used as an ideal standard for the performance of heat-engine and heat-pump installations operating with a condensable vapor as the working fluid, such as a steam power plant.

GS cycles

. thermodynamic cycles

. . . **Rankine cycle**

- RT ASTEC solar turboelectric generator
- Brayton cycle
- Carnot cycle
- laser propulsion
- Otto cycle
- solar dynamic power systems
- solar generators
- thermodynamics

Rankine-Hugoniot relation

- RT aerothermodynamics
- ∞ density
- . pressure gradients
- . shock wave propagation

ranking

- RT arrays
- comparison
- evaluation
- ratings
- selection
- sequencing
- value

Raoult law

- RT composition (property)
- Henry law
- partial pressure
- solutions
- vapor pressure

RAPCON (control)

USE **radar approach control**

rapid ballistics identification

- GS identifying
- . **rapid ballistics identification**
- RT display devices
- imaging techniques
- laser applications
- lasers
- measuring instruments
- photography
- scanning
- stimulated emission
- stimulated emission devices

rapid eye movement state

- UF *desynchronized sleep*
- REMS*
- RT dreams
- eye movements
- sleep

rapid prototyping

(added November 2001)

DEF The fabrication of functional prototypes within a short turn-around time in order to support model verification, reduce design-cycle time, or reduce the overall cost of development. A set of advanced manufacturing technologies that can quickly generate three-dimensional objects directly from computer-based models.

- RT computer aided design
- computer aided manufacturing
- cost reduction
- fabrication
- product development
- prototypes
- three dimensional models

rapid quenching (metallurgy)

DEF Rapid cooling of molten metals or alloys to achieve maximum uniformity in the crystal structure. Used for rapid solidification.

UF *rapid solidification*

- GS cooling
 . quenching (cooling)
 . . **rapid quenching (metallurgy)**
- RT crystal growth
 crystal lattices
 crystal structure
 ∞ metallurgy
 ∞ quenching
- rapid solidification*
 USE **rapid quenching (metallurgy)**
solidification
- rapid transit systems**
 UF *high speed transportation*
 GS transportation
 . **rapid transit systems**
- RT air transportation
 automated guideway transit vehicles
 automated transit vehicles
 cargo
 ground effect machines
 highways
 logistics
 passengers
 rail transportation
 rails
 roads
 ∞ systems
 ∞ transport vehicles
 transportation networks
 urban transportation
- rapids**
 RT meanders
 river basins
 rivers
 streams
 water currents
 water flow
- rare earth alloys**
 GS alloys
 . **rare earth alloys**
 . . erbium alloys
 . . gadolinium alloys
 . . lanthanum alloys
 . . mischmetal
 . . neodymium alloys
- RT yttrium alloys
- rare earth compounds**
 GS **rare earth compounds**
 . cerium compounds
 . . bastnasite
 . . cerium oxides
 . . dysprosium compounds
 . . erbium compounds
 . . europium compounds
 . . lanthanum tellurides
 . . lutetium compounds
 . . neodymium compounds
 . . praseodymium compounds
 . . samarium compounds
 . . scandium compounds
 . . scandium oxides
 . . terbium compounds
 . . thulium compounds
 . . ytterbium compounds
- RT ∞ chemical compounds
 ∞ Group 3B compounds
 ∞ metal compounds
- rare earth elements**
 UF *lanthanide series metals*
 GS chemical elements
 . **rare earth elements**
 . . cerium
 . . . cerium isotopes
 cerium 137
 cerium 144
 . . dysprosium
 . . . dysprosium isotopes
 . . erbium
 . . . erbium isotopes
 . . europium
 . . . europium isotopes
 . . gadolinium
 . . . gadolinium isotopes
 . . holmium
 . . . holmium isotopes
 . . lanthanum
 . . . lanthanum isotopes
 . . lutetium
 . . . lutetium isotopes
 . . neodymium
 . . . neodymium isotopes
 . . praseodymium
 . . . praseodymium isotopes
 . . promethium
 . . . promethium isotopes
 . . samarium
 . . . samarium isotopes
 . . scandium
 . . . scandium isotopes
 . . terbium
 . . . terbium isotopes
 . . thulium
 . . . thulium isotopes
 . . ytterbium
 . . . ytterbium isotopes
 . . yttrium
 . . . yttrium isotopes
- RT alkali vapor lamps
 krep
 neodymium lasers
 transition metals
- ∞ **rare gas compounds**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT ∞ chemical compounds
 excimer lasers
 excimers
 helium compounds
 xenon compounds
- rare gases**
 DEF Gases such as helium, neon, argon,
 krypton, xenon, and radon, all of whose shells of
 planetary electrons contain stable numbers of
 electrons so that the atoms are almost com-
 pletely chemically inactive. Used for inert gases
 and noble gases.
 UF *inert gases*
noble gases
 GS chemical elements
 . **rare gases**
 . . argon
 . . . argon isotopes
 . . helium
 . . . helium isotopes
 liquid helium
 liquid helium 2
 . . krypton
 . . . krypton isotopes
 krypton 85
 . . neon
 . . . liquid neon
 . . . neon isotopes
 . . radon
 . . . radon isotopes
 . . xenon
 . . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135
 gases
 . **rare gases**
 . . argon
 . . . argon isotopes
 . . helium
 . . . helium isotopes
 liquid helium
 liquid helium 2
 . . krypton
 . . . krypton isotopes
 krypton 85
 . . neon
 . . . liquid neon
 . . . neon isotopes
 . . radon
 . . . radon isotopes
 . . xenon
 . . . xenon isotopes
 xenon 129
 xenon 133
 xenon 135
 RT monatomic gases
 nonpolar gases
 Ramsauer effect
- rare gas-halide lasers**
 DEF A class of lasers in which the inert
 gases are used as the amplifying medium.
 GS stimulated emission devices
 . lasers
 . . gas lasers
 . . . **rare gas-halide lasers**
 krypton fluoride lasers
 xenon chloride lasers
 xenon fluoride lasers
- RT coherent light
 laser pumping
 lasing
 light beams
 optical pumping
 stimulated emission
- rarefaction**
 RT antinodes
 compressing
 elastic waves
 expansion
 vacuum
- rarefaction waves*
 USE **elastic waves**
- rarefied gas dynamics**
 GS mechanics (physics)
 . fluid mechanics
 . . fluid dynamics
 . . . gas dynamics
 **rarefied gas dynamics**
- RT atomic beams
 BGK model
 Chapman-Enskog theory
 continuum flow
 ∞ dynamics
 free molecular flow
 Knudsen flow
 low density flow
 low density wind tunnels
 molecular beams
 molecular flow
 plasmas (physics)
 slip flow

rarefied gases

transition flow

rarefied gases

UF *low density gases*

GS *gases*

. **rarefied gases**

. . . cosmic gases
. . . interplanetary gas
. . . interstellar gas

RT

electron gas
free molecular flow
gas density
gas temperature
high temperature gases
low density flow
low density research
molecular gases

rarefied plasmas

GS *gases*

. **rarefied plasmas**

particles

. charged particles
. . . energetic particles
. . . plasmas (physics)
. . . . **rarefied plasmas**
. corpuscular radiation
. . . energetic particles
. . . plasmas (physics)
. . . . **rarefied plasmas**

RT

cathode glow
cold plasmas
collisionless plasmas
electron plasma
nonuniform plasmas

rasers

USE **masers**

raster scanning

DEF Sweeping a cathode ray screen or an antenna beam characterized by a network of parallel sweeps either from side to side or from top to bottom.

GS *imaging techniques*

. **raster scanning**
scanning

. **raster scanning**

RT

cathode ray tubes
computer graphics
display devices
image processing
images
picture tubes
television cameras

rate meters

USE **measuring instruments**

rate of climb indicators

GS *aircraft instruments*

. **rate of climb indicators**

RT

altimeters
flight instruments

∞ *indicators*

rates (per time)

GS **rates (per time)**

. acceleration (physics)
. . . angular acceleration
. . . deceleration
. . . . spin reduction
. . . electron acceleration
. . . high acceleration
. . . high gravity environments
. . . impact acceleration
. . . particle acceleration
. . . plasma acceleration
. . . transverse acceleration
. acoustic velocity
. airspeed
. angular velocity
. bit error rate
. burning rate
. collision rates
. critical velocity
. decay rates
. . . electron decay rate
. drift rate
. escape velocity

. evaporation rate

. exhaust velocity

. flow velocity

. . . solar wind velocity

. flux (rate)

. . . heat flux

. . . magnetic flux

. . . solar flux

. flux density

. . . current density

. . . photon density

. . . radiant flux density

. . . irradiance

. . . . illuminance

. . . . solar constant

. . . lumens

. . . luminous intensity

. . . illuminance

. . . luminance

. . . particle flux density

. . . . electron flux density

. . . . neutron flux density

. . . . proton flux density

. . . radiance

. . . radiancy

. . . solar flux density

. . . . solar constant

. . . sound intensity

. . . zero sound

. ground speed

. group velocity

. heart rate

. . . arrhythmia

. . . bradycardia

. . . tachycardia

. high speed

. hypersonic speed

. ion production rates

. landing speed

. light speed

. loading rate

. low speed

. mass flow rate

. orbital velocity

. phase velocity

. physiological acceleration

. propagation velocity

. pulse rate

. . . pulse repetition rate

. radial velocity

. recombination coefficient

. relativistic velocity

. respiratory rate

. . . dyspnea

. . . hypoventilation

. . . tachypnea

. rotor speed

. signal fading rate

. solar velocity

. star formation rate

. strain energy release rate

. strain rate

. subsonic speed

. supersonic speed

. systole

. terminal velocity

. tip speed

. transmission rate (communications)

. transonic speed

. wind velocity

. . . solar wind velocity

RT

access time

MTBF

solitary waves

time functions

time measurement

volume

ratings

GS **ratings**

. pilot ratings
. . . Cooper-Harper ratings

RT

assessments
consistency
evaluation
normalizing (statistics)
∞ performance
position (title)

ranking

ratiometers

GS *measuring instruments*

. **ratiometers**

rational functions

GS *analysis (mathematics)*

. complex variables
. . . meromorphic functions
. . . . **rational functions**
functions (mathematics)
. meromorphic functions
. . **rational functions**

rations

GS **rations**

. space rations

RT ∞ *food*

ratios

UF *percentage*

GS **ratios**

. aspect ratio
. fineness ratio
. high aspect ratio
. low aspect ratio
. thickness ratio
. Biot number
. bypass ratio
. compression ratio
. fiber volume fraction
. Froude number
. fuel-air ratio
. Grashof number
. Hartmann number
. hematocrit ratio
. indexes (ratios)
. . . KP index
. . . morphological indexes
. . . vegetative index
. . . leaf area index
. . . normalized difference vegetation
index
. isotope ratios
. Laval number
. Lewis numbers
. lift drag ratio
. likelihood ratio
. Mach number
. mass ratios
. . . mass to light ratios
. . . mixing ratios
. . . payload mass ratio
. . . propellant mass ratio
. Mills ratio
. modular ratios
. Nusselt number
. Peclet number
. perveance
. Poisson ratio
. Prandtl number
. pressure ratio
. Rayleigh number
. Reynolds number
. . . high Reynolds number
. . . low Reynolds number
. Brinkman number
. Richardson number
. scale (ratio)
. Schmidt number
. signal to noise ratios
. similarity numbers
. standing wave ratios
. Stanton number
. stress ratio
. Strouhal number
. temperature ratio
. thrust-weight ratio
. void ratio
RT dynamic range
efficiency
fractals
fractions
proportion
psychological tests
refractivity

rats

GS *animals*

. vertebrates
 . . mammals
 . . . rodents
 **rats**

RT animal models
 mice
 pocket mice

RATSCAT program
 USE **radar target scatter site program**

Raven helicopter
 USE **OH-23 helicopter**

ravines
 GS landforms
 . **ravines**

RT canyons
 erosion
 river basins
 topography
 valleys
 water erosion

rawinsondes
 DEF Combinations of raob and rawin; observations of temperature, pressure, relative humidity, and winds-aloft by means of radiosonde and radio direction finding equipment of radar tracking.
 GS measuring instruments
 . meteorological instruments
 . . radiosondes
 . . . **rawinsondes**
 . sondes
 . . radiosondes
 . . . **rawinsondes**
 radio equipment
 . radio transmitters
 . . radiosondes
 . . . **rawinsondes**
 transmitters
 . radio transmitters
 . . radiosondes
 . . . **rawinsondes**

RT dropsondes
 meteorological balloons
 radar tracking
 radio tracking
 wind measurement

ray acoustics
 USE **geometrical acoustics**

ray casting
(added May 1997)
 USE **ray tracing**

ray optics
 USE **geometrical optics**

ray tracing
 DEF A procedure used in the graphical determination of the path followed by a single ray of radiant energy as it travels through media of varying indices of refraction.
 UF *ray casting*
 RT diffraction
 geometrical optics
 geometrical theory of diffraction
 gradient index optics
 grazing incidence
 optical measurement
 reflectance
 tracking (position)
 transmittance

Rayleigh distribution
 GS functions (mathematics)
 . probability density functions
 . . **Rayleigh distribution**
 statistical analysis
 . probability density functions
 . . **Rayleigh distribution**
 statistical distributions
 . **Rayleigh distribution**

RT error analysis
 operations research

radial distribution

Rayleigh equations
 RT ∞ equations
 flow equations
 heat transfer
 thermodynamics

Rayleigh fading
(added June 2000)
 DEF Rapid-fluctuation, small-scale fading resulting from multipath effects, and typically occurring in non-line-of-sight (NLOS) environments.
 GS fading
 . signal fading
 . . **Rayleigh fading**

RT channels (data transmission)
 mobile communication systems
 multipath transmission
 phase shift keying
 radio signals
 reception diversity

Rayleigh number
 GS dimensionless numbers
 . **Rayleigh number**
 ratios
 . **Rayleigh number**

RT Benard cells
 buoyancy
 Rayleigh-Benard convection

Rayleigh scattering
 DEF Any scattering process produced by spherical particles whose radii are smaller than about one tenth the wavelength of the scattered radiation.
 GS scattering
 . wave scattering
 . . electromagnetic scattering
 . . . Mie scattering
 **Rayleigh scattering**

RT airglow
 gray gas
 light scattering
 Raman spectroscopy
 sky

Rayleigh waves
 DEF Two dimensional barotropic disturbances in a fluid having one or more discontinuities in the vorticity profile. Surface waves associated with the free boundary of a solid, such that a surface particle describes an ellipse whose major axis is normal to the surface and whose center is at the undisturbed surface. At maximum particle displacement away from the solid surface the motion of the particle is opposite to that of the wave.
 GS elastic waves
 . seismic waves
 . . **Rayleigh waves**

RT barotropic flow
 fluid flow
 S waves
 two dimensional flow

Rayleigh-Benard convection
 DEF The flow of a fluid contained between horizontal thermally conducting plates and heated from below. The Rayleigh number is proportional to the temperature difference between the plates.
 GS convection
 . free convection
 . . **Rayleigh-Benard convection**
 . . . Benard cells
 fluid flow
 . convective flow
 . . **Rayleigh-Benard convection**
 . . . Benard cells

RT buoyancy-driven flow
 convection currents
 convection-diffusion equation
 convective heat transfer
 forced convection
 hot surfaces
 laminar flow
 Rayleigh number

solar convection (astronomy)
 stellar convection
 thermal boundary layer

Rayleigh-Ritz method
 GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **Rayleigh-Ritz method**

RT ∞ methodology
 variational principles

rayon
 DEF A manufactured fiber composed of regenerated cellulose, as well as fibers composed of regenerated cellulose in which substituents have replaced not more than 15 percent of the hydrogens of the hydroxyl groups.
 GS fibers
 . synthetic fibers
 . . **rayon**
 textiles
 . **rayon**

∞ rays
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT atmospheric radiation
 background noise
 beams (radiation)
 caustics (optics)
 coherent radiation
 continuous radiation
 corpuscular radiation
 electromagnetic radiation
 extraterrestrial radiation
 gamma rays
 lunar rays
 polarized radiation
 pulsed radiation

Raytheon computers
 GS data processing equipment
 . computers
 . . digital computers
 . . . **Raytheon computers**

razor blades
 GS cutters
 . blades (cutters)
 . . **razor blades**

RB-47 aircraft
 USE **B-47 aircraft**

RB-50 aircraft
 USE **B-50 aircraft**

RB-57 aircraft
 USE **B-57 aircraft**

RB-66 aircraft
 USE **B-66 aircraft**

RBCC engines
(added August 1999)
 USE **rocket-based combined-cycle engines**

RBE
 USE **relative biological effectiveness (RBE)**

RC circuits
 UF *RC networks*
 GS circuits
 . **RC circuits**

RT capacitance
 coupling circuits
 discriminators
 electric filters
 electrical resistance
 LC circuits
 network analysis
 network synthesis
 RLC circuits
 time constant

RCA computers

transconductance

RC networks

USE **RC circuits**

RCA computers

GS data processing equipment
. computers
. . . **RCA computers**
. . . RCA spectra 70 computer
. . . RCA-110 computers
RT data processing

RCA Satcom satellites

DEF Domestic commercial communications satellites launched by NASA for the RCA Corporation.

GS artificial satellites
. communication satellites
. . . **RCA Satcom satellites**
commercial spacecraft
. **RCA Satcom satellites**
RT Delta launch vehicle
domestic satellite communications systems

RCA spectra 70 computer

GS data processing equipment
. computers
. . . digital computers
. . . **RCA spectra 70 computer**
. . . RCA computers
. . . **RCA spectra 70 computer**

RCA-110 computers

GS data processing equipment
. computers
. . . RCA computers
. . . **RCA-110 computers**

RCB stars

USE **R Coronae Borealis stars**

RDX

UF *cyclotrimethylene trinitramine*
trinitrotriazocyclohexane
GS explosives
. **RDX**
nitrogen compounds
. azo compounds
. . . **RDX**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . **RDX**
propellants
. **RDX**
RT pyrotechnics
solid propellants
solid rocket propellants

reactance

GS electrical properties
. electrical impedance
. . . **reactance**
impedance
. electrical impedance
. . . **reactance**
RT capacitance
electrical resistance
Foster theory
inductance
Smith chart
transconductance

reactance amplifiers

USE **parametric amplifiers**

reacting flow

(added August 1991)

DEF Fluid flows in which chemical reactions are occurring or potentially can occur. Used for chemically reacting flow.

UF *chemically reacting flow*
GS fluid flow
. **reacting flow**
. . . combustible flow
RT boundary layer combustion
chemical reactions
combustion chemistry

detonable gas mixtures
direct numerical simulation
flame propagation
∞ flow
fuel flow
premixed flames
propellant combustion
reaction kinetics
turbulent combustion
turbulent flow

∞ reaction

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical reactions
human reactions
irritation
nuclear reactions
thrust

reaction bonding

DEF Chemical combining of ingredients to produce silicon nitride ceramics.

GS bonding
. **reaction bonding**
RT aluminum
ceramics
chemical reactions
melting points
nitrogen
oxygen
powder metallurgy
sialon
silicon
silicon nitrides
sintering

∞ reaction control

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT chemical reaction control
∞ control
directional control
Marquardt R4D engine
nuclear reactor control
reactor safety
thrust control

reaction intermediates

(added August 2004)

DEF Substances formed during or contributing towards, the synthesis or metabolism of other products. Reaction intermediates may also be the desired product of two or more initial reacting materials.

GS products
. reaction products
. . . **reaction intermediates**
RT chemical reactions
reaction kinetics
synthesis (chemistry)

reaction jet backpacks

USE **self maneuvering units**

reaction jets

USE **jet flow**
jet thrust

reaction kinetics

UF *chemical kinetics*
reaction rate
GS kinetics
. **reaction kinetics**
RT amino radical
association reactions
autocatalysis
catalysis
chemical equilibrium
chemical reactions
combustion chemistry
Damkohler number
Fischer-Tropsch process
half life
heat of dissociation
interstellar chemistry
irreversible processes
nitrous acid
nuclear reactions

pressure dependence
reacting flow
reaction intermediates
reaction-diffusion equations
reagents
solvation

reaction products

DEF The substances formed in a chemical reaction -- the desired items as well as the unwanted fumes, sludge, residues, etc.

GS products
. **reaction products**
. . . combustion products
. . . soot
. . . reaction intermediates
RT ashes
by-products
effluents
engines
exhaust gases
fumes
gases
infrared suppression
jet engines
precipitates
residues
slags
sludge

reaction rate

USE **reaction kinetics**

reaction time

DEF In human engineering, the interval between an input signal (physiological) or a stimulus (psychophysiological) and the response elicited by the signal. Used for reverse time.

UF *reverse time*
GS time

. **reaction time**
. . . chronaxy
RT adaptation
conditioned reflexes
dynamic characteristics
dynamic response
human reactions
perceptual time constant
physiological effects
pontryagin principle
psychological effects
psychomotor performance
ramp functions
reflexes
refractory period
sensitivity
sensorimotor performance
step functions
time constant
time lag

reaction wheels

UF *inertia wheels*
GS wheels
. **reaction wheels**
RT attitude control
counter-rotating wheels
flywheels

reaction-diffusion equations

(added July 1994)

RT combustion physics
convection-diffusion equation
diffusion coefficient
∞ equations
Ficks equation
partial differential equations
reaction kinetics
transport theory

reactive centers

(added August 2004)

USE **active sites (chemistry)**

reactivity

DEF The ability to react. For proper use of the term, the reaction in question and the conditions should be stated and the parameter used

in measuring reactivity indicated, such as rate, uniformity, or the like.

- GS **reactivity**
 - . photoreactivity
- RT chemical reactions
 - inhour equation
 - nuclear reactions

reactor chemistry

- USE **radiochemistry**

reactor cores

DEF In nuclear reactors, the regions containing the fissionable material.

- GS cores
 - . **reactor cores**
- RT annular core pulse reactors
 - control rods
 - nuclear fuel elements
 - nuclear fuels
 - nuclear reactors
- ∞ operators
 - plasma core reactors
 - reflectometers
 - reflectors
 - void ratio

reactor design

- RT annular core pulse reactors
 - blankets (fission reactors)
 - blankets (fusion reactors)
 - chemical reactors
 - computer aided design
- ∞ design
 - engine design
 - engineering test reactors
 - Hanford reactors
 - high temperature nuclear reactors
 - limiters (fusion reactors)
 - nuclear reactors
 - nuclear research and test reactors
 - offshore reactor sites
 - organic cooled reactors
 - pebble bed reactors
 - product development

reactor fuels

- USE **nuclear fuels**

reactor in flight test program

- USE **RIFT (reactor in flight test)**

reactor materials

- RT annular core pulse reactors
 - blankets (fission reactors)
 - blankets (fusion reactors)
 - chemical reactors
- ∞ construction materials
 - coolants
 - limiters (fusion reactors)
 - loss of coolant
- ∞ materials
 - materials selection
 - moderators
 - nuclear fuel elements
 - nuclear fuels
 - nuclear reactors
 - pressure vessels
 - radiation shielding
 - spent fuels

reactor physics

- GS nuclear physics
 - . **reactor physics**
- RT annular core pulse reactors
 - beta factor
 - Hanford reactors
 - inhour equation
 - nuclear fuel burnup
 - nuclear reactors
- ∞ physics
- ∞ science

reactor safety

DEF Theoretical and experimental investigations of the behavior of reactor types and designs under various real or hypothetical accidents.

- GS safety
 - . **reactor safety**

- RT annular core pulse reactors
 - chemical reactors
 - control rods
 - explosions
 - industrial safety
 - nuclear reactor control
 - nuclear reactors
 - offshore reactor sites
 - radiation hazards
- ∞ reaction control
 - relief valves
 - Transient Reactor Test Facility

reactor startup tests

- GS fuel tests
 - . **reactor startup tests**
- RT initiation
 - nuclear fuels
 - nuclear reactors
 - starting
- ∞ tests

reactor technology

- GS technologies
 - . **reactor technology**
- RT annular core pulse reactors
 - ∞ engineering
 - engineering test reactors
 - Hanford reactors
 - high temperature nuclear reactors
 - Joint European Torus
 - nuclear fuel burnup
 - nuclear reactors
 - nuclear research and test reactors
 - offshore reactor sites
 - organic cooled reactors
 - pebble bed reactors
 - reverse field pinch

∞ reactors

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT annular core pulse reactors
 - chemical reactors
 - electric reactors
 - fast test reactors
 - fusion reactors
 - fusion-fission hybrid reactors
 - high temperature nuclear reactors
 - molten salt nuclear reactors
 - nuclear reactors
 - nuclear research and test reactors
 - plasma core reactors
 - power reactors
 - RIFT (reactor in flight test)
 - SNAPTRAN reactor
 - spheromaks
 - swimming pool reactors
 - thermal reactors
 - tokamak devices
 - water cooled reactors

readers

- UF *reading machines*
- RT character recognition
 - conical scanning
- ∞ detectors
 - magnetic tapes
 - microfilms
 - optical data processing
 - optical scanners
 - pattern recognition
 - punched cards
 - punched tapes
 - reading

reading

- GS **reading**
 - . lip reading
- RT character recognition
 - conical scanning
 - data transmission
 - display devices
 - input
- ∞ interpretation
 - legibility
 - perception
 - printing
 - readers

- scanners
- scanning
- symbols
- visibility

reading machines

- USE **readers**

readjustment

- USE **adjusting**

read-only memory devices

DEF Computer devices for storing data in permanent or nonerasable form. Used for ROM devices.

- UF *ROM devices*
- GS computer components
 - . computer storage devices
 - . . **read-only memory devices**
 - . . . CD-ROM
- RT computer design
 - computer systems design
 - computers

readout

- RT display devices
 - multiple output programs
 - output
 - printers (data processing)
 - printouts
 - remote consoles

reagents

- RT catalysts
 - chemical analysis
 - chemical reactions
 - reaction kinetics

real gases

- GS gases
 - . **real gases**
- RT equations of state
 - gas density
 - ideal gas
 - kinetic theory
 - molecular gases
 - monatomic gases

real numbers

- GS **real numbers**
 - . integers
- RT complex numbers
 - ∞ numbers

real time operation

DEF Time in which reporting on events or recording of events is simultaneous with the events.

- RT automatic control
 - computer programming
 - computers
 - display devices
 - integrated mission control center
 - multiprocessing (computers)
 - onboard data processing
 - windows (computer programs)

real variables

- GS analysis (mathematics)
 - . **real variables**
 - . . Abel function
 - . . asymptotes
 - . . Bessel functions
 - . . . Hankel functions
 - . . Bethe-Salpeter equation
 - . . calculus of variations
 - . . composite functions
 - . . delta function
 - . . differential equations
 - . . . Blasius equation
 - . . . Chandrasekhar equation
 - . . . cosine series
 - . . . Duffing differential equation
 - . . . Falkner-Skan equation
 - . . . hyperbolic differential equations
 - . . . Lamé wave equations
 - . . . partial differential equations
 - biharmonic equations
 - Burger equation
 - Cauchy-Riemann equations

reattached flow

. . . . elliptic differential equations
 Monge-Ampere equation
 Euler-Cauchy equations
 Frowcs Williams-Hawkings equation
 Fokker-Planck equation
 Gauss equation
 Helmholtz vorticity equation
 Liouville equations
 parabolic differential equations
 Poisson equation
 vlasov equations
 Riccati equation
 vorticity equations
 Helmholtz vorticity equation
 . . Einstein equations
 . . existence theorems
 . . extremum values
 . . limits (mathematics)
 . . maxima
 . . minima
 Cramer-Rao bounds
 . . Fourier-Bessel transformations
 . . Green's functions
 . . hyperbolic functions
 . . hyperplanes
 . . Jacobi integral
 . . Jacobi matrix method
 . . kernel functions
 . . Liapunov functions
 . . linear equations
 Frowcs Williams-Hawkings equation
 linear evolution equations
 Riccati equation
 . . Lipschitz condition
 . . measure and integration
 binary integration
 Borel sets
 functional integration
 integral calculus
 J integral
 Lebesgue theorem
 numerical integration
 Runge-Kutta method
 Stieltjes integral
 weighting functions
 . . Neumann problem
 . . nonlinear equations
 cubic equations
 Duffing differential equation
 Monge-Ampere equation
 nonlinear evolution equations
 quadratic equations
 quartic equations
 numerical differentiation
 periodic functions
 trigonometric functions
 cosine series
 sine series
 tangents
 series (mathematics)
 asymptotic series
 Campbell-Hausdorff series
 cosine series
 Fourier series
 Pade approximation
 power series
 Taylor series
 MacLaurin series
 progressions
 Prony series
 sine series
 Sturm-Liouville theory
 . . vector analysis
 collinearity
 coplanarity
 curl (vectors)
 vorticity
 Weierstrass functions
 . . Whittaker functions
 RT aperiodic functions
 calculus
 Cholesky factorization
 complex variables
 continuums
 dependent variables
 differential calculus
 factorization

Fourier analysis
 Hermitian polynomial
 hyperspheres
 infinity
 inflection points
 maximum principle
 monotone functions
 Schmidt method
 stability derivatives
 uniqueness theorem
 ∞ variable

rearward facing steps
 USE **backward facing steps**

reattached flow
 GS fluid flow
 . . viscous flow
 . . boundary layer flow
 **reattached flow**
 RT ∞ attachment
 backward facing steps
 boundary layer separation
 Coanda effect
 Crocco-Lee theory
 flow characteristics
 flow distribution
 separated flow

reattachment
 USE **attachment**

REB
 USE **relativistic electron beams**

rebreathing
 RT air purification
 carbon dioxide concentration
 carbon dioxide removal
 expired air
 life support systems
 spacecraft cabin atmospheres

receivers
 DEF Initial components or sensing elements of measuring systems. For example, the receiver of a thermoelectric thermometer is the measuring thermocouple. Instruments used to detect the presence and to determine the information carried by electromagnetic radiation. Receivers include circuits designed to detect, amplify, rectify, and shape the incoming radio frequency signals received at the antenna in such a manner that the information containing component of the received energy can be delivered to the desired indicating of recording equipment. Used for receiving systems.
 UF *receiving systems*
 GS **receivers**
 . linear receivers
 . logarithmic receivers
 . radar receivers
 . radio receivers
 . . superheterodyne receivers
 . . transmitter receivers
 . . whistler recorders
 . radiotelephones
 . television receivers
 RT amplifiers
 ∞ detectors
 display devices
 duplexers
 electric filters
 instrument receivers
 ∞ receiving
 repeaters
 tanks (containers)
 teleprinters
 teletypewriters
 transmitters

 ∞ **receiving**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *reception*
 RT acquisition
 collection
 delivery
 procurement
 radar reception

radio reception
 receivers
 recognition
 signal reception
 television reception

receiving systems
 USE **receivers**

receptacles (containers)
 USE **containers**

reception
 USE **receiving**

reception diversity
 UF *space diversity*
 GS radio equipment
 . **reception diversity**
 RT fading
 radio antennas
 radio receivers
 radio reception
 Rayleigh fading
 signal fading

receptors (physiology)
 DEF Sensory nerve endings or organs in a living organism that is sensitive to physical or chemical stimuli.
 GS **receptors (physiology)**
 . baroreceptors
 . chemoreceptors
 . gravireceptors
 . . otolith organs
 . mechanoreceptors
 . photoreceptors
 . proprioceptors
 . thermoreceptors
 RT sense organs
 sensitometry

recesses
 RT cavities
 crevasses
 ∞ hollow

recession
 RT ∞ depression
 economics

recharging
 DEF The restoring of discharged electric storage batteries to a charged condition by passing direct current through them in a direction opposite to that of the discharging current.
 RT charge efficiency

reciprocal theorems
 GS theorems
 . **reciprocal theorems**
 RT angles (geometry)
 geometry
 lines (geometry)
 points (mathematics)
 projective geometry

reciprocating engines
 USE **piston engines**

reciprocation
 RT cycles
 mechanical oscillators
 piston engines
 pistons

reciprocity theorem
 DEF Any theorem expressing reciprocal relations for the behavior of some physical system in which input and output can be interchanged without altering the response of the system to a given excitation.
 GS theorems
 . **reciprocity theorem**
 RT acoustic scattering
 electromagnetic fields
 electromagnetic scattering

- wave scattering
- recirculation
 - USE **circulation**
- recirculative fluid flow**
 - GS fluid flow
 - . **recirculative fluid flow**
 - RT backward facing steps
 - boundary layer flow
 - boundary layer separation
 - reversed flow
 - turbulent flow
 - turbulent mixing
 - vortices
- reclamation**
 - GS **reclamation**
 - . materials recovery
 - . . gas recovery
 - . . nuclear fuel reprocessing
 - . . solvolysis
 - . . water reclamation
 - RT environmental cleanup
 - oil recovery
 - ∞ recovery
 - recycling
 - regeneration (engineering)
 - waste management
- recognition**
 - DEF The psychological process in which an observer so interprets the visual or auditory stimuli he receives from a distant object that he forms a correct conclusion as to the exact nature of that object or sound.
 - GS **recognition**
 - . pattern recognition
 - . . character recognition
 - . . graphology
 - . speech recognition
 - . target recognition
 - . timber identification
 - RT acquisition
 - consciousness
 - crop identification
 - identifying
 - IFF systems (identification)
 - ∞ interpretation
 - memory
 - ∞ receiving
 - remote sensing
- recoil atoms**
 - GS atoms
 - . **recoil atoms**
 - RT recoilings
- recoil ions**
 - GS ions
 - . **recoil ions**
 - RT atomic collisions
 - charge exchange
 - electron scattering
 - ion impact
 - ion production rates
 - ion scattering
 - ionic collisions
 - recoilings
- recoil protons**
 - GS particles
 - . charged particles
 - . . protons
 - . . . **recoil protons**
 - . elementary particles
 - . . fermions
 - . . . protons
 - **recoil protons**
 - RT baryons
 - recoilings
- recoilings**
 - RT collisions
 - particle motion
 - recoil atoms
 - recoil ions
- recoil protons
- recombinant DNA*
 - USE **deoxyribonucleic acid**
- recombination coefficient**
 - DEF A measure of the specific rate at which oppositely charged ions join to form neutral particles (a measure of ion recombination).
 - GS coefficients
 - . **recombination coefficient**
 - rates (per time)
 - . **recombination coefficient**
 - RT free electrons
 - ion recombination
 - ionized gases
- recombination reactions**
 - GS **recombination reactions**
 - . atomic recombination
 - . . oxygen recombination
 - . . electron recombination
 - . . radiative recombination
 - . . electron-ion recombination
 - . . radiative recombination
 - . hydrogen recombinations
 - . ion recombination
 - RT atomic collisions
 - capture effect
 - fertilization
 - Suhl effect
- recommendations**
 - GS **recommendations**
 - . suggestion
 - RT decision theory
 - general overviews
- recompression*
 - USE **compressing**
- reconfigurable hardware**
 - (added September 2001)
 - DEF Electronic circuit devices whose architectures can be programmatically modified to suit the application at hand.
 - GS **reconfigurable hardware**
 - . programmable logic devices
 - . . field-programmable gate arrays
 - . . evolvable hardware
 - RT chips (electronics)
 - ∞ hardware
 - integrated circuits
 - logic circuits
- reconnaissance**
 - GS **reconnaissance**
 - . aerial reconnaissance
 - . . Airborne Integrated Reconnaissance System
 - . photoreconnaissance
 - . . spectral reconnaissance
 - RT COSPAS
 - Earth resources
 - observation
 - patrols
 - photogeology
 - SarSat
 - searching
 - situational awareness
 - space observations (from Earth)
 - space surveillance (spaceborne)
 - surveillance
 - surveys
 - terrain analysis
- reconnaissance aircraft**
 - UF *Darkstar unmanned aerial vehicle*
 - GS **reconnaissance aircraft**
 - . A-9 aircraft
 - . Breguet 1150 aircraft
 - . Cessna L-19 aircraft
 - . HS-801 aircraft
 - . SR-71 aircraft
 - . TSR-2 aircraft
 - . U-2 aircraft
 - . Victor MK-1 aircraft
 - . weather reconnaissance aircraft
 - RT aerial reconnaissance
 - ∞ aircraft
- antisubmarine warfare aircraft
 - Earth Resources Survey aircraft
 - flying platforms
 - jet aircraft
 - light aircraft
 - ∞ military aircraft
 - ∞ military aviation
 - ∞ military helicopters
 - observation aircraft
 - pilotless aircraft
 - submersible aircraft
 - supersonic aircraft
 - unmanned aircraft systems
 - utility aircraft
 - V/STOL aircraft
 - Valiant aircraft
 - water takeoff and landing aircraft
 - YF-12 aircraft
- reconnaissance spacecraft**
 - GS **reconnaissance spacecraft**
 - . **reconnaissance spacecraft**
 - . . Inspector satellite
 - . . Midas satellites
 - . . . Midas 2 satellite
 - . . . Midas 3 satellite
 - . . . Midas 4 satellite
 - . . . Midas 5 satellite
 - . . . Midas 6 satellite
 - . . . Midas 7 satellite
 - . . photo reconnaissance spacecraft
 - . . Samos
 - RT aerial reconnaissance
 - artificial satellites
 - manned orbital laboratories
 - manned spacecraft
 - unmanned spacecraft
- reconstruction**
 - GS **reconstruction**
 - . image reconstruction
 - . wave front reconstruction
 - RT construction
 - restoration
- ∞ **recorders**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT cable force recorders
 - data recorders
 - playbacks
 - recording instruments
 - registers (computers)
 - tape recorders
 - VLF emission recorders
- recording**
 - GS **recording**
 - . data recording
 - . data smoothing
 - . magnetic recording
 - . photographic recording
 - . prediction recording
 - RT playbacks
 - plotting
 - privacy
 - ∞ storage
- recording heads**
 - RT data recording
 - magnetic recording
 - magnetic tapes
 - recording instruments
 - tape recorders
 - video equipment
- recording instruments**
 - UF *emissographs*
 - pluviographs*
 - thermograms*
 - GS **recording instruments**
 - . bathythermographs
 - . cable force recorders
 - . flight recorders
 - . . flight load recorders
 - . force vector recorders
 - . mechanograms
 - . oscillographs
 - . plotters
 - . . x-y plotters

records

- . pressure recorders
 - . radiometeorographs
 - . seismographs
 - . . lunar seismographs
 - . tape recorders
 - . . video tape recorders
 - . weather data recorders
 - . whistler recorders
 - RT aircraft instruments
 - automatic control
 - bubble technique
 - control equipment
 - counters
 - data recorders
 - electronic recording systems
 - flight instruments
 - graphs (charts)
 - indicating instruments
 - instrument receivers
 - instrument transmitters
 - ∞ instruments
 - measuring instruments
 - meteorological instruments
 - ∞ pens
 - photographic recording
 - ∞ recorders
 - recording heads
 - sonograms
 - sphygmography
 - transducers
 - VLF emission recorders
- records**
- GS documents
 - . **records**
 - . . video disks
 - RT case histories
 - ∞ data
 - data processing
 - data recording
 - documentation
 - ∞ drawing
 - format
 - histories
 - periodicals
 - playbacks
 - Presidential reports
 - privacy
 - records management
 - reports
 - supplements
 - technical writing
 - ∞ tests
 - texts
- records management**
(added August 1989)
- GS management
 - . information management
 - . . **records management**
 - RT data management
 - information resources management
 - information systems
 - management information systems
 - records
- recoverability**
- RT damage assessment
 - ∞ properties
 - ∞ recovery
- recoverable launch vehicles**
- GS launch vehicles
 - . **recoverable launch vehicles**
 - RT booster recovery
 - launch vehicle configurations
 - multiengine vehicles
 - ∞ recovery
 - recovery parachutes
 - reusable launch vehicles
 - ∞ vehicles
 - ∞ winged vehicles
 - X-33 reusable launch vehicle
 - X-34 reusable launch vehicle

recoverable satellites

USE **recoverable spacecraft**

recoverable spacecraft

UF *recoverable satellites*

- GS reentry vehicles
- . **recoverable spacecraft**
- . . Apollo spacecraft
- . . . Apollo lunar experiment module
- . . Astro vehicle
- . . Gemini B spacecraft
- . . Gemini spacecraft
- . . . Gemini 2 spacecraft
- . . . Gemini (GT-1) spacecraft
- . . Mercury spacecraft
- . . . Aurora 7
- . . . Faith 7
- . . . Friendship 7
- . . . SIGMA 7
- . . reusable spacecraft
- . . . aerospace planes
- HOPE aerospace plane
- HOTOL launch vehicle
- VentureStar launch vehicle
- X-30 vehicle
- X-37 vehicle
- X-40A vehicle
- . . . MARS (Manned Reusable Spacecraft)
- . . . single stage to orbit vehicles
- Delta Clipper
- HOTOL launch vehicle
- . . . space shuttles
- Buran space shuttle
- Hermes manned spaceplane
- Space Shuttle orbiters
- Atlantis (orbiter)
- Challenger (Orbiter)
- Columbia (Orbiter)
- Discovery (Orbiter)
- Endeavour (orbiter)
- Enterprise (Orbiter)
- . . voskhod manned spacecraft
- . . Voskhod 1 spacecraft
- . . Voskhod 2 spacecraft
- . . Vostok spacecraft
- . . . Vostok 1 spacecraft
- . . . Vostok 2 spacecraft
- . . . Vostok 3 spacecraft
- . . . Vostok 4 spacecraft
- . . . Vostok 5 spacecraft
- . . . Vostok 6 spacecraft
- RT booster rocket engines
- boostglide vehicles
- expendable stages (spacecraft)
- hypersonic vehicles
- Inertial Upper Stage
- interim stages (spacecraft)
- lifting reentry vehicles
- maneuverable spacecraft
- manned spacecraft
- military spacecraft
- rendezvous spacecraft
- space capsules
- ∞ spacecraft
- spacecraft recovery
- unmanned spacecraft
- ∞ winged vehicles

∞ **recovery**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT booster recovery
- gas recovery
- loop transfer recovery
- materials recovery
- nuclear fuel reprocessing
- oil recovery
- pressure recovery
- reclamation
- recoverability
- recoverable launch vehicles
- recovery parachutes
- retrieval
- reuse
- spacecraft recovery
- stress relaxation
- stress relieving
- visual discrimination

recovery parachutes

GS parachutes

. **recovery parachutes**

RT booster recovery

- Discoverer recovery capsules
- recoverable launch vehicles
- ∞ recovery
- ribbon parachutes
- spacecraft recovery

recovery vehicles

SN (EXCLUDES RECOVERABLE VEHICLES)

GS **recovery vehicles**

. Assured Crew Return Vehicle

. X-38 crew return vehicle

RT helicopters

∞ military vehicles

trucks

∞ vehicles

recovery zones

RT downrange

landing sites

reentry range

regions

spacecraft recovery

recreation

RT morale

parks

relaxation (physiology)

rest

Starsite program

tourism

urban planning

urban research

recrystallization

DEF In metals, the change from one crystal structure to another, as occurs on heating or cooling through a critical temperature. The formation of a new strain free grain structure from that existing in cold worked metal, usually accomplished by heating.

GS crystallization

. **recrystallization**

RT annealing

heat treatment

laser annealing

∞ metallurgy

nucleation

polygonization

∞ separation

rectangles

GS geometry

. Euclidean geometry

. . polygons

. . . tetragons

. . . . **rectangles**

RT rectangular planforms

rectangular beams

GS structural members

. beams (supports)

. . **rectangular beams**

RT box beams

rectangular coordinates

USE **Cartesian coordinates**

rectangular drainage

USE **drainage patterns**

rectangular panels

GS panels

. **rectangular panels**

planforms

. . rectangular planforms

. . . **rectangular panels**

RT strakes

structural members

wing panels

rectangular planforms

GS planforms

. **rectangular planforms**

. . rectangular panels

. . . rectangular plates

. . . rectangular wings

RT rectangles

wing planforms

rectangular plates

GS planforms

- . rectangular planforms
- . . **rectangular plates**
- structural members
- . plates (structural members)
- . . **rectangular plates**
- RT flat plates
- metal plates
- ∞ plates
- rectangular waveguides**
- GS waveguides
- . **rectangular waveguides**
- RT beam waveguides
- microwave filters
- rectangular wind tunnels**
- GS test facilities
- . wind tunnels
- . . **rectangular wind tunnels**
- RT subsonic wind tunnels
- rectangular wings**
- UF *straight wings*
- GS airfoils
- . wings
- . . unswept wings
- . . . **rectangular wings**
- planforms
- . rectangular planforms
- . . **rectangular wings**
- rectennas**
- DEF Devices that convert microwave energy into direct-current power by utilizing a number of small diodes each with its own diode rectifier. Used for rectifier antennas.
- UF *rectifier antennas*
- GS antennas
- . radio antennas
- . . microwave antennas
- . . . **rectennas**
- microwave equipment
- . microwave antennas
- . . **rectennas**
- radio equipment
- . radio antennas
- . . microwave antennas
- . . . **rectennas**
- RT satellite power transmission
- solar radiation
- spacetennas
- rectification**
- GS **rectification**
- . geometric rectification (imagery)
- RT ∞ condensation
- distillation
- purification
- refining
- rectifier antennas*
- USE **rectennas**
- rectifiers**
- SN (EXCLUDES PHOTOGRAPHIC RECTIFIER)
- DEF Static devices having an asymmetrical conduction characteristic which is used to convert attending current into direct current.
- GS **rectifiers**
- . avalanche diodes
- . . cryosar
- . crystal rectifiers
- . germanium diodes
- . ignitrons
- . thyratrons
- . thyristors
- . . silicon controlled rectifiers
- RT Barritt diodes
- current converters (AC to DC)
- diodes
- electron tubes
- ∞ energy sources
- form factors
- ITO (semiconductors)
- mercury arcs
- metal oxide semiconductors
- ∞ power supplies
- power supply circuits
- semiconductor devices
- solid state devices
- thin films
- rectum**
- GS anatomy
- . digestive system
- . . gastrointestinal system
- . . . intestines
- **rectum**
- recuperators*
- USE **regenerators**
- recursion formulas*
- USE **recursive functions**
- recursive filters*
- (added December 2002)
- USE **IIR filters**
- recursive functions**
- UF *recursion formulas*
- GS functions (mathematics)
- . **recursive functions**
- RT FIR filters
- IIR filters
- LISP (programming language)
- strange attractors
- recycling**
- RT economy
- extraction
- materials recovery
- nuclear fuel reprocessing
- ∞ processing
- reclamation
- refining
- resources
- solvolysis
- spent fuels
- waste management
- red arcs**
- GS atmospheric radiation
- . auroras
- . . auroral arcs
- . . . **red arcs**
- RT ∞ arcs
- auroral ionization
- red blood cells*
- USE **erythrocytes**
- red dwarf stars**
- DEF Red stars of low luminosity, so designated by E. Hertzsprung. Red Dwarf stars are commonly those main sequence stars fainter than an absolute magnitude of plus 1, and are the faintest and coolest of the dwarfs.
- GS celestial bodies
- . stars
- . . main sequence stars
- . . . dwarf stars
- **red dwarf stars**
- RT hot stars
- late stars
- massive compact halo objects
- stellar luminosity
- stellar magnitude
- subdwarf stars
- supernova remnants
- white dwarf stars
- red giant stars**
- DEF Stars whose evolution has progressed to the point where hydrogen core burning has been completed, the helium core has become denser and hotter than originally, and the envelope has expanded to perhaps 100 times its initial size.
- GS celestial bodies
- . stars
- . . giant stars
- . . . **red giant stars**
- carbon stars
- RT asymptotic giant branch stars
- late stars
- M stars
- Mira variables
- S stars
- stellar evolution
- stellar luminosity
- Red Sea**
- GS seas
- . **Red Sea**
- RT Africa
- Asia
- red shift**
- DEF In astronomy, the displacement of observed spectral lines toward the longer wavelengths of the red end of the spectrum.
- RT blue shift
- cosmology
- Doppler effect
- Doppler-Fizeau effect
- galaxies
- Hubble constant
- Hubble diagram
- irregular galaxies
- radial velocity
- red sprites*
- (added January 2000)
- USE **sprites (atmospheric physics)**
- red tide**
- RT fishes
- marine environments
- microorganisms
- oceanography
- plankton
- sea water
- toxicology
- Redeye missile**
- GS missiles
- . antiaircraft missiles
- . . **Redeye missile**
- . surface to air missiles
- . . **Redeye missile**
- RT solid propellant rocket engines
- Redox cells**
- DEF Cells for converting the energy of reactants to electrical energy; an intermediate reductant in the form of liquid electrolyte reacts at the anode in a conventional manner and is regenerated by reaction with a primary fuel.
- GS electrochemical cells
- . electric batteries
- . . **Redox cells**
- RT electrochemistry
- electrolytes
- energy conversion efficiency
- energy storage
- reduced gravity*
- USE **microgravity**
- reduced instruction set computing*
- USE **RISC processors**
- reduced order filters**
- GS linear filters
- . **reduced order filters**
- RT electric filters
- ∞ filters
- Kalman filters
- navigation aids
- ∞ **reduction**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- UF *decrementing*
- diminution*
- shortening*
- RT attenuation
- cleaning
- comminution
- contraction
- damping
- data reduction
- deceleration
- decontamination
- demagnetization
- deoxygenation
- depletion
- depolarization

reduction (chemistry)

dilution
dimming
dispersing
dissipation
drag reduction
elimination
friction reduction
hydrogenolysis
∞ inhibition
iodimetry
leakage
metal working
noise reduction
optimization
pressure reduction
prevention
purification
reduction (chemistry)
refining
relaxation (mechanics)
removal
retarding
shrinkage
sidelobe reduction
spin reduction
stopping
tapering

reduction (chemistry)

GS chemical reactions
. **reduction (chemistry)**
. . deoxidizing
. . hydrogenation
RT ∞ chemistry
dehydrogenation
electrodeposition
electrolysis
metal powder
oxidation
oxidation-reduction reactions
purification
∞ reduction
roasting
smelting
trichloroethylene

reduction (mathematics)

USE **optimization**

redundancy

DEF The existence of more than one means of accomplishing a given task, where all means must fail before there is an overall failure of the system.

RT assurance
communication theory
computer program integrity
correction
error detection codes
information theory
reliability

redundancy encoding

GS coding
. **redundancy encoding**
RT concatenated codes
data transmission
error correcting codes
error correcting devices
error detection codes
Reed-Solomon codes
repetition
signal encoding

redundant components

UF *redundant structures*
RT backups
∞ components
reliability
spare parts
∞ structures

redundant structures

USE **redundant components**

reeds (plants)

GS plants (botany)
. grasses

. . reeds (plants)

Reed-Solomon codes

(added June 1992)
UF *RS codes*
GS error correcting codes
. **Reed-Solomon codes**
RT bit error rate
∞ codes
coding
concatenated codes
decoders
redundancy encoding
signal encoding

reefs

DEF Chains of rocks, sand ridges, or coral at or near the surface of water.
GS landforms
. barriers (landforms)
. . **reefs**
RT atolls
bars (landforms)
coral reefs
island arcs
islands
oceanography
rocks
sands
shallow water
∞ shelves
shoals

reels

RT cables (ropes)
∞ containers
magnetic tapes
spools
tethered balloons
tethered satellites
tethering

reentry

DEF The event occurring when a spacecraft or other object comes back into the sensible atmosphere after going to higher altitudes; the action involved in this event.

GS atmospheric entry
. **reentry**
. . hyperbolic reentry
. . hypersonic reentry
. . . uncontrolled reentry (spacecraft)
. . manned reentry
. . spacecraft reentry
. . . uncontrolled reentry (spacecraft)

RT ablation
aerodynamic heating
aerodynamic stability
aerodynamics
aerothermodynamics
descent
descent trajectories
∞ entry
flight paths
impact prediction
lifting reentry vehicles
low observable reentry vehicles
missiles
∞ rockets
space flight
terminal guidance

reentry bodies

USE **reentry vehicles**

reentry breakup

USE **spacecraft breakup**

reentry communication

GS telecommunication
. space communication
. . spacecraft communication
. . . **reentry communication**
RT blackout (propagation)
manned reentry
plasma sheaths
radio communication

voice communication

reentry decoys

GS countermeasures
. **reentry decoys**
decoys
. **reentry decoys**
reentry vehicles
. **reentry decoys**
RT ballistic missile decoys
missile defense

reentry effects

RT ablation
aerodynamic heating
blackout (propagation)
∞ effects
hypersonic reentry
plasma sheaths
spacecraft breakup
temperature effects

reentry gliders

USE **lifting reentry vehicles**

reentry guidance

GS guidance (motion)
. **reentry guidance**
RT automatic control
descent trajectories
inertial guidance
manual control
satellite guidance
spacecraft guidance
terminal guidance

reentry physics

RT ablation
aerothermochemistry
aerothermodynamics
hypersonic reentry
low observable reentry vehicles
∞ physics
plasma sheaths
∞ science

reentry range

GS distance
. **reentry range**
RT missile ranges
recovery zones

reentry shielding

GS shielding
. heat shielding
. . **reentry shielding**
RT ablation
ablative nose cones
aerodynamic heating
aerothermochemistry
heat sinks
∞ insulated structures
Ludox (trademark)
nose cones
reusable heat shielding
spacecraft shielding
thermal control coatings
thermal insulation
thermal protection

reentry trajectories

DEF Those parts of rocket trajectories that begin at reentry and end at target or at the surface.

GS trajectories
. descent trajectories
. . **reentry trajectories**
RT circumlunar trajectories
flight mechanics
hyperbolic reentry
missile trajectories
moon-Earth trajectories
spacecraft trajectories
terminal guidance

reentry vehicles

DEF Any payload carrying vehicles designed to leave the sensible atmosphere and then return through it to Earth. Used for reentry bodies.

UF *reentry bodies*
 GS **reentry vehicles**
 . boostglide vehicles
 . . X-20 aircraft
 . low observable reentry vehicles
 . maneuverable reentry bodies
 . . lifting reentry vehicles
 . . . FDL-5 reentry vehicle
 . . . HL-10 reentry vehicle
 . . . HLD-35 reentry vehicle
 . . . Janus spacecraft
 . . . M-2 lifting body
 M-2F2 lifting body
 . . . X-20 aircraft
 . . . X-24 aircraft
 . Mark 1 reentry body
 . Mark 2 reentry body
 . Mark 3 reentry body
 . Mark 4 reentry body
 . Mark 5 reentry body
 . Mark 6 reentry body
 . Mark 11 reentry body
 . Mark 12 reentry body
 . Mark 17 reentry body
 . recoverable spacecraft
 . Apollo spacecraft
 . . Apollo lunar experiment module
 . . Astro vehicle
 . . Gemini B spacecraft
 . . Gemini spacecraft
 . . . Gemini 2 spacecraft
 . . . Gemini (GT-1) spacecraft
 . . Mercury spacecraft
 . . . Aurora 7
 . . . Faith 7
 . . . Friendship 7
 . . . SIGMA 7
 . reusable spacecraft
 . . aerospace planes
 . . . HOPE aerospace plane
 . . . HOTOL launch vehicle
 VentureStar launch vehicle
 X-30 vehicle
 X-37 vehicle
 X-40A vehicle
 . . MARS (Manned Reusable
 Spacecraft)
 . . single stage to orbit vehicles
 . . . Delta Clipper
 . . . HOTOL launch vehicle
 . . space shuttles
 . . . Buran space shuttle
 . . . Hermes manned spaceplane
 Space Shuttle orbiters
 Atlantis (orbiter)
 Challenger (Orbiter)
 Columbia (Orbiter)
 Discovery (Orbiter)
 Endeavour (orbiter)
 Enterprise (Orbiter)
 . . voskhod manned spacecraft
 . . Voskhod 1 spacecraft
 . . Voskhod 2 spacecraft
 . . Vostok spacecraft
 . . . Vostok 1 spacecraft
 . . . Vostok 2 spacecraft
 . . . Vostok 3 spacecraft
 . . . Vostok 4 spacecraft
 . . . Vostok 5 spacecraft
 . . . Vostok 6 spacecraft
 . reentry decoys
 . Trailblazer 1 reentry vehicle
 . Trailblazer 2 reentry vehicle
 . X-17 reentry vehicle
 RT ablative nose cones
 aeroshells
 aerothermochemistry
 Athena rocket vehicle
 ∞ ballistic vehicles
 bluff bodies
 ∞ bodies
 ferry spacecraft
 ∞ flight vehicles
 hypersonic vehicles
 ∞ insulated structures
 landing modules
 lifting bodies
 maneuverable spacecraft
 missiles

nose cones
 pyramidal bodies
 ∞ rockets
 space capsules
 ∞ spacecraft
 spacecraft configurations
 terminal guidance
 test vehicles
 ∞ vehicles
 ∞ winged vehicles
reference atmospheres
 UF *standard atmospheres*
 GS models
 . atmospheric models
 . . **reference atmospheres**
 standards
 . **reference atmospheres**
reference stars
 GS celestial bodies
 . stars
 . . **reference stars**
 RT astronomical coordinates
 astronomical photography
 celestial navigation
 laser guide stars
 navigation aids
 space navigation
 ∞ **reference systems**
 SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT bibliographies
 celestial reference systems
 coordinates
 documentation
 indexes (documentation)
 inertial reference systems
 libraries
 spherical coordinates
 ∞ systems
 Wiswesser notations
references (standards)
 USE **standards**
refilling
 GS filling
 . **refilling**
 RT ∞ loading
 replenishment
refining
 GS **refining**
 . electrorefining
 . electroslag refining
 RT alkylation
 beneficiation
 chemical fractionation
 clean fuels
 cleaning
 ∞ conversion
 crystallization
 desulfurizing
 dewaxing
 distillation
 drop transfer
 energy policy
 enrichment
 extraction
 fractionation
 hydrogenation
 hydrometallurgy
 isomerization
 materials recovery
 polymerization
 ∞ processing
 purification
 pyrometallurgy
 rectification
 recycling
 ∞ reduction
 ∞ separation
 smelting
 sublimation
 upgrading

zone melting
reflectance
 DEF The ratio of the radiant flux reflected by a body to that incident upon it. Used for reflection coefficient and reflectivity.
 UF *reflection coefficient*
reflectivity
 GS electromagnetic properties
 . optical properties
 . . **reflectance**
 . . . bidirectional reflectance
 . . . spectral reflectance
 RT absorbance
 albedo
 attenuation coefficients
 birefringence
 bistatic reflectivity
 brightness
 coarseness
 cosmic ray albedo
 Earth albedo
 flow coefficients
 geometrical theory of diffraction
 luster
 MISR (radiometry)
 optical measurement
 optical reflection
 photometry
 ray tracing
 reflection
 reflectometers
 surface properties
 surface roughness effects
 thermochromic coatings
 transmittance
 vegetative index
reflected radiation
 USE **reflected waves**
reflected rays
 USE **reflected waves**
reflected waves
 DEF Shock waves, expansion waves, or compression waves reflected by another wave incident upon a wall or other boundary. In electronics, radio waves reflected from a surface or object. Used for reflected radiation and reflected rays.
 UF *reflected radiation*
reflected rays
 RT corpuscular radiation
 elastic waves
 electromagnetic radiation
 evanescent waves
 incident radiation
 optical reflection
 photon beams
 ∞ radiation
 refracted waves
 retroreflection
 wave reflection
reflecting telescopes
 DEF Telescopes which collect light by means of concave mirrors.
 GS telescopes
 . **reflecting telescopes**
 . . Large Deployable Reflector
 . . Starsat telescope
 RT Cassegrain optics
 honeycomb mirrors
 mirrors
 optical equipment
 optical measuring instruments
 paraboloid mirrors
 reflectors
 Schmidt telescopes
 segmented mirrors
 spectroscopic telescopes
 stratoscope telescopes
reflection
 DEF The process whereby a surface of discontinuity turns back a portion of the incident radiation into the medium through which the radiation approached.
 GS **reflection**

reflection nebulae

- . infrared reflection
- . optical reflection
- . retroreflection
- . signal reflection
- . specular reflection
- . spread reflection
- . ultraviolet reflection
- . wave reflection
- . . Mach reflection

RT bidirectional reflectance
Brewster angle
deflection
diffusion
echelette gratings
echelle gratings
electromagnetic absorption
electromagnetic radiation
impingement
Lambert surface
light (visible radiation)

∞ optics
reflectance
refraction
scattering
transmission
zero sound

reflection coefficient
USE **reflectance**

reflection nebulae

DEF Any celestial body having a hazy cloudy appearance whose brightness results from the scattering by dust particles of light from nearby stars.

GS celestial bodies
. nebulae
. . **reflection nebulae**

RT cosmic dust
interstellar matter
light scattering

reflectivity
USE **reflectance**

reflectometers

DEF Instruments for measuring reflectance.

GS measuring instruments
. optical measuring instruments
. . **reflectometers**
. . . microwave reflectometers
optical equipment
. optical measuring instruments
. . **reflectometers**
. . . microwave reflectometers

RT comparators
directors (antenna elements)
optical measurement
photometers
reactor cores
reflectance
reflector antennas
Schelkunoff principle
two reflector antennas
ultraviolet reflection

reflector antennas

DEF Antennas consisting of one or more reflecting surfaces and a radiating (receiving) feed system.

GS antennas
. directional antennas
. . **reflector antennas**
. . . parabolic antennas
. . . two reflector antennas

RT antenna feeds
antenna radiation patterns
Cassegrain antennas
microwave antennas
multibeam antennas
parabolic reflectors
radar antennas
radar corner reflectors
radar reflectors
radio antennas
reflectometers
reflectors

subreflectors

reflector satellites
USE **passive satellites**

reflectors

GS **reflectors**
. Fresnel reflectors
. parabolic reflectors
. . paraboloid mirrors
. radar reflectors
. . radar corner reflectors
. retroreflectors
. solar reflectors
. . solar collectors
. . solettas
. Bragg reflectors
. wiggler magnets

RT antennas
attenuators
baffles
ceilings (architecture)
deflectors
directors (antenna elements)
etalons
heliostats
Large Deployable Reflector
mirrors
parasitic elements (antennas)
plasma core reactors
radiation shielding
reactor cores
reflecting telescopes
reflector antennas
Schelkunoff principle
subreflectors
telescopes
two reflector antennas

reflexes

GS **reflexes**
. conditioned reflexes
. respiratory reflexes
. . cough
. . Hering-Breuer reflex
. . sneezing
. baroreflexes
. vestibular nystagmus
. . carotid sinus reflex

RT deconditioning
reaction time
vasoconstriction
vasodilation

reforestation

DEF The reestablishment of a tree crop on forest land.

GS management
. resources management
. . forest management
. . . **reforestation**

RT forests
timber inventory

refracted radiation
USE **refracted waves**

refracted rays
USE **refracted waves**

refracted waves

DEF Waves that have had their direction of motion changed by refraction. Used for refracted radiation and refracted rays.

UF *refracted radiation*
refracted rays

RT corpuscular radiation
eikonal equation
elastic waves
electromagnetic radiation
incident radiation
photon beams
reflected waves
refraction
∞ waves

refracting telescopes

DEF Telescopes which collect light by means of a lens or system of lenses.

GS telescopes

. **refracting telescopes**

RT lenses
optical equipment
optical measuring instruments
spectroscopic telescopes
stratoscope telescopes

refraction

DEF The process in which the direction of energy propagation is changed as the result of a change within the propagating medium, or as the energy passes through the interface representing a density discontinuity between the two media. In the first instance, the rays undergo a smooth bending over a finite distance. In the second case, the index of refraction changes through an interfacial layer that is thin compared to the wavelength of the radiation; thus, the refraction is abrupt, essentially discontinuous.

GS **refraction**
. atmospheric refraction
. . radio wave refraction
. birefringence
. . Kerr electrooptical effect

RT asphericity
astigmatism

∞ conduction
deflection
diffraction
distortion
divergence
Huygens principle
isochromatics
lenses
light (visible radiation)
photoelasticity
prisms
reflection
refracted waves
refractivity
sinking
Snells law
transmission
Voigt effect
wave dispersion
wave propagation

refractive index
USE **refractivity**

refractivity

UF *refractive index*

GS electromagnetic properties
. optical properties
. . **refractivity**
. . . photorefractivity

RT atmospheric refraction
birefringence
birefringent coatings
birefringent filters
Brewster angle
gradient index optics
isotropism
light (visible radiation)
opacity
optical thickness
polarization (waves)
ratios
refraction
reflectometers
Snells law
underwater optics

reflectometers

DEF Instruments for measuring the index of refraction of a liquid, gas, or solid.

GS measuring instruments
. optical measuring instruments
. . **reflectometers**
optical equipment
. optical measuring instruments
. . **reflectometers**

RT goniometers
optical measurement
refractivity

refractories

GS refractory materials
. **refractories**

RT ceramics

cermets
 combustion chambers
 forsterite
 furnaces
 hearths
 mortars (material)
 refractory coatings
 rocket engines
 rocket linings
 thermal insulation
 turbines

refractory coatings

DEF Pyrolytic materials used for coating other materials exposed to high temperatures.

GS coatings
 . protective coatings
 . . **refractory coatings**
 RT ceramics
 pyrolytic materials
 refractories
 thermal insulation

refractory materials

UF *high melting compounds*
high temperature materials
pyrographalloy

GS **refractory materials**
 . Ludox (trademark)
 . porcelain
 . refractories
 . refractory metal alloys
 . . molybdenum alloys
 . . . Rene 41
 . . . Rene 63
 . . . Rene 77
 . . . Rene 95
 . . niobium alloys
 . . osmium alloys
 . . rhenium alloys
 . . tantalum alloys
 . . tungsten alloys
 . refractory metals
 . . chromium
 . . . chromium isotopes
 . . iridium
 . . . iridium isotopes
 . . molybdenum
 . . niobium
 . . . niobium isotopes
 niobium 95
 . . osmium
 . . . osmium isotopes
 . . rhenium
 . . . rhenium isotopes
 . . tantalum
 . . . tantalum isotopes
 . . tungsten
 . . . tungsten isotopes

RT ablative materials
 carbides
 Carborundum (trademark)
 ceramics
 cermets
 ∞ chemical compounds
 clays
 high temperature research
 ∞ inorganic materials
 ∞ materials
 ∞ metal compounds
 nonflammable materials
 nozzle walls
 pyrolytic materials
 Scotchlite (trademark)
 sialon

refractory metal alloys

GS alloys
 . heat resistant alloys
 . . **refractory metal alloys**
 . . . molybdenum alloys
 Rene 41
 Rene 63
 Rene 77
 Rene 95
 . . . niobium alloys
 . . . osmium alloys
 . . . rhenium alloys
 . . . tantalum alloys
 . . . tungsten alloys

refractory materials
 . **refractory metal alloys**
 . . molybdenum alloys
 . . . Rene 41
 . . . Rene 63
 . . . Rene 77
 . . . Rene 95
 . . niobium alloys
 . . osmium alloys
 . . rhenium alloys
 . . tantalum alloys
 . . tungsten alloys

refractory metals

DEF Usually alloys of high-melting point, hard-to-work metals, but can also refer to certain unalloyed elements.

GS metals
 . **refractory metals**
 . . chromium
 . . . chromium isotopes
 . . iridium
 . . . iridium isotopes
 . . molybdenum
 . . niobium
 . . . niobium isotopes
 niobium 95
 . . osmium
 . . . osmium isotopes
 . . rhenium
 . . . rhenium isotopes
 . . tantalum
 . . . tantalum isotopes
 . . tungsten
 . . . tungsten isotopes
 refractory materials
 . **refractory metals**
 . . chromium
 . . . chromium isotopes
 . . iridium
 . . . iridium isotopes
 . . molybdenum
 . . niobium
 . . . niobium isotopes
 niobium 95
 . . osmium
 . . . osmium isotopes
 . . rhenium
 . . . rhenium isotopes
 . . tantalum
 . . . tantalum isotopes
 . . tungsten
 . . . tungsten isotopes
 RT heat resistant alloys
 transition metals

refractory period

RT reaction time
 ∞ relaxation
 responses
 time lag

Refrasil (trademark)

USE **fibers**
silicon dioxide

refrigerants

RT absorbers (materials)
 absorption cooling
 air conditioning
 ammonia
 brines
 coolants
 cooling systems
 fluorohydrocarbons
 freon
 ice
 refrigerating
 refrigerating machinery
 refrigerators
 solid nitrogen

refrigerating

RT air conditioning
 air cooling
 cold traps
 condensing
 coolers
 cooling
 cooling systems

cryogenic cooling
 cryogenic equipment
 cryogenics
 defrosting
 dehumidification
 freezing
 freon
 frozen foods
 humidity
 low temperature
 magnetic cooling
 preserving
 refrigerants
 refrigerators
 temperature
 temperature control
 temperature distribution
 thermoacoustic refrigerators
 thermoelectric cooling
 ventilation

refrigerating machinery

GS **refrigerating machinery**
 . refrigerators
 . . thermoacoustic refrigerators
 RT absorbers (equipment)
 air conditioning
 air conditioning equipment
 blowers
 compressors
 condensers (liquefiers)
 coolers
 cooling systems
 cryogenic equipment
 evaporators
 heat pumps
 ∞ machinery
 refrigerants
 temperature control
 thermoelectric cooling

refrigerators

GS refrigerating machinery
 . **refrigerators**
 . . thermoacoustic refrigerators
 RT coolers
 defrosting
 refrigerants
 refrigerating

Refsat

DEF A proposed satellite that broadcasts navigation aiding signals to low cost user terminals which employ the constellation of 24 NavStar Global Positioning System (GPS) satellites for position determination.

GS artificial satellites
 . navigation satellites
 . . **Refsat**
 RT NAVSTAR satellites
 synchronous satellites

refueling

UF *fueling*
 GS **refueling**
 . air to air refueling
 RT aircraft hazards
 flight operations
 fuel consumption
 fuel contamination
 fuel control
 fuel systems
 ground support equipment
 preflight operations
 propellant transfer
 replenishment
 retractable equipment

∞ regeneration

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT regeneration (engineering)
 regeneration (physiology)

regeneration (engineering)

UF *regenerative cycles*
 RT ∞ generation
 positive feedback
 reclamation

regeneration (physiology)

∞ regeneration

regeneration (physiology)

UF *bioregeneration*
RT physiology
∞ regeneration

regenerative cooling

DEF The cooling of a part of an engine by the fuel or propellant being delivered to the combustion chamber; specifically, the cooling of a rocket engine combustion chamber or nozzle by circulating the fuel or oxidizer, or both, around the part to be cooled.

GS cooling
. **regenerative cooling**
RT heat exchangers
precooling
regenerators

regenerative cycles

USE **regeneration (engineering)**

regenerative feedback

USE **positive feedback**

regenerative fuel cells

GS electric generators
. direct power generators
. . fuel cells
. . . **regenerative fuel cells**
electrochemical cells
. fuel cells
. . **regenerative fuel cells**
RT biochemical fuel cells
phosphoric acid fuel cells
storage batteries

regenerators

DEF Devices used in a thermodynamic process for capturing and returning to the process heat that would otherwise be lost. Used for recuperators.

UF *recuperators*
GS **regenerators**
. thermosiphons
RT energy storage
heat exchangers
heat sinks
regenerative cooling
tube heat exchangers

Regge poles

RT angular momentum
∞ poles
Pomeranchuk theorem
pomeron
scattering cross sections

regimes

RT communities
culture (social sciences)
environments
governments
nations
politics

regional planning

GS planning
. **regional planning**
. . urban planning
RT conservation
farmlands
forest management
forests
harbors
highways
industrial areas
lakes
land management
megalopolises
parks
residential areas
rural areas
rural land use
St Louis-Kansas City Corridor (MO)
suburban areas
urban development

urban transportation

regions

UF *zones*
GS **regions**
. auroral zones
. Brillouin zones
. Central America
. Central Atlantic Region (US)
. Central Europe
. D region
. E region
. . E-1 layer
. . E-2 layer
. . sporadic E layer
. equatorial regions
. F region
. . F 1 region
. . F 2 region
. Fresnel region
. Great Basin (US)
. Great Plains Corridor (North America)
. Gutenberg zone
. habitats
. lumbar region
. M region
. Middle East
. New England (US)
. null zones
. Pacific Northwest (US)
. Panama Canal Zone
. pelagic zone
. polar regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
. remote regions
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
. Sand Hills Region (GA-NC-SC)
. Sand Hills Region (NE)
. sciatic region
. Southeast Asia
. Southern California
. Southern Yemen
. temperate regions
. tropical regions
. . Amazon region (South America)
. . intertropical convergent zones
RT asteroid belts
∞ belts
boundaries
Earth ionosphere
∞ layers
recovery zones
∞ sectors
sites

∞ **registers**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT registers (air circulation)
registers (computers)

registers (air circulation)

RT cooling systems
∞ registers

registers (computers)

DEF Devices capable of retaining information, often that contained in a small subset (e.g., one word) of the aggregate information in a digital computer.

GS computer components
. computer storage devices
. . **registers (computers)**
. . . accumulators (computers)
RT central processing units
∞ recorders
∞ registers

shift registers

regolith

DEF The layer rock or blanket or unconsolidated rocky debris of any thickness that overlies bedrock and forms the surface of the land.

GS rocks
. **regolith**
RT basalt
bedrock
breccia
carbonaceous rocks
coal
core-mantle boundary
Earth mantle
Earth resources
enstatite
geology
igneous rocks
lava
lithology
lunar geology
lunar mantle
lunar rocks
magma
olivine
peridotite
pyroxenes
rock intrusions
selenology
stratigraphy

regression (statistics)

USE **regression analysis**

regression analysis

DEF The statistical counterpart or analog of the functional expression, in ordinary mathematics, of one variable in terms of others.

UF *regression (statistics)*
GS statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . **regression analysis**
. . . . regression coefficients
RT autoregressive moving average
autoregressive processes
clumps
correlation
covariance
experiment design
factor analysis
forecasting
least squares method
quality control
significance
statistical tests
variability

regression coefficients

GS coefficients
. **regression coefficients**
statistical analysis
. variance (statistics)
. . multivariate statistical analysis
. . . regression analysis
. . . . **regression coefficients**
RT correlation
forecasting
mathematical models
quality control

regularity

RT continuity (mathematics)
convergence
irregularities
∞ normalizing
∞ patterns
periodic variations
physiology
∞ properties
trend analysis

regulation

USE **control**

regulations

RT air law
allowances
∞ control

- copyrights
 - crime
 - law (jurisprudence)
 - liabilities
 - licensing
 - patent policy
 - penalties
 - police
 - policies
 - procurement policy
 - prohibition
 - rules
- regulators**
- SN (LIMITED TO DEVICES)
 - GS control equipment
 - . **regulators**
 - .. automatic control valves
 - ... pressure regulators
 - ... relief valves
 - .. cryostats
 - .. current regulators
 - .. flow regulators
 - .. fuel flow regulators
 - .. oxygen regulators
 - .. speed regulators
 - .. thermostats
 - .. voltage regulators
 - RT actuators
 - automatic control
 - ∞ control
 - controllers
 - gibberellins
 - speed control
- regulatory mechanisms (biology)**
- SN (RESTRICTED TO THE REGULATION OF PHYSIOLOGICAL AND PHYSIOCHEMICAL PROCESSES--EXCLUDES ECOLOGICAL, GENETIC, OR BIOTECHNOLOGICAL REGULATION)
 - DEF Specific processes by which living organisms control the rates of biochemical and physiological reactions involved in processes such as metabolism and cellular differentiation.
 - RT biocontrol systems
 - calmodulin
 - ∞ control
 - hormones
 - thermoregulation
- Regulus missile**
- GS missiles
 - . surface to surface missiles
 - .. **Regulus missile**
 - RT solid propellant rocket engines
 - turbojet engines
- reheating*
- USE **heating**
- reignition*
- USE **ignition**
- reinforced plastics**
- DEF Plastics with some strength properties greatly superior to those of the base resin, resulting from the presence of high-strength fillers imbedded in the composition. Note: The reinforcing fillers are usually fibers, fabrics, or mats made of fibers. The plastic laminates are the most common and strongest.
- GS composite materials
 - . polymer matrix composites
 - .. **reinforced plastics**
 - ... carbon fiber reinforced plastics
 - ... carbon-phenolic composites
 - ... glass fiber reinforced plastics
 - ... micarta
 - plastics
 - . **reinforced plastics**
 - .. carbon fiber reinforced plastics
 - ... carbon-phenolic composites
 - ... glass fiber reinforced plastics
 - .. micarta
 - RT aircraft survivability
 - aramid fiber composites
 - aramid fibers
 - boron fibers
 - boron reinforced materials
 - fiber composites
- graphite-epoxy composites
 - hybrid composites
 - laminates
 - reinforcement (structures)
 - thermosetting resins
- reinforced plates**
- GS structural members
 - . plates (structural members)
 - .. **reinforced plates**
 - RT anisotropic plates
 - corrugated plates
 - laminates
 - plastic plates
 - reinforcement (structures)
- reinforced shells**
- GS shells (structural forms)
 - . **reinforced shells**
 - RT anisotropic shells
 - corrugated shells
 - cylindrical shells
 - fluid filled shells
 - hemispherical shells
 - liquid filled shells
 - metal shells
 - orthotropic shells
 - plastic shells
 - reinforcement (structures)
 - reinforcement rings
 - shell stability
 - spherical shells
 - thin walled shells
 - toroidal shells
 - wind tunnel walls
- ∞ **reinforcement**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT reinforcement (psychology)
 - reinforcement (structures)
- reinforcement (psychology)**
- GS **reinforcement (psychology)**
 - . reward (psychology)
 - RT learning
 - motivation
 - ∞ reinforcement
 - self stimulation
- reinforcement (structures)**
- RT bulkheads
 - composite materials
 - fillers
 - longerons
 - reinforced plastics
 - reinforced plates
 - reinforced shells
 - ∞ reinforcement
 - reinforcement rings
 - ribs (supports)
 - rigid structures
 - ring structures
 - stiffening
 - strakes
 - stringers
 - structural members
 - structural stability
 - structural strain
 - supports
 - thick walls
 - wire
 - wire cloth
- reinforcement rings**
- GS ring structures
 - . **reinforcement rings**
 - RT reinforced shells
 - reinforcement (structures)
 - ribs (supports)
 - ∞ rings
- reinforcing fibers**
- GS fibers
 - . **reinforcing fibers**
 - .. aramid fibers
 - ... Kevlar (trademark)
 - .. boron fibers
 - .. carbon fibers
 - RT boron reinforced materials
- braided composites
 - carbon fiber reinforced plastics
 - carbon-carbon composites
 - ceramic fibers
 - ceramic matrix composites
 - composite materials
 - Dacron (trademark)
 - debonding (materials)
 - fiber composites
 - fiber orientation
 - fiber pullout
 - fiber pushout
 - fiber volume fraction
 - fiber-matrix interfaces
 - glass fiber reinforced plastics
 - glass fibers
 - graphite-epoxy composites
 - hybrid composites
 - kink bands
 - lay-up
 - metal fibers
 - metal matrix composites
 - micromechanics
 - reinforcing materials
 - resin transfer molding
 - superhybrid materials
 - synthetic fibers
 - whisker composites
 - woven composites
- reinforcing materials**
- DEF Fibers, filaments, fabrics, and other substances used for strengthening of matrices in composite materials.
 - RT aramid fibers
 - composite materials
 - fabrics
 - fiber composites
 - fibers
 - ∞ filaments
 - ∞ materials
 - matrix materials
 - particulate reinforced composites
 - reinforcing fibers
- Reissner theory**
- RT Mindlin plates
 - plates (structural members)
 - stress analysis
 - ∞ theories
- Reissner-Mindlin plates*
(added April 1998)
- USE **Mindlin plates**
- Reissner-Nordstrom solution**
- DEF The unique solution of general relativity theory describing a nonrotating, charged black hole.
 - RT astronomical models
 - black holes (astronomy)
 - charged particles
 - gravitational effects
 - relativity
- rejection**
- RT acceptability
 - elimination
 - evaluation
 - exclusion
 - removal
 - selection
- relational data bases**
(added June 1997)
- GS data bases
 - . **relational data bases**
 - RT architecture (computers)
 - computer systems design
 - data base management systems
 - data management
 - data retrieval
- ∞ **relationships**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - UF *interrelationships*
 - RT approximation
 - duality theorem
 - homology

relative biological effectiveness (RBE)

stress-strain relationships

relative biological effectiveness (RBE)

UF *RBE*

GS biological effects

. **relative biological effectiveness (RBE)**

RT ∞ biology

physiological effects

relativistic effects

RT Bose-Einstein condensates
dimensions

∞ effects

gravitational lenses

mass

relativity

time

velocity

relativistic electron beams

DEF Beams of electrons traveling at approximately the speed of light. Used for REB.

UF *REB*

GS beams (radiation)

. particle beams

. . . electron beams

. . . . **relativistic electron beams**

particles

. charged particles

. . . energetic particles

. . . . electrons

. high energy electrons

. **relativistic electron beams**

. corpuscular radiation

. . electron radiation

. . . electron beams

. . . . **relativistic electron beams**

. . . energetic particles

. . . . electrons

. high energy electrons

. **relativistic electron beams**

. elementary particles

. . fermions

. . . leptons

. . . . electrons

. high energy electrons

. **relativistic electron beams**

. relativistic particles

. . **relativistic electron beams**

RT beam plasma amplifiers

beta particles

controlled fusion

diffraction radiation

electron bombardment

electron scattering

inertial fusion (reactor)

ionizing radiation

plasma heating

plasma jets

plasma-particle interactions

relativistic particles

DEF Particles with a velocity so large that their relativistic mass exceeds their rest mass by an amount which is significant for the computation or other considerations at hand.

GS particles

. **relativistic particles**

. . relativistic electron beams

RT Hamilton-Jacobi equation

relativistic plasmas

GS particles

. charged particles

. . energetic particles

. . . plasmas (physics)

. . . . **relativistic plasmas**

. corpuscular radiation

. . energetic particles

. . . plasmas (physics)

. . . . **relativistic plasmas**

RT Astron thermonuclear reactor

bremsstrahlung

cosmic plasma

electron plasma

electron-positron plasmas

gravitational collapse

high temperature plasmas

pinch effect

plasma jets

plasma radiation

plasma-particle interactions

ponderomotive forces

relativistic theory

UF *Wightman theory*

RT ∞ theories

relativistic velocity

DEF A velocity sufficiently high that some properties of a particle of this velocity have values significantly different from those obtaining when the particle is at rest.

GS rates (per time)

. **relativistic velocity**

velocity

. **relativistic velocity**

RT high speed

∞ hypervelocity

light speed

particle motion

relativity

DEF A principle that postulates the equivalence of the description of the universe, in terms of physical laws, by various observers, or for various frames of reference. Used for geometrodynamics and space-time continuum.

UF *geometrodynamics*

space-time continuum

RT big bang cosmology

continuum

differential geometry

event horizon

field theory (physics)

grand unified theory

gravitational lenses

Gravity Probe B

inertial reference systems

light-cone expansion

Lorentz contraction

naked singularities

nonrelativistic mechanics

paradoxes

ponderomotive forces

quantum mechanics

Reissner-Nordstrom solution

relativistic effects

Schwarzschild metric

space-time functions

string theory

supergravity

tensor analysis

unified field theory

∞ relaxation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT cross relaxation

molecular relaxation

refractory period

relaxation (mechanics)

relaxation (physiology)

relaxation method (mathematics)

relaxation (mechanics)

GS **relaxation (mechanics)**

. spin-lattice relaxation

. stress relaxation

RT ∞ equilibrium

expansion

magnetic relaxation

molecular relaxation

nuclear relaxation

∞ reduction

∞ relaxation

relaxation method (mathematics)

relaxation time

residual stress

strain energy release rate

viscoelasticity

viscoplasticity

relaxation (physiology)

RT compressibility effects

massaging

recreation

∞ relaxation

work-rest cycle

relaxation method (mathematics)

DEF An iterative numerical method for solving elliptic partial differential equations, e.g., a Poisson equation.

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . **relaxation method**

(mathematics)

RT computational fluid dynamics

∞ methodology

∞ relaxation

relaxation (mechanics)

relaxation oscillators

GS oscillators

. **relaxation oscillators**

. . phantastrons

relaxation time

DEF In general, the time required for a system, object, or fluid to recover to a specified condition or value after disturbance. Specifically, the time taken by an exponentially decaying quantity to decrease in amplitude by a factor of $1/e = 0.3679$.

GS time

. **relaxation time**

RT ∞ equilibrium

excitation

Maxwell bodies

molecular relaxation

relaxation (mechanics)

spin-lattice relaxation

time constant

∞ relay

SN

(USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

disconnect devices

electric contacts

electric relays

logic circuits

radio relay systems

repeaters

Relay 1 satellite

GS artificial satellites

. communication satellites

. . Relay satellites

. . . **Relay 1 satellite**

Relay 2 satellite

GS artificial satellites

. communication satellites

. . Relay satellites

. . . **Relay 2 satellite**

Relay satellites

GS artificial satellites

. communication satellites

. . **Relay satellites**

. . . Relay 1 satellite

. . . Relay 2 satellite

RT

Advent Project

Thor Delta launch vehicle

transoceanic communication

releasing

GS **releasing**

. fiber pullout

. fiber pushout

RT

decoupling

∞ discharge

disconnect devices

dispersing

dumping

ejection

emission

emptying

exhaust emission

materials handling

relieving

scattering

spilling

unloading

venting

reliability

DEF Of a piece of equipment or a system, the probability of specified performance for a given period of time when used in the specified manner.

GS **reliability**

. aircraft reliability
 . circuit reliability
 . component reliability
 . software reliability
 . . computer program integrity
 . spacecraft reliability
 . structural reliability

RT

acceptability
 accuracy
 aircraft survivability
 allowances
 assurance
 censored data (mathematics)
 computer systems performance
 confidence
 confidence limits
 consistency
 cumulative damage
 ∞ design
 design analysis
 downtime
 durability
 dynamic characteristics
 errors
 estimates
 expectation
 failure analysis
 forecasting
 maintainability
 maintenance
 maximum likelihood estimates
 mechanical properties
 missile design
 MTBF
 nondestructive tests
 ∞ performance
 performance prediction
 precision
 prelaunch problems
 probability theory
 product development
 production management
 productivity
 quality
 quality control
 redundancy
 redundant components
 risk
 safety factors
 sampling
 specifications
 stability
 standards
 statistical analysis
 statistical distributions
 statistical tests
 ∞ statistics
 system effectiveness
 systems compatibility
 systems engineering
 ∞ tests
 tolerances (mechanics)
 total quality management
 validity
 variability
 vulnerability

reliability analysis

RT ∞ analyzing
 design analysis
 performance prediction
 preventive maintenance
 software reliability
 trend analysis

reliability control

USE **quality control**
reliability engineering

reliability engineering

DEF The engineering discipline which formulates an acceptable combination of design

features, repair philosophy, and maintenance resources to achieve a specified level of reliability as an operational requirement, at optimum life cycle costs.

UF *reliability control*

RT complex systems
 concurrent engineering
 ∞ engineering
 fault detection
 fault tolerance
 lessons learned
 performance prediction
 quality control
 sneak circuit analysis
 system effectiveness
 system identification
 systems compatibility
 systems engineering
 Taguchi methods
 total quality management
 value engineering

relic radiation

DEF Background radiation resulting from the primordial big bang.

RT astronomy
 astrophysics
 background radiation
 big bang cosmology
 cosmic microwave background
 radiation
 extraterrestrial radiation
 large-scale structure of the universe
 Microwave Anisotropy Probe
 Population III stars
 ∞ radiation
 Sunyaev-Zeldovich effect
 universe

relief maps

GS maps
 . **relief maps**
 RT digital elevation models
 hypsography
 photogrammetry
 photomaps
 topography

relief valves

GS control equipment
 . regulators
 . . automatic control valves
 . . . **relief valves**
 valves
 . automatic control valves
 . . **relief valves**
 RT automatic control
 bypasses
 fuel tank pressurization
 fuel valves
 gas valves
 hydraulic equipment
 pressure regulators
 reactor safety
 venting
 vents

relieving

GS **relieving**
 . stress relieving
 RT ∞ discharge
 exhausting
 purging
 releasing

relocation

RT installing
 positioning
 replacing

reluctance

DEF The ratio of the magnetomotive force to the magnetic flux through any cross section of the magnetic circuit.

UF *reluctivity*
 GS magnetic properties
 . **reluctance**
 RT magnetic permeability

magneto-resistivity

*reluctivity*USE **reluctance***remagnetization*USE **magnetization****remanence**

DEF The magnetic flux density which remains in a magnetic circuit after the removal of an applied magnetomotive force. Also called retentivity.

GS magnetic properties

. **remanence**
 RT flux density
 paleomagnetism

*remelting*USE **melting****remodulation**

RT demodulation
 intermodulation
 modulation

remote consoles

GS computer components
 . peripheral equipment (computers)
 . . **remote consoles**
 consoles
 . **remote consoles**
 data processing equipment
 . peripheral equipment (computers)
 . . **remote consoles**
 RT computer components
 computer graphics
 data links
 data processing terminals
 display devices
 plotters
 readout

remote control

DEF Control of an operation from a distance, especially by means of electricity or electronics; a controlling switch, lever, or other device used in this kind of control. Used for electromagnetic control.

UF *electromagnetic control*GS **remote control**

. radio control
 RT aircraft control
 antiradiation missiles
 attitude control
 automatic control
 ∞ automation
 cascade control
 ∞ control
 control boards
 controllers
 digital command systems
 dynamic characteristics
 electric control
 electronic control
 engine control
 flight control
 ground based control
 guidance (motion)
 hydraulic control
 ∞ instruments
 Kalman-Schmidt filtering
 manipulators
 manual control
 missile control
 optical control
 pneumatic control
 remote manipulator system
 rocket engine control
 satellite control
 servocontrol
 servomechanisms
 spacecraft control
 teleoperators
 telerobotics
 temperature control
 turbojet engine control

remote handling

visual control

remote handling

UF *telechirics*
GS materials handling
. **remote handling**
RT manipulators
payload deployment & retrieval system
Space Station Mobile Servicing System
teleoperators

remote manipulator system

DEF Devices used in space for deploying and retrieving payloads by remote control; also used for space maintenance and/or servicing of satellites and other spacecraft.

GS manipulators
. **remote manipulator system**
. . Space Station Mobile Servicing System
RT payload deployment & retrieval system
payload retrieval (STS)
remote control
space maintenance
space transportation system
∞ systems

remote regions

GS regions
. **remote regions**
. . Antarctic regions
. . . McMurdo sound
. . . Ross ice shelf
. . Arctic regions
. . . subarctic regions
RT deserts
Mojave Desert (CA)
offshore reactor sites
Sahara Desert (Africa)
wilderness

remote sensing

DEF The collection of information about an object or phenomena by a recording device that is not in physical contact with it. The term is usually restricted to mean the methods for, and activity of, recording features and phenomena of the Earth surface from a remote platform or vehicle. Typically the methods used record reflected or radiated electromagnetic energy, such as radiometry, photometry, spectrometry, and photographic and radar techniques.

GS detection
. **remote sensing**
RT aeromagnetism
airborne radar
Aqua spacecraft
Aura spacecraft
band ratioing
CALIPSO (Pathfinder satellite)
CERES (experiment)
change detection
CloudSat
cluster analysis
Coastal Zone Color Scanner
data products
desertification
differential absorption lidar
DMSP satellites
Earth Observing System (EOS)
Earth resources
Envisat-1 satellite
EOS data and information system
Feature Identification and Location
Exper
FIRE (climatology)
geographic distribution
geographic information systems
GRACE mission
image analysis
image classification
imaging spectrometers
in situ measurement
ISCCP Project
Landsat 6
Landsat 7
leaf area index

low Earth orbits
Mapsat
MISR (radiometry)
Mission to Planet Earth
MODIS (radiometry)
multisensor applications
multisensor fusion
Multispectral Resource Sampler
NOAA 19 satellite
normalized difference vegetation index
NPOESS
observation scheduling
Orbiting Carbon Observatory (OCO)
OSTA-3 payload
pixels
planetary geology
plant stress
Priroda module
recognition
Shuttle Imaging Radar
small satellite technology
space station polar platforms
spectral mixture analysis
Surface Meteorology and Solar Energy project
Surface Radiation Budget project
swath width
Terra spacecraft
thematic mappers (LANDSAT)
vegetative index

remote sensors

GS **remote sensors**
. thematic mappers (LANDSAT)
RT Advanced Microwave Sounding Unit
Advanced Very High Resolution Radiometer
AgRISTARS project
airborne lasers
airborne radar
automatic weather stations
Coastal Zone Color Scanner
crop identification
crop inventories
data acquisition
data collection platforms
data products
∞ detectors
Earth resources
Earthnet
EROS (satellites)
Feature Identification and Location
Exper
geographic applications program
haze detection
image classification
imaging radar
measuring instruments
multisensor applications
ocean color scanner
∞ probes
radiometric resolution
satellite-borne instruments
Sea-viewing Wide Field-of-view Sensor
∞ sensors
spaceborne lasers
transducers
wildlife radiolocation

remotely piloted vehicles

UF *RPV*
RT ∞ aircraft
DAST program
drone aircraft
highly maneuverable aircraft
Jindivik target aircraft
oblique wings
orbital maneuvering vehicles
pilotless aircraft
target drone aircraft
unmanned aircraft systems
unmanned ground vehicles
VATOL aircraft
∞ vehicles

removal

GS **removal**
. carbon dioxide removal

. paint removal
RT anodic stripping
cancellation
clearing
deletion
depletion
disposal
dissipation
ejection
emptying
evacuating (transportation)
evacuating (vacuum)
exhausting
expulsion
extraction
materials recovery
∞ reduction
rejection
∞ separation
unloading
wear

REMS

USE **rapid eye movement state**

renal calculi

USE **calculi**
kidney stones

renal function

RT ∞ functions
glomerulus
kidney stones
kidneys
vasopressins

rendezvous

DEF The event of two or more objects meeting with zero relative velocity at a preconceived time and place. The point in space at which such an event takes place, or is to take place.

GS rendezvous

. space rendezvous
. . orbital rendezvous
. . . Earth orbital rendezvous
. . . lunar orbital rendezvous

RT Apollo Soyuz test project
flight mechanics
interception
maneuvers
orbital mechanics

rendezvous guidance

GS guidance (motion)
. **rendezvous guidance**
RT Automated Transfer Vehicle
autonomous docking
command guidance
homing devices
injection guidance
midcourse guidance
orbital rendezvous
proportional navigation
satellite guidance
spacecraft guidance
terminal guidance

rendezvous spacecraft

GS maneuverable spacecraft
. **rendezvous spacecraft**
RT Columbus space station
command guidance
ferry spacecraft
interplanetary spacecraft
lunar spacecraft
manned spacecraft
military spacecraft
orbital rendezvous
recoverable spacecraft
space capsules
space stations
spacecrew transfer
unmanned spacecraft

rendezvous trajectories

GS trajectories
. **rendezvous trajectories**
RT ascent trajectories
circumlunar trajectories
Earth orbital rendezvous

Earth-Moon trajectories
 flight mechanics
 interplanetary trajectories
 Near Earth Asteroid Rendezvous
 Mission
 orbital mechanics
 orbital rendezvous
 Rosetta mission
 space rendezvous
 spacecraft docking
 spacecraft trajectories

Rene 41

GS alloys
 . chromium alloys
 . . **Rene 41**
 . cobalt alloys
 . . **Rene 41**
 . heat resistant alloys
 . . refractory metal alloys
 . . . molybdenum alloys
 **Rene 41**
 . nickel alloys
 . . **Rene 41**
 refractory materials
 . refractory metal alloys
 . . molybdenum alloys
 . . . **Rene 41**
 RT wrought alloys

Rene 63

GS alloys
 . chromium alloys
 . . **Rene 63**
 . cobalt alloys
 . . **Rene 63**
 . heat resistant alloys
 . . refractory metal alloys
 . . . molybdenum alloys
 **Rene 63**
 . nickel alloys
 . . **Rene 63**
 refractory materials
 . refractory metal alloys
 . . molybdenum alloys
 . . . **Rene 63**
 RT wrought alloys

Rene 77

GS alloys
 . chromium alloys
 . . **Rene 77**
 . cobalt alloys
 . . **Rene 77**
 . heat resistant alloys
 . . refractory metal alloys
 . . . molybdenum alloys
 **Rene 77**
 . nickel alloys
 . . **Rene 77**
 refractory materials
 . refractory metal alloys
 . . molybdenum alloys
 . . . **Rene 77**
 RT wrought alloys

Rene 95

DEF High-strength nickel-base superalloy.
 GS alloys
 . chromium alloys
 . . **Rene 95**
 . cobalt alloys
 . . **Rene 95**
 . heat resistant alloys
 . . refractory metal alloys
 . . . molybdenum alloys
 **Rene 95**
 . nickel alloys
 . . **Rene 95**
 refractory materials
 . refractory metal alloys
 . . molybdenum alloys
 . . . **Rene 95**

renewable energy

(added December 1998)
 GS **renewable energy**
 . geothermal energy utilization
 . hydroelectricity
 . tidepower

. waterwave energy
 . windpower utilization
 RT bioconversion
 biomass energy production
 clean energy
 energy policy
 ∞ energy sources
 energy technology
 geothermal energy conversion
 hydrogen-based energy
 ocean thermal energy conversion
 solar energy conversion
 Surface Meteorology and Solar
 Energy project
 waste utilization
 waterwave energy conversion

renin

(added August 2004)
 DEF An enzyme whihc is secreted by the kidney and is formed from protein in plasma and kidney. The enzyme cleaves the Leu-Leu bond in angiotensinogen to generate angiotensin I.
 GS biopolymers
 . proteins
 . . enzymes
 . . . **renin**
 organic compounds
 . proteins
 . . enzymes
 . . . **renin**
 RT angiotensins
 kidneys

renormalization group methods

(added August 1990)
 RT Monte Carlo method
 normalizing (statistics)
 statistical mechanics
 turbulence models

reorientation

USE **retraining**

repairing

USE **maintenance**

repeaters

UF *interpolators*
 GS transmitters
 . **repeaters**
 RT amplifiers
 radar receivers
 receivers
 ∞ relay
 ∞ translators

repetition

RT counting
 pattern recognition
 redundancy encoding

replacing

RT damage assessment
 installing
 maintenance
 relocation
 replenishment
 substitutes

replenishment

RT filling
 input
 ∞ loading
 refilling
 refueling
 replacing

replicas

RT electron microscopes
 metallography
 models
 reproduction (copying)

report generators

RT computer programs
 computer systems programs
 ∞ generators

user manuals (computer programs)

reports

GS **reports**
 . congressional reports
 . postlaunch reports
 . Presidential reports
 . wage surveys
 RT aerospace technology transfer
 conferences
 ∞ discussion
 documentation
 documents
 information
 information dissemination
 papers
 proposals
 records
 summaries
 supplements
 technology transfer

representations

RT characterization
 descriptions
 drawings
 graphs (charts)
 images
 photographs
 signatures

∞ **reproduction**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT fertilization
 reproduction (biology)
 reproduction (copying)
 reproductive systems

reproduction (biology)

RT ∞ biology
 birth
 breeding (reproduction)
 cell division
 cloning (biology)
 embryology
 fertility
 fetuses
 mitosis
 progeny
 ∞ reproduction
 reproductive systems
 sex glands
 zygotes

reproduction (copying)

UF *duplicating*
 GS imagery
 . **reproduction (copying)**
 . . xerography
 RT blueprints
 document storage
 drawings
 engineering drawings
 lithography
 microfilms
 photographic processing equipment
 photography
 printing
 replicas
 ∞ reproduction
 stencil processes

reproductive systems

GS anatomy
 . genitourinary system
 . . **reproductive systems**
 . . . sex glands
 gonads
 ovaries
 testes
 prostate gland
 . . . uterus
 RT birth
 chromosomes
 fertility
 fetuses
 ∞ reproduction
 reproduction (biology)

reptiles

∞ systems

reptiles

- GS animals
 - . vertebrates
 - . . . **reptiles**
 - . . . lizards
 - . . . snakes
 - . . . turtles
- RT poikilothermia

Republic aircraft

- GS **Republic aircraft**
 - . A-10 aircraft
 - . F-84 aircraft
 - . F-105 aircraft
- RT ∞ aircraft

Republic of China

USE **Taiwan**

Republic of Korea

USE **South Korea**

Republic of South Africa

- UF *South Africa*
- GS nations
 - . **Republic of South Africa**
- RT Africa
 - Botswana
 - Kalahari Basin (Africa)
 - Lesotho
 - Namibia
 - Swaziland

Republic of Vietnam

USE **Vietnam**

repulsion

USE **force**

requirements

- GS **requirements**
 - . user requirements
- RT specifications

rescue operations

- RT aeronautical satellites
 - Assured Crew Return Vehicle
 - COSPAS
 - HH-65 helicopter
 - Marots (ESA)
- ∞ operations
 - SarSat
 - spacecraft recovery
 - X-38 crew return vehicle

research

- GS **research**
 - . dynamic programming
 - . high temperature research
 - . linear programming
 - . low density research
 - . market research
 - . multidisciplinary research
 - . nonlinear programming
 - . nuclear research
 - . quadratic programming
- RT critical path method
- ∞ design
 - ethics
 - exploration
 - interservice data exchange program
 - investigation
 - minimax technique
- ∞ research projects

research aircraft

- UF *experimental aircraft*
 - ornithopter aircraft*
- GS research vehicles
 - . **research aircraft**
 - . . Avian 2/180 autogyro
 - . . AVRO 707 aircraft
 - . . B-70 aircraft
 - . . Breguet 940 aircraft
 - . . C-8A augmentor wing aircraft
 - . . D-558 aircraft
 - . . FD 2 aircraft
 - . . Firebee 2 target drone aircraft
 - . . H-17 helicopter

- . . H-126 aircraft
- . . HP-115 aircraft
- . . meteorological research aircraft
- . . Nord 1500 aircraft
- . . Questol aircraft
- . . rotor systems research aircraft
- . . SC-1 aircraft
- . . U-2 aircraft
- . . VZ-2 aircraft
- . . VZ-8 aircraft
- . . X-1 aircraft
- . . X-2 aircraft
- . . X-3 aircraft
- . . X-5 aircraft
- . . X-13 aircraft
- . . X-14 aircraft
- . . X-15 aircraft
- . . X-19 aircraft
- . . X-20 aircraft
- . . X-21 aircraft
- . . X-21A aircraft
- . . X-22 aircraft
- . . X-22A aircraft
- . . X-24 aircraft
- . . X-31 aircraft
- . . X-32 aircraft
- . . X-35 aircraft
- . . X-36 aircraft
- . . X-45 aircraft
- . . XH-51 helicopter
- . . XV-4 aircraft
- . . XV-5 aircraft
- . . XV-8A aircraft
- . . XV-9A aircraft
- . . XV-11A aircraft

RT aerospace planes

∞ aircraft

- drone aircraft
- fan in wing aircraft
- flight test vehicles
- flying platforms
- ground effect machines
- hovercraft ground effect machines
- hypersonic aircraft
- jet aircraft
- joined wings
- ∞ military aircraft
 - nuclear propelled aircraft
 - rocket planes
 - submersible aircraft
 - supersonic aircraft
 - tailless aircraft
 - tandem wing aircraft
 - test vehicles
 - tilt wing aircraft
 - V/STOL aircraft
 - vertical takeoff aircraft
- ∞ winged vehicles
 - YF-12 aircraft

research and development

- RT ∞ design
 - investigation
 - management planning
 - operations research
 - outer space treaty
 - programs
 - project management
 - proposals
- ∞ research projects
 - systems engineering
 - technology utilization
 - weapons development

research facilities

- RT ∞ facilities
 - laboratories
- ∞ research projects
 - space industrialization
 - space laboratories
 - test facilities

research management

- GS management
 - . **research management**
- RT allocations
 - block diagrams
- ∞ budgets
 - engineering management
 - feasibility analysis

- goals
- industrial management
- manpower
- multidisciplinary research
- operations research
- personnel
- priorities

∞ research projects

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Chinese space program
 - Earth & Ocean Physics Applications Program
 - French space program
 - Indian space program
 - Japanese space program
 - management
 - NASA programs
 - programs
 - project management
 - projects
 - research
 - research and development
 - research facilities
 - space programs
 - SPHINX

research vehicles

- SN (VEHICLES DESIGNED TO BE SUBJECTS OF RESEARCH--NOT RESEARCH EQUIPMENT CONTAINERS)
- GS **research vehicles**
 - . automated mixed traffic vehicles
 - . research aircraft
 - . . Avian 2/180 autogyro
 - . . AVRO 707 aircraft
 - . . B-70 aircraft
 - . . Breguet 940 aircraft
 - . . C-8A augmentor wing aircraft
 - . . D-558 aircraft
 - . . FD 2 aircraft
 - . . Firebee 2 target drone aircraft
 - . . H-17 helicopter
 - . . H-126 aircraft
 - . . HP-115 aircraft
 - . . meteorological research aircraft
 - . . Nord 1500 aircraft
 - . . Questol aircraft
 - . . rotor systems research aircraft
 - . . SC-1 aircraft
 - . . U-2 aircraft
 - . . VZ-2 aircraft
 - . . VZ-8 aircraft
 - . . X-1 aircraft
 - . . X-2 aircraft
 - . . X-3 aircraft
 - . . X-5 aircraft
 - . . X-13 aircraft
 - . . X-14 aircraft
 - . . X-15 aircraft
 - . . X-19 aircraft
 - . . X-20 aircraft
 - . . X-21 aircraft
 - . . X-21A aircraft
 - . . X-22 aircraft
 - . . X-22A aircraft
 - . . X-24 aircraft
 - . . X-31 aircraft
 - . . X-32 aircraft
 - . . X-35 aircraft
 - . . X-36 aircraft
 - . . X-45 aircraft
 - . . XH-51 helicopter
 - . . XV-4 aircraft
 - . . XV-5 aircraft
 - . . XV-8A aircraft
 - . . XV-9A aircraft
 - . . XV-11A aircraft
 - . underwater research laboratories
 - . X-30 vehicle
 - . X-37 vehicle
 - . X-40A vehicle
 - . X-43 vehicle
- RT boats
 - electric motor vehicles
- ∞ flight vehicles
 - lunar roving vehicles
 - Mars roving vehicles
- ∞ military vehicles

roving vehicles
ships
space laboratories
∞ spacecraft
∞ surface effect ships
∞ underwater vehicles
∞ vehicles
water vehicles

reserpine
GS bases (chemical)
. alkaloids
. . . **reserpine**
drugs
. pentobarbital sodium
. . . **reserpine**
nitrogen compounds
. alkaloids
. . . **reserpine**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . alkaloids
. . . . **reserpine**
RT antihypertensive agents

reserves
RT abundance
availability
backups
contingency
crude oil
economic factors
energy policy
estimates
estimating
evaluation
exploitation
exploration
forecasting
inventories
inventory controls
∞ materials
mineral deposits
mines (excavations)
∞ production
resources
stockpiling
∞ storage

reservoirs
SN (FOR SURFACE WATER STORAGE--NOT OIL OR GAS POOLS)
RT dams
evaporation
fresh water
lagoons
Lake Texoma (OK-TX)
lakes
ponds
rivers
solar ponds (heat storage)
streams
water resources
windpowered pumps

residential areas
RT cities
inhabitants
land
land use
megalopolises
regional planning
rural areas
suburban areas
urban development

residential energy
DEF Household energy requirements in residences, apartments, etc.
RT energy conservation
energy technology
heat pumps
solar cooling
solar heating
solar houses
space cooling (buildings)
space heating (buildings)

water heating

residual gas
GS gases
. **residual gas**
RT getters
high vacuum
outgassing
partial pressure
ultrahigh vacuum
vacuum apparatus
vacuum tubes

residual strength
RT crack propagation
fatigue (materials)
fracture mechanics
fracture strength
residual stress
∞ strength
tensile strength

residual stress
DEF In structures, any stress in an unloaded body. These stresses arise from local yielding of the material due to machining, welding, quenching or cold working. Used for internal stress.
UF *internal stress*
GS stresses
. **residual stress**
RT creep properties
machining
relaxation (mechanics)
residual strength
strain hardening
stress relaxation
stress relieving
stress-strain relationships
temperature inversions

residues
RT ashes
organic wastes (fuel conversion)
reaction products
solid wastes
waste treatment
waste water
wastes

resilience
GS mechanical properties
. **resilience**
RT compressive strength
elastic properties
shear properties
springs (elastic)
tensile strength

resin bonding
GS bonding
. **resin bonding**
RT adhesive bonding
metal bonding
metal-metal bonding

resin film infusion
(added August 1997)
UF *RFI (composite materials)*
RT composite materials
composite structures
fabrication
infiltration
polymer matrix composites
preforms
resin matrix composites
resin transfer molding

resin matrix composites
DEF Composite materials utilizing a matrix of filaments and/or fibers of glass, metal, or other material bound with a polymer or resin.
GS composite materials
. **resin matrix composites**
. . boron-epoxy composites
. . carbon-phenolic composites
. . graphite-epoxy composites
RT aramid fibers
bismaleimide
epoxy resins

hybrid composites
matrix materials
metal matrix composites
PEEK
polyimide resins
polymer matrix composites
prepregs
pultrusion
resin film infusion
resin transfer molding
resins
sheet molding compounds

resin transfer molding
(added May 1992)
UF *RTM (composite materials)*
GS forming techniques
. **resin transfer molding**
RT casting
composite materials
curing
fabrication
fiber composites
injection molding
matrix materials
molding materials
molds
polymer matrix composites
preforms
reinforcing fibers
resin film infusion
resin matrix composites

resins
GS **resins**
. alkyd resins
. ion exchange resins
. polyimide resins
. polyurethane resins
. silicone resins
. synthetic resins
. . addition resins
. . . acrylic resins
. . . vinyl copolymers
. . polyester resins
. . polyether resins
. . . PEEK
. . . polymethyl methacrylate
. . thermoplastic resins
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
. . thermosetting resins
. . . epoxy resins
. . . phenolic epoxy resins
. . . furan resins
. . . polyamide resins
. . . . Kevlar (trademark)
. . . . Nylon (trademark)
. . . phenolic resins
. . . micarta
. . . phenolic epoxy resins
RT acrylates
Bakelite (trademark)
bismaleimide
Delrin (trademark)
fillers
Lexan (trademark)
melamine
paraplasts
∞ patterns
phenol formaldehyde
phloroglucinol
plastisols
resin matrix composites
teflon (trademark)

∞ **resistance**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF In electricity, the factor by which the square of the instantaneous conduction current must be multiplied to obtain the power lost by heat dissipation or other permanent radiation of energy away from the electrical current. In mechanics, the opposition by frictional effects to forces tending to produce motion. Used for conductance and resistance coefficients.
UF *conductance*

resistance heating

resistance coefficients
RT abrasion resistance
acceleration tolerance
acoustic properties
aerodynamic drag
chemical properties
constrictions
contact resistance
corrosion resistance
crack propagation
creep strength
damping
diffusivity
durability
earthquake resistance
electrical properties
electrical resistance
electrical resistivity
flammability
flow resistance
fracture strength
fusibility
Hall resistance
∞ high resistance
immunity
impact resistance
impact strength
impedance
Kapitza resistance
life (durability)
∞ low resistance
magnetoresistivity
moisture resistance
negative resistance circuits
negative resistance devices
oxidation resistance
permeability
prevention
protection
quality
radiation tolerance
resistance thermometers
retarding
sensitivity
shock resistance
skin resistance
stability
thermal resistance
tolerances (physiology)
transconductance
vulnerability
wave resistance
wear resistance

resistance coefficients
USE **resistance**

resistance heating

UF *Joule heating*
GS heating
. **resistance heating**
RT arc heating
electroslag refining
gas heating
levitation melting

resistance thermometers

GS measuring instruments
. temperature measuring instruments
. . . thermometers
. . . **resistance thermometers**
RT bolometers
ohmmeters
∞ resistance
temperature measurement
thermocouple pyrometers

resistivity

USE **electrical resistivity**

resistojet engines

UF *resistojets*
GS engines
. rocket engines
. . . electric rocket engines
. . . electrothermal engines
. . . **resistojet engines**
RT arc jet engines
plasma engines
pulsed jet engines

space station propulsion

resistojets

USE **resistojet engines**

resistors

UF *tunnel resistors*
GS attenuators
. **resistors**
. . . potentiometers (resistors)
. . . printed resistors
. . . thermistors
RT ballasts (impedances)
electric conductors
electric filters
electric reactors
∞ filaments
photoconductors
semiconductors (materials)
solid state devices
varistors

resolution

DEF The ability of a film, a lens, a combination of both, or a vidicon system to render barely distinguishable a standard pattern of black and white lines. In radar, the minimum angular separation at the antenna at which two targets can be distinguished (a function of beamwidth); or the minimum range at which two targets at the same azimuth can be separated (equal to one half the pulse height). Of a gyro, a measure of response to small changes in input; the maximum value of the minimum input change that will cause a detectable change in the output for inputs greater than the threshold, expressed as a percent of one half the input range. Used for resolving power.

UF *resolving power*

GS **resolution**

. angular resolution
. high resolution
. image resolution
. radar resolution
. radiometric resolution
. spatial resolution
. spectral resolution
. temporal resolution

RT

accuracy
automatic traffic advisory and resolution
blurring
character recognition
contrast
definition
dynamic characteristics
errors
foci
high resolution coverage antennas
image contrast
image enhancement
legibility
loci
numerical aperture
∞ optics
perception
∞ power
precision
resolution cell
sensitivity
spatial filtering
Stark effect
∞ thresholds
tolerances (mechanics)
visibility
vision

resolution cell

RT ∞ cells
imaging techniques
radar detection
radar imagery
resolution

resolvers

RT analog computers
instrument transformers

transformers

resolving power

USE **resolution**

resonance

DEF The phenomena of amplification of a free wave or oscillation of a system by a forced wave or oscillation of exactly equal period. The forced wave may arise from an impressed force upon the system or from a boundary condition. The growth of the resonant amplitude is characteristically linear in time. Of a system in forced oscillation, the condition which exists when any change, however small, in the frequency of excitation causes a decrease in the response of the system.

GS **resonance**

. baryon resonance
. cyclotron resonance
. . . electron cyclotron resonance
. magnetic resonance
. . . ferromagnetic resonance
. . . nuclear magnetic resonance
. . . . proton magnetic resonance
. . . . proton resonance
. . . paramagnetic resonance
. . . . electron paramagnetic resonance
. magnetosonic resonance
. meson resonance
. . X mesons
. acoustic resonance
. microwave resonance
. nuclear quadrupole resonance
. optical resonance
. orbital resonances (celestial mechanics)
. plasma resonance
. resonant vibration
. spin resonance

RT

Foster theory
oscillations
Overhauser effect
resonant frequencies
syntony
tuning
vibration

resonance charge exchange

GS exchanging
. charge exchange
. . . **resonance charge exchange**
RT spin exchange

resonance fluorescence

DEF The emission of radiation by a gas or vapor as a result of excitation of atoms to a higher energy level by incident photons at the resonance frequency of the gas or vapor. Used for resonance radiation.

UF *resonance radiation*

GS

emission
. light emission
. . . luminescence
. . . . fluorescence
. . . . **resonance fluorescence**

RT

atomic excitations
atomic physics
quantum electrodynamics
∞ radiation

resonance lines

DEF Spectral lines which occur either as absorption or emission lines. Used for dielectric satellite lines.

UF *dielectronic satellite lines*

RT

line spectra
optical resonance
plasma resonance

resonance probes

GS measuring instruments
. **resonance probes**
RT impedance probes
magnetic probes
microwave plasma probes
plasma diagnostics
plasma resonance

- tuners
- resonance radiation*
USE **resonance fluorescence**
- resonance scattering**
- SN (INTERACTION WITH THE INTERIOR OF THE NUCLEUS—EXCLUDES POTENTIAL SCATTERING)
- GS nuclear reactions
. nuclear scattering
. . . **resonance scattering**
scattering
. nuclear scattering
. . . **resonance scattering**
- RT inverse scattering
Mossbauer effect
neutron scattering
- resonance testing**
- RT damping tests
elastic damping
electronic equipment tests
fatigue tests
resonant frequencies
stability tests
static tests
structural stability
∞ tests
vibration tests
viscous damping
- resonant cavities*
USE **cavity resonators**
- resonant frequencies**
DEF Frequencies at which resonance exists. Used for natural frequencies and vibrational frequencies (structural).
- UF *natural frequencies*
vibrational frequencies (structural)
- GS frequencies
. **resonant frequencies**
- RT acoustic frequencies
acoustic resonance
antinodes
bandwidth
beat frequencies
Bordoni peaks
cavity resonators
critical frequencies
critical velocity
damping
dynamic characteristics
∞ dynamics
electromagnetic absorption
harmonics
impedance
Mossbauer effect
nodes (standing waves)
oscillators
resonance
resonance testing
resonators
standing waves
transient response
tuners
tuning
- resonant tunneling**
(added September 1988)
- RT barrier layers
electron tunneling
negative resistance devices
quantum electronics
quantum wells
resonant tunneling diodes
transistors
tunnel diodes
∞ tunneling
- resonant tunneling diodes**
(added September 2008)
DEF Solid-state, nanoelectronic devices capable of producing negative differential resistance comprised of one or more narrow quantum well structures each containing only a single, resonant energy level.
- GS electronic equipment
. diodes
. . . semiconductor diodes
- . . . tunnel diodes
. . . . **resonant tunneling diodes**
. solid state devices
. . . semiconductor devices
. . . **resonant tunneling diodes**
negative resistance devices
. **resonant tunneling diodes**
- RT barrier layers
heterojunctions
holes (electron deficiencies)
integrated circuits
nanotechnology
negative resistance circuits
quantum electronics
quantum wells
resonant tunneling
∞ solid state physics
- resonant vibration**
- UF *mechanical resonance*
- GS resonance
. **resonant vibration**
vibration
. **resonant vibration**
- RT acoustic resonance
damping
dynamic stability
∞ dynamics
flapping
flutter
mechanical oscillators
oscillations
Q factors
stable oscillations
structural vibration
undamped oscillations
- resonators**
DEF In radio and radar applications, circuits which will resonate at a given frequency, or over a range of frequencies, when properly excited.
- GS **resonators**
. cavity resonators
. . . superconducting cavity resonators
. Helmholtz resonators
. multimode resonators
. optical resonators
- RT delta antennas
electron tubes
frequency standards
grazing flow
magnetrons
masers
oscillators
resonant frequencies
self excitation
tuning
tuning fork gyroscopes
- resource allocation**
- GS allocations
. **resource allocation**
management
. resources management
. . . **resource allocation**
- RT distributing
energy conservation
energy policy
engineering management
logistics
NASA Interactive Planning System
outer space treaty
priorities
products
resources
- resources**
- GS **resources**
. Earth resources
. . . forests
. . . . rain forests
. . . fossil fuels
. . . coal
. . . . anthracite
. . . . lignite
. . . . solvent refined coal
. . . crude oil
. . . natural gas
. . . . liquefied natural gas
. . . peat
- . . . shale oil
. . . glaciers
. . . icebergs
. . . kerogen
. . . land ice
. . . marine resources
. . . oil fields
. . . range resources
. . . springs (water)
. . . tar sands
. . . thermal resources
. . . . geothermal resources
. . . . geysers
. . . underwater resources
. . . water resources
. . . . aquifers
. . . extraterrestrial resources
. . . lunar resources
. . . Internet resources
. . . websites
- RT abundance
availability
consulting
depletion
economic development
economic factors
economic impact
economics
energy conservation
energy policy
engineering management
geothermal technology
Great Lakes (North America)
inventory management
logistics
logistics management
man environment interactions
manpower
∞ materials
Mississippi River (US)
personnel
personnel development
production management
recycling
reserves
resource allocation
site selection
urban development
vegetation
- resources management**
- GS management
. **resources management**
. . forest management
. . . reforestation
. . information resources management
. . land management
. . resource allocation
- RT Earth resources
environment management
environmental control
leasing
NASA Interactive Planning System
thermal resources
water runoff
- respiration**
DEF The interchange of gases of living organisms and the gases of the medium in which they live. Used for apnea and inhalation.
- UF *apnea*
inhalation
- GS **respiration**
. high altitude breathing
. liquid breathing
. pressure breathing
- RT alveoli
asphyxia
∞ breathing
expiration
expired air
hydrogen metabolism
metabolism
oxygen metabolism
photosynthesis
physiology
plant physiology
respirators
respiratory system

respirators

resuscitation
sinuses
Valsalva exercise

respirators

GS medical equipment
. **respirators**
RT breathing apparatus
emergency breathing techniques
respiration
resuscitation
therapy

respiratory diseases

GS diseases
. **respiratory diseases**
.. aerosinusitis
.. asthma
.. emphysema
.. influenza
.. pneumonia
.. tuberculosis
RT beryllium poisoning
congestion
fungal diseases
lung morphology
pulmonary lesions

respiratory impedance

GS impedance
. **respiratory impedance**

respiratory physiology

GS physiology
. **respiratory physiology**
RT exercise physiology
∞ science

respiratory rate

GS rates (per time)
. **respiratory rate**
.. dyspnea
.. hypoventilation
.. tachypnea
RT hypercapnia
hyperpnea
spirometers

respiratory reflexes

GS reflexes
. **respiratory reflexes**
.. cough
.. Hering-Breuer reflex
.. sneezing
RT ∞ breathing

respiratory system

GS anatomy
. **respiratory system**
.. bronchi
.. diaphragm (anatomy)
.. larynx
.. glottis
.. vocal cords
.. lungs
.. alveoli
.. nose (anatomy)
.. paranasal sinuses
.. pharynx
.. trachea
RT evaporation
homeostasis
hypercapnia
organs
pleurae
pulmonary circulation
respiration
∞ systems

respirometers

GS measuring instruments
. **respirometers**
RT bioinstrumentation
exhalation

responders

USE **transponders**

response bias

GS bias

. response bias

RT dynamic response
errors
∞ time response
transient response

response time (computers)

GS time
. **response time (computers)**
RT computer programming
computer systems performance
data processing
parallel processing (computers)

responses

DEF Of devices or systems, the motions (or other output) resulting from excitation under specified conditions.

GS responses

. dynamic response
. . transient response
. frequency response
. galvanic skin response
. modal response
. physiological responses
. . hemodynamic responses

RT chronaxy

learning
refractory period
∞ thresholds
time lag
∞ time response

rest

GS rest

. bed rest
RT prone position
recreation
sitting position
sleep
supine position

restartable rocket engines

GS engines
. rocket engines
. . **restartable rocket engines**
RT ducted rocket engines
electric rocket engines
electrostatic engines
electrothermal engines
hybrid propellant rocket engines
ion engines
liquid propellant rocket engines
nuclear rocket engines
retrorocket engines
solid propellant rocket engines
sustainer rocket engines
turborocket engines
Vernier engines

restoration

RT addition
reconstruction

restraints

USE **constraints**

restrictions

USE **constrictions**

resultants

DEF The sums of two or more vectors.
RT vector analysis

resuscitation

UF *artificial respiration*
RT emergency breathing techniques
first aid
liquid breathing
respiration
respirators

retaining

RT asteroid capture
constraints
containment
∞ holding
∞ joining
locking
∞ retention

sealing

∞ storage

retardants

GS retardants

. flame retardants
RT accelerating agents
additives
antiicing additives
antiknock additives
antioxidants
catalysts
explosion suppression
inhibitors
neutralizers
penetrants
preservatives
∞ retarders
retarding
stabilizers (agents)
suppressors
surfactants
wear inhibitors

∞ retarders

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT retardants
retarders (devices)

retarders (devices)

RT blocking
brakes (for arresting motion)
braking
constrictions
∞ retarders
retarding

retarding

UF *suppression*
RT attenuation
blocking
braking
damping
deceleration
fouling
hysteresis
prevention
∞ reduction
∞ resistance
retardants
retarders (devices)
stopping

retarding ion mass spectrometers

USE **mass spectrometers**

∞ retention

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT retaining
retention (psychology)

retention (psychology)

RT learning
memory
∞ retention

reticles

DEF Systems of lines or wires placed in the focal plane of an optical instrument to serve as a reference. Also called a reticule.

GS reticles

. wire grid lenses
RT contact lenses
eyepieces
∞ grids
lenses
optical equipment
scale (ratio)

reticulocytes

GS cells (biology)
. blood cells
. . erythrocytes
. . . **reticulocytes**
RT hematology
hemoglobin
hemolysis

- hemorrhages
- retina**
 - GS anatomy
 - . sense organs
 - . . eye (anatomy)
 - . . . **retina**
 - fovea
 - RT electroretinography
 - phosphene
 - photoreceptors
 - vision
 - visual fields
 - visual pigments
- retinal adaptation**
 - GS adaptation
 - . **retinal adaptation**
 - . . dark adaptation
 - . . light adaptation
 - RT perception
 - visibility
 - vision
- retinal images**
 - GS images
 - . **retinal images**
 - RT vision
 - visual fields
- retinene**
 - UF *vitamin A*
 - GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **retinene**
 - . lipids
 - . . **retinene**
 - vitamins
 - . **retinene**
 - RT aldehydes
 - carotene
- retirement**
 - RT employee relations
 - industries
 - personnel
 - sociology
- retirement for cause**
 - DEF Procedure, primarily on aircraft, based on fracture mechanics, which allows safe utilization of the full life capacities of each component.
 - RT component reliability
 - engine parts
 - fatigue life
 - fracture strength
 - inventory management
 - life (durability)
 - metal fatigue
 - service life
 - spare parts
- RETORC (torpedoes)*
- USE **torpedoes**
- retort processing**
 - DEF One method for converting shale oil into oil similar to petroleum oils.
 - RT fractionation
 - hydrocarbon fuels
 - oils
 - ∞ processing
 - shale oil
- retractable equipment**
 - UF *retractable landing gear*
 - RT aerodynamic brakes
 - landing gear
 - refueling
- retractable landing gear*
- USE **landing gear**
- retractable equipment**
- retraining**
 - UF *reorientation*
 - RT adaptation
 - education
 - management methods
 - manpower
- personnel
 - tasks
 - training analysis
- retrieval**
 - GS **retrieval**
 - . data retrieval
 - . information retrieval
 - . payload retrieval (STS)
 - RT ∞ recovery
 - searching
- retroaction*
- USE **retrothrust**
- retrofiring**
 - GS firing (igniting)
 - . rocket firing
 - . . **retrofiring**
 - RT deceleration
 - retrorocket engines
 - retrothrust
- retrofitting**
 - DEF Modification of equipment to incorporate changes made in later production of similar equipment; the changes may be performed in the factory or in the field.
 - GS **retrofitting**
 - . acoustic retrofitting
 - RT installing
- retrograde orbits**
 - (*added June 1995*)
 - DEF Motion in an orbit opposite to the usual orbital direction of celestial bodies within a given system. Specifically, of a satellite, motion in a direction opposite to the direction of rotation of the primary.
 - GS orbits
 - . **retrograde orbits**
 - RT interacting galaxies
 - orbital mechanics
 - planetary orbits
 - precession
 - satellite orbits
 - spacecraft orbits
 - stellar orbits
 - three body problem
- retroreflection**
 - DEF Reflection wherein the reflected rays return along paths parallel to those of their corresponding incident rays. Also called retroflection.
 - GS reflection
 - . **retroreflection**
 - RT antenna arrays
 - incident radiation
 - LAGEOS (satellite)
 - laser ranging
 - lunar retroreflectors
 - reflected waves
 - retroreflectors
 - satellite laser ranging
- retroreflectors**
 - DEF Class of optical instruments which cause reflected radiation to return along paths parallel to those of their corresponding incident rays.
 - GS radar equipment
 - . **retroreflectors**
 - reflectors
 - . **retroreflectors**
 - RT laser ranging
 - radar corner reflectors
 - retroreflection
 - satellite laser ranging
- retrorocket engines**
 - DEF Rocket engines fitted on or in spacecraft, satellites, or the like to produce thrust opposed to forward motion.
 - GS engines
 - . rocket engines
 - . . **retrorocket engines**
 - . . . BE-3 engine
 - RT control rockets
 - internal combustion engines
- liquid propellant rocket engines
- man operated propulsion systems
- restartable rocket engines
- retrofiring
- retrothrust
- solid propellant rocket engines
- retrothrust**
 - DEF Thrust used for a braking maneuver; reverse thrust. Used for retroaction.
 - UF *retroaction*
 - GS thrust
 - . rocket thrust
 - . . **retrothrust**
 - RT deceleration
 - retrofiring
 - retrorocket engines
- return beam vidicons**
 - GS electron tubes
 - . camera tubes
 - . . vidicons
 - . . . **return beam vidicons**
 - thermicons
 - RT television cameras
- return to Earth space flight**
 - GS space flight
 - . **return to Earth space flight**
 - RT Assured Crew Return Vehicle
 - interplanetary flight
 - manned Mars missions
 - Mars missions
 - spacecraft reentry
 - X-38 crew return vehicle
- reusable heat shielding**
 - GS shielding
 - . heat shielding
 - . . **reusable heat shielding**
 - RT cooling
 - heat transfer
 - reentry shielding
 - spacecraft shielding
 - temperature control
 - thermal control coatings
 - thermal protection
- reusable launch vehicles**
 - GS launch vehicles
 - . **reusable launch vehicles**
 - . . single stage to orbit vehicles
 - . . . Delta Clipper
 - . . . HOTOL launch vehicle
 - . . X-33 reusable launch vehicle
 - . . X-34 reusable launch vehicle
 - RT Advanced Launch System (STS)
 - Aeromaneuvering Orbit to Orbit Shuttle
 - recoverable launch vehicles
 - rocket engines
 - spacecraft launching
 - spacecraft recovery
 - ∞ vehicles
 - X-37 vehicle
 - X-40A vehicle
- reusable rocket engines**
 - GS engines
 - . rocket engines
 - . . **reusable rocket engines**
 - RT oxygen-hydrocarbon rocket engines
- reusable spacecraft**
 - GS reentry vehicles
 - . recoverable spacecraft
 - . . **reusable spacecraft**
 - . . . aerospace planes
 - HOPE aerospace plane
 - HOTOL launch vehicle
 - VentureStar launch vehicle
 - X-30 vehicle
 - X-37 vehicle
 - X-40A vehicle
 - . . . MARS (Manned Reusable Spacecraft)
 - . . . single stage to orbit vehicles
 - Delta Clipper
 - HOTOL launch vehicle
 - . . . space shuttles

reuse

- Buran space shuttle
- Hermes manned spaceplane
- Space Shuttle orbiters
- Atlantis (orbiter)
- Challenger (Orbiter)
- Columbia (Orbiter)
- Discovery (Orbiter)
- Endeavour (orbiter)
- Enterprise (Orbiter)
- RT expendable stages (spacecraft)
- ferry spacecraft
- Inertial Upper Stage
- interim stages (spacecraft)
- interplanetary spacecraft
- landing modules
- lunar landing modules
- manned spacecraft
- Saenger space transportation system
- soft landing spacecraft
- Space Shuttle Boosters
- unmanned spacecraft
- X-33 reusable launch vehicle
- X-34 reusable launch vehicle

reuse

- GS utilization
- . reuse
- . . software reuse
- RT oil recovery
- ∞ recovery

revenue

- RT allocations
- assessments
- budgeting
- costs
- international trade

reverberation

DEF The persistence of sound in an enclosed space, as a result of multiple reflections, after the sound source has stopped. The sound that persists in an enclosed space, as a result of repeated reflection or scattering after the source of the sound has stopped.

- GS acoustic properties
- . acoustic scattering
- . . reverberation
- scattering
- . wave scattering
- . . acoustic scattering
- . . . reverberation

- RT echoes
- noise (sound)
- reverberation chambers
- sound waves

reverberation chambers

DEF Chambers designed to eliminate outside noise for accurate acoustic measurement.

- GS compartments
- . test chambers
- . . reverberation chambers
- test facilities
- . reverberation chambers

- RT acoustic measurement
- acoustic simulation
- ∞ chambers
- environmental tests
- reverberation

reverse engineering

(added May 1992)

- RT computer programming
- design analysis
- reversing
- software development tools
- software engineering
- systems engineering

reverse field pinch

DEF A method of plasma confinement under investigation as part of the mirror and pinch programs.

- GS pinch effect
- . reverse field pinch
- RT magnetohydrodynamic flow
- plasma control
- reactor technology
- screw pinch

toroidal plasmas

reverse osmosis

DEF The application of pressure to stop or reverse the transport of solvent through a semi-permeable membrane separating two solutions of different solute concentration. The applied pressure required to prevent the flow of solvent across a perfectly semipermeable membrane is called the osmotic pressure and is a characteristic of the solution.

- GS osmosis
- . reverse osmosis
- RT demineralizing
- desalination
- membranes
- permeating

reverse time

USE reaction time

reversed flow

- GS fluid flow
- . reversed flow
- RT boundary layer separation
- recirculative fluid flow
- reversing
- separated flow

reversing

- RT ∞ direction
- reverse engineering
- reversed flow

reviewing

- RT ∞ discussion
- evaluation
- examination
- training evaluation

revisions

- UF alteration
- modification
- RT adjusting
- contracts
- correction
- extensions
- variations

revolution (motion)

USE revolving

revolving

DEF Moving in a path about an axis, usually external to the body accomplishing the motion. Used for revolution (motion).

- UF revolution (motion)
- GS gyration
- . revolving
- RT angular velocity
- centripetal force
- rotation

reward (psychology)

- GS reinforcement (psychology)
- . reward (psychology)
- RT comfort
- human reactions
- psychological factors

Reynolds averaging

(added October 1997)

- GS analysis (mathematics)
- . numerical analysis
- . . approximation
- . . . Reynolds averaging
- RT average
- boundary layer equations
- computational fluid dynamics
- flow equations
- large eddy simulation
- Navier-Stokes equation
- Reynolds stress
- turbulence models

Reynolds equation

- UF Reynolds law
- GS equations of motion
- . Reynolds equation
- flow equations
- . Reynolds equation

RT aerodynamic configurations

- ∞ equations
- Navier-Stokes equation
- scale models

Reynolds law

USE Reynolds equation

Reynolds number

DEF A nondimensional parameter representing the ratio of the momentum forces to the viscous forces in fluid flow. (After Osborne Reynolds, 1842-1912, English scientist). Used for critical Reynolds number.

- UF critical Reynolds number
- GS dimensionless numbers
- . Reynolds number
- . . high Reynolds number
- . . low Reynolds number
- ratios

- . Reynolds number
- . . high Reynolds number
- . . low Reynolds number

- RT boundary layer flow
- boundary layer stability
- boundary layer transition
- critical velocity
- fluid flow
- Froude number
- Grashof number
- inviscid flow
- laminar flow
- Peclet number
- Prandtl number
- Richardson number
- scale effect
- transition points
- turbulent flow
- viscous flow

Reynolds stress

DEF In the mathematical treatment of a viscous, incompressible, homogeneous fluid in turbulent motion, that represents the transfer of momentum due to turbulent fluctuations.

- GS stresses
- . Reynolds stress
- RT incompressible flow
- Navier-Stokes equation
- Reynolds averaging
- turbulent boundary layer
- turbulent flow

RF-4 aircraft

USE F-4 aircraft

RF-8 aircraft

USE F-8 aircraft

RFI (composite materials)

(added August 1997)

USE resin film infusion

RH-2 helicopter

USE UH-1 helicopter

Rhea (astronomy)

DEF A natural satellite of the planet Saturn orbiting at a mean distance of 527,000 kilometers.

- GS celestial bodies
- . natural satellites
- . . icy satellites
- . . . Rhea (astronomy)
- . . Saturn satellites
- . . . Rhea (astronomy)
- RT Saturn (planet)
- solar system

rhenium

- GS chemical elements
- . rhenium
- . . rhenium isotopes
- metals
- . refractory metals
- . . rhenium
- . . . rhenium isotopes
- . transition metals
- . . rhenium
- . . . rhenium isotopes

refractory materials
 . refractory metals
 . . **rhodium**
 . . . rhodium isotopes

rhodium alloys
 GS alloys
 . heat resistant alloys
 . . refractory metal alloys
 . . . **rhodium alloys**
 refractory materials
 . refractory metal alloys
 . . **rhodium alloys**

rhodium compounds
 RT ∞ chemical compounds
 ∞ Group 7B compounds
 ∞ metal compounds

rhodium isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **rhodium isotopes**
 . rhodium
 . . **rhodium isotopes**
 metals
 . refractory metals
 . . rhodium
 . . . **rhodium isotopes**
 . transition metals
 . . rhodium
 . . . **rhodium isotopes**
 refractory materials
 . refractory metals
 . . rhodium
 . . . **rhodium isotopes**
 RT radioactive isotopes

rheocasting
 DEF Use of partially solidified metal alloys (fractions solids) fed directly into a casting machine for forming into machine parts.
 GS forming techniques
 . casting
 . . **rheocasting**
 RT alloys
 cast alloys
 dies
 forging
 slurries
 solidification

rheoelectrical simulation
 GS simulation
 . **rheoelectrical simulation**
 RT analog circuits
 analog simulation
 bionics
 flow distribution

rheoencephalography
 RT blood circulation
 brain
 brain circulation

rheology
 DEF The study of the deformation and flow of matter.
 RT electrorheological fluids
 flow measurement
 flow theory
 ∞ fluids
 liquid flow
 magnetorheological fluids
 Maxwell fluids
 nonNewtonian fluids
 plastic flow
 plastic properties
 shear thinning
 viscosity

rheometers
 GS measuring instruments
 . flowmeters
 . . **rheometers**
 RT blood circulation

Rhesus factor
 RT antigens

blood
 congenital anomalies

rheumatic diseases
 GS diseases
 . **rheumatic diseases**
 RT arthritis

rhizopus
 GS plants (botany)
 . fungi
 . . **rhizopus**
 RT blight
 ∞ mold

rhodamine
 (added July 1988)
 GS dyes
 . **rhodamine**
 organic compounds
 . cyclic compounds
 . . **rhodamine**
 RT amines
 dye lasers
 fluorescence
 laser materials

Rhode Island
 GS nations
 . United States
 . . **Rhode Island**
 RT Block Island Sound (RI)

Rhodesia
 USE **Zimbabwe**

rhodium
 GS chemical elements
 . **rhodium**
 . . rhodium isotopes
 metals
 . transition metals
 . . **rhodium**
 . . . rhodium isotopes

rhodium 102
 USE **rhodium isotopes**

rhodium 106
 USE **rhodium isotopes**

rhodium alloys
 GS alloys
 . **rhodium alloys**
 RT platinum alloys

rhodium compounds
 RT ∞ chemical compounds
 ∞ Group 8 compounds

rhodium isotopes
 UF *rhodium 102*
rhodium 106
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **rhodium isotopes**
 . rhodium
 . . **rhodium isotopes**
 metals
 . transition metals
 . . rhodium
 . . . **rhodium isotopes**

rhombic antennas
 DEF Antennas composed of long wire radiators comprising the sides of a rhombus. The antenna usually is terminated in an impedance. The sides of the rhombus, the angle between the sides, the elevation, and the termination are proportioned to give the desired directivity.
 GS antennas
 . directional antennas
 . . **rhombic antennas**
 RT antenna design
 radio antennas

rhombohedrons
 GS geometry
 . Euclidean geometry
 . . polyhedrons

. . . **rhombohedrons**

rhomboids
 DEF Parallelograms whose adjacent sides are not equal.
 GS geometry
 . Euclidean geometry
 . . polygons
 . . . tetragons
 parallelograms
 **rhomboids**

rho-mesons
 GS particles
 . elementary particles
 . . bosons
 . . . mesons
 vector mesons
 **rho-mesons**
 . . fermions
 . . . baryons
 **rho-mesons**
 . . hadrons
 . . . baryons
 **rho-mesons**
 . . mesons
 vector mesons
 **rho-mesons**
 . nuclear particles
 . . bosons
 . . . mesons
 vector mesons
 **rho-mesons**
 RT charged particles
 eta-mesons

Rhone Delta (France)
 GS landforms
 . deltas
 . . **Rhone Delta (France)**
 RT France
 Mediterranean Sea
 rivers

rhyolite
 GS rocks
 . igneous rocks
 . . **rhyolite**
 RT lava
 magma
 silicon dioxide

∞ **rhythm**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT oscillations
 periodic variations
 rhythm (biology)

rhythm (biology)
 UF *biological clocks*
biological rhythm
biorhythms
chronobiology
periodicity (biology)
 GS **rhythm (biology)**
 . circadian rhythms
 RT activity cycles (biology)
 alternations
 ∞ biology
 cycles
 desynchronization (biology)
 jet lag
 phenology
 ∞ rhythm
 zeitgebers

ribbon parachutes
 DEF Parachutes having a canopy consisting of an arrangement of closely spaced tapes. These parachutes have high porosity with attendant stability and slight opening shock.
 GS parachutes
 . **ribbon parachutes**
 RT drag chutes
 recovery parachutes

ribbons
 RT conveyors
 fabrics

riblets

- fasteners
- metal strips
- ∞ strip
- ∞ tapes

riblets

(added October 1988)

DEF Longitudinal striations forming V-shaped grooves on aerodynamic and hydrodynamic surfaces. The riblet devices act to reduce large-scale disturbances near the boundary layer. These grooves are dimensional on the order of the wall vortices and turbulent dimensions.

- GS grooves
 - . V grooves
 - . . **riblets**
- RT boundary layer control
 - drag reduction
 - friction drag
 - shear layers
 - skin friction
 - striation
 - turbulent boundary layer
 - vortex alleviation

riboflavin

- UF *vitamin B 2*
vitamin G
- GS organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . **riboflavin**
 - vitamins
 - . **riboflavin**

ribonucleic acids

DEF A chemical found in the nucleus and cytoplasm of cells. It plays an important role in protein synthesis and other chemical activities of the cell. Used for RNA, messenger RNA, transfer RNA, and ribosomal RNA.

- UF *messenger RNA*
ribosomal RNA
transfer RNA
- GS acids
 - . nucleic acids
 - . . **ribonucleic acids**
 - biopolymers
 - . nucleic acids
 - . . **ribonucleic acids**
 - organic compounds
 - . nucleic acids
 - . . **ribonucleic acids**
- RT adenines
 - gene expression
 - genes
 - genome
 - guanosines
 - polynucleotides
 - ribosomes
 - transcription (genetics)

ribose

- GS organic compounds
 - . carbohydrates
 - . . sugars
 - . . . monosaccharides
 - pentose
 - **ribose**
- RT nucleosides

ribosomal RNA

USE **ribonucleic acids**

ribosomes

(added August 2004)

DEF A class of multi-component structures found in all cells, in mitochondria, and chloroplasts. They have roles both in genetic translation of transcripts and in the manufacture and secretion of the proteins.

- GS organelles
 - . **ribosomes**
- RT cells (biology)
 - cytoplasm
 - ribonucleic acids

ribs (supports)

- RT longerons

- reinforcement (structures)
- reinforcement rings
- stiffening
- webs (supports)

Riccati equation

- GS algebra
 - . linear equations
 - . . **Riccati equation**
 - analysis (mathematics)
 - . real variables
 - . . differential equations
 - . . . **Riccati equation**
 - . . linear equations
 - . . . **Riccati equation**

rice

- GS farm crops
 - . grains (food)
 - . . **rice**
 - plants (botany)
 - . **rice**
- RT wheat

Richards theorem

- GS theorems
 - . **Richards theorem**
- RT network synthesis
 - signal flow graphs

Richardson number

DEF A nondimensional number arising in the study of shearing flows of a stratified fluid.

- GS dimensionless numbers
 - . **Richardson number**
 - ratios
 - . **Richardson number**
- RT aerodynamic stability
 - Reynolds number
 - shear flow

Richardson-Dushman equation

USE **temperature effects**
thermionic emission

∞ **ridges**

- SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW))
- UF *cuestas*
hogbacks
- RT bridges (landforms)
 - buckling
 - corrugating
 - gaps (geology)
 - karst
 - landforms
 - mid-ocean ridges
 - mountains
 - protuberances
 - wrinkling

riding quality

- GS quality
 - . **riding quality**
- RT comfort
 - passengers
 - seats
 - suspension systems (vehicles)
 - transportation

Riemann integral

USE **measure and integration**

Riemann manifold

- UF *Riemann space*
Riemann sphere
- GS geometry
 - . differential geometry
 - . . **Riemann manifold**
 - manifolds (mathematics)
 - . **Riemann manifold**

- RT Euclidean geometry

Riemann problem

USE **Cauchy problem**

Riemann space

USE **Riemann manifold**

Riemann sphere

USE **Riemann manifold**

Riemann waves

- GS elastic waves
 - . shock waves
 - . . **Riemann waves**
- RT blast loads
 - differential equations
 - dynamic pressure
 - explosions
 - hyperbolic functions

Riesz theorem

- GS theorems
 - . **Riesz theorem**
- RT differential equations
 - hyperbolic functions

rifles

- GS weapons
 - . guns (ordnance)
 - . . **rifles**
- RT artillery

RIFT (reactor in flight test)

- UF *reactor in flight test program*
- RT electric propulsion
 - ∞ reactors
 - rocket engines
 - Rover project
 - Saturn project

rift valleys

USE **valleys**

rifts

USE **geological faults**

rigging

- RT assembling
 - construction
- ∞ equipment
 - materials handling
 - shrouds

rigid bodies

USE **rigid structures**

rigid mounting

- GS mounting
 - . **rigid mounting**
- RT pylon mounting

rigid rotor helicopters

- GS V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . **rigid rotor helicopters**
 - CH-3 helicopter
 - F-28 helicopter
 - XH-51 helicopter
- RT ∞ aircraft
 - OH-5 helicopter

rigid rotors

- UF *hingeless rotors*
- GS airfoils
 - . wings
 - . . rotary wings
 - . . . **rigid rotors**
 - rigid structures
 - . **rigid rotors**
 - rotating bodies
 - . rotors
 - . . rotary wings
 - . . . **rigid rotors**
- RT bearingless rotors

rigid rotors (plasma physics)

DEF Ensembles of electrons moving in cir-

cular or nearly circular orbits at a constant angular frequency.

- GS **rigid rotors (plasma physics)**
 - . plasma physics
- RT molecular collisions
- ∞ molecular rotation
- ∞ physics
- plasma control

rigid structures

- UF *inelastic bodies*
rigid bodies
stiff structures
- GS **rigid structures**
 - . rigid rotors
 - . rigid wings
- RT arches
 - composite materials
 - concrete structures
 - Euler equations of motion
 - hybrid structures
 - plastic bodies
 - reinforcement (structures)
 - sandwich structures
 - space erectable structures
 - steel structures
- ∞ structures
 - translational motion
 - welded structures

rigid wings

- SN (EXCLUDES 'RIGID ROTORS')
- GS airfoils
 - . wings
 - . . **rigid wings**
- rigid structures
 - . **rigid wings**
- RT aeroelasticity
 - fixed wings
 - flexible wings
 - low aspect ratio wings

∞ **rigidity**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT flexibility
 - magnetic rigidity
 - mechanical properties
 - modulus of elasticity
 - ruggedness
 - stiffness
 - structural stability

rills

USE **valleys**

rim

- RT ∞ blades
- borders
- edges
- margins
- sides

ring currents

- GS electric current
 - . **ring currents**
- RT atmospheric electricity
 - electrojets
 - plasma currents

ring discharge

- GS electric current
 - . electric discharges
 - . . Townsend discharge
 - . . . gas discharges
 - toroidal discharge
 - **ring discharge**
- RT ∞ discharge
 - electrodeless discharges
 - gas ionization
 - high frequencies
 - radio frequency discharge

ring galaxies

- (added November 1988)
- GS celestial bodies
 - . galaxies
 - . . **ring galaxies**
- RT elliptical galaxies
- galactic evolution

galactic structure
interacting galaxies
spiral galaxies

ring lasers

- GS stimulated emission devices
 - . lasers
 - . . **ring lasers**

ring structures

- GS **ring structures**
 - . reinforcement rings
 - . ring wings
- RT aerodynamic configurations
 - ∞ bands
 - hoops
 - reinforcement (structures)
 - ∞ rings
 - ∞ structures

ring wings

- GS airfoils
 - . wings
 - . . uncambered wings
 - . . . **ring wings**
 - . . . unswept wings
 - **ring wings**
 - ring structures
 - . **ring wings**
- RT ducted fans
 - shrouded propellers
 - twisted wings

Ringleb flow

- (added July 1998)
- GS fluid flow
 - . compressible flow
 - . . **Ringleb flow**
 - . . steady flow
 - . . . **Ringleb flow**
 - . . . two dimensional flow
 - **Ringleb flow**
- RT critical flow
 - subsonic flow
 - transonic flow

∞ **rings**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT annuli
 - bodies of revolution
 - circles (geometry)
 - Jupiter rings
 - O ring seals
 - planetary rings
 - reinforcement rings
 - ring structures
 - rings (mathematics)
 - Saturn rings
 - storage rings (particle accelerators)
 - toroidal plasmas
 - toruses
 - Uranus rings
 - vortex rings

rings (mathematics)

- RT ∞ mathematics
- ∞ rings

Rio Grande (North America)

- GS rivers
 - . **Rio Grande (North America)**
- RT Gulf of Mexico
 - Mexico
 - New Mexico
 - texas

riometers

- GS measuring instruments
 - . radiation measuring instruments
 - . . **riometers**
- RT atmospheric ionization
 - auroral absorption
 - ionograms
 - ionosondes
 - ionospheric noise
 - ionospheric propagation

ripples

- GS elastic waves

- . capillary waves
- . . **ripples**
- surface waves
 - . capillary waves
 - . . **ripples**
- RT gravity waves
 - interfacial tension
 - water waves
 - wind (meteorology)

RISC processors

- (added March 1995)
- DEF A type of computer processor designed to optimize total system performance by simple, fast decoding of the instructions most commonly employed in computer operations and characterized by: a simple instruction set with the majority of instructions being single cycle; instructions that are register-to-register with LOAD and STORE commands being the only memory-reference instructions; very few addressing modes; hardwired control; instructions with one or two sizes and with fields at fixed locations; and some degree of pipelining.
- UF *reduced instruction set computing*
- GS computer components
 - . central processing units
 - . . **RISC processors**
- RT architecture (computers)
 - chips (electronics)
 - computer programming
 - computer systems performance
 - firmware
 - pipelining (computers)
 - systems-on-a-chip
 - very large scale integration

risers

- RT castings
- pipes (tubes)

risk

- DEF The combined effect of the likelihood of an unfavorable occurrence and the potential impact of that occurrence.
- RT acceptability
 - assumptions
- ∞ capacity
 - commerce
 - confidence
 - confidence limits
 - contingency
 - decision theory
 - estimates
 - estimating
 - finance
 - forecasting
 - game theory
 - hazards
 - inventory controls
 - mathematical models
 - maximum likelihood estimates
 - operations research
 - predictions
 - reliability
 - risk assessment
 - strategy

risk assessment

- (added March 2008)
- DEF The identification, evaluation, and estimation of the levels of risks involved in a situation, their comparison against benchmarks or standards, and determination of an acceptable level of risk.
- GS assessments
 - . **risk assessment**
- RT decision making
 - evaluation
 - failure analysis
 - hazards
 - predictions
 - risk
 - risk management

risk management

- (added April 2008)
- DEF An organized, systematic process that identifies, analyzes, tracks, controls, communicates and documents risks to increase the like-

RIT engines

likelihood of achieving success.

- GS management
 - . **risk management**
- RT accident prevention
- decision making
- project planning
- risk assessment
- safety management

RIT engines

DEF Radio frequency ion thrusters which generate thrust by converting electric energy into a reaction force by utilizing an electromagnetic field. Used for radio frequency ion thruster engines.

- UF *radio frequency ion thruster engines*
- GS engines
 - . rocket engines
 - . . . electric rocket engines
 - . . . electrostatic engines
 - ion engines
 - **RIT engines**
- RT plasma engines

Ritz averaging method

- GS analysis (mathematics)
 - . numerical analysis
 - . . approximation
 - . . . **Ritz averaging method**
- RT ∞ methodology

river basins

- GS landforms
 - . structural basins
 - . . **river basins**
 - . . . Atchafalaya River Basin (LA)
 - . . . Chena River Basin (AK)
 - . . . Columbia River Basin (ID-OR-WA)
 - . . . Delaware River Basin (US)
 - . . . Feather River Basin (CA)
 - . . . Missouri River Basin (US)
 - . . . Susquehanna River Basin (MD-NY-PA)
 - . . . Wabash River Basin (IL-IN-OH)
 - . . . wadis
- RT Amazon region (South America)
- Chesapeake Bay (US)
- Death Valley (CA)
- International Hydrological Decade
- lakes
- meanders
- Mississippi River (US)
- Missouri River (US)
- rapids
- ravines
- rivers
- Sacramento Valley (CA)
- Saginaw Bay (MI)
- San Joaquin Valley (CA)
- Shenandoah Valley (VA)
- vadose water
- watersheds

rivers

DEF A general term for natural fresh water surface streams of considerable volume and permanent or seasonal flow, moving in definite channels toward seas, lakes, or other rivers. Rivers are large streams or ones larger than brooks or creeks, such as trunk systems and the larger branches of drainage systems.

- GS **rivers**
 - . Colorado River (North America)
 - . Hudson River (NY-NJ)
 - . Mississippi River (US)
 - . Missouri River (US)
 - . Ohio River (US)
 - . Rio Grande (North America)
- RT alluvium
- Amazon region (South America)
- Atchafalaya River Basin (LA)
- aufeis (ice)
- bayous
- canyons
- Columbia River Basin (ID-OR-WA)
- Delaware River Basin (US)
- deltas
- Earth resources
- erosion

estuaries

Feather River Basin (CA)

inland waters

Lake Erie

Lake Huron

Lake Michigan

Lake Ontario

Lake Superior

meanders

Mississippi Delta (LA)

Missouri River Basin (US)

rapids

reservoirs

Rhone Delta (France)

river basins

shoals

shorelines

sounds (topographic features)

streams

surface water

Susquehanna River Basin (MD-NY-PA)

tributaries

valleys

Wabash River Basin (IL-IN-OH)

wadis

water color

water runoff

watersheds

waterways

wharves

riveted joints

- GS joints (junctions)
 - . **riveted joints**
- RT bolted joints
- butt joints
- lap joints
- metal joints
- welded joints

riveting

- RT ∞ joining
- rivets
- sealing

rivets

- GS fasteners
 - . **rivets**
- RT couplings
- holders
- pins
- riveting

RL circuits

- UF *LR circuits*
- GS circuits
 - . **RL circuits**
 - . . RLC circuits
- RT coupling circuits
- electrical resistance
- inductance
- LC circuits
- network analysis
- network synthesis
- time constant
- transconductance

RL-10 engines

- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **RL-10 engines**
 - RL-10-A-1 engine
 - RL-10-A-3 engine
- RT Atlas Centaur launch vehicle
- Centaur project
- cryogenic rocket propellants
- Saturn launch vehicles

RL-10-A-1 engine

- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . hydrogen oxygen engines
 - **RL-10-A-1 engine**
 - RL-10 engines

. . . . **RL-10-A-1 engine**

RL-10-A-3 engine

- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . hydrogen oxygen engines
 - **RL-10-A-3 engine**
 - RL-10 engines
 - **RL-10-A-3 engine**
- RT Saturn D launch vehicle

RLC circuits

- UF *LRC circuits*
- RLC networks*
- GS circuits
 - . RL circuits
 - . . **RLC circuits**
- RT capacitance
- capacitance switches
- electrical resistance
- LC circuits
- network analysis
- network synthesis
- RC circuits
- time constant
- transconductance

RLC networks

USE **RLC circuits**

roads

- GS **roads**
 - . highways
- RT ∞ facilities
- intersections
- passageways
- pavements
- rapid transit systems
- site selection
- streets
- transportation
- transportation networks

roadway powered vehicles

DEF Surface vehicles utilizing a combination of an electrical power source embedded in a roadway and an inductive coupled power pickup.

- GS surface vehicles
 - . **roadway powered vehicles**
- RT electric batteries
- electric motor vehicles
- energy storage

roasting

- UF *calcination*
- RT baking
- desulfurizing
- drying
- heating
- ignition
- oxidation
- reduction (chemistry)
- sintering

ROBIN balloons

- GS expandable structures
 - . inflatable structures
 - . . balloons
 - . . . meteorological balloons
 - **ROBIN balloons**
- RT high altitude balloons
- radiosondes
- rockoons
- skyhook balloons
- sounding

robot arms

- (*added January 1990*)
- UF *arms (robotics)*
- GS **robot arms**
 - . Space Station Mobile Servicing System
- RT electroactive polymers
- end effectors
- manipulators
- robot dynamics
- robotics

robots

robot control
(added December 1990)
RT adaptive control
∞ control
control systems design
control theory
dynamic control
feedback control
inverse kinematics
robot dynamics
robotics
robots
unmanned ground vehicles

robot dynamics
(added January 1990)
UF *robot motion*
RT dynamic control
∞ dynamics
end effectors
gait
inverse kinematics
manipulators
robot arms
robot control
robotics
telerobotics
trajectory planning

robot fingers
USE **end effectors**

robot hands
USE **end effectors**

robot motion
USE **robot dynamics**

robot sensors
(added January 1990)
GS **robot sensors**
. tactile sensors (robotics)
. torque sensors (robotics)
RT acceleration measurement
computer vision
robotics
robots
∞ sensors

robotics
DEF A discipline that employs the principles and techniques of mechanical and electrical engineering and artificial intelligence to develop programmable or self-controlled machines that often include sensory systems and a degree of intelligence.
GS **robotics**
. telerobotics
RT artificial intelligence
automata theory
automatic control
∞ automation
computer aided design
computer aided manufacturing
computer aided mapping
computer vision
end effectors
inverse kinematics
man machine systems
manipulators
multisensor fusion
position sensing
robot arms
robot control
robot dynamics
robot sensors
robots
task planning (robotics)
teleoperators
trajectory planning
unmanned ground vehicles
voice control

robots
RT artificial intelligence
automata theory
bionics
computer vision

end effectors
psycholinguistics
robot arms
robot control
robot sensors
robotics
servomechanisms
Space Station Mobile Servicing System
tactile sensors (robotics)
task planning (robotics)
telerobotics
torque sensors (robotics)
voice control

robustness (mathematics)
DEF Insensitivity of systems to uncontrolled perturbations and independent of changes in environmental parameters as demonstrated mathematically.
RT algorithms
control stability
control theory
feedback control
linear systems
mathematical models

Roche limit
GS range (extremes)
. **Roche limit**
RT celestial mechanics
dimensional stability
gravitation
natural satellites
orbits
rotating bodies
two body problem

rock bolts
GS fasteners
. bolts
. . **rock bolts**

rock intrusions
DEF Vertical tabular bodies of rock that fill fissures in host rocks. Used for dikes (geology).
UF *dikes (geology)*
GS **rock intrusions**
. batholiths
RT contacts (geology)
igneous rocks
inliers (landforms)
regolith
rocks
veins (petrology)

rock mechanics
DEF The theoretical and applied science of the physical behavior of rocks, representing a branch of mechanics concerned with the response of rock to the force fields of its physical environment.
RT fracture mechanics
geology
rocks
soil mechanics
structural properties (geology)

rock salt
USE **halites**

rocket boosters
USE **booster rocket engines**

rocket catapults
GS launchers
. catapults
. . **rocket catapults**
. rocket launchers
. . **rocket catapults**
RT gun launchers
launch vehicles
launching sites
missiles

∞ rockets

rocket chambers
USE **thrust chambers**

rocket engine 9KS-11000
GS engines
. rocket engines
. . booster rocket engines
. . . **rocket engine 9KS-11000**

rocket engine cases
UF *missile engine cases*
rocket motor cases
GS cases (containers)
. **rocket engine cases**
RT bonded joints
missile bodies
orthotropic cylinders
perforated shells
shells (structural forms)
thrust chambers

rocket engine control
GS engine control
. **rocket engine control**
RT attitude control
automatic control
∞ control
directional control
flight control
fuel control
HEUS rocket engines
missile control
remote control
servocontrol
spacecraft control
thrust control

rocket engine design
GS engine design
. **rocket engine design**
RT aerospike engines
cold flow tests
∞ design
engine tests
prefiring tests
Rover project

rocket engine noise
GS elastic waves
. sound waves
. . noise (sound)
. . . engine noise
. . . . **rocket engine noise**
RT mufflers

rocket engines
DEF Reaction engines that contain within themselves, or carry along with themselves, all the substances necessary for their operation or for the consumption or combustion of their fuel, not requiring of any outside substance and hence capable of operation in outer space. Used for interplanetary propulsion.
UF *interplanetary propulsion*
GS engines
. **rocket engines**
. . booster rocket engines
. . . AJ-10 engine
. . . Algol engine
. . . apogee boost motors
. . . H-1 engine
. . . LR-87-AJ-5 engine
. . . M-1 engine
. . . M-55 engine
. . . MA-2 engine
. . . MA-3 engine
. . . MA-5 engine
. . . Nike booster rocket engines
. . . P-1 engine
. . . rocket engine 9KS-11000
. . . Space Shuttle Boosters
. . . Advanced Solid Rocket Motor (STS)
. . . X-405 engine
. . ducted rocket engines
. . electric rocket engines
. . . electrostatic engines
. . . . ion engines

rocket exhaust

- cesium engines
- Hall thrusters
- mercury ion engines
- RIT engines
- . . . electrothermal engines
- arc jet engines
- pulsed jet engines
- resistojet engines
- . . . plasma engines
- magnetoplasmadynamic thrusters
- pulsed inductive thrusters
- pulsed plasma thrusters
- two stage plasma engines
- VASIMR (propulsion system)
- . . HEUS rocket engines
- . . hot water rocket engines
- . . hybrid propellant rocket engines
- . . . lithergol rocket engines
- . . liquid propellant rocket engines
- . . . AJ-10 engine
- . . . F-1 rocket engine
- . . . H-1 engine
- . . . hydrazine engines
- . . . hydrogen oxygen engines
- . . . J-2 engine
- . . . M-1 engine
- RL-10-A-1 engine
- RL-10-A-3 engine
- . . liquid air cycle engines
- . . . LR-62-RM-2 engine
- . . . LR-87-AJ-5 engine
- . . . LR-91-AJ-5 engine
- . . . MA-2 engine
- . . . MA-3 engine
- . . . MA-5 engine
- . . . oxygen-hydrocarbon rocket engines
- . . . RL-10 engines
- RL-10-A-1 engine
- RL-10-A-3 engine
- . . pulse detonation engines
- . . . Space Shuttle Main Engine
- . . . X-405 engine
- . . . XLR-99 engine
- . . . YLR-91-AJ-1 engine
- . . M-100 engine
- . . microrocket engines
- . . . Orbit Maneuvering Engine (Space Shuttle)
- . . nozzleless rocket engines
- . . nuclear engine for rocket vehicles
- . . nuclear ramjet engines
- . . nuclear rocket engines
- . . . nuclear lightbulb engines
- . . restartable rocket engines
- . . retrorocket engines
- . . . BE-3 engine
- . . reusable rocket engines
- . . solid propellant rocket engines
- . . . Algol engine
- . . . apogee boost motors
- . . ASROC engine
- . . Hercules engine
- . . . M-46 engine
- . . . M-55 engine
- . . . M-56 engine
- . . . M-57 engine
- . . Nike booster rocket engines
- . . . P-1 engine
- . . . SL-3 rocket engine
- . . . Space Shuttle Boosters
- Advanced Solid Rocket Motor (STS)
- . . . SYNCOM apogee engines
- . . . TX-77 engine
- . . . TX-354 engine
- . . . X-248 engine
- . . . X-254 engine
- . . . X-258 engines
- X-258-B1 engine
- . . . X-259 engine
- . . . XM-33 engine
- . . sustainer rocket engines
- . . turborocket engines
- . . ullage rocket engines
- . . upper stage rocket engines
- . . Vernier engines
- . . control rockets

- . . . SYNCOM apogee engines
- . . aerospike engines
- . . rocket-based combined-cycle engines

RT aircraft engines

- axial modes
- burning time
- dump combustors
- ejectors
- exhaust nozzles
- expendable stages (spacecraft)
- heavy lift launch vehicles
- hybrid propulsion
- ignition systems
- internal combustion engines
- jet engines
- jet propulsion
- laser propulsion
- launch vehicles
- Lunar Module Ascent Stage
- magnetoplasmadynamics
- matter-antimatter propulsion
- missile configurations
- missiles
- multistage rocket vehicles
- negative matter propulsion
- post boost propulsion system

∞ propellant actuated devices

- propellant explosions
- refractories
- reusable launch vehicles
- RIFT (reactor in flight test)

∞ rockets

- single stage rocket vehicles
- solid rocket propellants
- spacecraft components
- spacecraft propulsion
- spacecraft structures
- thrust
- thrust vector control

∞ thrusters

- thrust-weight ratio

rocket exhaust

GS plumes

- . **rocket exhaust**

RT aerospike engines

- base heating
- combustion products
- exhaust clouds
- exhaust gases
- exhaust systems
- jet exhaust

rocket firing

GS firing (igniting)

- . **rocket firing**
- . . retrofiring

RT burning time

- detonation
- liftoff (launching)
- static firing
- test firing

rocket flight

RT climbing flight

- coasting flight

∞ flight

- flight paths
- horizontal flight
- hypersonic flight
- meteorological flight
- space flight
- suborbital flight
- supersonic flight
- trajectories
- transonic flight
- vertical flight

rocket launchers

DEF Devices for launching rockets.

GS launchers

- . **rocket launchers**
- . . rocket catapults

RT ground support equipment

- gun launchers
- launch vehicles
- launching
- launching sites
- missile launchers

- ∞ rockets
- rockoons
- sea launching

rocket launching

UF *blastoff*

GS launching

- . **rocket launching**
- . . liftoff (launching)
- . . lunar launch
- . . orbital launching

RT Delta 4 Heavy launch vehicle

- exhaust clouds
- launch vehicles
- launch windows
- launchers
- spacecraft launching

rocket linings

DEF In solid rockets, the layers of inhibitors applied to the inner surface of the chamber holding the grain.

GS linings

- . **rocket linings**

RT bonded joints

- engine parts
- refractories

rocket motor cases

USE **rocket engine cases**

rocket nose cones

GS cones

- . nose cones
- . . **rocket nose cones**
- forebodies
- . noses (forebodies)
- . . nose cones
- . . . **rocket nose cones**

RT ablative nose cones

rocket nozzles

DEF The exhaust nozzles of rockets.

GS **rocket nozzles**

- . dual thrust nozzles

RT aerospike engines

- annular nozzles
- carbon-phenolic composites
- conical nozzles
- convergent-divergent nozzles
- divergent nozzles
- hypersonic nozzles
- magnetic nozzles
- nozzle inserts
- nozzleless rocket engines

∞ nozzles

- plug nozzles
- skirts
- spike nozzles
- supersonic nozzles

rocket oxidizers

UF *propellant oxidizers*

GS oxidizers

- . **rocket oxidizers**
- . . FLOX
- . . TAGN

RT cryogenic fluids

- Domino propellants
- high energy oxidizers
- hydrogen peroxide
- liquid oxidizers
- liquid oxygen
- nitrogen tetroxide
- nitronium perchlorate
- TATB
- tetrafluorohydrazine

rocket planes

GS rocket vehicles

- . **rocket planes**
- . . X-1 aircraft
- . . X-2 aircraft
- . . X-15 aircraft

RT aerospace planes

∞ aircraft

- boostglide vehicles

research aircraft

rocket propellant tanks

USE **propellant tanks**

rocket propellants

DEF Agents used for consumption or combustion in rockets and from which the rockets derive their thrust, such as fuels, oxidizers, additives, catalysts or any compounds or mixtures of these. Used for multipropellants.

UF *multipropellants*

GS propellants

. **rocket propellants**

- . . . gaseous rocket propellants
- . . . liquid rocket propellants
- cryogenic rocket propellants
- gelled rocket propellants
- hypergolic rocket propellants
- monopropellants
- RP-1 rocket propellants
- slurry propellants
- slush hydrogen
- aerazine
- nitramine propellants
- solid rocket propellants
- double base rocket propellants
- HMX
- HTPB propellants
- metal propellants
- TAGN
- TATB

RT ascent propulsion systems

auxiliary propulsion

fuels

hydrazines

hydrocarbon fuels

missiles

propellant binders

propellant consumption

propellant storage

propulsion

solid propellants

specific impulse

storable propellants

thrust

torpedo engines

rocket propelled sleds

GS surface vehicles

. sleds

. . **rocket propelled sleds**

RT Javelin rocket vehicle

∞ test equipment

rocket sondes

USE **sounding rockets**

rocket sounding

GS sounding

. **rocket sounding**

RT acoustic sounding

atmospheric sounding

barium ion clouds

in situ measurement

ionospheric sounding

Judi-Dart rocket

microwave sounding

satellite sounding

sounding rockets

Vertikal rockets

rocket test facilities

GS test facilities

. **rocket test facilities**

RT engine tests

test firing

test ranges

test stands

rocket thrust

DEF The thrust of a rocket engine usually expressed in pounds.

GS thrust

. **rocket thrust**

. . retrothrust

RT high thrust

jet thrust

liftoff (launching)

low thrust

low thrust propulsion

microthrust

propulsion system performance

specific impulse

static thrust

thrust loads

thrust termination

variable thrust

rocket vehicles

DEF Vehicles propelled by rocket engines, used to place satellites in orbit, place missiles on target or carry passengers over rails as on rocket sleds.

GS **rocket vehicles**

. Arcon rocket vehicle

. Blue Streak launch vehicle

. Blue Streak missile

. Centaur launch vehicle

. Atlas Centaur launch vehicle

. Folding Fin aircraft rocket vehicle

. hovering rocket vehicles

. Meteor 1 rocket vehicle

. multistage rocket vehicles

. Ablestar launch vehicle

. Antares rocket vehicle

. Argo rocket vehicles

. Astrobee rocket vehicles

. . . Astrobee 1500 rocket vehicle

. Athena rocket vehicle

. Atlas launch vehicles

. . . Atlas Able 5 launch vehicle

. . . Atlas Agena B launch vehicle

. . . Atlas Agena launch vehicles

. . . Atlas Centaur launch vehicle

. . . Atlas SLV-3 launch vehicle

. Berenice rocket vehicle

. Black Knight rocket vehicle

. Blue Scout rocket vehicle

. Diamant launch vehicle

. Eldo launch vehicle

. EXOS sounding rocket

. Jaguar rocket vehicle

. Javelin rocket vehicle

. Juno launch vehicles

. . . Juno 1 launch vehicle

. . . Juno 2 launch vehicle

. Jupiter C rocket vehicle

. Kappa rocket vehicles

. . . Kappa 8 rocket vehicle

. . . Kappa 9 rocket vehicle

. Lambda rocket vehicles

. Little Joe 2 launch vehicle

. Nike rocket vehicles

. . . Nike-Apache rocket vehicle

. . . Nike-Cajun rocket vehicle

. . . Nike-Hydac rocket vehicle

. . . Nike-Iroquois rocket vehicle

. . . Nike-Javelin rocket vehicle

. . . Nike-Tomahawk rocket vehicle

. Nova launch vehicles

. Pegasus air-launched booster

. Phoenix sounding rocket

. RAM B launch vehicle

. Rubis rocket vehicle

. Saturn launch vehicles

. . . Saturn 1 launch vehicles

. . . . Saturn 1 SA-1 launch vehicle

. . . . Saturn 1 SA-10 launch vehicle

. . . . Saturn 1 SA-2 launch vehicle

. . . . Saturn 1 SA-3 launch vehicle

. . . . Saturn 1 SA-4 launch vehicle

. . . . Saturn 1 SA-5 launch vehicle

. . . . Saturn 1 SA-6 launch vehicle

. . . . Saturn 1 SA-7 launch vehicle

. . . . Saturn 1 SA-8 launch vehicle

. . . . Saturn 1 SA-9 launch vehicle

. . . Saturn 1B launch vehicles

. . . Saturn 2 launch vehicles

. . . Saturn 5 launch vehicles

. . . Saturn D launch vehicle

. Scout launch vehicle

. Skylark rocket vehicle

. Thor launch vehicles

. . . Thor Able rocket vehicle

. . . Thor Agena launch vehicle

. . . Thor Delta launch vehicle

. Titan launch vehicles

. . . Titan 3 launch vehicle

. . . Titan 4 launch vehicle

. . . . Titan 4B launch vehicle

. Ares 1 launch vehicle

. . vanguard 2 launch vehicle

. Vega launch vehicle

. WASP sounding rocket

. . . Ares 1 first stage

. . . Ares 1 upper stage

. . . Ares 5 cargo launch vehicle

. payload assist module

. rocket planes

. X-1 aircraft

. X-2 aircraft

. X-15 aircraft

. Saturn stages

. . Saturn S-1 stage

. . Saturn S-1B stage

. . Saturn S-1C stage

. . Saturn S-2 stage

. . Saturn S-4 stage

. . Saturn S-4B stage

. single stage rocket vehicles

. Agena rocket vehicles

. . Agena A rocket vehicle

. . Agena B rocket vehicle

. . Agena C rocket vehicle

. . Agena D rocket vehicle

. Arcas rocket vehicles

. Black Brant sounding rockets

. . Black Brant 1 sounding rocket

. . Black Brant 2 sounding rocket

. . Black Brant 3 sounding rocket

. . Black Brant 4 sounding rocket

. . Black Brant 5 sounding rocket

. Black Knight rocket vehicle

. Domier paraglider rocket vehicle

. Genie rocket vehicle

. Honest John rocket vehicle

. Hyla-Star rocket vehicle

. Little John rocket vehicle

. Loki rocket vehicle

. Nomad launch vehicle

. Veronique rocket vehicles

. Viking rocket vehicle

. Zuni rocket vehicle

. sounding rockets

. . Aerobee rocket vehicle

. . Antares rocket vehicle

. . Apache rocket vehicle

. . Arcas rocket vehicles

. . Aries sounding rocket

. . Astrobee rocket vehicles

. . . Astrobee 1500 rocket vehicle

. . Black Brant sounding rockets

. . . Black Brant 1 sounding rocket

. . . Black Brant 2 sounding rocket

. . . Black Brant 3 sounding rocket

. . . Black Brant 4 sounding rocket

. . . Black Brant 5 sounding rocket

. . Cajun rocket vehicle

. . Domier paraglider rocket vehicle

. . EXOS sounding rocket

. . Jaguar rocket vehicle

. . Judi-Dart rocket

. . Kappa rocket vehicles

. . . Kappa 8 rocket vehicle

. . . Kappa 9 rocket vehicle

. . Lambda rocket vehicles

. . Loki rocket vehicle

. . Petrel sounding rocket

. . Phoenix sounding rocket

. . Skua rocket vehicles

. . Skylark rocket vehicle

. . Venus fly trap rocket vehicle

. . Veronique rocket vehicles

. . Vertikal rockets

. . WASP sounding rocket

. Standard Launch Vehicles

. . Atlas SLV-3 launch vehicle

. . Standard Launch Vehicle 5

. surface to surface rockets

. . Honest John rocket vehicle

. . Little John rocket vehicle

. Thorad launch vehicles

. . Thor Able rocket vehicle

. . Thor Agena launch vehicle

. . Thor Delta launch vehicle

. . Titan Centaur launch vehicle

RT

acoustic sounding

rocket-based combined-cycle engines

- ∞ ballistic vehicles
- ∞ flight vehicles
 - HEUS rocket engines
 - launch vehicles
 - missile configurations
 - multiengine vehicles
- ∞ rockets
 - Space Processing Applications
 - Rocket
 - stage separation
 - test vehicles
 - Trailblazer 1 reentry vehicle
 - Trailblazer 2 reentry vehicle
- ∞ vehicles
- ∞ winged vehicles
 - X-17 reentry vehicle

rocket-based combined-cycle engines

(added August 1999)

DEF Launch vehicle engines that integrate a high specific impulse, low thrust-to-weight, airbreathing engine with a low-impulse, high thrust-to-weight rocket. The engines are often defined by four modes of operation in a single-stage-to-orbit configuration. In the first mode, the engine functions as a rocket-driven ejector. When the rocket engine is switched off, subsonic combustion (mode 2) is present in the ramjet mode. As the vehicle continues to accelerate, supersonic combustion (mode 3) occurs in the ramjet mode. Finally, as the edge of the atmosphere is approached and the engine inlet is closed off, the rocket is reignited and the final ascent to orbit is undertaken in an all-rocket mode (mode 4).

UF *RBCC engines*

GS engines

. rocket engines

. . **rocket-based combined-cycle engines**

- RT air breathing boosters
 air breathing engines
 hybrid propulsion
 integral rocket ramjets
 ramjet engines
 single stage to orbit vehicles
 spacecraft propulsion
 supersonic combustion ramjet engines

rocket-borne instruments

- RT controllers
 flight test instruments

∞ instruments

measuring instruments
 meteorological instruments
 position indicators

rocket-borne photography

- GS imagery
 . photography
 . . **rocket-borne photography**

- RT aerial photography
 astronomical photography
 black and white photography
 photomapping
 satellite-borne photography
 spaceborne photography

∞ rockets

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT air slew missiles
 ammunition
 escape rockets
 heavy lift launch vehicles
 incendiary ammunition
 launch vehicles
 missiles
 nuclear ramjet engines
 nuclear rocket engines
 nuclear weapons
 Patriot missile
 Petrel sounding rocket
 pyrotechnics
 reentry
 reentry vehicles
 rocket catapults
 rocket engines

- rocket launchers
- rocket vehicles
- rockoons
- space flight
- surface to air missiles
- surface to surface missiles
- surface to surface rockets
- torpedoes
- warheads
- weapon systems
- weapons delivery

rockoons

DEF High altitude sounding systems that consist of small solid propellant research rockets carried aloft by large plastic balloons.

- RT high altitude balloons
 meteorological balloons
 ROBIN balloons
 rocket launchers
 ∞ rockets
 skyhook balloons

rocks

DEF Naturally formed aggregates of mineral matter occurring in large masses or fragments. Used for stones (rocks).

UF *stones (rocks)*

GS **rocks**

- . andesite
- . ataxite
- . bedrock
- . . Baltic Shield (Europe)
- . . batholiths
- . breccia
- . gneiss
- . igneous rocks
 - . . anorthosite
 - . . basalt
 - . . diorite
 - . . dunite
 - . . eclogite
 - . . felsite
 - . . gabbro
 - . . granite
 - . . obsidian
 - . . . moldavite
 - . . peridotite
 - . . pumice
 - . . rhyolite
 - . . syenite
 - . . trachyte
- . lunar rocks
- . . krep
- . metamorphic rocks
 - . . quartzite
 - . . regolith
 - . . schist
 - . . sedimentary rocks
 - . . carbonaceous rocks
 - . . . coal
 - anthracite
 - lignite
 - solvent refined coal
 - . . limestone
 - . . sandstones
 - . . shales
 - . . shatter cones

RT aggregates

- bauxite
- boreholes
- clays
- contacts (geology)
- crossbedding (geology)
- dirt
- dolomite (mineral)
- Earth resources
- effusives
- enstatite
- fold (geology)
- formations
- geology
- gypsum
- inliers (landforms)
- karst
- landslides
- laterites
- lava
- ledges

- lithology
- magma
- metamorphism (geology)
- minerals
- nunataks
- olivine
- outliers (landforms)
- paleomagnetism
- petrography
- petrology
- pyroxenes
- quartz
- reefs
- rock intrusions
- rock mechanics
- serpentine
- soils
- stratigraphy
- tunneling (excavation)
- veins (petrology)

Rockwell hardness

- GS mechanical properties
 . hardness

. . **Rockwell hardness**

- RT microhardness

Rocky Mountains (North America)

- GS landforms

. mountains

. . **Rocky Mountains (North America)**

- RT Canada
 United States

rodents

- GS animals
 . vertebrates
 . . mammals
 . . . **rodents**
 guinea pigs
 hamsters
 mice
 jerboas
 knockout mice
 pocket mice
 rabbits
 rats
 squirrels
 ground squirrels

rods

- GS **rods**
 . control rods

RT bars

- billets
- directors (antenna elements)
- structural members
- wire

Roe flux difference splitting scheme

USE **flux difference splitting**

Roentgen satellite

USE **ROSAT mission**

Rogallo wings

USE **flexible wings**
folding structures

rogue planets

(added April 2001)

USE **hypothetical planets**

roll

DEF The act of rolling; rotational or oscillatory movement of an aircraft or similar body about a longitudinal axis through the body -- called roll for any degree of such rotation. The amount of this movement, i.e., the angle of roll.

GS attitude (inclination)

. **roll**

- RT damping
 lateral control
 lateral oscillation
 lateral stability
 pitch (inclination)
 rollers
 ∞ rolling
 rolling moments

rotation
sideslip
turning flight
wing rock
yaw

roll control

USE **lateral control**

roll forming

GS forming techniques
. **roll forming**
RT cold working
metal working

roller bearings

GS bearings
. antifriction bearings
. . **roller bearings**
. . . needle bearings
RT ball bearings
thrust bearings

rollers

RT conveyors
cylindrical bodies
dispensers
distributors
idlers
platens
pulleys
roll
tires
vehicle wheels
wheels

∞ **rolling**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ausforming
flattening
forging
leveling
metal working
roll

rolling contact loads

GS loads (forces)
. contact loads
. . **rolling contact loads**
. dynamic loads
. . **rolling contact loads**
RT antifriction bearings
stresses
structural design criteria

rolling moments

DEF Moments that tend to rotate an aircraft, rocket or spacecraft about a longitudinal axis. These moments are considered positive when they tend to depress the starboard side of the body.

GS moments
. stability derivatives
. . **rolling moments**
RT aerodynamic coefficients
lateral stability
moments of inertia
pitching moments
roll
torque
yawing moments

rollup solar arrays

USE **solar arrays**

ROM devices

USE **read-only memory devices**

Romania

UF *Rumania*
GS nations
. **Romania**
RT Black Sea
Central Europe
Europe

Ronchi test

DEF An improvement on the Foucault knife-edge test for curved mirrors, in which the knife

edge is replaced with a transmission grating with 15 to 80 lines per centimeter, and the pinhole source is replaced with a slit or a section of the same grating.

GS interferometry
. **Ronchi test**
RT electromagnetic radiation
etalons
gratings (spectra)
interferometers
measuring instruments
optical measurement

roofs

RT buildings
sheaths

room temperature

DEF A temperature in the range of 20 to 30 C (68 to 85 F).
GS temperature
. **room temperature**
RT ambient temperature
operating temperature

rooms

GS **rooms**
. clean rooms
. darkrooms
RT compartments
enclosures
∞ lounges

root-mean-square errors

DEF In statistics, the square root of the arithmetic mean of the squares of the deviations of the various items from the arithmetic mean of the whole.

GS errors
. **root-mean-square errors**
RT error analysis
statistical analysis

∞ **roots**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT plant roots
radicals
roots of equations
wing roots

roots of equations

UF *zero crossings*
RT eigenvalues
∞ equations
existence theorems
matrices (mathematics)
Newton methods
nonlinear equations
polynomials
∞ roots

Rorschach tests

GS psychological tests
. **Rorschach tests**
RT mental health
psychology
∞ tests

ROSAT mission

UF *Roentgen satellite*
GS artificial satellites
. **ROSAT mission**
observatories
. astronomical observatories
. . **ROSAT mission**
RT astronomical satellites
international cooperation
spaceborne astronomy
spaceborne telescopes
x ray astronomy
x ray sources
x ray telescopes

Rosetta mission

(added October 1995)
UF *CNSR*
GS space missions
. asteroid missions
. . **Rosetta mission**

RT comet nuclei
Comet Rendezvous Asteroid Flyby Mission
∞ missions
Near Earth Asteroid Rendezvous Mission
rendezvous trajectories
sampling

rosette shapes

GS shapes
. **rosette shapes**
RT antenna radiation patterns
crystallites
spherulites
strain gages

Roshko prediction

GS predictions
. **Roshko prediction**
RT bluff bodies
laminar flow
Oseen approximation
three dimensional flow

rosin

GS gums (substances)
. **rosin**
RT organic materials

Ross ice shelf

GS regions
. polar regions
. . Antarctic regions
. . . **Ross ice shelf**
. remote regions
. . Antarctic regions
. . . **Ross ice shelf**
Southern Hemisphere
. Antarctic regions
. . **Ross ice shelf**
RT McMurdo sound

Rossby regimes

RT barotropic flow
planetary waves

Rossby waves

USE **planetary waves**

Rossi X Ray Timing Explorer
(added March 1999)

USE **X Ray Timing Explorer**

rotary drives

USE **mechanical drives**

rotary engines

DEF A positive displacement engine consisting of a rotor and stator. The control volume which encloses the working fluid during the thermodynamic cycle moves in a generally circular motion rather than a linear motion as in a piston engine.

GS engines
. internal combustion engines
. . **rotary engines**
. . . Wankel engines
RT aircraft engines
automobile engines
piston engines

rotary gyroscopes

GS gyroscopes
. **rotary gyroscopes**
. . fluid rotor gyroscopes
RT gyroscope fluids
gyroscopic stability
rotating bodies

rotary stability

UF *whirl instability*
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . **rotary stability**
. . . . gyroscopic stability
stability
. dynamic stability
. . motion stability
. . . **rotary stability**

rotary wing aircraft

RT gyroscopic stability
airfoil oscillations
directional stability
flow stability
lateral stability
longitudinal stability
rotating bodies
rotation
rotor dynamics

rotary wing aircraft

DEF A heavier-than-air aircraft that depends principally for its support in flight on the lift generated by one or more rotors.

UF *rotorcraft*

GS V/STOL aircraft

. rotary wing aircraft

. . . autogyros
. . . Avian 2/180 autogyro
. . . helicopters
. . . Alouette helicopters
. . . . SA-330 helicopter
. . . . SE-3160 helicopter
. . . Bell 214A helicopter
. . . compound helicopters
. . . . S-67 helicopter
. . . H-17 helicopter
. . . heavy lift helicopters
. . . . CH-62 helicopter
. . . light helicopters
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-58 helicopter
. . . military helicopters
. . . . AH-1G helicopter
. . . . AH-1S helicopter
. . . . AH-1W helicopter
. . . . AH-63 helicopter
. . . . AH-64 helicopter
. . . . BO-105 helicopter
. . . . CH-3 helicopter
. . . . CH-21 helicopter
. . . . CH-34 helicopter
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . CH-54 helicopter
. . . . CH-62 helicopter
. . . . H-19 helicopter
. . . . H-43 helicopter
. . . . H-53 helicopter
. . . . H-54 helicopter
. . . . H-56 helicopter
. . . . H-60 Helicopter
. . . . HC-3 helicopter
. . . . HH-43 helicopter
. . . . HH-65 helicopter
. . . . OH-4 helicopter
. . . . OH-5 helicopter
. . . . OH-6 helicopter
. . . . OH-13 helicopter
. . . . OH-23 helicopter
. . . . OH-58 helicopter
. . . . P-531 helicopter
. . . . QH-50 helicopter
. . . . S-67 helicopter
. . . . SA-321 helicopter
. . . . SA-330 helicopter
. . . . SH-3 helicopter
. . . . SH-4 helicopter
. . . . Sikorsky Whirlwind helicopter
. . . . UH-1 helicopter
. . . . UH-2 helicopter
. . . . UH-34 helicopter
. . . . UH-60A helicopter
. . . . UH-61A helicopter
. . . . Westland Whirlwind helicopter
. . . . XV-9A aircraft
. . . rigid rotor helicopters
. . . . CH-3 helicopter
. . . . F-28 helicopter
. . . . XH-51 helicopter
. . . S-58 helicopter
. . . S-61 helicopter
. . . tandem rotor helicopters
. . . . CH-46 helicopter
. . . . CH-47 helicopter
. . . . H-25 helicopter
. . . EH-101 helicopter

. . . TH-55 helicopter
. . . rotor systems research aircraft
. . . tilt rotor aircraft
. . . V-22 aircraft
. . . XV-15 aircraft
RT ∞ aircraft
autorotation
commercial aircraft
lifting rotors
∞ military aircraft
passenger aircraft
rotor stator interactions
short takeoff aircraft
∞ subsonic aircraft
transport aircraft
vertical takeoff aircraft
Weser aircraft
Westland aircraft

rotary wings

UF *helicopter rotors*

hinged rotor blades

GS airfoils

. wings

. . rotary wings

. . . circulation control rotors

. . . lifting rotors

. . . bearingless rotors

. . . rigid rotors

. . . tilting rotors

. . . tip driven rotors

. . . x wing rotors

rotating bodies

. rotors

. . rotary wings

. . . circulation control rotors

. . . lifting rotors

. . . bearingless rotors

. . . rigid rotors

. . . tilting rotors

. . . tip driven rotors

. . . x wing rotors

RT blade tips

∞ blades

blade-vortex interaction

convertible fan-shaft engines

fan blades

flapping hinges

folding structures

ground resonance

harmonic control

helicopter propeller drive

helicopter tail rotors

lift fans

propeller blades

∞ rotor blades

rotor dynamics

tail rotors

Tilt Rotor Research Aircraft Program

V-22 aircraft

whirl towers

rotating

USE **rotation**

rotating bodies

UF *rotating vehicles*

solid rotation

GS **rotating bodies**

. lunar rotation

. rotating cylinders

. rotating disks

. rotating spheres

. rotors

. . compressor rotors

. . flywheels

. . impellers

. . pump impellers

. . rotary wings

. . . circulation control rotors

. . . lifting rotors

. . . bearingless rotors

. . . rigid rotors

. . . tilting rotors

. . . tip driven rotors

. . . x wing rotors

. . . tail rotors

. . . helicopter tail rotors

. . . tip vanes

. . turbine wheels

. . wave rotors
RT axes of rotation
∞ bodies
planetary rotation
Roche limit
rotary gyroscopes
rotary stability
rotation
spinning unguided rocket trajectory

rotating cylinders

GS rotating bodies
. **rotating cylinders**
symmetrical bodies
. bodies of revolution
. . cylindrical bodies
. . . **rotating cylinders**
RT Couette flow
∞ cylinders
cylindrical shells
elastohydrodynamics
Magnus effect
shafts (machine elements)
viscometers
viscometry

rotating disks

GS disks (shapes)
. **rotating disks**
rotating bodies
. **rotating disks**
RT accretion disks
counter rotation
Karman-Bodewadt flow
mistuning (turbomachinery)

∞ rotating electrical machines

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT armatures

commutators

electric hybrid vehicles

electric motors

induction motors

∞ machinery

rotating generators

rotors

servomotors

stators

rotating environments

GS environments
. **rotating environments**
RT artificial gravity
Barany chair
clinorotation
clinostats
Coriolis effect
high gravity environments
Langley complex coordinator
spacecraft environments
tumbling motion

rotating fluids

GS matter (physics)
. rotating matter
. . **rotating fluids**
. . . rotating liquids
. . . rotating plasmas
RT counter rotation
∞ fluids
Goertler instability
Karman-Bodewadt flow
liquid sloshing
planetary waves
superrotation
Taylor instability
trapped vortices
turbulent flow
vortex sheets
vortices
wing tip vortices

rotating generators

UF *dynamos*
GS electric generators
. **rotating generators**
. . amplidyne
. . dynamometers
. . homopolar generators

- . . turbogenerators
 - . . . ASTEC solar turboelectric generator
 - RT AC generators
 - commutators
 - DC generators
 - electrostatic generators
 - ∞ generators
 - ∞ rotating electrical machines
 - turbines
 - turbomachinery
- rotating liquids**
- UF *liquid rotation*
 - GS liquids
 - . **rotating liquids**
 - matter (physics)
 - . rotating matter
 - . . rotating fluids
 - . . . **rotating liquids**
 - RT Goertler instability
 - planetary waves
 - rotation
 - trapped vortices
 - vortices
- rotating matter**
- GS matter (physics)
 - . **rotating matter**
 - . . rotating fluids
 - . . . rotating liquids
 - . . . rotating plasmas
 - RT degenerate matter
 - rotation
 - spin dynamics
- rotating mirrors**
- GS mirrors
 - . **rotating mirrors**
 - RT framing cameras
 - high speed cameras
- rotating plasmas**
- GS matter (physics)
 - . rotating matter
 - . . rotating fluids
 - . . . **rotating plasmas**
 - particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - **rotating plasmas**
 - . corpuscular radiation
 - . . energetic particles
 - . . . plasmas (physics)
 - **rotating plasmas**
 - RT drift rate
 - nonequilibrium plasmas
 - plasma flux measurement
 - theta pinch
 - toroidal plasmas
 - two fluid models
 - zeta pinch
- rotating shafts**
- GS shafts (machine elements)
 - . **rotating shafts**
 - . . turboshafts
- rotating spheres**
- GS rotating bodies
 - . **rotating spheres**
 - symmetrical bodies
 - . bodies of revolution
 - . . spheres
 - . . . **rotating spheres**
 - RT equators
 - spherical shells
- rotating stalls**
- RT aerodynamic stalling
 - boundary layer separation
 - compressor blades
 - ∞ rotor blades
 - ∞ stalling
- turbocompressors
- rotating vehicles*
- USE **rotating bodies vehicles**
- rotation**
- DEF The motion of a body about some straight line wherein the particles of the body along the line or its extensions have a zero velocity relative to some reference. The line of stationary particles is called the axis of rotation. Used for rotating, whirl, and whirling.
- UF *rotating whirl whirling*
 - GS gyration
 - . **rotation**
 - . . autorotation
 - . . corotation
 - . . counter rotation
 - . . Earth rotation
 - . . galactic rotation
 - . . image rotation
 - . . lunar rotation
 - . . molecular rotation
 - . . muon spin rotation
 - . . planetary rotation
 - . . satellite rotation
 - . . stellar rotation
 - . . . solar rotation
 - . . clinorotation
 - . . superrotation
 - RT angular acceleration
 - angular velocity
 - axes of rotation
 - circulation
 - coning motion
 - Coriolis effect
 - cross polarization
 - Faraday effect
 - libration
 - ∞ motion
 - nutaton
 - pitch (inclination)
 - polarization (spin alignment)
 - polarization (waves)
 - precession
 - revolving
 - roll
 - rotary stability
 - rotating bodies
 - rotating liquids
 - rotating matter
 - rotors
 - torque
 - vortex avoidance
 - vortices
 - yaw
- rotational flow*
- USE **fluid flow vortices**
- rotational spectra**
- (added July 1989)
- GS molecular properties
 - . molecular spectra
 - . . **rotational spectra**
 - spectra
 - . molecular spectra
 - . . **rotational spectra**
 - RT absorption spectra
 - line spectra
 - molecular excitation
 - molecular rotation
 - molecular spectroscopy
 - rotational states
 - vibrational spectra
- rotational states**
- (added December 1993)
- SN (LIMITED TO MOLECULAR ENERGY LEVELS - EXCLUDES ROTATIONAL DYNAMICS OF VEHICLES OR OTHER BODIES)
 - GS level (quantity)
 - . energy levels
 - . . molecular energy levels
 - . . . **rotational states**
 - molecular properties
- . molecular energy levels
 - . . **rotational states**
 - molecular excitation
 - rotational spectra
- Rotifera**
- DEF A phylum of multicellular animals in the subkingdom Eumatazoa.
- GS animals
 - . invertebrates
 - . . **Rotifera**
 - microorganisms
 - . **Rotifera**
 - RT worms
- rotochutes**
- GS parachutes
 - . **rotochutes**
 - RT autorotation
- rotons**
- GS mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . **rotons**
 - RT activation energy
 - excitation
 - photons
 - rotation
- rotor aerodynamics**
- GS mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . gas dynamics
 - aerodynamics
 - **rotor aerodynamics**
 - RT Ffowkes Williams-Hawkins equation
 - flapping
 - flapping hinges
 - ground resonance
 - rotor body interactions
 - rotor dynamics
 - rotor stator interactions
 - rotors
 - whirl towers
- ∞ **rotor blades**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT helicopter tail rotors
 - mistuning (turbomachinery)
 - rotary wings
 - rotating stalls
 - rotor blades (turbomachinery)
 - tail rotors
 - x wing rotors
- rotor blades (turbomachinery)**
- UF *impeller blades*
 - GS turbomachine blades
 - . **rotor blades (turbomachinery)**
 - RT airfoils
 - blade tips
 - ∞ blades
 - compressor blades
 - compressor rotors
 - impellers
 - mistuning (turbomachinery)
 - ∞ rotor blades
 - rotor stator interactions
 - rotors
 - stator blades
 - turbine blades
- rotor body interactions**
- DEF Aerodynamic interactions between a helicopter rotor and a body.
- RT aerodynamic characteristics
 - aerodynamic configurations
 - helicopter design
 - rotor aerodynamics
 - rotor stator interactions
- rotor disks*
- USE **turbine wheels**
- rotor dynamics**
- (added July 1989)
- UF *rotordynamics*

rotor lift

RT dynamic characteristics
dynamic response
dynamic stability
∞ dynamics
rotary stability
rotary wings
rotor aerodynamics
rotors
structural vibration
turbomachinery

rotor hubs

USE **hubs**
rotors

rotor lift

GS aerodynamic characteristics
. lift
. . . **rotor lift**
aerodynamic forces
. lift
. . . **rotor lift**
dynamic characteristics
. lift
. . . **rotor lift**
RT distribution (property)

rotor speed

GS rates (per time)
. **rotor speed**
velocity
. **rotor speed**
RT angular velocity
high speed
labyrinth seals
tip speed

rotor stator interactions

(added June 1995)

DEF Aerodynamic interaction between a rotor and a stator.

RT aerodynamic interference
interactional aerodynamics
rotary wing aircraft
rotor aerodynamics
rotor blades (turbomachinery)
rotor body interactions
stator blades
structural stability
supersonic turbines
surface noise interactions
tilt rotor aircraft
turbine blades

rotor systems research aircraft

GS research vehicles
. research aircraft
. . . **rotor systems research aircraft**
V/STOL aircraft
. rotary wing aircraft
. . . **rotor systems research aircraft**
RT ∞ aircraft
aircraft design
helicopters
NASA programs
∞ systems

rotorcraft

USE **rotary wing aircraft**

rotordynamics

USE **rotor dynamics**

rotors

UF *rotor hubs*
GS rotating bodies
. **rotors**
. . . compressor rotors
. . . flywheels
. . . impellers
. . . pump impellers
. . . rotary wings
. . . circulation control rotors
. . . lifting rotors
. . . . bearingless rotors
. . . . rigid rotors
. . . . tilting rotors
. . . . tip driven rotors
. . . . x wing rotors
. . . tail rotors

. . . helicopter tail rotors
. . . tip vanes
. . . turbine wheels
. . . wave rotors

RT

airfoils
armatures
centrifugal compressors
heavy lift airships
mistuning (turbomachinery)
∞ rotating electrical machines
rotor aerodynamics
rotor blades (turbomachinery)
rotor dynamics
stators
turbines
turbocompressors
turbomachine blades
turboshafts
wheels
wings

roughness

GS **roughness**
. sea roughness
. surface roughness
RT coarseness
contours
flatness
mechanical properties
motion stability
profilometers
smoothing
surface properties

round trip trajectories

GS trajectories
. **round trip trajectories**
. . . circumlunar trajectories
RT Earth-Moon trajectories
interorbital trajectories
interplanetary flight
interplanetary trajectories
moon-Earth trajectories
orbital mechanics
spacecraft trajectories
swingby technique

Rouse belts

RT ∞ belts
cones (volcanoes)
earthquakes
geological faults
Mars volcanoes
seismology
tremors
volcanoes
volcanology

routes

RT air traffic control
flight plans
∞ paths
site selection
transportation

∞ routines

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT computer programs
computer systems programs
data conversion routines
disk operating system (DOS)
input/output routines
merging routines
operating systems (computers)
user manuals (computer programs)

Rover project

GS programs
. NASA programs
. . . NASA space programs
. . . **Rover project**
. . . projects
. . . **Rover project**
. . . space programs
. . . NASA space programs
. . . **Rover project**
RT KIWI reactors
nuclear engine for rocket vehicles
nuclear propulsion

nuclear reactors
RIFT (reactor in flight test)
rocket engine design
spacecraft propulsion

roving vehicles

UF *extraterrestrial roving vehicles*
GS surface vehicles
. **roving vehicles**
. . . lunar roving vehicles
. . . Lunokhod lunar roving vehicles
. . . manned lunar surface vehicles
. . . Mars roving vehicles
. . . Marsokhod Mars roving vehicles
RT Mars sample return missions
planetary landing
planetary surfaces
research vehicles
toroidal wheels
unmanned ground vehicles
∞ vehicles

∞ roving

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT composite materials
webs (sheets)
yarns

Rowland circles

RT gratings (spectra)
optical filters

RP-1 rocket propellants

GS propellants
. rocket propellants
. . . liquid rocket propellants
. . . **RP-1 rocket propellants**
RT JP-4 jet fuel
kerosene

RPV

USE **remotely piloted vehicles**

RS codes

USE **Reed-Solomon codes**

RTM (composite materials)

USE **resin transfer molding**

RTV-40 rubber (trademark)

GS elastomers
. rubber
. . . synthetic rubbers
. . . silicone rubber
. . . . **RTV-40 rubber (trademark)**
. . . . vulcanized elastomers
. . . . **RTV-40 rubber (trademark)**

RTV-60 rubber (trademark)

GS elastomers
. rubber
. . . synthetic rubbers
. . . silicone rubber
. . . . **RTV-60 rubber (trademark)**
. . . . vulcanized elastomers
. . . . **RTV-60 rubber (trademark)**

Ruanda-Urundi

USE **Burundi**
Rwanda

rubber

DEF A material that is capable of recovering from large deformations quickly and forcibly, and can be, or already is modified to a state in which it is essentially insoluble (but can swell) in boiling solvent such as benzene, methyl ethyl ketone, and ethanol-toluene azeotrope.

GS elastomers
. **rubber**
. . . synthetic rubbers
. . . Adiprene (trademark)
. . . Buna (trademark)
. . . silicone rubber
. . . . RTV-40 rubber (trademark)
. . . . RTV-60 rubber (trademark)
. . . . Viton rubber (trademark)
. . . . vulcanized elastomers
. . . . RTV-40 rubber (trademark)

- RTV-60 rubber (trademark)
- chloroprene resins
- RT guayule
- gums (substances)
- latex
- organic materials
- polyisoprenes
- rubber coatings**
- GS coatings
- . **rubber coatings**
- RT paints
- protective coatings
- rubidium**
- GS chemical elements
- . alkali metals
- . . **rubidium**
- . . . rubidium isotopes
- rubidium 86
- metals
- . alkali metals
- . . **rubidium**
- . . . rubidium isotopes
- rubidium 86
- rubidium 86**
- GS chemical elements
- . alkali metals
- . . rubidium
- . . . rubidium isotopes
- **rubidium 86**
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- **rubidium 86**
- rubidium isotopes
- **rubidium 86**
- metals
- . alkali metals
- . . rubidium
- . . . rubidium isotopes
- **rubidium 86**
- rubidium compounds**
- RT ∞ alkali metal compounds
- ∞ chemical compounds
- ∞ metal compounds
- rubidium isotopes**
- GS chemical elements
- . alkali metals
- . . rubidium
- . . . **rubidium isotopes**
- rubidium 86
- . nuclides
- . . isotopes
- . . . **rubidium isotopes**
- rubidium 86
- metals
- . alkali metals
- . . rubidium
- . . . **rubidium isotopes**
- rubidium 86
- Rubis rocket vehicle**
- GS rocket vehicles
- . multistage rocket vehicles
- . . **Rubis rocket vehicle**
- RT solid propellant rocket engines
- ruby**
- RT aluminum oxides
- crystals
- ruby lasers**
- GS electronic equipment
- . solid state devices
- . . solid state lasers
- . . . **ruby lasers**
- stimulated emission devices
- . lasers
- . . solid state lasers
- . . . **ruby lasers**
- RT pulsed lasers
- Q switched lasers
- Verneuil process
- rudders**
- GS control surfaces
- . **rudders**
- . . aerial rudders
- . . . marine rudders
- RT airfoils
- fins
- pintles
- stabilizers (fluid dynamics)
- sweptback tail surfaces
- tabs (control surfaces)
- tail assemblies
- tail surfaces
- trapezoidal tail surfaces
- ruggedness**
- RT durability
- ∞ high resistance
- mechanical properties
- ∞ rigidity
- ruler method**
- RT ∞ methodology
- rules**
- GS **rules**
- . flight rules
- . . instrument flight rules
- . . visual flight rules
- . Palmgren-Miner rule
- . phase rule
- . selection rules (nuclear physics)
- . sum rules
- . Whitham rule
- RT laws
- patent policy
- policies
- procurement policy
- regulations
- sea law
- Rumania*
- USE **Romania**
- run time (computers)**
- RT computer programming
- computers
- time sharing
- Runge-Kutta method**
- DEF A method for the numerical solution of an ordinary differential equation.
- GS analysis (mathematics)
- . numerical analysis
- . . numerical integration
- . . . **Runge-Kutta method**
- . real variables
- . . measure and integration
- . . . numerical integration
- **Runge-Kutta method**
- RT ∞ methodology
- running**
- GS locomotion
- . **running**
- RT gait
- physical exercise
- walking
- runoffs*
- USE **drainage**
- runway alignment**
- SN (ALIGNMENT WITH RUNWAYS--NOT ALIGNMENT OF RUNWAYS)
- RT aircraft landing
- takeoff runs
- runway conditions**
- GS conditions
- . **runway conditions**
- RT aviation meteorology
- ice
- runway incursions
- runways
- slush
- surface roughness
- water
- weather
- runway incursions**
- (added May 2006)
- DEF Any occurrence at an airport involving an aircraft, vehicle, person or object on the ground, that creates a collision hazard or results in the loss of separation with an aircraft taking off, intending to take off or intending to land.
- GS hazards
- . aircraft hazards
- . . **runway incursions**
- RT aerospace safety
- aircraft accidents
- aircraft safety
- airfield surface movements
- airport surface detection equipment
- collision avoidance
- collisions
- crashes
- flight safety
- runway conditions
- runways
- situational awareness
- runway lights**
- GS landing aids
- . airport lights
- . . **runway lights**
- lighting equipment
- . luminaires
- . . airport lights
- . . . **runway lights**
- RT approach control
- ∞ flares
- ∞ markers
- runways
- searchlights
- visual control
- runways**
- DEF A defined rectangular area on a land airport prepared for the landing and takeoff run of aircraft along its length.
- RT airfield surface movements
- airports
- landing
- landing aids
- landing mats
- landing sites
- pavements
- runway conditions
- runway incursions
- runway lights
- ∞ strip
- takeoff
- taxiing
- rupturing**
- RT ∞ blisters
- bursts
- cracking (fracturing)
- disrupting
- failure
- fracture mechanics
- metal fatigue
- self sealing
- structural strain
- tearing
- rural areas**
- RT agriculture
- farmlands
- grasslands
- land
- megalopolises
- rangelands
- regional planning
- residential areas
- suburban areas
- wilderness
- rural land use**
- GS land use
- . **rural land use**
- RT agriculture
- conservation
- ∞ development
- Earth resources
- farmlands
- grasslands
- grazing
- Great Plains Corridor (North America)
- land
- land management

Russian Federation

orchards
rangelands
regional planning
sites

Russia

USE **Russian Federation**

Russian Federation

(added August 1993)

UF *Russia*

GS nations

. **Russian Federation**

RT Asia

Automatic Universal Orbiting Stations
Europe
Moscow
Russian Space Program

Russian Space Program

(added September 1994)

GS programs

. space programs

. . **Russian Space Program**

RT Commonwealth of Independent States

cosmonauts
Energia launch vehicle
GLONASS
Granat satellite
international cooperation
Kvant modules
Proton launch vehicle
Russian Federation
Soviet satellites
Soviet spacecraft
U.S.S.R. space program
Vertikal rockets

rust fungi

UF *rusts (botany)*

GS plants (botany)

. fungi

. . **rust fungi**

RT blight

∞ mold
parasitic diseases
plant diseases

rusting

GS chemical reactions

. oxidation

. . **rusting**

corrosion

. **rusting**

RT atmospheric effects
chemical attack
coatings

corrosion resistance
degradation
desensitizing
deterioration
hot corrosion
metal-water reactions
oxidation resistance
passivity
scale (corrosion)
weathering

rusts (botany)

USE **rust fungi**

ruthenium

GS chemical elements

. **ruthenium**

. . ruthenium isotopes

metals

. noble metals

. . **ruthenium**

. . . ruthenium isotopes

. . transition metals

. . **ruthenium**

. . . ruthenium isotopes

ruthenium 106

USE **ruthenium isotopes**

ruthenium alloys

GS alloys

. **ruthenium alloys**

ruthenium compounds

RT ∞ chemical compounds

∞ metal compounds

transition metals

ruthenium isotopes

UF *ruthenium 106*

GS chemical elements

. nuclides

. . isotopes

. . . **ruthenium isotopes**

. ruthenium

. . **ruthenium isotopes**

metals

. noble metals

. . ruthenium

. . . **ruthenium isotopes**

. . transition metals

. . ruthenium

. . . **ruthenium isotopes**

rutherfordium

(added November 1994)

GS chemical elements

. **rutherfordium**

RT dubnium

∞ elements

rutile

DEF A mineral form of titanium oxide (TiO₂) (tetragonal crystallization), but usually produced chemically for use in ceramics and other products.

GS chalcogenides

. oxides

. . metal oxides

. . . titanium oxides

. . . . **rutile**

titanium compounds

. titanium oxides

. . **rutile**

RT anatase

coesite

cross relaxation

minerals

pigments

stishovite

Rwanda

UF *Ruanda-Urundi*

GS nations

. **Rwanda**

RT Africa

Burundi

RXTE (satellite)

(added March 1999)

USE **X Ray Timing Explorer**

Ryan aircraft

GS **Ryan aircraft**

. Firebee 2 target drone aircraft

. X-13 aircraft

. XC-142 aircraft

. XV-5 aircraft

. XV-8A aircraft

RT ∞ aircraft

Rydberg series

GS spectra

. radiation spectra

. . electromagnetic spectra

. . . line spectra

. . . . **Rydberg series**

RT absorption spectra

atomic spectra

electron transitions

emission spectra

H lines

hydrogen

S

S band

USE **superhigh frequencies**
ultrahigh frequencies

S curves

GS geometry
 . curves (geometry)
 . . **S curves**
 . . . Gompertz curves
 . Euclidean geometry
 . . analytic geometry
 . . . **S curves**
 Gompertz curves

S glass

GS glass
 . E glass
 . . **S glass**

RT composite materials
 glass fiber reinforced plastics
 glass fibers
 silicon dioxide

S matrix theory

UF *scattering matrix*

RT operators (mathematics)
 scattering cross sections
 ∞ theories

S stars

GS celestial bodies
 . stars
 . . late stars
 . . . cool stars
 **S stars**

RT asymptotic giant branch stars
 giant stars
 M stars
 Mira variables
 red giant stars

S waves

DEF Waves in an elastic media which cause an element of the medium to change its shape without a change in volume. Mathematically, S waves are ones whose velocity field has zero divergence. Used for secondary waves, shear disturbances, and shear waves.

UF *secondary waves*
shear disturbances
shear waves

GS elastic waves
 . **S waves**
 . . SH waves

RT crustal fractures
 dilatational waves
 P waves
 polarized elastic waves
 Rayleigh waves
 seismic waves
 surface waves
 transverse waves

S-2 aircraft

UF *US-2A aircraft*

GS antisubmarine warfare aircraft
 . **S-2 aircraft**
 monoplanes
 . **S-2 aircraft**
 utility aircraft
 . **S-2 aircraft**

RT ∞ aircraft

S-3 aircraft

UF *ES-3A aircraft*
KS-3 aircraft

GS antisubmarine warfare aircraft
 . **S-3 aircraft**
 jet aircraft
 . **S-3 aircraft**
 Lockheed aircraft
 . **S-3 aircraft**
 monoplanes
 . **S-3 aircraft**

RT ∞ aircraft

∞ military aircraft

S-3 satellite

USE **Explorer 12 satellite**

S-6 satellite

USE **Explorer 17 satellite**

S-16 satellite

USE **OSO-1**

S-17 satellite

USE **OSO-2**

S-18 satellite

USE **OAO**

S-27 satellite

USE **Alouette 1 satellite**

S-49 satellite

USE **OGO-A**

S-50 satellite

USE **OGO-C**

S-51 satellite

USE **Ariel 1 satellite**

S-52 satellite

USE **Ariel 2 satellite**

S-57 satellite

USE **OSO-C**

S-58 helicopter

UF *Sikorsky S-58 helicopter*

GS Sikorsky aircraft
 . **S-58 helicopter**
 transport aircraft
 . **S-58 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **S-58 helicopter**

RT CH-34 helicopter
 UH-34 helicopter

S-61 helicopter

UF *Sikorsky S-61 helicopter*

GS Sikorsky aircraft
 . **S-61 helicopter**
 transport aircraft
 . **S-61 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **S-61 helicopter**

RT ∞ aircraft
 antisubmarine warfare aircraft
 CH-3 helicopter
 SH-3 helicopter
 SH-4 helicopter
 water takeoff and landing aircraft

S-64 helicopter

USE **CH-54 helicopter**

S-66 satellite

USE **Beacon Explorer A**

S-67 helicopter

UF *Sikorsky S-67 helicopter*

GS Sikorsky aircraft
 . **S-67 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . compound helicopters
 **S-67 helicopter**
 military helicopters
 **S-67 helicopter**

RT ∞ aircraft

S-74 satellite

USE **Explorer 18 satellite**

SA-321 helicopter

UF *Sud Aviation SA-321 helicopter*

GS Sud Aviation aircraft

. **SA-321 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . military helicopters
 **SA-321 helicopter**

RT ∞ aircraft

SA-330 helicopter

UF *Sud Aviation SA-330 helicopter*

GS Sud Aviation aircraft
 . Alouette helicopters
 . . **SA-330 helicopter**
 transport aircraft
 . **SA-330 helicopter**
 V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . Alouette helicopters
 **SA-330 helicopter**
 military helicopters
 **SA-330 helicopter**

RT ∞ aircraft

Saab 37 aircraft

GS attack aircraft
 . fighter aircraft
 . . **Saab 37 aircraft**
 jet aircraft
 . turbofan aircraft
 . . **Saab 37 aircraft**
 Saab aircraft
 . **Saab 37 aircraft**
 supersonic aircraft
 . **Saab 37 aircraft**

RT ∞ aircraft
 canard configurations
 Harrier aircraft

Saab 105 aircraft

GS jet aircraft
 . turbofan aircraft
 . . **Saab 105 aircraft**
 light aircraft
 . **Saab 105 aircraft**
 monoplanes
 . **Saab 105 aircraft**
 Saab aircraft
 . **Saab 105 aircraft**
 utility aircraft
 . **Saab 105 aircraft**

RT ∞ aircraft
 passenger aircraft

Saab aircraft

GS **Saab aircraft**
 . Saab 37 aircraft
 . Saab 105 aircraft

RT ∞ aircraft

Sabatier reaction

GS chemical reactions
 . **Sabatier reaction**

RT photographic film

Sabot projectiles

DEF Projectiles having devices fitted around or in back of the projectiles in gun barrels or launching tubes to support or protect the projectiles or to prevent the escape of gas ahead of it. The sabot separates from the projectile after launching.

GS projectiles
 . **Sabot projectiles**

RT artillery
 fragmentation
 gun launchers
 guns (ordnance)

sabotage

DEF Deliberate destructive action that may be directed against property, processes, systems, organizations, governments, or people and that is intended to prevent a process, undermine a group, or interfere with progress towards a goal.

RT accidents
 air defense
 damage

Saccadic eye movements

- deactivation
 - disasters
 - hazards
 - injuries
 - prevention
 - safety
 - space law
 - terrorism
 - wreckage
- Sabre aircraft*
USE **F-86 aircraft**
- Sabreliner aircraft*
USE **T-39 aircraft**
- Saccadic eye movements**
GS eye movements
. **Saccadic eye movements**
RT fovea
∞ motion
visual fields
- saccharides*
USE **carbohydrates**
- saccharomyces**
GS plants (botany)
. fungi
. . **saccharomyces**
- Sacramento Valley (CA)**
GS valleys
. **Sacramento Valley (CA)**
RT California
river basins
- saddle points**
GS **saddle points**
. saddle points (game theory)
RT curve fitting
game theory
minimax technique
- saddle points (game theory)**
GS game theory
. **saddle points (game theory)**
saddle points
. **saddle points (game theory)**
RT operations research
saddles
∞ theories
zero sum games
- saddles**
RT saddle points (game theory)
- saddles (supports)**
GS structural members
. **saddles (supports)**
supports
. **saddles (supports)**
- Saenger space transportation system**
(added September 1995)
UF *Saenger space transportation system*
GS transportation
. space transportation
. . space transportation system
. . . **Saenger space transportation system**
RT aerospace planes
German space program
piggyback systems
ramjet engines
reusable spacecraft
- Safeguard system**
GS weapon systems
. missile systems
. . **Safeguard system**
RT antimissile defense
ballistic missiles
military technology
missile defense
Sentinel system
∞ systems
- safety**
GS **safety**
. aerospace safety
- . aircraft safety
 - . flight safety
 - . industrial safety
 - . range safety
 - . reactor safety
- RT accident prevention
accidents
air bag restraint devices
crashes
∞ detectors
emergency life sustaining systems
energy policy
explosions
fire prevention
fireproofing
fires
hazards
prevention
protection
sabotage
∞ storage
vortex avoidance
warning
warning systems
- safety devices**
GS **safety devices**
. abort apparatus
. air bag restraint devices
. arresting gear
. ejection seats
. . flying ejection seats
. escape capsules
. escape rockets
. helmets
. seat belts
RT accident prevention
accident proneness
accidents
aircraft safety
ambulances
antiskid devices
automobile accidents
∞ barriers
chemical defense
deflectors
∞ devices
emergency life sustaining systems
enclosures
∞ equipment
fail-safe systems
fire prevention
flame deflectors
flight safety
gates (openings)
guards (shields)
harnesses
hazards
human factors engineering
landing aids
pressure suits
protection
protective clothing
protectors
radiation measuring instruments
radiation shielding
shielding
smoke detectors
space suits
spacecraft shielding
warning
warning systems
- safety factors**
RT accident proneness
aerospace safety
design analysis
escape systems
hazards
health physics
reliability
stability
- safety management**
GS management
. **safety management**
RT accident prevention
aerospace safety
Assured Crew Return Vehicle
education
- fail-safe systems
 - fire prevention
 - guards (shields)
 - hazards
 - human factors engineering
 - production management
 - risk management
 - warning systems
- SAGE air defense system**
GS air defense
. **SAGE air defense system**
RT ∞ systems
- SAGE satellite**
DEF Spacecraft for the study of stratospheric aerosols and gases. Used for Stratospheric Aerosol & Gas Experiment.
UF *Stratospheric Aerosol & Gas Experiment*
GS artificial satellites
. **SAGE satellite**
RT aerosols
ozone
- Saginaw Bay (MI)**
GS bays (topographic features)
. **Saginaw Bay (MI)**
RT inlets (topography)
Lake Huron
Michigan
river basins
- Sagittarius constellation**
GS constellations
. **Sagittarius constellation**
- Sagnac effect**
DEF A phase shift (and consequent measurable rotation rate) caused by nonreciprocity (different optical path lengths) of two counter-propagating light waves traveling in the same coil in a fiber optic gyro or ring interferometer.
GS phase shift
. **Sagnac effect**
RT angular velocity
astronomical interferometry
etalons
fiber optics
interferometers
interferometry
laser gyroscopes
laser interferometry
light transmission
nonlinear optics
optical gyroscopes
optical paths
speckle interferometry
wave propagation
- Saha equations**
RT arc heating
electric arcs
∞ equations
ion density (concentration)
ionization potentials
temperature
- Sahara Desert (Africa)**
GS land
. deserts
. . **Sahara Desert (Africa)**
RT Africa
arid lands
barren land
desertification
dunes
remote regions
- SAIL project**
UF *Shuttle Avionics Integration Laboratory*
GS programs
. NASA programs
. . NASA space programs
. . . **SAIL project**
. projects
. . **SAIL project**
. space programs
. . NASA space programs

... **SAIL project**
 RT Earth Viewing Applications Laboratory laboratories
 space laboratories
 space shuttles

sailplanes
 USE **gliders**

sails
 GS **sails**
 . magnetic sails
 . sailwings
 . solar sails
 RT fins
 gliders
 tail assemblies

sailwings
 UF *Princeton sailwings*
 GS folding structures
 . **sailwings**
 sails
 . **sailwings**
 RT gliders
 hang gliders

Saint Elmo fire
 GS electric current
 . electric discharges
 . . **Saint Elmo fire**
 RT fires

Saint Venant flexure problem
 USE **Saint Venant principle**

Saint Venant principle
 UF *Saint Venant flexure problem*
St Venant flexure problem
 RT plastic deformation
 static deformation
 static loads
 stress analysis
 stress concentration
 temperature inversions

salicylates
 GS **salicylates**
 . sodium salicylates
 RT acetylsalicylic acid
 drugs
 esters

salinity
 GS chemical properties
 . **salinity**
 RT alkalinity
 brines
 core sampling
 desalinization
 ocean currents
 oceanographic parameters
 sea water
 soil sampling
 thermohaline circulation

saliva
 GS body fluids
 . **saliva**
 RT digestive system
 mucus
 salivary glands

salivary glands
 UF *parotid gland*
 GS anatomy
 . digestive system
 . . **salivary glands**
 . glands (anatomy)
 . . **salivary glands**
 RT mouth
 saliva

salmonella
 GS microorganisms
 . bacteria
 . . **salmonella**

salt baths
 GS baths
 . **salt baths**

RT brines
 heat treatment
 molten salts

salt beds
 DEF Deposits of sodium chloride and other salts resulting from the evaporation and/or precipitation of ancient oceans.

GS geology
 . beds (geology)
 . . **salt beds**
 landforms
 . beds (geology)
 . . **salt beds**

RT brines
 bromides
 chlorides
 flats (landforms)
 sodium chlorides

salt flats
 USE **flats (landforms)**

salt spray tests
 GS chemical tests
 . **salt spray tests**
 environmental tests
 . corrosion tests
 . . **salt spray tests**
 RT corrosion
 corrosion resistance
 spray ingestion
 stress corrosion
 ∞ tests

Salton Sea (CA)
 GS seas
 . **Salton Sea (CA)**
 RT California
 deserts

∞ **salts**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT halites
 inorganic compounds
 molten salts
 organic charge transfer salts
 organic compounds
 sodium chlorides
 sulfonates

Salyut space station
 GS artificial satellites
 . space stations
 . . **Salyut space station**
 manned spacecraft
 . **Salyut space station**
 Soviet spacecraft
 . **Salyut space station**
 stations
 . space stations
 . . **Salyut space station**
 RT Soyuz spacecraft
 space bases
 space laboratories
 spacecraft docking
 U.S.S.R. space program

Samaritan aircraft
 USE **C-131 aircraft**

samarium
 GS chemical elements
 . rare earth elements
 . . **samarium**
 . . . samarium isotopes
 metals
 . rare earth elements
 . . **samarium**
 . . . samarium isotopes

samarium compounds
 GS rare earth compounds
 . **samarium compounds**
 RT ∞ chemical compounds
 ∞ metal compounds

samarium isotopes
 GS chemical elements

. nuclides
 . . isotopes
 . . . **samarium isotopes**
 . rare earth elements
 . . samarium
 . . . **samarium isotopes**
 metals
 . rare earth elements
 . . samarium
 . . . **samarium isotopes**

Samoa
 GS landforms
 . islands
 . . Pacific islands
 . . . **Samoa**

Samos
 UF *Satellite and Missile Observation System*
 GS artificial satellites
 . **Samos**
 military spacecraft
 . reconnaissance spacecraft
 . . **Samos**
 RT satellite tracking

sample return missions
 (added March 2001)
 DEF Space missions to collect material samples from interplanetary space, a planet, or other body and return the samples to Earth.
 GS space missions
 . **sample return missions**
 . . Mars sample return missions
 . . Stardust Mission
 RT samples
 space exploration

sampled data systems
 (added July 1990)
 RT adaptive control
 automatic control
 control stability
 control theory
 data sampling
 feedback control

samplers
 UF *bombs (samplers)*
sampling devices
 RT ∞ bombs
 core sampling
 samples
 sampling
 selectors
 ∞ test equipment

samples
 DEF Physical or biological specimens intended to be representative of the whole.
 GS **samples**
 . Mars surface samples
 RT acceptability
 Mars sample return missions
 sample return missions
 samplers
 sampling
 specimens

sampling
 DEF Obtaining of a portion representative of the material concerned.
 GS **sampling**
 . air sampling
 . core sampling
 . data sampling
 . particulate sampling
 . random sampling
 . soil sampling
 . water sampling
 RT allowances
 assaying
 Bayes theorem
 censored data (mathematics)
 chemical analysis
 chemical tests
 collection
 concentration (composition)
 confidence limits

San Andreas Fault

counting
estimating
exploration
Global Air Sampling Program
heterogeneity
homogeneity
inspection
investigation
probability theory
process control (industry)
quality control
random errors
reliability
Rosetta mission
samplers
samples
selection
sequential analysis
specimens
standards
statistical analysis
∞ statistics
∞ sweep circuits
∞ tests
variability
Weibull density functions

sampling devices

USE **samplers**

San Andreas Fault

GS geological faults
. **San Andreas Fault**
RT California
crustal fractures
Earth crust
earthquakes
Mexico

San Andreas Fault experiment

RT earthquakes
geological faults

San Francisco (CA)

GS cities
. **San Francisco (CA)**
RT California

San Francisco Bay (CA)

GS bays (topographic features)
. **San Francisco Bay (CA)**
RT California
Pacific Ocean
San Pablo Bay (CA)

San Joaquin Valley (CA)

GS valleys
. **San Joaquin Valley (CA)**
RT California
river basins

San Juan Mountains (CO)

GS landforms
. mountains
. . **San Juan Mountains (CO)**
RT Colorado

San Marco 1 satellite

GS artificial satellites
. meteorological satellites
. . San Marco satellites
. . . **San Marco 1 satellite**

San Marco 2 satellite

GS artificial satellites
. meteorological satellites
. . San Marco satellites
. . . **San Marco 2 satellite**

San Marco 3 satellite

GS artificial satellites
. meteorological satellites
. . San Marco satellites
. . . **San Marco 3 satellite**

San Marco satellites

GS artificial satellites
. meteorological satellites
. . **San Marco satellites**
. . . San Marco 1 satellite
. . . San Marco 2 satellite

. . . San Marco 3 satellite
RT Scout launch vehicle

San Marino

GS nations
. **San Marino**
RT Europe
Italy

San Pablo Bay (CA)

GS bays (topographic features)
. **San Pablo Bay (CA)**
RT California
San Francisco Bay (CA)

sand casting

GS forming techniques
. casting
. . **sand casting**
RT molding materials
sands

sand dunes

USE **dunes**

Sand Hills Region (GA-NC-SC)

GS regions
. **Sand Hills Region (GA-NC-SC)**
RT Georgia
North Carolina
South Carolina

Sand Hills Region (NE)

GS regions
. **Sand Hills Region (NE)**
RT Nebraska

Sandpiper target missile

GS missile configurations
. **Sandpiper target missile**
missiles
. **Sandpiper target missile**
RT drone vehicles
targets

sands

GS sediments
. **sands**
. . monazite sands
. . tar sands
soils
. **sands**
. . monazite sands
. . tar sands
RT aggregates
alluvium
aquifers
deltas
dunes
dust
Earth resources
fans (landforms)
gravels
grit
ilmenite
littoral drift
littoral transport
molding materials
porous materials
quartz
rain erosion
reefs
sand casting
sandstones
sedimentary rocks
silica glass
silicon dioxide

sandstones

GS rocks
. sedimentary rocks
. . **sandstones**
RT Earth resources
sands
schist

soils

sandwich construction

USE **sandwich structures**

sandwich structures

UF *sandwich construction*
RT composite materials
epoxy matrix composites
honeycomb cores
honeycomb structures
interlayers
laminates
multilayer insulation
ply orientation
rigid structures
∞ structures
walls

Sanger space transportation system

USE **Saenger space transportation system**

sanitation

RT consumables (spacecrew supplies)
health
housekeeping (spacecraft)
hygiene
potable water
public health
sewers
toilets
warning systems
waste disposal
waste management

Santowax (trademark)

RT polystyrene

sapphire

GS aluminum compounds
. aluminum oxides
. . **sapphire**
chalcogenides
. oxides
. . metal oxides
. . . aluminum oxides
. . . . **sapphire**

saprophytes

GS plants (botany)
. **saprophytes**
RT bacteria
microorganisms

sarcina

GS microorganisms
. bacteria
. . **sarcina**

sarcoma

USE **cancer**

sarcoplasmic reticulum

GS organelles
. endoplasmic reticulum
. . **sarcoplasmic reticulum**
RT cells (biology)
cytology
cytoplasm

Sargasso Sea

DEF A region in the Atlantic characterized by mixing ocean currents and a lack of winds. Located northeast of the West Indies.

RT Atlantic Ocean
Gulf Stream
ocean models
ocean surface
oceanography
seas

SarSat

DEF The US satellite of the COSPAS-SarSat project for the search and rescue of distressed vehicles, administered by USSR, US, French, and Canadian agencies. Used for Search and Rescue Satellite.

UF *Search and Rescue Satellite*
GS artificial satellites
. **SarSat**

- RT COSPAS
NOAA 8 satellite
reconnaissance
rescue operations
searching
- SAS**
- UF *Small Astronomy Satellites*
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **SAS**
. . . . Explorer 53 satellite
. . . . SAS-1
. . . . SAS-2
. . . . SAS-3
observatories
. astronomical observatories
. . . astronomical satellites
. . . **SAS**
. . . . Explorer 53 satellite
. . . . SAS-1
. . . . SAS-2
. . . . SAS-3
- RT Explorer 48 satellite
Uhuru satellite
- SAS-1**
- UF *Small Astronomy Satellite 1*
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **SAS**
. . . . **SAS-1**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **SAS**
. . . . **SAS-1**
- RT radio astronomy
- SAS-2**
- UF *Small Astronomy Satellite 2*
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **SAS**
. . . . **SAS-2**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **SAS**
. . . . **SAS-2**
- RT Explorer 48 satellite
radio astronomy
spaceborne astronomy
- SAS-3**
- UF *Small Astronomy Satellite 3*
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **SAS**
. . . . **SAS-3**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **SAS**
. . . . **SAS-3**
- RT Explorer 53 satellite
radio astronomy
spaceborne astronomy
x ray astronomy
- SAS-D**
USE **IUE**
- Saskatchewan**
GS nations
. Canada
. . **Saskatchewan**
- SATAN (sensor)**
USE **terrain analysis**
- satellite altimetry**
GS altimetry
. **satellite altimetry**
- RT altimeters
digital elevation models
- geodesy
geodetic satellites
geoids
GEOS 3 satellite
Geosat satellites
Ice, Cloud and Land Elevation
Satellite
radar measurement
satellite observation
satellite-borne radar
SEASAT satellites
topography
- Satellite and Missile Observation System*
USE **Samos**
- satellite antennas**
GS antennas
. **satellite antennas**
- RT furlable antennas
multibeam antennas
radio antennas
telecommunication
- satellite atmospheres**
DEF The atmospheres that are found on natural satellites.
GS environments
. extraterrestrial environments
. . . **satellite atmospheres**
. . . . lunar atmosphere
. . . . Titan atmosphere
- RT ∞ atmospheres
atmospheric chemistry
atmospheric composition
atmospheric physics
Earth atmosphere
Earth ionosphere
Earth magnetosphere
Huygens probe
ionospheric composition
magnetopause
natural satellites
planetary atmospheres
stellar atmospheres
Titan
Triton
upper atmosphere
- satellite attitude control**
GS attitude control
. **satellite attitude control**
spacecraft control
. satellite control
. . . **satellite attitude control**
- RT attitude stability
automatic control
 ∞ control
directional control
gravity gradient satellites
jet control
lateral control
longitudinal control
Marquardt R4D engine
three axis stabilization
Transit Attitude Control satellite
- satellite attitude disturbance*
USE **attitude stability**
spacecraft stability
- satellite breakup*
USE **spacecraft breakup**
- satellite capture*
USE **spacecraft recovery**
- satellite clusters*
USE **satellite constellations**
- satellite communication**
DEF Use of communication satellites, passive reflecting belts of dipoles or needles, or reflecting orbiting balloons to extend the range of radio communication by returning signals to Earth from the orbiting object, with or without amplification.
GS telecommunication
. space communication
. . . spacecraft communication
- . . . **satellite communication**
- RT ACTS
ARPA computer network
astrionics
circumlunar communication
communication satellites
Earth terminals
facsimile communication
free-space optical communication
ground-air-ground communication
hoop column antennas
interplanetary communication
Iridium network
lunar communication
multibeam antennas
optical communication
packet transmission
plasma antennas
radio communication
satellite communications ships
satellite ground support
single channel per carrier
transmission
system generated electromagnetic pulses
transmission rate (communications)
unified S band
- satellite communications ships**
UF *USNS Kingsport*
GS surface vehicles
. **satellite communications ships**
water vehicles
. ships
. . **satellite communications ships**
- RT satellite communication
spacecraft communication
- satellite configurations**
GS spacecraft configurations
. **satellite configurations**
- RT aerodynamic configurations
- satellite constellations**
(added February 1994)
UF *satellite clusters*
GS networks
. satellite networks
. . **satellite constellations**
. . . Constellation-X
. . . Iridium network
- RT communication networks
communication satellites
formation flying
Global Positioning System
microsatellites
nanosatellites
satellite ground tracks
satellite navigation systems
spatial distribution
stationkeeping
- satellite control**
GS spacecraft control
. **satellite control**
. . . satellite attitude control
- RT attitude control
automatic control
 ∞ control
directional control
flexible spacecraft
formation flying
gravity gradient satellites
jet control
lateral control
longitudinal control
manual control
remote control
thrust control
- satellite defense*
USE **spacecraft defense**
- satellite design**
GS spacecraft design
. **satellite design**
- RT computer aided design
 ∞ design
Indian space program
Japanese space program

satellite doppler positioning

microsattelites
 nanosatellites
 product development
 small satellite technology
 spacecraft structures
 structural design
 systems engineering

satellite doppler positioning
 GS positioning
 . **satellite doppler positioning**
 RT Argos system
 Doppler effect
 Doppler navigation
 Doppler radar
 geodesy
 geodetic accuracy
 geodetic coordinates
 geodetic satellites
 geodetic surveys
 polystation doppler tracking system
 satellite tracking
 tracking (position)

satellite drag
 GS dynamic characteristics
 . drag
 . . **satellite drag**
 RT aerodynamic drag
 electrostatic drag
 friction drag

satellite fragmentation
 USE **spacecraft breakup**

satellite ground support
 RT ground support equipment
 satellite communication
 spacecraft communication

satellite ground tracks
 GS ground tracks
 . **satellite ground tracks**
 RT flight paths
 orbits
 satellite constellations

satellite guidance
 GS guidance (motion)
 . spacecraft guidance
 . . **satellite guidance**
 RT automatic control
 inertial guidance
 injection guidance
 LOCATES system
 manual control
 reentry guidance
 rendezvous guidance
 space navigation

satellite imagery
 GS imagery
 . **satellite imagery**
 RT atmospheric correction
 Coastal Zone Color Scanner
 data products
 image analysis
 imaging techniques
 MISR (radiometry)
 normalized difference vegetation index
 pixels
 satellite observation
 satellite-borne photography
 vegetative index

satellite instruments
 GS spacecraft instruments
 . **satellite instruments**
 . . multispectral linear arrays
 RT flight instruments
 ∞ instruments
 laser altimeters
 measuring instruments
 needs (data system)
 wildlife radiolocation

satellite interceptors
 RT ∞ interceptors

pursuit tracking

satellite laser ranging
(added July 2001)
 DEF A technique for determining the distance to or from an artificial satellite by precise measurement of the time required for a laser pulse to travel from a transmitter to a retroreflector and return to a detector.
 UF *SLR (ranging)*
 GS rangefinding
 . laser ranging
 . . **satellite laser ranging**
 utilization
 . laser applications
 . . laser ranging
 . . . **satellite laser ranging**
 RT celestial geodesy
 geodetic satellites
 LAGEOS (satellite)
 laser range finders
 passive satellites
 retroreflection
 retroreflectors
 satellite tracking

satellite launching
 USE **spacecraft launching**

satellite lifetime
 GS life (durability)
 . **satellite lifetime**
 RT orbit decay
 spacecraft reentry

satellite maneuvers
 USE **spacecraft maneuvers**

satellite navigation systems
 GS **satellite navigation systems**
 . Global Positioning System
 . GLONASS
 . Transit navigation system
 RT autonomous navigation
 navigation satellites
 radar navigation
 radio navigation
 satellite constellations
 space navigation
 ∞ systems

satellite networks
 SN (NETWORKS INCORPORATING SATELLITES)
 GS networks
 . **satellite networks**
 . . Argos system
 . . satellite constellations
 . . . Constellation-X
 . . . Iridium network
 . . VSAT (network)
 RT aeronautical satellites
 Aerosat satellites
 code division multiple access
 communication networks
 communication satellites
 ComStar satellites
 demand assignment multiple access
 domestic satellite communications systems
 formation flying
 HET experiment
 L-Sat
 Marecs maritime satellites
 military spacecraft
 Molniya satellites
 multimission modular spacecraft
 navigation satellites
 NAVSTAR satellites
 network control
 Skynet satellites
 TDR satellites
 teleconferencing
 time division multiple access

satellite observation
 SN (OBSERVATION OF THE EARTH BY SATELLITE)
 GS observation
 . Earth observations (from space)
 . . **satellite observation**

RT arc clouds
 Earth Resources Program
 Envisat-1 satellite
 EOS data and information system
 EROS (satellites)
 ESSA satellites
 FIRE (climatology)
 Glory Mission satellite
 GRACE mission
 IRIS satellites
 ISCCP Project
 Landsat satellites
 meteorological satellites
 METEOSAT satellite
 MISR (radiometry)
 Nimbus project
 Nimbus satellites
 NOAA 19 satellite
 satellite altimetry
 satellite imagery
 SIRS B satellite
 spaceborne photography
 Surface Meteorology and Solar Energy project
 Surface Radiation Budget project
 swath width
 Synchronous Earth Observatory satellite
 TIROS operational satellite system
 TIROS satellites
 TOPEX
 Uhuru satellite
 vegetative index
 Vela satellites
 wildlife radiolocation

satellite oceans
(added June 2001)
 USE **extraterrestrial oceans**

satellite orbit calculation
 USE **orbit calculation**

satellite orbits
 SN (LIMITED TO ORBITS OF ARTIFICIAL SATELLITES)
 GS orbits
 . spacecraft orbits
 . . **satellite orbits**
 . . . geosynchronous orbits
 . . . parking orbits
 . . . stationary orbits
 . . . twenty-four hour orbits
 RT circular orbits
 Earth orbits
 elliptical orbits
 equatorial orbits
 Lissajous figures
 low Earth orbits
 lunar orbits
 orbit insertion
 orbit spectrum utilization
 orbital mechanics
 orbital position estimation
 orbital resonances (celestial mechanics)
 planetary orbits
 retrograde orbits
 transfer orbits

satellite orientation
 GS attitude (inclination)
 . **satellite orientation**
 RT flexible spacecraft
 image dissector tubes
 spin stabilization
 three axis stabilization

satellite perturbation
 GS perturbation
 . orbit perturbation
 . . **satellite perturbation**
 RT Discos (satellite attitude control)
 gravitational fields
 orbital mechanics
 Schach effect
 spacecraft stability

- tesseral harmonics
- satellite power transmission**
(added November 1989)
GS power beaming
 . **satellite power transmission**
RT laser power beaming
microwave power beaming
rectennas
solar arrays
solar cells
solar power satellites
- satellite rendezvous*
USE **orbital rendezvous**
- satellite repair*
USE **orbital servicing**
- satellite rotation**
GS gyration
 . rotation
 . . **satellite rotation**
RT flexible spacecraft
spin reduction
spin stabilization
tumbling motion
yo-yo devices
- satellite solar energy conversion**
GS energy conversion
 . **satellite solar energy conversion**
RT ∞ conversion
microwave transmission
microwaves
power conditioning
solar cells
sun
- satellite solar power stations**
RT energy conversion
microwave transmission
microwaves
power conditioning
solar cells
sun
- satellite sounding**
GS sounding
 . **satellite sounding**
RT Advanced Microwave Sounding Unit
artificial satellites
atmospheric sounding
ionosondes
ionospheric sounding
meteorological satellites
NOAA 19 satellite
NPOESS
radiosondes
rocket sounding
visible infrared spin scan radiometer
- satellite surfaces**
SN (RESTRICTED TO NATURAL SATELLITES)
DEF The crust and soil of natural satellites.
GS **satellite surfaces**
 . lunar surface
RT craters
extraterrestrial oceans
icy satellites
Mercury surface
natural satellites
∞ surfaces
terrain analysis
- satellite television**
GS communication equipment
 . spacecraft television
 . . **satellite television**
telecommunication
 . spacecraft television
 . . **satellite television**
television systems
 . spacecraft television
 . . **satellite television**
RT color television
direct broadcast satellites
meteorological satellites
space probes
stereotelevision
- Symphonie satellites
television cameras
television transmission
- satellite temperature**
GS spacecraft temperature
 . **satellite temperature**
temperature
 . **satellite temperature**
RT ambient temperature
radiative heat transfer
solar radiation shielding
spacecraft design
spacecraft environments
temperature distribution
temperature measurement
thermal environments
- satellite tracking**
GS tracking (position)
 . spacecraft tracking
 . . **satellite tracking**
 . . . satellite-to-satellite tracking
RT cinetheodolites
Global Tracking Network
International Satellite Geodesy
 Experiment
laser target designators
minitrack system
optical satellite tracking program
orbit determination
photographic tracking
range and range rate tracking
Samos
satellite doppler positioning
satellite laser ranging
Space Flight Tracking and Data
 Network
STDN (network)
tracking networks
tracking stations
transponder control group
- Satellite Tracking and Data Acq Network*
USE **STDN (network)**
- satellite transmission**
GS transmission
 . signal transmission
 . . **satellite transmission**
RT Aloha system
binary phase shift keying
code division multiplexing
data transmission
direct broadcast satellites
domestic satellite communications
 systems
downlinking
Earth terminals
frequency division multiplexing
frequency reuse
MSAT
multiplexing
pulse communication
quadrature phase shift keying
radio transmission
single channel per carrier
 transmission
spacecraft television
TDR satellites
television transmission
uplinking
- satellite-borne instruments**
GS measuring instruments
 . **satellite-borne instruments**
 . . Advanced Microwave Sounding
 Unit
 . . Advanced Very High Resolution
 Radiometer
 . . AMPS (satellite payload)
 . . MISR (radiometry)
 . . Total Ozone Mapping Spectrometer
RT AMPTE (satellites)
data products
DIAL satellite
infrared radiometers
instrument packages
∞ instruments
OPEN Project
- particle telescopes
radiation detectors
remote sensors
Sea-viewing Wide Field-of-view
 Sensor
single event upsets
Solar Backscatter UV Spectrometer
visible infrared spin scan radiometer
- satellite-borne photography**
GS imagery
 . photography
 . . spaceborne photography
 . . . **satellite-borne photography**
RT aerial photography
astronomical photography
black and white photography
DMSP satellites
forest fire detection
geographic applications program
infrared photography
Mars photographs
photomapping
photomaps
rocket-borne photography
satellite imagery
space surveillance (spaceborne)
spectral reconnaissance
timber inventory
- satellite-borne radar**
GS radar
 . **satellite-borne radar**
RT Envisat-1 satellite
radar detection
satellite altimetry
search radar
surveillance radar
synthetic aperture radar
tracking radar
- ∞ **satellites**
SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
DEF Any objects, man-made or natural, that
orbit celestial bodies.
RT artificial satellites
natural satellites
∞ spacecraft
- satellite-to-satellite tracking**
GS tracking (position)
 . spacecraft tracking
 . . satellite tracking
 . . . **satellite-to-satellite tracking**
RT space surveillance (spaceborne)
tracking networks
- saturable reactors**
UF *SR (reactors)*
GS electric reactors
 . **saturable reactors**
RT magnet coils
magnetic amplifiers
magnetic circuits
magnetic cores
magnetic switching
power reactors
transformers
- saturated hydrocarbons*
USE **alkanes**
- ∞ **saturation**
SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT concentration (composition)
condensing
crowding
desaturation
penetration
permeating
precipitation (chemistry)
precipitation (meteorology)
unsaturation (chemistry)
wetting
- saturation (chemistry)**
DEF The state of a solution when it holds

Saturn

the maximum equilibrium quantity of dissolved matter at a given temperature.

- RT chemical bonds
- ∞ chemistry
- dew point
- precipitation (chemistry)
- unsaturation (chemistry)

∞ Saturn

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT Saturn (planet)
- Saturn project

Saturn 1 launch vehicles

- GS launch vehicles
 - . Saturn launch vehicles
 - .. **Saturn 1 launch vehicles**
 - ... Saturn 1 SA-1 launch vehicle
 - ... Saturn 1 SA-10 launch vehicle
 - ... Saturn 1 SA-2 launch vehicle
 - ... Saturn 1 SA-3 launch vehicle
 - ... Saturn 1 SA-4 launch vehicle
 - ... Saturn 1 SA-5 launch vehicle
 - ... Saturn 1 SA-6 launch vehicle
 - ... Saturn 1 SA-7 launch vehicle
 - ... Saturn 1 SA-8 launch vehicle
 - ... Saturn 1 SA-9 launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... **Saturn 1 launch vehicles**
 - Saturn 1 SA-1 launch vehicle
 - Saturn 1 SA-10 launch vehicle
 - Saturn 1 SA-2 launch vehicle
 - Saturn 1 SA-3 launch vehicle
 - Saturn 1 SA-4 launch vehicle
 - Saturn 1 SA-5 launch vehicle
 - Saturn 1 SA-6 launch vehicle
 - Saturn 1 SA-7 launch vehicle
 - Saturn 1 SA-8 launch vehicle
 - Saturn 1 SA-9 launch vehicle
- RT H-1 engine
- M-1 engine

Saturn 1 SA-1 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-1 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-1 launch vehicle**

Saturn 1 SA-10 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-10 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-10 launch vehicle**

Saturn 1 SA-2 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-2 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-2 launch vehicle**

Saturn 1 SA-3 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-3 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles

... Saturn 1 SA-3 launch vehicle

Saturn 1 SA-4 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-4 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-4 launch vehicle**

Saturn 1 SA-5 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-5 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-5 launch vehicle**

Saturn 1 SA-6 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-6 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-6 launch vehicle**

Saturn 1 SA-7 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-7 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-7 launch vehicle**

Saturn 1 SA-8 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-8 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-8 launch vehicle**

Saturn 1 SA-9 launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. Saturn 1 launch vehicles
 - ... **Saturn 1 SA-9 launch vehicle**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... Saturn 1 launch vehicles
 - **Saturn 1 SA-9 launch vehicle**

Saturn 1 workshop

- GS artificial satellites
 - . orbital workshops
 - .. Saturn workshops
 - ... **Saturn 1 workshop**
 - manned spacecraft
 - . orbital workshops
 - .. Saturn workshops
 - ... **Saturn 1 workshop**
- RT airlock modules
 - Apollo applications program
 - Apollo project
 - multiple docking adapters
 - Skylab program
 - space stations

Saturn 1B launch vehicles

- GS launch vehicles
 - . Saturn launch vehicles
 - .. **Saturn 1B launch vehicles**
 - rocket vehicles
 - . multistage rocket vehicles

- . Saturn launch vehicles
- ... **Saturn 1B launch vehicles**
- RT H-1 engine
- J-2 engine
- M-1 engine
- Skylab 2
- Skylab 3
- Skylab 4

Saturn 2 launch vehicles

- GS launch vehicles
 - . Saturn launch vehicles
 - .. **Saturn 2 launch vehicles**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... **Saturn 2 launch vehicles**

Saturn 5 launch vehicles

- GS launch vehicles
 - . Saturn launch vehicles
 - .. **Saturn 5 launch vehicles**
 - rocket vehicles
 - . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... **Saturn 5 launch vehicles**
- RT J-2 engine
- Skylab 2
- Skylab 3
- Skylab 4

Saturn 5 workshop

- GS artificial satellites
 - . orbital workshops
 - .. Saturn workshops
 - ... **Saturn 5 workshop**
 - manned spacecraft
 - . orbital workshops
 - .. Saturn workshops
 - ... **Saturn 5 workshop**
- RT airlock modules
 - Apollo applications program
 - Apollo project
 - multiple docking adapters
 - Skylab program
 - space stations

Saturn (planet)

- GS celestial bodies
 - . planets
 - .. gas giant planets
 - ... **Saturn (planet)**
- RT Calypso
- Cassini mission
- Dione
- Enceladus
- Epimetheus
- Helene
- Hyperion
- Iapetus
- Janus
- Mimas
- Pandora
- Phoebe
- Prometheus
- Rhea (astronomy)
- ∞ Saturn
- Telesto
- Tethys
- Titan
- Titan atmosphere
- Voyager 2 spacecraft

Saturn atmosphere

- DEF The outer shell of gas surrounding the planet Saturn.
- GS environments
 - . extraterrestrial environments
 - .. planetary environments
 - ... planetary atmospheres
 - **Saturn atmosphere**
- RT atmospheric composition
- planetary ionospheres
- planetary radiation

Saturn D launch vehicle

- GS launch vehicles
 - . Saturn launch vehicles
 - .. **Saturn D launch vehicle**
 - rocket vehicles

- . multistage rocket vehicles
 - .. Saturn launch vehicles
 - ... **Saturn D launch vehicle**
 - RT RL-10-A-3 engine
- Saturn launch vehicles**
- GS launch vehicles
 - . **Saturn launch vehicles**
 - .. Saturn 1 launch vehicles
 - ... Saturn 1 SA-1 launch vehicle
 - ... Saturn 1 SA-10 launch vehicle
 - ... Saturn 1 SA-2 launch vehicle
 - ... Saturn 1 SA-3 launch vehicle
 - ... Saturn 1 SA-4 launch vehicle
 - ... Saturn 1 SA-5 launch vehicle
 - ... Saturn 1 SA-6 launch vehicle
 - ... Saturn 1 SA-7 launch vehicle
 - ... Saturn 1 SA-8 launch vehicle
 - ... Saturn 1 SA-9 launch vehicle
 - .. Saturn 1B launch vehicles
 - .. Saturn 2 launch vehicles
 - .. Saturn 5 launch vehicles
 - .. Saturn D launch vehicle
 - rocket vehicles
 - . multistage rocket vehicles
 - .. **Saturn launch vehicles**
 - ... Saturn 1 launch vehicles
 - ... Saturn 1 SA-1 launch vehicle
 - ... Saturn 1 SA-10 launch vehicle
 - ... Saturn 1 SA-2 launch vehicle
 - ... Saturn 1 SA-3 launch vehicle
 - ... Saturn 1 SA-4 launch vehicle
 - ... Saturn 1 SA-5 launch vehicle
 - ... Saturn 1 SA-6 launch vehicle
 - ... Saturn 1 SA-7 launch vehicle
 - ... Saturn 1 SA-8 launch vehicle
 - ... Saturn 1 SA-9 launch vehicle
 - .. Saturn 1B launch vehicles
 - .. Saturn 2 launch vehicles
 - .. Saturn 5 launch vehicles
 - .. Saturn D launch vehicle
 - RT Apollo project
 - F-1 rocket engine
 - RL-10 engines
 - ∞ vehicles
- Saturn project**
- GS programs
 - . NASA programs
 - . NASA space programs
 - ... **Saturn project**
 - . projects
 - .. **Saturn project**
 - . space programs
 - .. NASA space programs
 - ... **Saturn project**
 - RT Apollo applications program
 - Apollo spacecraft
 - Centaur launch vehicle
 - launch vehicles
 - lunar launch
 - Pegasus satellites
 - RIFT (reactor in flight test)
 - ∞ Saturn
 - Voyager project
- Saturn rings**
- GS celestial bodies
 - . planetary rings
 - .. **Saturn rings**
 - RT gas giant planets
 - Jupiter rings
 - moonlets
 - natural satellites
 - planetary atmospheres
 - planetary composition
 - planetary surfaces
 - planetary temperature
 - planetology
 - planets
 - ∞ rings
 - solar system
 - Uranus rings
- Saturn S-1 stage**
- GS rocket vehicles
 - . Saturn stages
 - .. **Saturn S-1 stage**
- Saturn S-1B stage**
- GS rocket vehicles
 - . Saturn stages
 - .. **Saturn S-1B stage**
 - RT liquid propellant rocket engines
- Saturn S-1C stage**
- GS rocket vehicles
 - . Saturn stages
 - .. **Saturn S-1C stage**
 - RT liquid propellant rocket engines
- Saturn S-2 stage**
- GS rocket vehicles
 - . Saturn stages
 - .. **Saturn S-2 stage**
 - RT liquid propellant rocket engines
- Saturn S-4 stage**
- GS rocket vehicles
 - . Saturn stages
 - .. **Saturn S-4 stage**
 - RT liquid propellant rocket engines
- Saturn S-4B stage**
- GS rocket vehicles
 - . Saturn stages
 - .. **Saturn S-4B stage**
 - RT liquid propellant rocket engines
- Saturn satellites**
- DEF The natural satellites of the planet Saturn.
 - GS celestial bodies
 - . natural satellites
 - .. **Saturn satellites**
 - ... Calypso
 - ... Dione
 - ... Enceladus
 - ... Epimetheus
 - ... Helene
 - ... Hyperion
 - ... Iapetus
 - ... Janus
 - ... Mimas
 - ... Pandora
 - ... Phoebe
 - ... Prometheus
 - ... Rhea (astronomy)
 - ... Teleso
 - ... Tethys
 - ... Titan
 - RT icy satellites
- Saturn stages**
- GS rocket vehicles
 - . **Saturn stages**
 - .. Saturn S-1 stage
 - .. Saturn S-1B stage
 - .. Saturn S-1C stage
 - .. Saturn S-2 stage
 - .. Saturn S-4 stage
 - .. Saturn S-4B stage
 - RT liquid propellant rocket engines
- Saturn workshops**
- GS artificial satellites
 - . orbital workshops
 - .. **Saturn workshops**
 - ... Saturn 1 workshop
 - ... Saturn 5 workshop
 - manned spacecraft
 - . orbital workshops
 - .. **Saturn workshops**
 - ... Saturn 1 workshop
 - ... Saturn 5 workshop
 - RT airlock modules
 - Apollo applications program
 - Apollo project
 - multiple docking adapters
 - Skylab program
 - space stations
- Saudi Arabia**
- GS nations
 - . **Saudi Arabia**
 - RT Asia
- Saudi Arabian space program
- Saudi Arabian space program**
- GS programs
 - . space programs
 - .. **Saudi Arabian space program**
 - RT Arabsat
 - Arcomsat
 - Saudi Arabia
 - Space Shuttle mission 51-G
- Savage aircraft*
- USE **A-2 aircraft**
- Savannah nuclear ship**
- GS surface vehicles
 - . cargo ships
 - .. **Savannah nuclear ship**
 - . nuclear powered ships
 - .. **Savannah nuclear ship**
 - water vehicles
 - . ships
 - .. cargo ships
 - ... **Savannah nuclear ship**
 - . nuclear powered ships
 - ... **Savannah nuclear ship**
 - RT marine propulsion
 - nuclear propulsion
- savannahs*
- USE **grasslands**
- S-A-W devices*
- USE **surface acoustic wave devices**
- saws**
- GS cutters
 - . **saws**
 - tools
 - . **saws**
 - RT machine tools
 - shears
- sawtooth waveforms**
- GS waveforms
 - . **sawtooth waveforms**
 - RT pulse amplitude
 - pulse duration
 - square waves
- SC-1 aircraft**
- UF *Short SC-1 aircraft*
 - GS jet aircraft
 - . **SC-1 aircraft**
 - monoplanes
 - . **SC-1 aircraft**
 - research vehicles
 - . research aircraft
 - .. **SC-1 aircraft**
 - tailless aircraft
 - . **SC-1 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - .. **SC-1 aircraft**
 - RT ∞ aircraft
- SC-5 aircraft**
- UF *Belfast aircraft*
 - Short Belfast C MK-1 aircraft*
 - Short SC-5 aircraft*
 - GS jet aircraft
 - . turboprop aircraft
 - .. **SC-5 aircraft**
 - monoplanes
 - . **SC-5 aircraft**
 - transport aircraft
 - . **SC-5 aircraft**
 - RT ∞ aircraft
- SC-7 aircraft**
- UF *Short SC-7 aircraft*
 - Skyvan aircraft*
 - Turbo-Skyvan aircraft*
 - GS light aircraft
 - . **SC-7 aircraft**
 - monoplanes
 - . **SC-7 aircraft**
 - transport aircraft
 - . **SC-7 aircraft**
 - RT ∞ aircraft

scalars

cargo aircraft
passenger aircraft

scalar magnetic charge
USE **magnetic charge density**

scalars

DEF Any physical quantity whose field can be described by a single numerical value at each point in space.

RT tensor analysis
tensors

∞ scale

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT scale (corrosion)
scale (ratio)
temperature scales
weight indicators

scale (corrosion)

GS corrosion
. **scale (corrosion)**
RT chemical attack
degradation
descaling
hot corrosion
pickling (metallurgy)
rusting
∞ scale
∞ scaling

scale (ratio)

GS ratios
. **scale (ratio)**
RT mapping
reticles
∞ scale

scale effect

DEF Any variation in the nature of the flow and in the force coefficients associated with a change in value of the Reynolds number, i.e., caused by change in size without change in shape.

RT ∞ effects
force distribution
multiscale models
parameterization
Reynolds number
∞ scaling

scale height

DEF A measure of the relationship between density and temperature at any point in the atmosphere.

GS dimensions
. height
. . **scale height**
RT Earth atmosphere
geopotential height
head (fluid mechanics)

scale models

DEF Three-dimensional representations of objects or structures containing all parts in the same proportion as their true size.

GS models
. **scale models**
RT aerodynamic configurations
aircraft models
multiscale models
Reynolds equation
scaling laws
semispan models
similarity theorem
similitude law
spacecraft models
wind tunnel models

scalars

DEF Devices that produce output pulses whenever a prescribed number of input pulses have been received.

GS circuits
. counting circuits
. . **scalars**

RT tensor analysis

∞ scaling

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT calibrating
errors
scale (corrosion)
scale effect
scaling laws

scaling laws

GS laws
. **scaling laws**
RT dimensional analysis
dimensionless numbers
scale models
∞ scaling
similarity numbers
wind tunnel calibration

scaloping

RT edges
electron beams
traveling wave tubes

Scandinavia

RT Denmark
Finland
Norway
Sweden

scandium

GS chemical elements
. rare earth elements
. . **scandium**
. . . scandium isotopes
metals
. rare earth elements
. . **scandium**
. . . scandium isotopes
. transition metals
. . **scandium**
. . . scandium isotopes

scandium 46

USE **scandium isotopes**

scandium compounds

GS rare earth compounds
. **scandium compounds**
. . scandium oxides
RT ∞ chemical compounds
∞ Group 3B compounds
∞ metal compounds

scandium isotopes

UF *scandium 46*
GS chemical elements
. nuclides
. . isotopes
. . . **scandium isotopes**
. rare earth elements
. . scandium
. . . **scandium isotopes**
metals
. rare earth elements
. . scandium
. . . **scandium isotopes**
. transition metals
. . scandium
. . . **scandium isotopes**

scandium oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **scandium oxides**
rare earth compounds
. scandium compounds
. . **scandium oxides**

Scanner project

GS programs
. projects
. . **Scanner project**
RT horizon scanners
infrared scanners

optical equipment

scanners

DEF Radar mechanisms incorporating such things as rotatable antennas, radiators, motor drives, or mountings for directing a searching radar beam through space and imparting target information to an indicator. Used for scanning devices.

UF *scanning devices*

GS scanners

. horizon scanners
. infrared scanners
. ocean color scanner
. . Coastal Zone Color Scanner
. . Sea-viewing Wide Field-of-view
Sensor

. . optical scanners
. . flying spot scanners
. . multispectral band scanners
. . . thematic mappers (LANDSAT)
. ultrasonic scanners

RT

conical scanning
optical data processing
optical equipment
panoramic scanning
reading
scanning
subreflectors

scanning

DEF In radar, the motion of the antenna assembly when searching for targets.

GS scanning

. conical scanning
. frequency scanning
. panoramic scanning
. radar scanning
. raster scanning

RT

Earth resources
EROS (satellites)
examination
monitors
multispectral band scanners
rapid ballistics identification
reading
scanners
searching
surveillance
ultrasonic scanners

scanning devices

USE **scanners**

scanning electron microscopy

(added September 1992)

DEF A type of electron microscopy in which a beam of electrons, a few hundred angstroms in diameter, systematically sweeps over the specimen. The intensity of secondary electrons generated at the point of impact of the beam on the specimen is measured and the resulting signal is fed into a cathode-ray-tube display which is scanned in synchronism with the scanning of the specimen.

UF *SEM (microscopy)*

GS microscopy

. electron microscopy
. . **scanning electron microscopy**

RT

electron beams
electron microscopes
field emission
ion microscopes
magnetic lenses
microanalysis
phase contrast
secondary emission

scanning laser acoustic microscope (SLAM)

USE **acoustic microscopes**

scanning tunneling microscopy

(added October 1988)

GS microscopy

. electron microscopy
. . **scanning tunneling microscopy**

RT

electron microscopes
electron tunneling
nanofabrication

transmission electron microscopy

scapula

- GS anatomy
 - . musculoskeletal system
 - . . bones
 - . . . **scapula**
- RT arm (anatomy)
 - shoulders

SCAR program

USE **supersonic cruise aircraft research**

scarf joints

(added March 1998)

DEF A joint in which the overlapping parts are tapered to form a continuous length, with no increase in dimension at the joint.

- GS joints (junctions)
 - . **scarf joints**
- RT bolted joints
 - bonded joints
 - lap joints
 - metal joints
 - scarfing

scarfing

- GS cutting
 - . **scarfing**
- RT cleaning
 - grinding (material removal)
 - metal cutting
 - scarf joints
 - slicing

scarp

USE **escarpments**

scars

- GS tissues (biology)
 - . **scars**

scars (geology)

USE **erosion**

SCAT

USE **supersonic commercial air transport**

SCATHA satellite

DEF Satellite for investigating spacecraft charging at high altitudes. A joint NASA-Air Force venture. Used for P78-2 satellite.

- UF *P78-2 satellite*
 - Spacecraft Charging at High Altitude*
- GS artificial satellites
 - . scientific satellites
 - . . **SCATHA satellite**
- RT ∞ charging
 - electric charge
 - electromagnetic interference
 - electrostatic charge
 - electrostatic probes
 - electrostatic shielding
 - high energy electrons

scatter plates (optics)

DEF Holograms of diffusing screens for scattering incident light by the process of diffraction.

- GS optical equipment
 - . **scatter plates (optics)**
- RT beam splitters
 - coherent light
 - holographic interferometry
 - holography
 - interferometry
 - light scattering
- ∞ optics
- ∞ plates
 - speckle holography
 - speckle interferometry

scatter propagation

DEF Specifically, the long-range propagation of radio signals by scattering due to index of refraction inhomogeneities in the lower atmosphere.

- GS transmission
 - . electromagnetic wave transmission
 - . . **scatter propagation**

- . . . ionospheric F-scatter propagation
- . wave propagation
- . . **scatter propagation**
- . . . ionospheric F-scatter propagation
- RT backscattering
 - forward scattering
 - ionospheric propagation
 - meteor trails
 - radio reception
 - radio scattering
 - radio transmission
 - radio waves

scatterers

USE **scattering**

scattering

DEF The process by which small particles suspended in a medium of a different index of diffraction diffuse a portion of the incident radiation in all directions. In scattering, no energy transformation results, only a change in the spatial distribution of the radiation. Used for scatterers.

- UF **scatterers**
- GS **scattering**

- . backscattering
- . coherent scattering
- . Compton effect
- . elastic scattering
- . electron scattering
- . . electron runaway (plasma physics)
- . forward scattering
- . incoherent scattering
- . inelastic scattering
- . inverse scattering
- . ion scattering
- . nuclear scattering
- . . neutron scattering
- . . resonance scattering
- . nucleon-nucleon scattering
- . proton scattering
- . radar scattering
- . radio scattering
 - . . microwave scattering
 - . wave scattering
- . . acoustic scattering
 - . . . reverberation
- . . atmospheric scattering
 - . . . tropospheric scattering
- . . electromagnetic scattering
 - . . . ionospheric F-scatter propagation
 - . . . light scattering
 - halos
 - . . . microwave scattering
 - . . . Mie scattering
 - Rayleigh scattering
 - . . . Raman spectra
 - . . . Thomson scattering
 - . . . x ray scattering

RT

- atomic collisions
- bistatic reflectivity
- circumsolar radiation
- collision parameters
- collisions
- deep scattering layers
- deflection
- diffusion
- dispersing
- electromagnetic radiation
- encounters
- Huygens principle
- impingement
- incident radiation
- inelastic collisions
- mean free path
- particle collisions
- pomerons
- reflection
- releasing
- scatterometers
- shock wave interaction
- spread reflection
- spreading
- sprinkling
- statistical distributions
- transmittance
- wave degradation
- wave dispersion

wave interaction

scattering amplitude

- GS amplitudes
 - . **scattering amplitude**
- RT Faddeev equations
 - Mandelstam representation
 - wave scattering

scattering coefficients

- DEF Measures of the attenuation due to scattering of radiation as it traverses a medium containing scattering particles.
- GS coefficients
 - . **scattering coefficients**
- RT absorptivity
 - attenuation coefficients
 - form factors

scattering cross sections

DEF The hypothetical areas normal to the incident radiation that would geometrically intercept the total amount of radiation actually scattered by a scattering particle. They are also defined, equivalently, as the cross section areas of isotropic scatterers (spheres) which would scatter the same amount of radiation as the actual amount.

- RT absorption cross sections
 - baryon resonance
 - Born approximation
 - ∞ cross sections
 - electron runaway (plasma physics)
 - ionization cross sections
 - neutron cross sections
 - Pomeranchuk theorem
 - pomerons
 - Ramsauer effect
 - Regge poles
 - S matrix theory
 - stopping power

scattering functions

- DEF The intensities of scattered radiation in a given direction per lumen of flux incident upon the scattering material.
- RT flux density
 - ∞ functions
 - radiant flux density

scattering matrix

USE **S matrix theory**

scatterometers

- GS measuring instruments
 - . **scatterometers**
- RT ∞ instruments
 - microwave scattering
 - microwaves
 - QuikSCAT satellite
 - radar
 - radar scattering
 - scattering
 - wave scattering

scavenging

- RT cleaning
 - degassing
 - deoxidizing
 - purification

SCCF

USE **Solar Cell Calibration Facility**

scene analysis

- GS data processing
 - . **scene analysis**
- RT change detection
 - character recognition
 - edge detection
 - Feature Identification and Location
 - Exper
 - image analysis
 - imagery
 - imaging techniques
 - optical flow (image analysis)

scene generation

video landmark acquisition and tracking

scene generation

(added July 1998)

GS imaging techniques
. **scene generation**
simulation
. **scene generation**
RT computer graphics
flight simulation
image reconstruction
scientific visualization
target simulators

scenedesmus

GS plants (botany)
. algae
.. **scenedesmus**

SCF

USE **self consistent fields**

Schach effect

DEF When a slowly or nonrotating satellite is heated on its sunward side, the photons of thermal radiation carry away more momentum from the hot sunward side than the cold shadowed side, thereby giving the satellite a certain net acceleration in the direction away from the sun. This effect was discovered by Milton Schach in the course of an investigation of unknown perturbations in the LAGEOS satellite.

RT celestial mechanics
∞ effects
orbit perturbation
perturbation
satellite perturbation

Schauder fixpoint theorem

GS theorems
. **Schauder fixpoint theorem**
RT complex variables
differential equations

schedules

GS **schedules**
. countdown
RT contract management
precision
predictions
production planning
time
time lag
turnaround (STS)

scheduling

GS **scheduling**
. prediction analysis techniques
. programming (scheduling)
.. thrust programming
. observation scheduling
RT calendars
consecutive events
continuity
∞ control
crop calendars
decision theory
forecasting
lateness
mathematical models
matrix management
mission planning
optimization
production engineering
quality control
sequencing
task complexity
task planning (robotics)
tasks
time series analysis

scheelite

GS calcium compounds
. **scheelite**
chalcogenides
. oxides
.. metal oxides
... tungsten oxides
... **scheelite**

minerals
. **scheelite**
tungsten compounds
. tungsten oxides
.. **scheelite**

Schelkunoff principle

RT antenna radiation patterns
horn antennas
Huygens principle
reflectometers
reflectors

schematics

USE **circuit diagrams**

Schiff bases

USE **imines**

schist

DEF A strongly foliated crystalline rock formed by dynamic metamorphism which can be readily split into thin flakes or slabs due to the well developed parallelism of more than 508 of the minerals present.

GS rocks
. **schist**
RT limestone
sandstones

schizophrenia

GS psychoses
. **schizophrenia**
RT ∞ depression
irrationality
mental health

Schleicher aircraft

RT ∞ aircraft
gliders

Schlieren photography

DEF A method of photography for flow patterns that takes advantage of the fact that light passing through a density gradient in a gas is refracted as though it were passing through a prism.

GS imagery
. photography
.. shadowgraph photography
... **Schlieren photography**
RT black and white photography
differential interferometry
flow visualization
Mach-Zehnder interferometers
Moire effects

Schmidt cameras

GS optical equipment
. cameras
.. **Schmidt cameras**
photographic equipment
. cameras
.. **Schmidt cameras**
RT astronomical photography
Baker-Nunn camera
telescopes

Schmidt method

RT differential equations
integral equations
∞ methodology
real variables

Schmidt number

GS dimensionless numbers
. **Schmidt number**
ratios
. **Schmidt number**
RT Nusselt number
Prandtl number

Schmidt telescopes

GS telescopes
. **Schmidt telescopes**
RT reflecting telescopes

schools

RT education
instructors
training evaluation

universities

schools (fish)

GS animals
. vertebrates
.. fishes
... **schools (fish)**
RT fishing
ichthyology

Schottky barrier diodes

USE **Schottky diodes**

Schottky diodes

UF **Schottky barrier diodes**
GS electronic equipment
. diodes
.. semiconductor diodes
... **Schottky diodes**
. solid state devices
.. semiconductor devices
... **Schottky diodes**
RT ∞ barriers
Barritt diodes
gallium arsenides
MSM (semiconductors)
n-type semiconductors
semiconductor junctions
silicon
SIS (semiconductors)
work functions
zinc selenides

Schottky effect

USE **work functions**

schreibersite

GS iron compounds
. **schreibersite**
minerals
. **schreibersite**
nickel compounds
. **schreibersite**
phosphorus compounds
. phosphides
.. **schreibersite**
RT iron meteorites
meteoritic composition
stony meteorites

Schroedinger equation

GS wave equations
. **Schroedinger equation**
RT ∞ equations
Wentzel-Kramer-Brillouin method

Schuler tuning

DEF Adjusting a system performing the function of a pendulum so that it has a period of 84 minutes.

GS tuning
. **Schuler tuning**
RT gyroscopic pendulums
gyroscopic stability
inertial navigation

Schumann-Runge bands

GS spectra
. spectral bands
.. **Schumann-Runge bands**
RT absorption spectra
∞ bands
emission spectra
Herzberg bands
oxygen
quantum theory

Schwartz inequality

GS inequalities
. **Schwartz inequality**
RT algebra
linear transformations
vectors (mathematics)

Schwartz method

GS analysis (mathematics)
. numerical analysis
.. approximation
... **Schwartz method**
stress analysis

- . **Schwartz method**
- RT ∞ methodology
- Schwarz-Christoffel transformation**
- GS analysis (mathematics)
 - . complex variables
 - . . **Schwarz-Christoffel transformation**
 - functions (mathematics)
 - . **Schwarz-Christoffel transformation**
- RT conformal mapping
- Schwarzschild antennas**
- GS antennas
 - . **Schwarzschild antennas**
- RT horns
 - parabolic reflectors
 - radar antennas
 - radio antennas
- Schwarzschild metric**
- RT bimetric theories
 - coordinate transformations
 - escape velocity
 - event horizon
 - gravitational fields
 - ionization
 - light speed
 - orbitals
 - orbits
 - relativity
- Schwassmann-Wachmann comet**
- GS celestial bodies
 - . comets
 - . . **Schwassmann-Wachmann comet**
- RT Comet Nucleus Tour
 - solar system
- sciatic region**
- GS anatomy
 - . **sciatic region**
 - regions
 - . **sciatic region**
- RT human body
 - lumbar region
 - musculoskeletal system
 - nerves
 - spine
- ∞ **science**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT acoustics
 - aeroacoustics
 - aerodynamics
 - ∞ aeronautics
 - aerospace medicine
 - aerothermodynamics
 - algebra
 - anthropology
 - astrodynamics
 - astronomy
 - astrophysics
 - atmospheric physics
 - atomic physics
 - bioacoustics
 - bioastronautics
 - biodynamics
 - ∞ biology
 - biophysics
 - botany
 - cloud physics
 - combustion physics
 - computational astrophysics
 - electrophysics
 - electrophysiology
 - entomology
 - fluid dynamics
 - fluid mechanics
 - geology
 - geometry
 - geophysics
 - health physics
 - heliogeology
 - hydrogeology
 - hydromechanics
 - life sciences
 - low temperature physics
 - marine biology
 - marine chemistry
 - marine meteorology
 - ∞ materials science
 - ∞ mathematics
 - medical science
 - ∞ metallurgy
 - meteorology
 - ∞ molecular physics
 - neurophysiology
 - neutron physics
 - nuclear physics
 - oceanography
 - ∞ optics
 - ∞ physical sciences
 - ∞ physics
 - physiochemistry
 - physiology
 - plasma physics
 - polymer physics
 - psychophysics
 - psychophysiology
 - radio astronomy
 - radio physics
 - reactor physics
 - reentry physics
 - respiratory physiology
 - seismology
 - solar diameter
 - solar physics
 - solid mechanics
 - ∞ solid state physics
 - stellar physics
 - sunrise
 - sunset
 - taxonomy
 - theoretical physics
 - trigonometry
 - underwater physiology
 - ∞ zoology
- scientific instrument modules*
- USE **SIM**
- scientific satellites**
- GS artificial satellites
 - . **scientific satellites**
 - . . AMPTE (satellites)
 - . . astronomical satellites
 - . . . Astronomical Netherlands Satellite
 - . . . Gamma Ray Observatory
 - . . . Ginga satellite
 - . . . HEAO
 - HEAO 1
 - HEAO 2
 - HEAO 3
 - HEAO 4
 - . . . Hubble Space Telescope
 - . . . Infrared Astronomy Satellite
 - . . . Infrared Space Observatory (ISO)
 - . . . IUE
 - . . . Large Deployable Reflector
 - . . . Magellan ultraviolet astronomy satellite
 - . . . OAO
 - OAO 1
 - OAO 2
 - OAO 3
 - . . . OSO
 - AOSO
 - OSO-1
 - OSO-2
 - OSO-3
 - OSO-4
 - OSO-5
 - OSO-6
 - OSO-7
 - OSO-8
 - OSO-C
 - . . . Quasat
 - . . . SAS
 - Explorer 53 satellite
 - SAS-1
 - SAS-2
 - SAS-3
 - . . . Constellation-X
 - . . . Fermi Gamma-ray Space Telescope
 - . . . James Webb Space Telescope
 - . . . Kepler mission
 - . . . LISA (observatory)
 - . . . Space Infrared Telescope Facility
 - . . . Spartan satellites
 - . . . Submillimeter Wave Astronomy Satellite
 - . . . Swift observatory
 - . . . Tenma satellite
 - . . . Wide-field Infrared Survey Explorer
 - . . . X Ray Astrophysics Facility
 - . . . XMM-Newton telescope
 - . . . ATS
 - ATS 1
 - ATS 2
 - ATS 3
 - ATS 4
 - ATS 5
 - ATS 6
 - ATS 7
 - ATS 8
 - . . . Azur satellite
 - . . . Cannonball 2 satellite
 - . . . CRRES (satellite)
 - . . . DIAL satellite
 - . . . Environmental Research Satellites
 - ERS 17
 - ERS 18
 - . . . Intasat satellite
 - . . . EXOS satellites
 - EXOS-A satellite
 - EXOS-B satellite
 - EXOS-C satellite
 - EXOS-D satellite
 - . . . Exosat satellite
 - . . . Explorer satellites
 - . . . Applications Explorer Satellites
 - . . . Cosmic Background Explorer satellite
 - . . . Dual Air Density Explorer
 - . . . Dynamics Explorer satellites
 - Dynamics Explorer 1 satellite
 - Dynamics Explorer 2 satellite
 - . . . Explorer 1 satellite
 - . . . Explorer 2 satellite
 - . . . Explorer 3 satellite
 - . . . Explorer 4 satellite
 - . . . Explorer 5 satellite
 - . . . Explorer 6 satellite
 - . . . Explorer 7 satellite
 - . . . Explorer 8 satellite
 - . . . Explorer 9 satellite
 - . . . Explorer 10 satellite
 - . . . Explorer 11 satellite
 - . . . Explorer 12 satellite
 - . . . Explorer 14 satellite
 - . . . Explorer 15 satellite
 - . . . Explorer 16 satellite
 - . . . Explorer 17 satellite
 - . . . Explorer 18 satellite
 - . . . Explorer 19 satellite
 - . . . Explorer 20 satellite
 - . . . Explorer 21 satellite
 - . . . Explorer 22 satellite
 - . . . Explorer 23 satellite
 - . . . Explorer 24 satellite
 - . . . Explorer 25 satellite
 - . . . Explorer 26 satellite
 - . . . Explorer 27 satellite
 - . . . Explorer 28 satellite
 - . . . Explorer 29 satellite
 - . . . Explorer 30 satellite
 - . . . Explorer 31 satellite
 - . . . Explorer 32 satellite
 - . . . Explorer 33 satellite
 - . . . Explorer 34 satellite
 - . . . Explorer 35 satellite
 - . . . Explorer 36 satellite
 - . . . Explorer 37 satellite
 - . . . Explorer 38 satellite
 - . . . Explorer 39 satellite
 - . . . Explorer 40 satellite
 - . . . Explorer 41 satellite
 - . . . Explorer 43 satellite
 - . . . Explorer 44 satellite
 - . . . Explorer 45 satellite
 - . . . Explorer 46 satellite
 - . . . Explorer 47 satellite

scientific visualization

. . . Explorer 48 satellite
 . . . Explorer 49 satellite
 . . . Explorer 50 satellite
 . . . Explorer 51 satellite
 . . . Explorer 52 satellite
 . . . Explorer 53 satellite
 . . . Explorer 54 satellite
 . . . Explorer 55 satellite
 . . . Extreme Ultraviolet Explorer satellite
 . . . Far UV Spectroscopic Explorer
 . . . IMP
 . . . International Magnetospheric Explorer
 . . . International Sun Earth Explorers
 International Sun Earth Explorer 1
 International Sun Earth Explorer 2
 International Sun Earth Explorer 3
 . . . Advanced Composition Explorer
 . . . IMAGE satellite
 . . . Micrometeoroid Explorer satellites
 . . . Radio Astronomy Explorer satellite
 . . . Solar Mesosphere Explorer
 . . . Submillimeter Wave Astronomy Satellite
 . . . Transition Region and Coronal Explorer
 . . . Uhuru satellite
 . . . X Ray Timing Explorer
 . . Geopotential Research Mission
 . . Hawkeye satellites
 . . Long Duration Exposure Facility
 . . LZEEBE satellite
 . . MagSat satellites
 . . . MagSat 1 satellite
 . . . Magsat A satellite
 . . . MagSat B satellite
 . . ORBIS
 . . . ORBIS CAL satellite
 . . OV-1 satellites
 . . OV-2 satellites
 . . OV-3 satellites
 . . OV-4 satellites
 . . OV-5 satellites
 . . SCATHA satellite
 . . small scientific satellites
 . . . Submillimeter Wave Astronomy Satellite
 . . . Transition Region and Coronal Explorer
 . . UK satellites
 . . . Ariel 4 satellite
 . . . Ariel 5 satellite
 . . . Miranda satellite
 . . . UK 4 satellite
 . . Aqua spacecraft
 . . Aura spacecraft
 . . CALIPSO (Pathfinder satellite)
 . . CloudSat
 . . Glory Mission satellite
 . . Ice, Cloud and Land Elevation Satellite
 . . Orbiting Carbon Observatory (OCO)
 . . Polar/GGS spacecraft
 . . QuikSCAT satellite
 . . TRMM satellite
 . . Upper Atmosphere Research Satellite (UARS)
 . . Wind/GGS spacecraft
 RT Canadian space program
 Cluster Mission
 EOS data and information system
 ESRO 4 satellite
 SOHO Mission
 technology feasibility spacecraft

scientific visualization

(added July 1993)

UF *data visualization*
 GS information analysis
 . **scientific visualization**
 . . numerical flow visualization
 RT computer graphics
 computerized simulation

display devices
 image processing
 Mission to Planet Earth
 scene generation
 software development tools

scientists

GS manpower
 . **scientists**
 personnel
 . **scientists**
 RT awards
 engineers

Scimitar aircraft

UF *Vickers Scimitar aircraft*
 GS attack aircraft
 . fighter aircraft
 . . **Scimitar aircraft**
 BAC aircraft
 . **Scimitar aircraft**
 jet aircraft
 . **Scimitar aircraft**
 monoplanes
 . **Scimitar aircraft**
 RT ∞ aircraft

scintillating fibers

(added December 1992)
 UF *scintillation fibers*
 GS fibers
 . optical fibers
 . . **scintillating fibers**
 optical materials
 . optical fibers
 . . **scintillating fibers**
 waveguides
 . optical waveguides
 . . optical fibers
 . . . **scintillating fibers**
 RT calorimeters
 cosmic rays
 fiber optics
 gamma ray spectrometers
 gamma ray telescopes
 gamma rays
 hodoscopes
 photomultiplier tubes
 radiation counters
 scintillation
 scintillation counters

scintillation

DEF Generic term for rapid variations in apparent position, brightness, or color of a distant luminous object viewed through the atmosphere. A flash of light produced in a phosphor by an ionizing event. On a radar display, a rapid apparent displacement of the target from its mean position.

RT glint
 phosphorescence
 scintillating fibers
 seeing (astronomy)

scintillation counters

DEF The combinations of phosphor, photomultiplier tube, and associated circuits for counting scintillations. Used for scintillators and scintillometers.

UF *scintillators*
scintillometers
 GS measuring instruments
 . counters
 . . radiation counters
 . . . **scintillation counters**
 . radiation measuring instruments
 . . radiation counters
 . . . **scintillation counters**
 RT anticoincidence detectors
 Cerenkov counters
 neutron counters
 particle telescopes
 photomultiplier tubes
 photopeak

scintillating fibers

scintillation fibers
 USE **scintillating fibers**

scintillators

USE **scintillation counters**

scintillometers

USE **scintillation counters**

scission

USE **cleavage**

scoops

RT air intakes
 conveyors
 ducts
 intake systems
 nose inlets
 side inlets
 ∞ water intakes

scopolamine

USE **hyoscine**

SCORE omnirange

USE **self calibrating omnirange**

SCORE satellite

GS artificial satellites
 . **SCORE satellite**

scoring

UF *scribing*
 RT abrasion
 defects
 friction
 pitting
 wear

Scorpio constellation

USE **Scorpius constellation**

Scorpius constellation

UF *Scorpio constellation*
 GS constellations
 . **Scorpius constellation**
 RT zodiac

Scotchlite (trademark)

RT membrane structures
 refractory materials

Scotland

GS nations
 . United Kingdom
 . . **Scotland**
 RT Europe

Scout helicopter

USE **P-531 helicopter**

Scout launch vehicle

GS launch vehicles
 . **Scout launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . **Scout launch vehicle**
 RT Algol engine
 Explorer 9 satellite
 Explorer 16 satellite
 Explorer 19 satellite
 Explorer 20 satellite
 Explorer 22 satellite
 Explorer 23 satellite
 Explorer 24 satellite
 Explorer 25 satellite
 Explorer 27 satellite
 Explorer 30 satellite
 Explorer 37 satellite
 Explorer 39 satellite
 Explorer 40 satellite
 San Marco satellites
 solid propellant rocket engines
 TX-354 engine
 X-248 engine
 X-254 engine
 X-258 engines
 X-259 engine

XM-33 engine

Scout project

- GS programs
 - . NASA programs
 - . . . NASA space programs
 - **Scout project**
 - . projects
 - . . . **Scout project**
 - . . . space programs
 - . . . NASA space programs
 - **Scout project**
- RT ∞ boosters
 - Explorer satellites
 - launch vehicles

SCPC transmission

USE **single channel per carrier transmission**

SCR (rectifiers)

USE **silicon controlled rectifiers**

∞ **SCRAM**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT missiles
 - shutdowns
 - supersonic combustion ramjet engines

scrambling (communication)

- RT intelligibility
 - security
 - signal distortion
 - signal encoding
 - vocoders
 - voice communication

scramjet engines

USE **supersonic combustion ramjet engines**

scramjets

USE **supersonic combustion ramjet engines**

scrap

- RT chips
 - debris
 - metal particles
 - wastes

scrapers

- RT cutters
 - files (tools)
 - honing
- ∞ separation

screech tones

(added March 1998)

DEF Discrete acoustic tones produced by imperfectly expanded supersonic jets. The phenomenon is a result of a resonant feedback condition involving downstream traveling shear-layer disturbances and upstream traveling acoustic waves.

- GS elastic waves
 - . sound waves
 - . . . noise (sound)
 - flow noise
 - aerodynamic noise
 - **screech tones**
 - frequencies
 - . acoustic frequencies
 - . . **screech tones**
- RT aeroacoustics
 - feedback
 - jet aircraft noise
 - jet mixing flow
 - nozzle flow
 - shear layers
 - supersonic jet flow
 - supersonic nozzles

screen effect

- RT ∞ coma
 - dielectrics
 - Earth magnetosphere
- ∞ effects

- electromagnetic wave filters
- electromagnetic wave transmission
- electron gas
- semiconductors (materials)
- wave propagation

∞ **screening**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT filtration
 - finer
 - louvers
 - selection
 - water treatment

∞ **screens**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT curtains
 - display devices
 - protectors
 - shielding
 - sizing screens
 - wire cloth

screw dislocations

- GS defects
 - . crystal defects
 - . . crystal dislocations
 - . . . **screw dislocations**
 - dislocations (materials)
 - . crystal dislocations
 - . . **screw dislocations**
- RT edge dislocations

screw pinch

DEF A cylindrical plasma equilibrium in which the axial and azimuthal components of the vacuum field are of the same size.

- GS pinch effect
 - . plasma pinch
 - . . **screw pinch**
- RT magnetic fields
 - magnetohydrodynamic flow
 - plasma control
 - reverse field pinch
 - theta pinch
 - zeta pinch

screws

- SN (EXCLUDES PROPELLERS AND CRYSTAL DEFECTS)
- GS fasteners
 - . **screws**
- RT anchors (fasteners)
 - bolts
 - couplings
 - holders
 - nuts (fasteners)
 - studs (structural members)
 - threads

scribing

USE **scoring**

scrubbers

DEF Apparatus used in sampling and in gas cleaning in which the gas is passed through a space containing wetted "packing" or spray.

- RT cleaning
 - columns (process engineering)
 - flue gases
 - washing

scrubbing

USE **washing**

scrubs (botany)

USE **brush (botany)**

Scutum constellation

- GS constellations
 - . **Scutum constellation**
- RT zodiac

Scylla

- GS plasma generators
 - . **Scylla**
- RT magnetic fields
 - magnetic mirrors

- magnetic variations
- plasmas (physics)
- thermonuclear reactions

SDP (computers)

USE **site data processors**

SDS 900 series computers

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **SDS 900 series computers**
 - SDS 930 computer

SDS 930 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . SDS 900 series computers
 - **SDS 930 computer**

SDS 9300 computer

- GS data processing equipment
 - . computers
 - . . digital computers
 - . . . **SDS 9300 computer**

SDV

USE **Shuttle Derived Vehicles**

SE-210 aircraft

- UF *Caravelle aircraft*
 - Sud Aviation SE-210 aircraft*
- GS commercial aircraft
 - . **SE-210 aircraft**
 - jet aircraft
 - . turbofan aircraft
 - . . **SE-210 aircraft**
 - monoplanes
 - . **SE-210 aircraft**
 - passenger aircraft
 - . **SE-210 aircraft**
 - Sud Aviation aircraft
 - . **SE-210 aircraft**
- RT ∞ aircraft

SE-3160 helicopter

- UF *Alouette 3 helicopter*
 - Sud Aviation SE-3160 helicopter*
- GS Sud Aviation aircraft
 - . Alouette helicopters
 - . . **SE-3160 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . Alouette helicopters
 - **SE-3160 helicopter**

SE-A

USE **Explorer 30 satellite**

sea breeze

DEF A coastal, local wind that blows from sea to land caused by temperature differences when the sea surface is colder than the adjacent land.

- GS wind (meteorology)
 - . **sea breeze**
- RT aerology
 - air currents
 - atmospheric circulation
 - barotropic flow
 - climatology
 - geostrophic wind
 - gusts
 - marine environments
 - meteorology
 - monsoons
 - offshore energy sources
 - tidal waves
 - wind direction
 - wind effects
 - wind erosion
 - wind measurement
 - windpower utilization
 - winds aloft

sea floor spreading

(added July 1992)

DEF A hypothesis that the oceanic crust is

sea grasses

increasing by convective upwelling of magma along the mid-ocean ridges or world rift system, and by a moving-away of the new material at a rate of one to ten centimeters per year. This movement provides the source of dynamic thrust in the hypothesis of plate tectonics.

UF *ocean floor spreading*

RT Earth crust
Earth mantle
Earth movements
mid-ocean ridges
neotectonics
ocean bottom
plates (tectonics)
submarine hydrothermal vents
tectonics
terradyamics

sea grasses

GS plants (botany)

. grasses

. . **sea grasses**

RT marine biology
oceanography
seaweeds
vegetation
wetlands

sea ice

UF *ice packs*

GS ice

. **sea ice**

. . ice floes

. . icebergs

. . pressure ice

RT air sea ice interactions
bay ice
freezing
glacial drift
glaciers
ice environments
ice formation
ice mapping
lake ice
land ice
nunataks
oceanography
polynyas

sea keeping

DEF Maintaining the stability of a surface vessel in linear response to wave height, pitch, heave, center of gravity, and bow acceleration.

RT attitude gyros
damping
gyroscopic stability
gyrostabilizers
motion stability
∞ stabilizers
torquers

Sea King helicopter

USE **SH-3 helicopter**

Sea Knight helicopter

USE **CH-46 helicopter**

sea launching

GS launching

. **sea launching**

RT antiship missiles
antiship warfare
ballistic missile submarines
catapults
drydocks
fleet ballistic missiles
missile launchers
Poseidon missiles
rocket launchers
torpedoes
water takeoff and landing aircraft
Zenit launch vehicles

sea law

DEF United Nations declaration regarding rights to minerals and other marine resources.

GS law (jurisprudence)

. international law

. . **sea law**

RT ∞ cooperation

international cooperation

rules

United Nations

sea level

DEF The level of the surface of the ocean; especially, the mean level halfway between high and low tide used as a standard in reckoning land elevation or sea depths.

GS altitude

. **sea level**

RT ocean surface

oceanography

sea states

Sea of Japan

GS seas

. **Sea of Japan**

RT Asia

Sea of Okhotsk

GS seas

. **Sea of Okhotsk**

RT Pacific Ocean

U.S.S.R.

sea roughness

GS roughness

. **sea roughness**

RT hydrodynamic coefficients

ocean models

ocean surface

oceanography

surface waves

tidal waves

tide powered generators

tide powered machines

tidewater

tides

turbulence

water currents

water waves

waterwave energy conversion

waterwave powered machines

wind effects

wind velocity

sea states

RT ocean models

ocean surface

ocean temperature

oceanographic parameters

oceanography

sea level

TOPEX

water currents

water waves

wind effects

sea surface temperature

GS oceanographic parameters

. ocean temperature

. . **sea surface temperature**

surface properties

. surface temperature

. . **sea surface temperature**

temperature

. surface temperature

. . **sea surface temperature**

. water temperature

. . ocean temperature

. . . **sea surface temperature**

RT air water interactions

land surface temperature

ocean surface

oceanography

sea truth

RT aerial photography

coastal currents

imagery

ocean surface

ocean temperature

photointerpretation

sea urchins

GS animals

. invertebrates

. . **sea urchins**

sea walls

USE **breakwaters**

sea water

GS water

. **sea water**

RT brines
coastal water
dissolved organic matter
fisheries
marine resources
nearshore water
ocean surface
ocean temperature
oceanography
red tide
salinity
seaweeds
thermoclines
thermohaline circulation
underwater photography
underwater resources
water resources
water sampling

seaborgium

(added May 1998)

GS chemical elements

. **seaborgium**

RT bohrium

dubnium

Seafarer project

UF *Global Communications Antenna Grid*

(navy)

underground radio antenna grid

(navy)

GS programs

. projects

. . **Seafarer project**

RT extremely low frequencies

radio transmission

submarines

telecommunication

underwater communication

seafloor hydrothermal vents

(added April 2005)

USE **submarine hydrothermal vents**

Seahorse helicopter

USE **UH-34 helicopter**

sealants

USE **sealers**

sealers

UF *sealants*

RT adhesives

coatings

dopes

fillers

packaging

packings (seals)

paints

sealing

seals (stoppers)

seams (joints)

solders

varnishes

sealing

GS **sealing**

. self sealing

RT adhesion

adhesive bonding

binding

blocking

blowers

bonding

brazing

caulking

cements

clamps

closing

coating

coatings

containment

- coverings
- encapsulating glands (seals)
- ∞ joining
 - lining processes
 - moisture resistance
- ∞ packing
 - packings (seals)
 - plugging
 - retaining
 - riveting
 - sealers
 - soldering
 - spraying
 - stopping
 - waterproofing
 - welding
- seals (animals)**
 - GS animals
 - . vertebrates
 - . . mammals
 - . . . marine mammals
 - **seals (animals)**
 - RT marine biology
- seals (stoppers)**
 - GS **seals (stoppers)**
 - . brush seals
 - . gaskets
 - . glands (seals)
 - . hermetic seals
 - . labyrinth seals
 - . O ring seals
 - . packings (seals)
 - . plugs
 - . pump seals
 - RT air locks
 - barrier layers
 - ∞ barriers
 - blocking
 - ∞ caps
 - closures
 - constrictions
 - cuffs
 - plugging
 - sealers
 - spherical caps
 - ∞ tapes
 - valves
- seamounts**
 - DEF Elevations of the ocean floor rising to about 3000-1000 feet or more with the summit about 1000-6000 feet below sea level.
 - RT continental shelves
 - crevasses
 - ∞ faults
 - folds (geology)
 - islands
 - landforms
 - mid-ocean ridges
 - ocean bottom
 - structural basins
- seams (joints)**
 - GS joints (junctions)
 - . **seams (joints)**
 - RT adhesives
 - fillets
 - metal joints
 - sealers
- seaplanes**
 - GS water takeoff and landing aircraft
 - . **seaplanes**
 - RT amphibious aircraft
 - amphibious vehicles
 - hulls (structures)
 - monoplanes
- Search and Rescue Satellite*
 - USE **SarSat**
- Search for Extraterrestrial Intelligence*
 - USE **Project SETI**
- search profiles**
 - GS searching
 - . **search profiles**
- RT data retrieval
 - information retrieval
 - ∞ profiles
- search radar**
 - GS radar
 - . **search radar**
 - . . over-the-horizon radar
 - RT airport surface detection equipment
 - coherent radar
 - continuous wave radar
 - pulse radar
 - radar detection
 - radar tracking
 - satellite-borne radar
 - side-looking radar
 - surveillance radar
 - tracking radar
 - TRADEX radar system
- searching**
 - GS **searching**
 - . search profiles
 - RT conical scanning
 - COSPAS
 - panoramic scanning
 - reconnaissance
 - retrieval
 - SarSat
 - scanning
 - selection
- searchlights**
 - GS lighting equipment
 - . luminaires
 - . . **searchlights**
 - RT airport lights
 - arc lamps
 - beacons
 - projectors
 - runway lights
- seas**
 - DEF Inland bodies of salt water or geographic divisions of oceans or ocean areas of wave generation.
 - GS **seas**
 - . Arabian Sea
 - . Baltic sea
 - . Barents Sea
 - . Beaufort Sea (North America)
 - . Bering Sea
 - . Black Sea
 - . Caribbean Sea
 - . Caspian Sea
 - . Chukchi Sea
 - . Mediterranean Sea
 - . . Adriatic Sea
 - . North Sea
 - . Red Sea
 - . Salton Sea (CA)
 - . Sea of Japan
 - . Sea of Okhotsk
 - RT archipelagoes
 - coastal currents
 - coasts
 - deep water
 - Earth hydrosphere
 - ocean temperature
 - oceanography
 - oceans
 - Sargasso Sea
 - seaweeds
 - shallow water
 - shoals
 - straits
 - thermal pollution
 - underwater photography
- SEASAT 1**
 - GS artificial satellites
 - . SEASAT satellites
 - . . **SEASAT 1**
 - RT Landsat satellites
 - oceanography
 - programs
 - SEASAT-B satellite
- SEASAT program**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . Earth Resources Program
 - Earth Resources Survey Program
 - **SEASAT program**
 - . space programs
 - . . NASA space programs
 - . . . Earth Resources Program
 - Earth Resources Survey Program
 - **SEASAT program**
 - RT Landsat satellites
 - oceanography
- SEASAT satellites**
 - GS artificial satellites
 - . **SEASAT satellites**
 - . . SEASAT 1
 - . . SEASAT-B satellite
 - RT Landsat satellites
 - NASA programs
 - oceanography
 - programs
 - satellite altimetry
 - Synchronous Earth Observatory satellite
- SEASAT-B satellite**
 - GS artificial satellites
 - . SEASAT satellites
 - . . **SEASAT-B satellite**
 - RT Landsat satellites
 - oceanography
 - programs
 - SEASAT 1
- seasonal variations*
 - USE **annual variations**
- seasons**
 - GS **seasons**
 - . autumn
 - . spring (season)
 - . summer
 - . winter
 - RT annual variations
 - climatology
 - crop calendars
 - equinoxes
 - meteorology
 - solar position
 - solstices
 - weather
 - wind variations
- Seasprite helicopter*
 - USE **UH-2 helicopter**
- seat belts**
 - DEF Safety belts that fasten across the lap.
 - GS safety devices
 - . **seat belts**
 - RT ∞ belts
 - harnesses
 - seats
- seats**
 - UF *benches*
 - chairs*
 - GS **seats**
 - . Barany chair
 - . ejection seats
 - . . flying ejection seats
 - RT
 - comfort
 - couches
 - cushions
 - harnesses
 - ∞ lounges
 - riding quality
 - seat belts
 - sitting position
- Sea-viewing Wide Field-of-view Sensor**
 - (added December 1998)
 - UF *SeaWiFS*
 - GS scanners
 - . ocean color scanner
 - . . **Sea-viewing Wide Field-of-view Sensor**

seaweeds

RT chlorophylls
Coastal Zone Color Scanner
ocean surface
phytoplankton
remote sensors
satellite-borne instruments
water color

seaweeds

UF *kelp*
RT marine biology
oceanography
oceans
sea grasses
sea water
seas

SeaWiFS

(added December 1998)

USE **Sea-viewing Wide Field-of-view
Sensor**

sebaceous glands

GS anatomy
. glands (anatomy)
.. **sebaceous glands**

sebamic acid

GS acids
. carboxylic acids
.. fatty acids
... **sebamic acid**
organic compounds
. carboxylic acids
.. fatty acids
... **sebamic acid**

secondary batteries

USE **storage batteries**

secondary cosmic rays

DEF Secondary emission in the atmosphere stimulated by primary cosmic rays. Used for Moliere formula.

UF *Moliere formula*
GS ionizing radiation
. cosmic rays
.. **secondary cosmic rays**
RT atmospheric radiation
cosmic ray albedo
cosmic ray showers
electron decay rate
electron photon cascades
electron precipitation
primary cosmic rays
single event upsets

secondary emission

DEF Emission of subatomic particles of photons stimulated by primary radiation; for example, cosmic rays impinging on other particles and causing them, by disruption of their electron configurations or even of their nuclei, to emit particles or photons or both in turn.

GS emission
. particle emission
.. electron emission
... **secondary emission**
RT dynodes
electron irradiation
field emission
monoscopes
multipactor discharges
photomultiplier tubes
scanning electron microscopy
Townsend avalanche

secondary flow

GS fluid flow
. parallel flow
.. three dimensional flow
... **secondary flow**
. viscous flow
.. boundary layer flow
... **secondary flow**
translational motion
. three dimensional motion
.. three dimensional flow
... **secondary flow**
RT compressibility effects

corner flow
three dimensional boundary layer
vortices
vorticity

secondary injection

GS injection
. **secondary injection**
RT fluid injection
shock wave control
shock wave propagation
supersonic flow
thrust augmentation
thrust vector control

secondary ion mass spectrometry

(added July 1991)
DEF Mass spectrometry performed on ions sputtered from a sample by a primary ion beam.

UF *SIMS (spectrometry)*
GS spectroscopy
. mass spectroscopy
.. **secondary ion mass spectrometry**
RT mass spectrometers

secondary radar

DEF A radar technique or mode of operation in which the return signals are obtained from beacons, transponders, or repeaters carried by the targets, contrasted with primary radar in which the return signals are obtained by reflection from the targets.

GS radar
. **secondary radar**
RT discrete address beacon system
interrogation

secondary waves

USE **S waves**

secretions

GS **secretions**
. endocrine secretions
.. hormones
... corticosteroids
.... aldosterone
.... hydroxycorticosteroid
..... cortisone
.... glucocorticoids
... estrogens
... hypertensin
... pituitary hormones
... adrenocorticotropin (ACTH)
... vasopressins
... prostaglandins
... thyroxine
.. insulin
. sweat
RT body fluids
gall
glands (anatomy)
hydrogen metabolism
melatonin
metabolism
mineral metabolism
skin (anatomy)

∞ sections

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT categories
classes
subdivisions
subsidiaries

∞ sectors

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT area
circles (geometry)
regions

secular perturbation

USE **long term effects**

secular variations

GS variations
. periodic variations
.. **secular variations**

RT atmospheric physics
solar activity effects
solar cycles
teleconnections (meteorology)

security

GS **security**
. airport security
. computer security
.. computer information security
.. firewalls (computers)
.. intrusion detection (computers)
RT ∞ classifying
computer program integrity
crime
integrity
police
privacy
scrambling (communication)
selective dissemination of information
steganography
terrorism
vulnerability

sedatives

GS drugs
. **sedatives**
RT pentobarbital
phenobarbital
psychotropic drugs
tranquilizers

sediment transport

RT mass flow
mass transfer
sediments

sedimentary rocks

DEF Rocks resulting from the consolidation of loose sediments that have accumulated in layers, e.g., clastic rocks (such as fragments of older rocks transported from their source and deposited in water or from air or ice. Sedimentary rocks constitute one of the three main classes into which rocks are divided, the others being igneous rocks and metamorphic rocks.

GS rocks
. **sedimentary rocks**
.. carbonaceous rocks
... coal
... anthracite
... lignite
... solvent refined coal
.. limestone
.. sandstones
.. shales

RT alluvium
breccia
clays
dolomite (mineral)
gypsum
igneous rocks
∞ layers
monazite sands
petrography
sands
sediments
shatter cones
soils
stratigraphy

sediments

DEF Solid fragmental materials that originate from weathering of rocks and are transported or deposited by air, water, or ice, or that accumulate by other natural agents, such as chemical precipitation from solution or secretion by organisms, and that form in layers on the Earth's surface at ordinary temperatures in a loose, unconsolidated form; e.g., sand, gravel, silt, mud, till, loess, and alluvium.

UF *silts*
GS **sediments**
. gravels
. mud
. sands
.. monazite sands
.. tar sands
RT alluvium
clays

deposition
deposits
dissolved organic matter
dredged materials
fans (landforms)
glacial drift
grit
littoral drift
marine chemistry
ocean bottom
peat
sediment transport
sedimentary rocks
sewage treatment
sludge
soil pollution

SEE (software engineering environments)
USE **programming environments**

Seebeck coefficient
USE **Seebeck effect**

Seebeck effect

DEF The establishment of an electric potential difference tending to produce a flow of current in a circuit of two dissimilar metals the junctions of which are at different temperatures. Used for Seebeck coefficient.
UF *Seebeck coefficient*
RT ∞ effects
Peltier effects
temperature effects
thermocouples
thermodynamic properties
thermoelectricity
thermophysical properties
transport properties

seeding (inoculation)
USE **inoculation**

seedlings (botany)

(added August 2004)
DEF A very young plant after germination of seeds.
GS plants (botany)
. **seedlings (botany)**
RT plant physiology
plant roots
seeds

seeds

RT alfalfa
barley
citrus trees
corn
embryos
farm crops
grains (food)
nuts (fruits)
oats
planting
plants (botany)
seedlings (botany)
sugar beets
sugar cane
tomatoes
utricle
vegetables
viability

seeing (astronomy)

(added July 1989)
UF *atmospheric seeing*
RT astronomical observatories
astronomy
atmospheric effects
atmospheric optics
atmospheric turbulence
optical correction procedure
scintillation
space observations (from Earth)
telescopes

turbulence effects

seekers
USE **homing devices**

seepage

RT canals
drainage
flood damage
flow nets
hydrodynamics
intrusion
irrigation
leakage
losses
offshore energy sources
penetration
percolation
permeability
piezometers
water consumption

segmented mirrors

(added August 1995)
DEF Telescope mirrors made up of many small, thin, glass segments. Motorized controllers keep the segments optically aligned to form a single large mirror.
GS mirrors
. **segmented mirrors**
RT adaptive optics
astronomical observatories
deformable mirrors
honeycomb mirrors
optical correction procedure
reflecting telescopes

segments

RT circles (geometry)
∞ components
curves (geometry)
lines (geometry)
radii

Segre characteristic

RT ∞ characteristics
crack propagation
metal fatigue

segregation

USE **separation**

seismic energy

RT earthquake damage
∞ energy
strain energy methods

seismic waves

DEF The disturbance of earth tremors produced by a mechanical disturbance on the surface or underground. Used for electroseismic effect.
UF *electroseismic effect*
GS elastic waves
. **seismic waves**
. . Love waves
. . microseisms
. . Rayleigh waves
RT crustal fractures
detonation waves
dilatational waves
Earth movements
earthquake damage
earthquake resistance
earthquake resistant structures
earthquakes
Gutenberg zone
large aperture seismic array
longitudinal waves
P waves
planetary quakes
polarized elastic waves
S waves
seismology
SH waves
shock waves
surface waves
tsunami waves
underground explosions

∞ waves

seismocardiography

DEF The measurement of the high frequency vibrations of the heart.
GS bioengineering
. biometrics
. . cardiography
. . . **seismocardiography**
RT ballistocardiography
fibrillation

seismograms

RT seismographs

seismographs

UF *seismometers*
GS measuring instruments
. vibration meters
. . **seismographs**
. . . lunar seismographs
recording instruments
. **seismographs**
. . lunar seismographs
RT accelerometers
acoustic measurement
phased arrays
seismograms
shock measuring instruments
tiltmeters

seismology

DEF The study of earthquakes, by extension, the structure of the interior of the Earth via both natural and artificially generated seismic signals.
GS **seismology**
. asteroseismology
. moonquakes
. . helioseismology
RT asthenosphere
crustal fractures
Earth movements
Earth sciences
earthquake damage
earthquakes
geology
geophysics
isostasy
large aperture seismic array
lunar geology
mid-ocean ridges
Rouse belts
∞ science
seismic waves
subduction (geology)
tidal waves

seismometers

USE **seismographs**

seizures

RT convulsions
cramps

SEL computers

GS data processing equipment
. computers
. . digital computers
. . . **SEL computers**

selection

UF *choice*
GS **selection**
. personnel selection
. . pilot selection
. materials selection
. site selection
RT certification
∞ classifying
collection
decisions
evaluation
figure of merit
options
ranking
rejection
sampling
∞ screening
searching

selection rules (nuclear physics)

sorting algorithms
∞ tests

selection rules (nuclear physics)

GS rules
. **selection rules (nuclear physics)**
RT alpha decay
emission
forbidden transitions
neutron emission
∞ physics
quantum numbers

selective dissemination of information

GS communicating
. information dissemination
. . **selective dissemination of information**
RT computer information security
data storage
documentation
indexes (documentation)
information flow
information retrieval
information systems
libraries
management planning
security
technology transfer

selective fading

GS fading
. signal fading
. . **selective fading**
RT frequency analyzers
ground wave propagation
modulation
sidebands
signal fading rate

selective surfaces

DEF Surfaces, often coated, for which the spectral optical properties, such as reflectance, absorptance, emittance, or transmittance vary significantly with wavelength. Such properties are of interest in solar energy applications. Used for solar selective coatings.

UF *solar selective coatings*
RT energy absorption films
selectivity
solar collectors
solar energy absorbers
thermochromic coatings

selectivity

RT discrimination
photothermal conversion
selective surfaces

selectors

RT analyzers
circuits
electric relays
samplers
switches
switching circuits

selenides

GS chalcogenides
. **selenides**
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides
selenium compounds
. **selenides**
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides

. . zinc selenides

selenium

GS chemical elements
. **selenium**
RT selenium isotopes

selenium alloys

GS alloys
. **selenium alloys**
RT copper

selenium compounds

GS **selenium compounds**
. selenides
. . cadmium selenides
. . copper selenides
. . . copper indium selenides
. . gallium selenides
. . indium selenides
. . . copper indium selenides
. . lead selenides
. . zinc selenides
. . selenium oxides
RT ∞ chemical compounds
∞ Group 6A compounds

selenium isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **selenium isotopes**
RT selenium

selenium oxides

GS chalcogenides
. oxides
. . **selenium oxides**
selenium compounds
. **selenium oxides**

selenography

RT geography
lunar craters
lunar crust
lunar landing sites
lunar maps
lunar mobile laboratories
lunar rays
lunar rocks
lunar topography
moon
selenology
surface properties

selenology

DEF That branch of astronomy that treats of the moon, its magnitude, motion, constitution, and the like. Selene is Greek for moon.

RT astronomy
lunar composition
lunar core
lunar craters
lunar crust
lunar dust
lunar echoes
lunar eclipses
lunar effects
lunar environment
lunar equator
lunar evolution
lunar exploration
lunar far side
lunar figure
lunar geology
lunar gravitation
lunar gravitational effects
lunar limb
lunar luminescence
lunar magnetic fields
lunar mantle
lunar maria
lunar occultation
lunar phases
lunar radar echoes
lunar radiation
lunar rocks
lunar rotation
lunar seismographs
lunar shadow

lunar soil
lunar surface
lunar temperature
lunar tides
lunar topography
moon
moonquakes
regolith
selenography

self absorption

GS energy absorption
. radiation absorption
. . **self absorption**
RT ∞ absorption
absorption spectra
absorptivity
automatic control
diffusion
∞ radiation

self adaptive control systems

DEF Particular types of stability augmentation systems which change the responses of given control inputs by constantly sampling responses and adjusting their gain, rather than having fixed or selective gain systems.

GS automatic control
. adaptive control
. . **self adaptive control systems**
RT active control
adaptive optics
automata theory
autonomy
∞ control
∞ systems

self alignment

GS alignment
. **self alignment**
RT active control
adaptive control
automatic control
landing gear
model reference adaptive control
servomechanisms

self assembly

(added January 2001)

DEF Coordinated action of independent units to produce a larger structure or to achieve a desired group effect. A strategy for nanofabrication that involves designing molecules and supramolecular entities so that shape-complementarity or other properties causes them to aggregate into desired structures.

GS assembling
. **self assembly**
RT abiogenesis
∞ assembly
chemical evolution
fabrication
micelles
molecular biology
molecular structure
monomolecular films
nanofabrication
nanostructure (characteristics)
nanotechnology
synthesis (chemistry)

self calibrating omnirange

UF *SCORE omnirange*
GS navigation aids
. beacons
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
radio equipment
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**
transmitters
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . . **self calibrating omnirange**

RT solar compasses

self consistent fields

UF *SCF*

RT computational chemistry
field theory (physics)

∞ fields

Hartree approximation
magnetic fields
molecular orbitals
quantum electrodynamics
shell theory

self deploying space stations

USE **self erecting devices**
space stations

self diffusion (solid state)

DEF The spontaneous movement of an atom to a new site in a crystal of its own species.

GS diffusion

. **self diffusion (solid state)**

RT atomic mobilities
ionic diffusion
molecular diffusion
particle diffusion

self erecting devices

UF *self deploying space stations*

RT ∞ automation
∞ devices
∞ equipment
inflatable spacecraft
inflatable structures
orbital assembly
space erectable structures

self excitation

GS excitation

. **self excitation**

RT forced vibration
free vibration
oscillators
resonators

self focusing

GS focusing

. **self focusing**

RT image contrast

∞ machinery

optical correction procedure
optical measuring instruments

self ignition
(added April 1997)

USE **spontaneous combustion**

self induced vibration

GS vibration

. structural vibration

. . . **self induced vibration**

. . . . panel flutter

. . . . subsonic flutter

. . . . supersonic flutter

. . . . transonic flutter

RT bending vibration
flutter
forced vibration
free vibration
missile vibration
pilot induced oscillation
random vibration
torsional vibration

self initiated anti-aircraft missiles

USE **SIAM missiles**

self lubricating materials

RT impregnating
lubrication

∞ materials

solid lubricants
spacecraft lubrication

self lubrication

GS lubrication

. **self lubrication**

RT impregnating

self maneuvering units

UF *personnel propulsion systems*

reaction jet backpacks
SMU (maneuvering units)
space self maneuvering units

self maneuvering units

. IMLSS

RT astronaut maneuvering equipment
extravehicular activity
extravehicular mobility units
maneuvers
manned maneuvering units

self organizing systems

UF *perceptrons*

RT artificial intelligence
machine learning

∞ systems

Turing machines

self oscillation

GS oscillations

. **self oscillation**

RT feedback amplifiers
positive feedback
transfer functions

self propagation

GS diffusion

. **self propagation**
transmission

. **self propagation**

RT ∞ propagation

self regulating

USE **automatic control**

self repairing devices

RT ∞ automation
∞ devices
evolvable hardware
maintenance

self sealing

GS sealing

. **self sealing**

RT flight safety
fuel systems
rupturing
support systems

self shadowing

RT large space structures
shadows
solar arrays

self stimulation

RT motivation
reinforcement (psychology)

self subtraction holography

USE **holographic subtraction**

self sustained emission

GS emission

. **self sustained emission**

RT electron emission
light emission
particle emission
stimulated emission

self tests

DEF Programmed functions performed by a machine, either automatically at start-up or on user demand, that test the working order of the machine. In particular, programs stored in read-only memory that test the integrity of a machine's integrated circuits and the connections between the circuits and the devices they control.

RT automatic test equipment
avionics
checkout
electronic equipment tests
fail-safe systems

∞ tests

Selsyns (trademark)

USE **servomotors**

SEM (microscopy)

USE **scanning electron microscopy**

semantics

GS linguistics

. **semantics**

RT communication theory
grammars
languages
message processing
messages
natural language processing
nomenclatures
orthography
parsing algorithms
predicate logic
psycholinguistics
sentences
speech
syllables
symbols
syntax
words (language)

semicircular canals

DEF Structures of the inner ear, the primary function of which is to register movement of the body in space. They respond to change in the rate of movement.

GS anatomy

. sense organs

. . ear

. . . labyrinth

. . . . **semicircular canals**

RT eardrums
middle ear
otolith organs
vestibules

semiconducting films

RT amorphous semiconductors
amorphous silicon
diamond films
energy absorption films

∞ films

superconducting films
thick films
thin films

semiconductor devices

DEF Electron devices in which the characteristic distinguishing electronic conduction takes place within semiconductors.

GS electronic equipment

. solid state devices

. . **semiconductor devices**

. . . avalanche diodes

. . . . cryosar

. . . . Barritt diodes

. . . . charge transfer devices

. . . . bucket brigade devices

. . . . charge coupled devices

. . . . charge injection devices

. . . . germanium diodes

. . . . heterojunction devices

. . . . high electron mobility transistors

. MODFETS

. . . . junction diodes

. . . . MIM diodes

. . . . step recovery diodes

. . . . light emitting diodes

. . . . metal oxide semiconductors

. . . . CMOS

. . . . ITO (semiconductors)

. . . . SOS (semiconductors)

. . . . MIM (semiconductors)

. . . . MIS (semiconductors)

. . . . MOM (semiconductors)

. . . . MSM (semiconductors)

. . . . NDM semiconductor devices

. . . . neuristors

. . . . parametric diodes

. . . . photodiodes

. . . . photovoltaic cells

. . . . solar cells

semiconductor diodes

- vertical junction solar cells
- . . . Schottky diodes
- . . . semiconductor lasers
- aluminum gallium arsenide lasers
- gallium arsenide lasers
- quantum cascade lasers
- quantum well lasers
- YLF lasers
- . . . SOI (semiconductors)
- . . . thermistors
- . . . thyristors
- silicon controlled rectifiers
- . . . transferred electron devices
- . . . transistor amplifiers
- . . . transistors
- bipolar transistors
- field effect transistors
- charge flow devices
- JFET
- MODFETS
- high electron mobility transistors
- MODFETS
- junction transistors
- JFET
- phototransistors
- silicon transistors
- SOS (semiconductors)
- single electron transistors
- cascode devices
- quantum well infrared photodetectors
- . . . resonant tunneling diodes
- . . . TRAPATT devices
- . . . varactor diodes
- . . . varistors
- RT barrier layers
- bubble technique
- chips (memory devices)
- crystal rectifiers
- diffusion electrodes
- diffusion length
- diodes
- doping (materials)
- Gunn diodes
- Gunn effect
- Hall effect
- hybrid circuits
- ion implantation
- ∞ junctions
- microminiaturization
- modulation doping
- molecular electronics
- nanostructures (devices)
- organic semiconductors
- oscillators
- parametric amplifiers
- pentodes
- quantum dots
- quantum Hall effect
- quantum wires
- rectifiers
- semiconductors (materials)
- silicon films
- tetrodes
- triodes
- tunnel junctions
- wafers

semiconductor diodes

DEF Two-electrode semiconductor devices utilizing the rectifying properties of junctions or point contacts.

- GS electronic equipment
- . diodes
- . . **semiconductor diodes**
- . . . avalanche diodes
- cryosar
- Barritt diodes
- . . . germanium diodes
- . . . Gunn diodes
- transferred electron devices
- . . . junction diodes
- MIM diodes
- step recovery diodes
- . . . light emitting diodes
- . . . parametric diodes
- . . . photodiodes
- . . . Schottky diodes

- . . . tunnel diodes
- resonant tunneling diodes
- . . . varactor diodes
- RT MIM diodes
- SIS (semiconductors)
- thermionic diodes

semiconductor insulator semiconductors

USE **SIS (semiconductors)**

semiconductor junctions

GS **semiconductor junctions**

- . heterojunctions
- . homojunctions
- . MBM junctions
- . n-n junctions
- . n-p-n junctions
- . p-i-n junctions
- . p-n junctions
- . p-n-p junctions
- . p-n-p-n junctions
- . silicon junctions

RT Barritt diodes

heterojunction devices

∞ junctions

MSM (semiconductors)

n-type semiconductors

p-type semiconductors

Schottky diodes

SIS (semiconductors)

threshold voltage

tunnel junctions

semiconductor lasers

UF *laser diodes*

GS electronic equipment

. solid state devices

. . semiconductor devices

. . . **semiconductor lasers**

. . . . aluminum gallium arsenide lasers

. . . . gallium arsenide lasers

. . . . quantum cascade lasers

. . . . quantum well lasers

. . . . YLF lasers

stimulated emission devices

. lasers

. . **semiconductor lasers**

. . . aluminum gallium arsenide lasers

. . . gallium arsenide lasers

. . . quantum cascade lasers

. . . quantum well lasers

. . . YLF lasers

RT Bragg reflectors

DBR lasers

distributed feedback lasers

fiber lasers

gadolinium-gallium garnet

gallium arsenides

Gunn effect

injection lasers

laser arrays

laser cavities

optical switching

pulsed lasers

Q switched lasers

quantum dots

quantum wires

solid state lasers

surface emitting lasers

waveguide lasers

semiconductor plasmas

GS particles

. charged particles

. . energetic particles

. . . plasmas (physics)

. . . . **semiconductor plasmas**

. . corpuscular radiation

. . energetic particles

. . . plasmas (physics)

. . . . **semiconductor plasmas**

RT electron mobility

electron-hole drops

holes (electron deficiencies)

plasma physics

semiconductors (materials)

semiconductors (materials)

DEF Electronic conductors, with resistivity

in the range between metals and insulators, in which the electrical charge carrier concentration increases with increasing temperature over some temperature range. Certain semiconductors possess two types of carriers, namely, negative electrons and positive holes.

GS **semiconductors (materials)**

- . acceptor materials
- . amorphous semiconductors
- . . amorphous silicon
- . donor materials
- . metal oxide semiconductors
- . . CMOS
- . . ITO (semiconductors)
- . . SOS (semiconductors)
- . . metal-nitride-oxide-semiconductors
- . . metal-nitride-oxide-silicon
- . . MIM (semiconductors)
- . . MIS (semiconductors)
- . . MOM (semiconductors)
- . . n-type semiconductors
- . . organic semiconductors
- . . photoconductors
- . . p-type semiconductors
- . . superlattices
- . . Vycor

RT aluminum arsenides

- antislite defects
- bipolar transistors
- bucket brigade devices
- carbon nitrides
- carrier density (solid state)
- carrier injection
- charge injection devices
- conducting polymers
- conduction bands
- conductors
- copper indium selenides
- doping (materials)
- electric conductors
- electron affinity
- electron density (concentration)
- electron tunneling
- electrons
- emitters
- excitons
- gadolinium-gallium garnet
- gallium nitrides
- hole distribution (electronics)
- holes (electron deficiencies)
- indium antimonides
- indium gallium arsenides
- indium selenides
- indium tellurides
- intermetallics
- majority carriers
- ∞ materials
- melts (crystal growth)
- metalloids
- minority carriers
- modulation doping
- nanostructure (characteristics)
- negative electron affinity
- organic charge transfer salts
- polyacetylene
- pseudopotentials
- resistors
- screen effect
- semiconductor devices
- semiconductor plasmas
- ∞ solid state physics
- thermoelectric materials

semiempirical equations

RT algebra

∞ equations

parameterization

semimetals

USE **metalloids**

semiregular variable stars

GS celestial bodies

. stars

. . variable stars

. . . **semiregular variable stars**

RT irregular variable stars

periodic variations

semisolids
 RT plastic properties
 solids
 thixotropy
 viscous fluids

semispan models
 GS models
 . **semispan models**
 RT aerodynamic configurations
 aircraft models
 scale models
 wind tunnel models

Senarmont polariscopes
 GS measuring instruments
 . polariscopes
 . . **Senarmont polariscopes**
 optical equipment
 . polariscopes
 . . **Senarmont polariscopes**
 RT lasers
 optical measuring instruments

senders
 USE **transmitters**

Seneca aircraft
 USE **PA-34 Seneca aircraft**

Senegal
 GS nations
 . **Senegal**
 RT Africa

sense organs
 GS anatomy
 . **sense organs**
 . . chemoreceptors
 . . ear
 . . . eardrums
 . . . eustachian tubes
 . . . labyrinth
 cochlea
 Corti organ
 otolith organs
 semicircular canals
 vestibules
 middle ear
 eye (anatomy)
 choroid membranes
 conjunctiva
 cornea
 oculomotor nerves
 pupils
 retina
 fovea
 gravireceptors
 otolith organs
 baroreceptors
 mechanoreceptors
 photoreceptors
 proprioceptors
 thermoreceptors
 RT fingers
 head (anatomy)
 nervous system
 olfactory perception
 organs
 perceptual time constant
 receptors (physiology)
 sensitometry
 skin (anatomy)

senses
 USE **sensory perception**

sensibility
 USE **sensitivity**

sensing
 USE **detection**

sensitivity
 DEF Response of a mathematical model to variations of the input parameters. Used for insensitivity and sensibility.
 UF *insensitivity*

sensibility

GS **sensitivity**
 . anaphylaxis
 . impact resistance
 . notch sensitivity
 . pain sensitivity
 . photosensitivity
 . . light adaptation
 . . phototropism
 . . propellant sensitivity
 . . radiation tolerance
 . . sensitometry
 . . spectral sensitivity

RT acuity
 adaptation
 amplification
 auditory perception
 dynamic characteristics
 dynamic response
 frequency response
 itching
 perception
 precision
 range (extremes)
 reaction time
 ∞ resistance
 resolution
 sensitizing
 shock resistance
 ∞ thresholds
 thresholds (perception)
 tolerances (mechanics)
 transfer functions
 transient response
 visibility
 vulnerability

sensitivity analysis
(added February 2001)
 DEF Study of how the variation in the output of a system model can be qualitatively or quantitatively apportioned to different input parameters, model structures, or calibration data.
 RT ∞ analyzing
 design analysis
 design optimization
 error analysis
 factorial design
 optimization
 parameter identification
 parameterization
 shape optimization
 systems analysis

sensitizing
 RT activation
 actuation
 anaphylaxis
 corrosion prevention
 sensitivity

sensitometry
 DEF The measurement of the light response characteristics of photographic film under specified conditions of exposure and development.
 GS sensitivity
 . **sensitometry**
 RT gravireceptors
 mechanoreceptors
 photoreceptors
 photosensitivity
 proprioceptors
 radiation measurement
 receptors (physiology)
 sense organs
 thermoreceptors

sensor fusion
 USE **multisensor fusion**

sensorimotor performance
 UF *motor skills*
 GS **sensorimotor performance**
 . psychomotor performance
 . . psychosomatics
 RT afferent nervous systems
 efferent nervous systems
 human performance
 human reactions

perceptual time constant
 physiological tests
 pilot performance
 reaction time
 sensory feedback

∞ **sensors**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Devices designed to respond to physical stimuli (as temperature, illumination, and motion) and transmit a resulting signal for interpretation, or measurement, or for operating a control. Used for pickoffs and pickups.
 UF *pickoffs*
pickups
 RT bioinstrumentation
 character recognition
 charge flow devices
 contour sensors
 crop identification
 data acquisition
 electronic transducers
 FLIR detectors
 gas detectors
 guidance sensors
 image velocity sensors
 laser gyroscopes
 measuring instruments
 microoptoelectromechanical systems
 microwave sensors
 multispectral linear arrays
 remote sensors
 robot sensors
 servomotors
 smart materials
 tactile sensors (robotics)
 torque sensors (robotics)
 transducers

sensory deprivation
 GS deprivation
 . **sensory deprivation**
 RT confinement
 confining
 monotony
 perception

sensory discrimination
 GS discrimination
 . **sensory discrimination**
 . . brightness discrimination
 . . tactile discrimination
 . . visual discrimination
 RT speech recognition
 time discrimination

sensory feedback
 UF *feelings*
 GS feedback
 . biofeedback
 . . **sensory feedback**
 RT emotional factors
 emotions
 moods
 moon illusion
 nonlinear feedback
 perception
 sensorimotor performance

sensory perception
 UF *senses*
 GS perception
 . **sensory perception**
 . . auditory perception
 . . consciousness
 . . extrasensory perception
 . . kinesthesia
 . . olfactory perception
 . . pain
 . . pain sensitivity
 . . proprioception
 autokinesis
 taste
 touch
 tactile discrimination
 vertical perception
 vibration perception
 visual perception

sensory stimulation

. . . critical flicker fusion
. . . space perception
. . . . autokinesis
. . . visual discrimination

RT afterimages
anesthesia
electrocutaneous communication
itching

sensory stimulation

GS stimulation
. **sensory stimulation**

RT chronaxy
emotional factors
subliminal stimuli

sensory thresholds

(added August 2004)
USE **thresholds (perception)**

sentences

RT communication theory
languages
messages
semantics
signal reception
signal transmission
speech
syntax
talking
words (language)

Sentinel system

GS weapon systems
. **Sentinel system**
RT antimissile defense
antimissile missiles
civil defense
Nike missiles
Safeguard system
Spartan missile
Sprint missile
surface to air missiles
∞ systems

SEO (Indian spacecraft)

USE **Indian spacecraft**

SEOCS (satellite)

DEF An ESA meteorological satellite designed for sun-Earth observation and climatology.

GS artificial satellites
. meteorological satellites
. . **SEOCS (satellite)**

SEOS

USE **Synchronous Earth Observatory satellite**

SEPAC (payload)

DEF Space experiment particle accelerators. A Spacelab 1 payload that experiments on the Earth's ionosphere and magnetosphere. Used for Space Exper with Particle Accelerators.

UF *Space Exper with Particle Accelerators*

GS payloads
. **SEPAC (payload)**

RT ∞ accelerators
particle accelerators
Spacelab

separated flow

UF *flow separation*
GS fluid flow
. viscous flow
. . boundary layer flow
. . . **separated flow**
. . . boundary layer separation
RT cavitation flow
conical flow
Crocco-Lee theory
flow characteristics
flow distribution
forward facing steps
reattached flow
reversed flow
∞ separation

surface roughness effects
turbulence effects
vortex flaps

∞ separation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF *segregation*
RT adsorption
aeration
agglomeration
agitation
beneficiation
boundary layer separation
breaking
centrifuging
chemical fractionation
chipping
classifiers
cleaning
coagulation
coalescing
Coanda effect
colloids
concentrating
condensing
crystallization
cutting
debonding (materials)
decontamination
degassing
dehumidification
dehydration
deionization
delaminating
demineralizing
deoxygenation
deposition
descaling
desorption
dialysis
diffusion
dispersing
dissolving
distillation
diverters

∞ division
drying
electrodialysis
electrostatic precipitators
elimination
elution
evaporation
exchanging
exclusion
external store separation
extraction
filtration
flaking
flashing (vaporizing)
flotation
flushing
foaming
fractionation
fracturing
homogenizing
ion exchanging
ion extraction
ion stripping
isolation
leaching
materials recovery
melting
mixing
osmosis
percolation
phase separation (materials)
polarization (charge separation)
precipitation (chemistry)
purging
purification
radiochemical separation
recrystallization
refining
removal
scrapers
separated flow
separators
settling

shaking
shearing
size separation
slicing
solvent extraction
sorption
spacing
splitting
spreading
stage separation
stripping (distillation)
sublimation
swirling
thermal diffusion
thermophoresis
tumbling motion
vaporizing
venting
washing
zone melting

separators

UF *battery separators*

GS **separators**
. classifiers
. . sizing screens
. . thickeners (equipment)
. dividers
. drying apparatus
. . desiccators
. dust collectors
. evaporators
. fluid filters
. . air filters
. precipitators
. . electrostatic precipitators
. sieves
. spirals (concentrators)
. stills

RT centrifuges
cleaners
columns (process engineering)
concentrating
concentrators
condensers (liquefiers)
curtains
∞ diffusers
diverters
∞ filters
floats
fluidized bed processors
furnaces
ion exchange membrane electrolytes
mixers
∞ separation
shakers
spacers
traps
vaporizers
washers (cleaners)
washers (spacers)
windows (apertures)

septum

RT mediastinum
membranes
∞ partitions

sequencing

RT consecutive events
coordination
critical path method
interruption
∞ operations
operations research
packet switching
Petri nets
planning
priorities
ranking
scheduling
sequential control
switching
switching theory
turnaround (STS)

sequential analysis

GS statistical analysis
. **sequential analysis**
RT quality control

- sampling
- sorting algorithms
- temporal logic
- sequential computers**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... **sequential computers**
- sequential control**
 - DEF Control by completion of a series of one or more events.
 - GS automatic control
 - . **sequential control**
 - RT accuracy
 - . computer programming
 - . consecutive events
 - ∞ control
 - . data flow analysis
 - . numerical control
 - . sequencing
- Serbska Republic**
 - (added June 1996)
 - GS nations
 - . **Serbska Republic**
 - RT Bosnia and Herzegovina
 - . Europe
 - . Yugoslavia
- sergeant missiles**
 - GS missiles
 - . surface to surface missiles
 - .. **sergeant missiles**
 - RT Juno 1 launch vehicle
 - . Juno 2 launch vehicle
 - . Jupiter C rocket vehicle
 - . Little Joe 2 launch vehicle
 - . solid propellant rocket engines
- sergenium**
 - GS chemical elements
 - . actinide series
 - . transuranium elements
 - ... **sergenium**
 - . nuclides
 - . isotopes
 - ... radioactive isotopes
 - ... transuranium elements
 - ... **sergenium**
 - . metals
 - . actinide series
 - . transuranium elements
 - ... **sergenium**
- series (mathematics)**
 - GS analysis (mathematics)
 - . calculus
 - .. **series (mathematics)**
 - ... asymptotic series
 - ... Campbell-Hausdorff series
 - ... cosine series
 - ... Fourier series
 - ... Pade approximation
 - ... power series
 - ... Taylor series
 - ... MacLaurin series
 - ... progressions
 - ... Prony series
 - ... sine series
 - . real variables
 - .. **series (mathematics)**
 - ... asymptotic series
 - ... Campbell-Hausdorff series
 - ... cosine series
 - ... Fourier series
 - ... Pade approximation
 - ... power series
 - ... Taylor series
 - ... MacLaurin series
 - ... progressions
 - ... Prony series
 - ... sine series
 - RT Abel function
 - . Chebyshev approximation
 - . divergence
 - . form factors
 - . Fourier-Bessel transformations
 - . function space
- functional analysis
 - . Gibbs phenomenon
 - . infinity
 - . series expansion
 - . sums
- series expansion**
 - DEF In mathematics, a divergent series of terms the sum of which is asymptotic or ascending.
 - GS expansion
 - . **series expansion**
 - RT asymptotic series
 - . divergence
 - ∞ mathematics
 - . series (mathematics)
- serotonin**
 - GS drugs
 - . vasoconstrictor drugs
 - .. **serotonin**
 - . organic compounds
 - . amines
 - .. tryptamines
 - ... **serotonin**
 - . cyclic compounds
 - .. heterocyclic compounds
 - ... indoles
 - ... tryptamines
 - ... **serotonin**
- serpentine**
 - GS minerals
 - . **serpentine**
 - RT asbestos
 - . chromites
 - . rocks
 - . soils
- serratia**
 - GS microorganisms
 - . bacteria
 - .. **serratia**
- SERT 1 spacecraft**
 - RT electric propulsion
 - . electric rocket engines
 - . engine tests
 - . space electric rocket tests
 - ∞ spacecraft
- SERT 2 spacecraft**
 - RT electric propulsion
 - . electric rocket engines
 - . engine tests
 - . space electric rocket tests
 - ∞ spacecraft
- SERT (rocket tests)**
 - USE **space electric rocket tests**
- serums**
 - GS **serums**
 - . blood serum
 - . inoculum
 - RT antiserums
 - ∞ fluids
 - . proteins
- service life**
 - UF *machine life*
 - GS life (durability)
 - . **service life**
 - RT accelerated life tests
 - ∞ equipment
 - . fatigue life
 - . maintenance
 - . retirement for cause
 - . systems health monitoring
- Service Module (ISS)**
 - (added March 1999)
 - DEF Primary Russian component of the International Space Station providing an early station living quarters and life support system functions to all early elements. Also provides propulsive attitude control and reboost capability for the early station.
 - UF *Zvezda Service Module*
 - GS modules
 - . space station modules
 - .. **Service Module (ISS)**
 - RT International Space Station
 - . life support systems
- service modules**
 - GS modules
 - . **service modules**
 - .. Multi-Purpose Logistics Modules spacecraft components
 - . **service modules**
 - .. Multi-Purpose Logistics Modules
 - RT Apollo spacecraft
 - . command modules
 - . spacecraft docking modules
 - . spacecraft modules
- service oriented architecture**
 - (added May 2007)
 - DEF A paradigm for organizing and utilizing loosely coupled, platform-independent, distributed capabilities that may be under the control of different ownership domains. The set of components comprising the architecture can be invoked and their interface descriptions can be published and discovered.
 - GS architecture (computers)
 - . **service oriented architecture**
 - RT computer networks
 - . computer systems design
 - . distributed processing
 - . web services
- services**
 - GS **services**
 - . medical services
 - . meteorological services
 - . web services
 - RT ∞ food
 - . government procurement
 - . Internet resources
 - . inventory management
 - . logistics
 - . logistics management
 - . materials handling
 - . personnel
 - . procurement
 - . procurement management
 - . products
 - . site selection
 - . support systems
 - . transportation
 - . utilities
- servoamplifiers**
 - GS amplifiers
 - . **servoamplifiers**
 - . control equipment
 - . **servoamplifiers**
 - . controllers
 - . servomechanisms
 - .. **servoamplifiers**
 - RT feedback amplifiers
 - . fly by tube control
 - . servocontrol
- servocontrol**
 - UF *servostability control*
 - RT aeroservoelasticity
 - . aircraft hydraulic systems
 - . automatic control
 - ∞ control
 - . control moment gyroscopes
 - . control theory
 - . digital command systems
 - . feedback control
 - . hydraulic equipment
 - . manipulators
 - . manual control
 - . off-on control
 - . pneumatic equipment
 - . proportional control
 - . remote control
 - . rocket engine control
 - . servoamplifiers
 - . servomechanisms
 - . servomotors
 - . stepping motors
 - . turbojet engine control

servomechanisms

visual control

servomechanisms
 DEF Control systems incorporating feedback in which one or more of the system signals represent mechanical motion.
 GS controllers
 . **servomechanisms**
 . . servoamplifiers
 . . servomotors

RT active control
 actuators
 aircraft hydraulic systems
 automatic control
 automatic control valves
 ∞ automation
 ∞ control
 control moment gyroscopes
 electric motors
 feedback control
 hydraulic equipment
 pneumatic equipment
 radar equipment
 remote control
 robots
 self alignment
 servocontrol
 stepping motors
 tactile sensors (robotics)
 torque sensors (robotics)

servomotors
 UF *Magnesyn (trademark)*
Selsyns (trademark)
servos
 GS controllers
 . servomechanisms
 . . **servomotors**
 motors
 . **servomotors**

RT actuators
 amplidynes
 automatic control
 electric motors
 heliostats
 ∞ rotating electrical machines
 ∞ sensors
 servocontrol
 slewing
 synchronizers
 torque motors

servos
 USE **servomotors**

servostability control
 USE **servocontrol**

SES
 USE **surface effect ships**

SES (Shuttle)
 USE **Shuttle Engineering Simulator**

set
 SN (EXCLUDES SET THEORY)
 GS mechanical properties
 . **set**
 RT deformation
 shear properties

set theory
 UF *subsets (mathematics)*
 GS mathematical logic
 . **set theory**
 . . Borel sets
 . . equivalence
 . . threshold logic

RT Boolean algebra
 branching (mathematics)
 combinatorial analysis
 ∞ conjunction
 Fibonacci numbers
 fractals
 fuzzy sets
 fuzzy systems
 graph theory
 homotropy
 hyperplanes
 lattices (mathematics)

Lebesgue theorem
 Orlicz space
 permutations
 ∞ space
 subdivisions
 subgroups
 ∞ theories

SETI
 USE **Project SETI**

∞ **setting**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT adjusting
 coagulation
 curing
 hardening (materials)
 polymerization
 positioning
 solidification

settling
 RT accumulations
 agglomeration
 agitation
 beneficiation
 coagulation
 coalescing
 concentrating
 crystallization
 deposition
 effluents
 flocculating
 flotation
 particle motion
 precipitation (chemistry)
 ∞ processing
 ∞ separation
 size separation
 Stokes law (fluid mechanics)
 subsidence
 water treatment

setups
 RT machining
 tooling

Severe Storms Observing Satellite
 USE **StormSat satellite**

sewage
 GS wastes
 . **sewage**
 RT activated sludge
 effluents
 environment effects
 human wastes
 liquid wastes
 metabolic wastes
 organic wastes (fuel conversion)
 sewers
 solid wastes
 waste disposal
 water treatment

sewage treatment
 GS management
 . waste management
 . . waste treatment
 . . . **sewage treatment**

RT aerobes
 anaerobes
 chemical sterilization
 filtration
 Modular Integrated Utility System
 purification
 sediments
 sludge
 ∞ treatment
 waste disposal

sewers
 DEF Networks of pipelines for the transportation of metabolic and/or industrial wastes for disposal.
 GS pipelines
 . **sewers**
 RT drainage
 effluents

garbage
 human wastes
 metabolic wastes
 sanitation
 sewage
 waste disposal
 wastes

sewing
 RT binding
 ∞ joining
 needles
 weaving

sex
 RT ∞ drives
 females
 males
 sex factor
 zygotes

sex factor
 RT females
 males
 physiological factors
 psychological factors
 sex
 sex glands

sex glands
 GS anatomy
 . genitourinary system
 . . reproductive systems
 . . . **sex glands**
 gonads
 ovaries
 testes
 prostate gland
 . glands (anatomy)
 . . **sex glands**
 . . . gonads
 . . . ovaries
 . . . testes
 . . . prostate gland

RT estrogens
 reproduction (biology)
 sex factor

sextants
 DEF Double reflecting instruments for measuring angles, primarily altitudes of celestial bodies.
 GS measuring instruments
 . optical measuring instruments
 . . **sextants**
 . optical equipment
 . optical measuring instruments
 . . **sextants**

RT navigation aids
 position indicators
 stadimeters
 theodolites
 transits

Seychelles
(added February 1989)
 GS landforms
 . islands
 . . **Seychelles**
 nations
 . **Seychelles**

RT Africa
 Indian Ocean

Seyfert galaxies
 GS celestial bodies
 . galaxies
 . . active galaxies
 . . . **Seyfert galaxies**

RT active galactic nuclei
 blazars
 galactic nuclei
 infrared radiation
 line spectra
 luminous intensity
 Markarian galaxies
 spiral galaxies
 stellar spectra

ultraviolet radiation

SFAR
USE **sound fixing and ranging**

sferics
USE **atmospherics**

SGEMP
USE **system generated electromagnetic pulses**

SGML
USE **document markup languages**

SGR (astronomy)
(added January 2000)
USE **soft gamma repeaters**

SGR (nuclear reactors)
USE **sodium graphite reactors**

SH waves
(added September 1988)
UF *horizontally polarized shear waves*
GS elastic waves
. S waves
. . **SH waves**
RT nondestructive tests
seismic waves
transverse waves
ultrasonic tests
∞ waves

SH-3 helicopter
UF *HSS-2 helicopter*
Sea King helicopter
Sikorsky HSS-2 helicopter
GS antisubmarine warfare aircraft
. **SH-3 helicopter**
Sikorsky aircraft
. **SH-3 helicopter**
transport aircraft
. **SH-3 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-3 helicopter**
RT S-61 helicopter
SH-4 helicopter

SH-4 helicopter
GS antisubmarine warfare aircraft
. **SH-4 helicopter**
Sikorsky aircraft
. **SH-4 helicopter**
transport aircraft
. **SH-4 helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **SH-4 helicopter**
RT S-61 helicopter
SH-3 helicopter

Shackleton bomber
GS attack aircraft
. bomber aircraft
. . **Shackleton bomber**
Hawker Siddeley aircraft
. **Shackleton bomber**
monoplanes
. **Shackleton bomber**

shades
RT louvers
shielding
∞ shutters

shadowgraph photography
DEF Photography in which steep density gradients in the flow about a body are made visible, the body itself being presented in silhouette. Used for shadowgraphs and spark shadowgraph photography.
UF *shadowgraphs*
spark shadowgraph photography
GS imagery
. photography

. . **shadowgraph photography**
. . . Schlieren photography

RT black and white photography
color photography
flow visualization
wind tunnel models

shadowgraphs
USE **shadowgraph photography**

shadows
DEF Darknesses in regions, caused by obstructions between the source of light and the regions.
GS **shadows**
. lunar shadow
. penumbras
RT cloud cover
clouds (meteorology)
darkness
illuminating
light (visible radiation)
night
self shadowing
umbras

shafts (machine elements)
UF *axles*
journals (shafts)
trunnions
GS **shafts (machine elements)**
. rotating shafts
. . turbshafts
RT axes of rotation
bearings
bushings
∞ journals
∞ loading
loads (forces)
mandrels
mechanical drives
packings (seals)
pintles
pivots
rotating cylinders
spindles
supports
torque
transmissions (machine elements)
vehicle wheels
wheels

shakers
RT classifiers
mixers
separators
shaking
sieves
sizing screens
vertical motion simulators
vibration simulators

shaking
GS **shaking**
. dithers
RT agitation
buffeting
dispersing
epilepsy
flapping
flutter
mixing
∞ separation
shakers
structural vibration
suspending (mixing)
swirling
vibration

shale oil
GS fuels
. chemical fuels
. . hydrocarbon fuels
. . . fossil fuels
. . . . **shale oil**
oils
. **shale oil**
resources
. Earth resources
. . fossil fuels

. . . **shale oil**

RT fuel oils
fuels
gasoline
hydrocarbon fuels
kerogen
kerosene
lubricating oils
paraffins
retort processing

shales
DEF Fine grained detrital sedimentary rocks, formed by the consolidation (especially by compression) of clay, silt, or mud. They are characterized by finely laminated structures, which impart a fissility approximately parallel to the bedding, along which rocks break readily into thin layers and are commonly most conspicuous on weathered surfaces. They are characterized by an appreciable content of clay minerals and detrital quartz; thinly laminated or fissile claystones, siltstones, or mudstones.
GS rocks
. sedimentary rocks
. . **shales**
RT boreholes
clays
Earth resources
minerals
soils

shallow shell equations
RT end plates
∞ equations
pressure vessels
stress analysis

shallow shells
GS shells (structural forms)
. **shallow shells**
RT critical loading
shell stability
shell theory

shallow water
GS water
. **shallow water**
RT cnoidal waves
fisheries
oceanography
oceans
reefs
seas
shorelines
topography
water depth

shanks
USE **joints (junctions)**

Shannon information theory
USE **information theory**

Shannon-Wiener measure
RT entropy
information theory
random variables

shape control
DEF The control of large flexible platforms in orbit by means of actuators strategically located.
RT actuators
Columbus space station
∞ control
control theory
flexible spacecraft
large space structures
space platforms
spacecraft control

shape functions
(added July 1992)
GS functions (mathematics)
. **shape functions**
RT finite element method
polynomials
shape optimization

shape memory alloys

structural analysis

shape memory alloys

DEF Martensitic alloys (titanium-nickel) which exhibit shape recovery characteristics by stress-induced transformation and reorientation. Reverse transformation during heating restores the original grain structure of the high temperature phase.

GS alloys

. **shape memory alloys**

. . nitinol alloys
ferroelastic materials

. **shape memory alloys**

. . nitinol alloys

RT

ferroelasticity
microstructure
nickel alloys
phase transformations
plastic memory
smart materials
stress-strain diagrams
temperature effects
titanium alloys
transition metals

shape optimization

(added February 2001)

DEF Process of, or techniques for, determining values of shape design variables that minimize or maximize a selected object function while satisfying limiting constraints.

GS optimization

. design optimization

. . **shape optimization**

RT

aircraft design
airfoil profiles

∞ design

design analysis
fineness ratio
sensitivity analysis
shape functions
structural analysis
structural design
structural design criteria

shaped charges

DEF An explosive device configured so that its energy can be controlled in one direction.

GS explosive devices

. **shaped charges**

RT

ammunition
bombs (ordnance)
explosive forming
explosives
projectiles
torpedoes
warheads
weapons

shapers

GS tools

. machine tools

. . **shapers**

RT

grinding machines
milling machines

shapes

UF *curved surfaces*
form

GS **shapes**

. convexity
. ellipticity
. flatness
. line shape
. ogee shape
. rosette shapes
. T shape

RT

asymmetry
concavity
contour sensors
contours
corners
∞ cross sections
crystal morphology
curvature
curved panels
geoids
geometry
morphology

oblate spheroids

planforms

∞ profiles

profilometers

prolateness

∞ surface geometry

symmetry

topology

sharks

GS animals

. vertebrates

. . fishes

. . . **sharks**

sharp leading edges

GS edges

. leading edges

. . **sharp leading edges**

RT

airfoils
forebodies
trailing edges

∞ sharpness

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

clarity
contrast
precision
slender bodies

shatter cones

DEF Distinctively striated conical rock fragments along which fracturing has occurred, ranging in length from less than a centimeter to several meters, and generally found in nested or composite groups in rocks of cryptoexplosion structures and believed to be formed by shock waves generated by meteorite impact.

GS cones

. **shatter cones**

rocks

. **shatter cones**

RT

carbonaceous rocks
cometary collisions
crustal fractures
formations
geology
geomorphology
meteorite collisions
meteorite craters
sedimentary rocks
shock loads
striation
structural properties (geology)

shattering

USE **fragmentation**

Shawnee helicopter

USE **CH-21 helicopter**

∞ shear

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT

dilatational waves
shearing
shears

shear creep

GS mechanical properties

. creep properties

. . **shear creep**

RT

plastic deformation
tensile creep

shear disturbances

USE **S waves**

shear fatigue

USE **shear stress**

shear flow

GS fluid flow

. **shear flow**

RT

coaxial flow
core flow
creep properties
∞ flow
grazing flow

Kolmogorov theory

Krook equation

mixing length flow theory

plastic flow

Richardson number

shear thinning

stratified flow

shear layers

UF *Chapman shear layer*

RT boundary layers

Earth ionosphere

∞ layers

mixing layers (fluids)

riblets

screech tones

shock layers

shock wave control

∞ transition layers

shear properties

GS mechanical properties

. **shear properties**

. . shear strength

RT

creep properties
ductility
fatigue (materials)
Hookes law
hysteresis
impact strength
modulus of elasticity
∞ properties
resilience
set
stress relaxation
stresses
stress-strain diagrams
temperature inversions
toughness

shear strain

DEF The tangent of the angular change, due to force, between two lines originally perpendicular to each other through a point in a body.

RT mechanical properties

Mindlin plates

structural strain

torsional vibration

shear strength

DEF The maximum shear stress which a material is capable of sustaining. Shear strength is calculated from the maximum load during a shear or torsion test and is based on the original dimensions of the cross section of the specimen.

GS mechanical properties

. shear properties

. . **shear strength**

RT

compressive strength
fiber strength
high strength
interfacial energy
∞ strength
tensile strength

shear stress

DEF The stress component tangential to the plane on which the forces act. Used for shear fatigue and shearing stress.

UF *shear fatigue*

shearing stress

GS stresses

. **shear stress**

. . torsional stress

RT

interlaminar stress
mechanical properties
shear thinning
shearography
transverse loads

shear thinning

(added April 2009)

DEF A temporary reduction in the viscosity of certain fluids when they are subjected to increased shear force.

RT nonNewtonian fluids

rheology

shear flow

- shear stress
viscoelasticity
viscosity
- shear waves*
USE **S waves**
- shearing**
GS cutting
. **shearing**
RT blanking (cutting)
cold working
failure
failure modes
hot working
loads (forces)
metal cutting
metal working
∞ separation
∞ shear
shears
stamping
structural strain
- shearing stress*
USE **shear stress**
- shearography**
(added February 1996)
DEF An interferometric method that provides whole field observation of derivatives of small surface displacement and hence, strain.
GS interferometry
. **shearography**
RT displacement measurement
nondestructive tests
shear stress
strain measurement
stress measurement
- shears**
GS cutters
. **shears**
tools
. **shears**
RT machine tools
saws
∞ shear
shearing
- sheaths**
GS **sheaths**
. ion sheaths
. plasma sheaths
RT ∞ casing
encapsulating
fairings
jackets
linings
protectors
roofs
walls
- shedding**
RT ejection
molting
peeling
vortex shedding
- sheds**
RT shelters
- sheep**
GS animals
. vertebrates
. . . mammals
. . . **sheep**
RT livestock
wool
- sheet metal*
USE **metal sheets**
- sheet molding compounds**
(added July 1993)
DEF Resin matrix of polymer matrix fiber composites formed into sheets and used as molding materials for structures.
GS molding materials
. **sheet molding compounds**
RT composite materials
- composite structures
fiber composites
graphite-epoxy composites
molds
plastics
polymer matrix composites
resin matrix composites
∞ sheets
- ∞ **sheets**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT coatings
current sheets
elastic sheets
fabrics
flat plates
laminates
membrane structures
membranes
metal foils
metal sheets
multilayer insulation
neutral sheets
panels
papers
polymeric films
sheet molding compounds
thick plates
thin plates
vortex sheets
vortex streets
webs (sheets)
- shell anodes**
GS electrodes
. anodes
. . . **shell anodes**
RT heat measurement
- shell galaxies**
(added March 1991)
GS celestial bodies
. galaxies
. . . **shell galaxies**
RT elliptical galaxies
galactic structure
interacting galaxies
- shell stability**
GS mechanical properties
. dimensional stability
. . structural stability
. . . **shell stability**
stability
. static stability
. . dimensional stability
. . . structural stability
. . . . **shell stability**
RT buckling
fluid filled shells
liquid filled shells
orthotropic shells
plastic shells
reinforced shells
shallow shells
- shell stars**
(added November 1988)
GS celestial bodies
. stars
. . early stars
. . . hot stars
. . . . B stars
. **shell stars**
. . peculiar stars
. . . **shell stars**
RT stellar envelopes
- shell theory**
RT perforated shells
self consistent fields
shallow shells
∞ theories
- shellfish**
DEF Aquatic invertebrate animals having shells.
RT coastal water
marine biology
- marine environments
marine resources
mollusks
- shells (structural forms)**
GS **shells (structural forms)**
. anisotropic shells
. circular shells
. conical shells
. corrugated shells
. cylindrical shells
. domes (structural forms)
. . radomes
. elastic shells
. fluid filled shells
. . liquid filled shells
. hemispherical shells
. metal shells
. orthotropic shells
. perforated shells
. plastic shells
. reinforced shells
. shallow shells
. spherical shells
. . spherical caps
. thin walled shells
. toroidal shells
RT aircraft structures
arches
∞ bays (structural units)
∞ capsules
clamped structures
coverings
cowlings
enclosures
fairings
 housings
hulls (structures)
isotenoid structures
membrane structures
membranes
monocoque structures
nacelles
pressure vessel design
protuberances
rocket engine cases
skin (structural member)
walls
- shelters**
GS **shelters**
. lunar shelters
RT buildings
civil defense
environmental engineering
habitability
sheds
Starsite program
survival
- ∞ **shelves**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT bedrock
cases (containers)
cliffs
continental shelves
racks (frames)
reefs
- Shenandoah Valley (VA)**
GS valleys
. **Shenandoah Valley (VA)**
RT river basins
Virginia
- Shenzhou 5 spacecraft**
(added October 2003)
DEF Chinese manned spacecraft consisting of a forward orbital module, a re-entry capsule, and an aft service module.
GS Chinese spacecraft
. **Shenzhou 5 spacecraft**
manned spacecraft
. **Shenzhou 5 spacecraft**
RT Chinese space program
Long March launch vehicles
- shergottites**
(added September 1991)

shielding

DEF Achondritic stony meteorites composed mainly of pigeonite and maskolyne.

- GS celestial bodies
 - . meteorites
 - . . . stony meteorites
 - achondrites
 - **shergottites**
- RT chassignites
nakhilites
SNC meteorites

Shergotty Nakhla Chassigny meteorites
(added March 1998)

USE **SNC meteorites**

shielding

DEF The arrangement of shields used for any particular circumstance; the use of shields.

- GS **shielding**
 - . electromagnetic shielding
 - . . radio frequency shielding
 - . electrostatic shielding
 - . heat shielding
 - . . reentry shielding
 - . . reusable heat shielding
 - . magnetic shielding
 - . radiation shielding
 - . . solar radiation shielding
 - . spacecraft shielding
- RT ablative nose cones
absorbers (materials)
armor
attenuation
attenuators
baffles
 - ∞ barriersblast deflectors
blinds
deflectors
diverters
enclosures
flame deflectors
guards (shields)
 housings
linings
louvers
manipulators
panels
protection
protectors
safety devices
 - ∞ screensshades
suppressors
windows (apertures)
windshields

shields (geology)

USE **bedrock**

∞ shift

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT exchanging
frequency shift
phase shift
shift registers
transferring

shift registers

- GS computer components
 - . **shift registers**
- RT computer storage devices
delay lines (computer storage)
digital techniques
registers (computers)
 - ∞ shift

shifting equilibrium flow

- GS fluid flow
 - . gas flow
 - . . equilibrium flow
 - . . . **shifting equilibrium flow**
- RT frozen equilibrium flow

Shillelagh missiles

- GS missiles
 - . surface to surface missiles
 - . . antitank missiles

. . . **Shillelagh missiles**

ship hulls

- GS hulls (structures)
 - . **ship hulls**
- RT hydrodynamic coefficients
hydrodynamics
ships
structural design
submarines

ship terminals

- GS terminal facilities
 - . **ship terminals**
- RT artificial harbors
deepwater terminals
harbors
Marots (ESA)
offshore docking
tanker terminals
 - ∞ terminalswharves

ship to shore communication

DEF Communication between a ship at sea and a shore station.

- GS telecommunication
 - . communication
 - . . **ship to shore communication**
- RT data transmission
radio communication
ships
telemetry

ships

- GS water vehicles
 - . **ships**
 - . . Advanced Range Instrumentation Ship
 - . . aircraft carriers
 - . . cargo ships
 - . . . Savannah nuclear ship
 - . . . tanker ships
 - . . nuclear powered ships
 - . . . Savannah nuclear ship
 - . . satellite communications ships
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
 - . . surface effect ships
 - . . SWATH (ship)
- RT amphibious vehicles
antiship missiles
antiship warfare
boats
harbors
hydrofoil craft
hydrofoils
keels
marine transportation
 - ∞ military vehiclesnavy
ocean data acquisitions systems
propellers
research vehicles
ship hulls
ship to shore communication
shipyards
surface navigation
surface vehicles
 - ∞ transport vehiclestransportation energy
underwater vehicles
 - ∞ vessels

shipyards

- RT cargo ships
construction
enclosures
industrial areas
industries
logistics
maintenance
oceanography
 - ∞ portsships
tanker ships

water vehicles

Shiva laser system

- DEF High energy multi-arm solid state (Nd doped ED-2 glass) infrared laser system used for laser driven fusion experiments.
- GS stimulated emission devices
 - . lasers
 - . . high power lasers
 - . . . **Shiva laser system**
- RT coherent light
laser fusion
laser outputs
Nova Laser System
 - ∞ systems

shivering

- GS **shivering**
 - . dithers
- RT body temperature

shoals

- GS water
 - . **shoals**
- RT beaches
lakes
oceanography
oceans
reefs
rivers
seas
water depth

∞ shock

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT convulsions
mechanical shock
shock (physiology)
shock resistance
thermal shock

shock (physiology)

DEF Clinical manifestations of circulatory insufficiency, including hypotension, weak pulse, tachycardia, pallor, and diminished urinary output.

- RT human reactions
human tolerances
physiological effects
physiology
 - ∞ shock

shock absorbers

DEF Devices for the dissipation of energy used to modify the response of a mechanical system to applied shock.

- RT ∞ absorbers
absorbers (equipment)
cushions
damping
energy absorption
hydraulic equipment
impact
impact acceleration
isolators
landing gear
mechanical shock
pneumatic equipment
silencers
springs (elastic)
suspension systems (vehicles)
vibration damping
vibration isolators

shock diffusers

USE **diffusers**
shock wave attenuation

shock discontinuity

- GS discontinuity
 - . **shock discontinuity**
- RT density distribution
wave fronts

shock fronts

DEF Shock waves regarded as the forward surfaces of fluid regions having characteristics different from those of the region ahead of the wave. The front sides of shock waves.

- GS wave fronts
 - . **shock fronts**
- RT ∞ fronts
 - magnetosheath
 - wave propagation
 - wave scattering
- shock heating**
 - GS heating
 - . kinetic heating
 - . . aerodynamic heating
 - . . . **shock heating**
 - transient heating
 - **shock heating**
 - RT magnetohydrodynamic shear heating
 - plasma heating
- shock layers**
 - RT ∞ layers
 - normal shock waves
 - oblique shock waves
 - shear layers
 - stress waves
 - ∞ transition layers
- shock loads**
 - GS loads (forces)
 - . dynamic loads
 - . . transient loads
 - . . . **shock loads**
 - blast loads
 - RT aerodynamic loads
 - axial compression loads
 - compression loads
 - contact loads
 - crustal fractures
 - impact loads
 - landing loads
 - shatter cones
 - structural design criteria
- shock measuring instruments**
 - GS measuring instruments
 - . **shock measuring instruments**
 - RT accelerometers
 - pressure gages
 - seismographs
 - strain gages
- shock resistance**
 - GS **shock resistance**
 - . impact resistance
 - RT earthquake resistance
 - high acceleration
 - impact
 - mechanical properties
 - mechanical shock
 - propellant sensitivity
 - ∞ resistance
 - sensitivity
 - ∞ shock
 - thermal shock
 - vibration
- shock simulators**
 - GS simulators
 - . **shock simulators**
 - RT vertical motion simulators
 - vibration simulators
- shock spectra**
 - DEF Plots of the maximum acceleration experienced by single degree of freedom systems as a function of their own natural frequency in response to applied shocks.
 - GS spectra
 - . **shock spectra**
 - RT dynamic structural analysis
 - energy spectra
 - mechanical shock
 - noise spectra
 - stroking tests
 - structural design
 - structural vibration
- shock tests**
 - RT drop tests
 - impact tests
 - load tests
 - railroad humping tests
- ∞ tests
 - vibration tests
- shock tubes**
 - DEF Relatively long tubes or pipes in which very brief high speed gas flows are produced by the sudden release of gas at very high pressure into low pressure portions of the tubes; the high speed flows move into the region of low pressure behind shock waves.
 - GS shock wave generators
 - . **shock tubes**
 - . . magnetic annular shock tubes
 - . . . shock tunnels
 - RT gas temperature
 - hotshot wind tunnels
 - hypersonic flow
 - hypersonic wind tunnels
 - hypervelocity wind tunnels
 - low density research
 - low density wind tunnels
 - magnetic pistons
 - test facilities
 - tube lasers
 - ∞ tubes
- shock tunnels**
 - DEF Shock tubes used as wind tunnels.
 - GS shock wave generators
 - . shock tubes
 - . . **shock tunnels**
 - . . . test facilities
 - wind tunnels
 - hypersonic wind tunnels
 - **shock tunnels**
 - hypervelocity wind tunnels
 - **shock tunnels**
 - RT cascade wind tunnels
 - hotshot wind tunnels
 - hypersonic flow
 - low density research
 - low density wind tunnels
 - supersonic wind tunnels
- shock wave attenuation**
 - UF *shock diffusers*
 - GS attenuation
 - . wave attenuation
 - . . acoustic attenuation
 - . . . **shock wave attenuation**
 - RT atmospheric attenuation
 - noise reduction
 - wave propagation
- shock wave control**
 - RT ∞ control
 - secondary injection
 - shear layers
- shock wave generators**
 - GS **shock wave generators**
 - . shock tubes
 - . . magnetic annular shock tubes
 - . . . shock tunnels
 - RT ∞ generators
 - magnetic pistons
 - pressure sensors
 - pulse generators
 - wave generation
- shock wave interaction**
 - GS wave interaction
 - . **shock wave interaction**
 - RT Godunov method
 - interactional aerodynamics
 - ∞ interactions
 - interplanetary shock waves
 - propagation modes
 - scattering
 - wave degradation
- shock wave luminescence**
 - GS emission
 - . light emission
 - . . luminescence
 - . . . **shock wave luminescence**
 - RT low density research
- wave interaction
- shock wave profiles**
 - RT Krook equation
 - pressure distribution
 - ∞ profiles
 - velocity distribution
 - wave interaction
- shock wave propagation**
 - GS transmission
 - . wave propagation
 - . . **shock wave propagation**
 - RT atmospheric attenuation
 - Burger equation
 - Crocco method
 - high temperature gases
 - interplanetary shock waves
 - nonequilibrium radiation
 - Rankine-Hugoniot relation
 - secondary injection
 - sound propagation
 - two fluid models
 - wave attenuation
 - wave interaction
- shock waves**
 - DEF Surfaces or sheets of discontinuity (i.e., abrupt changes in conditions) set up in supersonic fields of flow, through which the fluids undergo a finite decrease in velocity accompanied by a marked increase in pressure, density, temperature, and entropy, as occurs, e.g., in supersonic flows about bodies. Used for bow shock waves.
 - UF *bow shock waves*
 - GS elastic waves
 - . **shock waves**
 - . . detonation waves
 - . . interplanetary shock waves
 - . . Mach cones
 - . . normal shock waves
 - . . oblique shock waves
 - . . Riemann waves
 - . . sonic booms
 - RT adiabatic equations
 - aerodynamic noise
 - blast loads
 - ∞ blasts
 - bow waves
 - Burnett equations
 - caustic lines
 - crustal fractures
 - detonation
 - earthquake damage
 - earthquake resistance
 - earthquake resistant structures
 - earthquakes
 - electrostatic waves
 - exploding wires
 - explosions
 - gas temperature
 - geodynamics
 - Hugoniot equation of state
 - hypersonic flow
 - hypersonic shock
 - hypersonic wakes
 - impact
 - implosions
 - longitudinal waves
 - Mach number
 - Mach reflection
 - magnetohydrodynamic waves
 - mechanical shock
 - molecular relaxation
 - noise (sound)
 - novae
 - plane waves
 - planetary quakes
 - plasma waves
 - plumes
 - pressure pulses
 - seismic waves
 - sound pressure
 - sound waves
 - stress waves
 - supersonic flow
 - ∞ transition layers
 - transonic flow
 - tsunami waves

Shoemaker-Levy 9 comet

underwater acoustics
underwater communication
∞ waves
wedge flow
Whitham rule

Shoemaker-Levy 9 comet

(added June 1994)
GS celestial bodies
. comets
. . Shoemaker-Levy 9 comet
RT cometary collisions
Jupiter (planet)

shoes

GS clothing
. shoes
RT boots (footwear)
leather
protective clothing
socks

Shooting Star aircraft

USE T-33 aircraft

shops

RT maintenance

Shoran

DEF A precision electronic position fixing system using a pulse transmitter and receiver and two transponder beacons at fixed points. Used for short range navigation.
UF short range navigation
GS navigation
. radio navigation
. . hyperbolic navigation
. . . Shoran
RT air navigation
Decca navigation
distance measuring equipment
navigation aids
solar compasses

shorelines

RT beaches
coastal water
coasts
lakes
oceanography
oceans
rivers
shallow water
tidal flats
wetlands

Short Belfast C MK-1 aircraft

USE SC-5 aircraft

short circuit currents

DEF The steady value of the input alternating currents that flow when the output direct current terminals are short-circuited and rated line alternating voltage is applied to the line terminals.
GS electric current
. short circuit currents
RT open circuit voltage
photovoltaic cells
short circuits
solar cells
volt-ampere characteristics

short circuits

DEF An abnormal connection of relatively low resistance between two points on a circuit. The result is a flow of excess (often damaging) current between these points.
GS electrical faults
. short circuits
RT circuits
electric arcs
failure
jumpers
short circuit currents
sneak circuit analysis
system failures

short cracks

GS fractures (materials)

. cracks
. . short cracks
RT crack geometry
crack initiation
crack propagation
fatigue life
fracture mechanics
metal fatigue

short haul aircraft

GS transport aircraft
. short haul aircraft
. . C-8A augmentor wing aircraft
. . Cessna 402B aircraft
. . Mercure aircraft
RT air transportation
∞ aircraft
aircraft design
airline operations
passenger aircraft
V/STOL aircraft

short range ballistic missiles

GS missiles
. ballistic missiles
. . short range ballistic missiles
. surface to surface missiles
. . short range ballistic missiles
RT field army ballistic missiles
intermediate range ballistic missiles

short range navigation

USE Shoran

Short SC-1 aircraft

USE SC-1 aircraft

Short SC-5 aircraft

USE SC-5 aircraft

Short SC-7 aircraft

USE SC-7 aircraft

short takeoff & vertical landing aircraft

USE STOVL aircraft

short takeoff aircraft

UF STOL aircraft
GS V/STOL aircraft
. short takeoff aircraft
. . Aladin 2 aircraft
. . Breguet 940 aircraft
. . Breguet 941 aircraft
. . C-8A augmentor wing aircraft
. . C-15 aircraft
. . C-123 aircraft
. . DHC 4 aircraft
. . DHC 5 aircraft
. . Questol aircraft
. . U-10 aircraft

RT ∞ aircraft
circulation control airfoils
compound helicopters
externally blown flaps
fan in wing aircraft
helicopters
JATO engines
jet aircraft
jet flaps
lift fans
lifting rotors
∞ military aircraft
powered lift aircraft
rotary wing aircraft
Siebel aircraft
STOVL aircraft
∞ subsonic aircraft
takeoff runs
tilt wing aircraft
vertical takeoff aircraft
∞ winged vehicles

short wave radiation

SN (RADIO WAVES)
GS electromagnetic radiation
. radio waves
. . short wave radiation
. . . microwaves
. . . . centimeter waves

. . . . cosmic microwave background radiation
. . . . decimeter waves
. . . . microwave emission
. . . . millimeter waves
. . . . submillimeter waves
RT far infrared radiation
high frequencies
long wave radiation
monochromatic radiation
∞ radiation
Surface Meteorology and Solar Energy project
Surface Radiation Budget project

short wave radio transmission

GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . short wave radio transmission
. signal transmission
. . radio transmission
. . . short wave radio transmission
RT high frequencies
wave propagation

shortening

USE reduction

∞ shot

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ammunition
launching
orbital shots
pellets
shot noise
shot peening

shot noise

DEF Quantum noise caused by electric current fluctuations attributable to the discrete nature of charge carriers.
GS electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . shot noise
RT Barritt diodes
∞ shot
thermal noise

shot peening

GS hardening (materials)
. shot peening
metal finishing
. peening
. . shot peening
RT cold working
descaling
fatigue (materials)
metal working
∞ shot
strain hardening
surface finishing
work hardening

shoulders

RT joints (anatomy)
scapula

∞ showers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cosmic ray showers
flood predictions
meteoroid showers
rain
rain forests
rainstorms

shrapnel

RT fragmentation
fragments
projectiles
weapons

shredding

GS comminution
. shredding
RT composting

- cutting
tearing
- Shrike missile**
GS missiles
. air to surface missiles
. . **Shrike missile**
RT solid propellant rocket engines
- shrinkage**
RT casting
contraction
growth
∞ reduction
sintering
temperature inversions
warpage
- shrouded bodies*
USE **shrouds**
- shrouded nozzles**
RT annular nozzles
nozzle geometry
nozzle walls
∞ nozzles
- shrouded propellers**
UF *ducted propellers*
GS propellers
. **shrouded propellers**
RT ducted fans
ring wings
thrust augmentation
XV-11A aircraft
- shrouded turbines**
GS turbomachinery
. turbines
. . **shrouded turbines**
- shrouds**
UF *shrouded bodies*
RT coverings
ducted bodies
rigging
- shunts*
USE **bypasses**
circuits
- shutdowns**
DEF The processes of decreasing engine thrusts to zero.
RT deactivation
engines
∞ SCRAM
- ∞ **shutters**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blinds
camera shutters
louvers
shades
- Shuttle Avionics Integration Laboratory*
USE **SAIL project**
- Shuttle Boosters*
USE **Space Shuttle Boosters**
- Shuttle Derived Vehicles**
DEF New configuration resulting from the production and operation of the Space Shuttle. Used for SDV.
UF *SDV*
RT Advanced Launch System (STS)
manned spacecraft
Space Shuttle orbiters
space shuttles
∞ spacecraft
spacecraft design
- Shuttle Engineering Simulator**
DEF Training equipment for crew members in mission operation procedures including various approach maneuvers, braking, final approach, etc.
UF *SES (Shuttle)*
GS simulators
- . **Shuttle Engineering Simulator**
RT space shuttles
- shuttle glow*
USE **spacecraft glow**
- Shuttle Imaging Radar**
UF *Earth resources shuttle imaging radar*
SIR-A
SIR-B
SIR-C
SIR-D
GS radar
. Doppler radar
. . pulse Doppler radar
. . . **Shuttle Imaging Radar**
. imaging radar
. . **Shuttle Imaging Radar**
. pulse radar
. . pulse Doppler radar
. . . **Shuttle Imaging Radar**
. space based radar
. . **Shuttle Imaging Radar**
. synthetic aperture radar
. . **Shuttle Imaging Radar**
RT Earth observations (from space)
radar geology
radar imagery
remote sensing
Space Shuttle payloads
synthetic arrays
- Shuttle Mission Simulator**
UF *SMS (Shuttle)*
GS simulators
. **Shuttle Mission Simulator**
- Shuttle Orbiters*
USE **Space Shuttle orbiters**
- Shuttle pallet satellites**
DEF Reusable pallet type structures designed to be shuttle launched which will act as building blocks for larger platforms. Used for SPAS (ESA platforms).
UF *SPAS (ESA platforms)*
GS artificial satellites
. **Shuttle pallet satellites**
RT space shuttles
- Shuttle Superlightweight Tank*
(added June 1998)
USE **external tanks**
propellant tanks
- SI*
USE **International System of Units**
- sialon**
DEF Any composition containing silicon, aluminum, oxygen, and nitrogen and usually produced by the high-temperature reactions among the ingredients.
GS mixtures
. **sialon**
RT aluminum
ceramics
high temperature
nitrogen
oxygen
reaction bonding
refractory materials
silicon nitrides
sintering
- SIAM missiles**
UF *self initiated anti-aircraft missiles*
GS missiles
. anti-aircraft missiles
. . **SIAM missiles**
RT air to air missiles
antimissile missiles
- Siberia**
RT Arctic regions
Asia
- U.S.S.R.
- SIC (coefficient)*
USE **structural influence coefficients**
- Sicily**
GS landforms
. islands
. . **Sicily**
RT Italy
Mediterranean Sea
- sicknesses**
GS **sicknesses**
. altitude sickness
. decompression sickness
. motion sickness
- SID (ionospheric disturbances)*
USE **sudden ionospheric disturbances**
- side inlets**
GS intake systems
. **side inlets**
RT air intakes
bypass ratio
hypersonic inlets
inlet airframe configurations
nose inlets
scoops
supersonic inlets
∞ water intakes
- sidebands**
RT ∞ bands
double sideband transmission
selective fading
single sideband transmission
- sidelobe reduction**
GS attenuation
. **sidelobe reduction**
RT apodization
horn antennas
radar antennas
radar attenuation
radar reception
radar reflectors
radar resolution
∞ reduction
sidelobes
- sidelobes**
GS distribution (property)
. radiation distribution
. . antenna radiation patterns
. . . **sidelobes**
RT antenna design
∞ lobes
near fields
sidelobe reduction
- side-looking radar**
GS radar
. synthetic aperture radar
. . **side-looking radar**
RT airborne radar
change detection
imaging radar
radar imagery
radar scanning
search radar
- sidereal time**
DEF Time based upon the rotation of the Earth relative to the vernal equinox.
GS time
. **sidereal time**
RT astronomy
Earth rotation
stellar motions
time measurement
units of measurement
- siderite meteorites*
USE **iron meteorites**
- siderites**
DEF A spathic iron ore; an iron carbonate.
GS carbon compounds
. carbonates

siderophile elements

- . . siderites
- iron compounds
- . siderites
- minerals
- . siderites

siderophile elements

(added January 2002)

DEF Elements having a chemical affinity for iron, and normally found in the metal-rich interiors of compositionally segregated planets and asteroids.

GS chemical elements

- . siderophile elements

RT chondrites

- Earth mantle
- geochemistry
- iron
- lunar composition
- meteoritic composition
- mineralogy
- minerals
- petrography
- planetary composition
- trace elements

sides

RT edges

- geometry
- rims
- walls

sideslip

RT maneuvers

- roll
- skidding

∞ slip

- spacecraft motion
- yaw

sidewash

USE **backwash**

Sidewinder missiles

GS missiles

- . air to air missiles
- . . Sidewinder missiles
- . antiaircraft missiles
- . . Sidewinder missiles

Siebel aircraft

RT ∞ aircraft

- short takeoff aircraft

Siemens 2002 computer

GS data processing equipment

- . computers
- . . Siemens 2002 computer

Sierra Leone

GS nations

- . Sierra Leone

RT Africa

Sierra Nevada Mountains (CA)

GS landforms

- . mountains
- . . Sierra Nevada Mountains (CA)

RT California

sieves

GS separators

- . sieves

RT fluid filters

- shakers
- sizing screens
- wire cloth

sight

USE **visual perception**

SIGMA 5 computer

GS data processing equipment

- . computers
- . . analog computers
- . . . SIGMA 5 computer
- . . digital computers
- . . . SIGMA 5 computer

SIGMA 7

GS manned spacecraft

- . Mercury spacecraft
- . . SIGMA 7
- reentry vehicles
- . recoverable spacecraft
- . . Mercury spacecraft
- . . . SIGMA 7
- soft landing spacecraft
- . Mercury spacecraft
- . . SIGMA 7
- space capsules
- . Mercury spacecraft
- . . SIGMA 7

RT Mercury MA-8 flight

SIGMA 9 computer

GS data processing equipment

- . computers
- . . digital computers
- . . . SIGMA computers
- SIGMA 9 computer

SIGMA computers

GS data processing equipment

- . computers
- . . digital computers
- . . . SIGMA computers
- SIGMA 9 computer

Sigma Orionis

GS celestial bodies

- . stars
- . . double stars
- . . . binary stars
- Sigma Orionis
- . . early stars
- . . . hot stars
- B stars
- Sigma Orionis
- . . peculiar stars
- . . . Sigma Orionis

RT Orion constellation

- stellar systems

sigma-mesons

GS particles

- . elementary particles
- . . bosons
- . . mesons
- . . . vector mesons
- sigma-mesons
- . . fermions
- . . . baryons
- sigma-mesons
- . . hadrons
- . . . baryons
- sigma-mesons
- . . mesons
- . . . vector mesons
- sigma-mesons
- . . nuclear particles
- . . bosons
- . . mesons
- . . . vector mesons
- sigma-mesons

RT charged particles

- eta-mesons

signal analysis

GS data processing

- . signal analysis
- . . cepstral analysis

RT ∞ analyzing

- digital radar systems
- frequency analyzers
- Gabor transformation
- phase deviation
- signal measurement
- spectrum analysis
- wavelet analysis

signal analyzers

GS measuring instruments

- . analyzers
- . . signal analyzers

RT analog computers

- autodynes

signal detection

GS detection

- . signal detection

- . . correlation detection

RT autodynes

∞ detectors

- discrimination
- dynamic range
- phase detectors
- preamplifiers
- radar detection
- signal measurement
- sound transducers
- telecommunication

signal detectors

UF signal discriminators

RT anticoincidence detectors

- autodynes

∞ detectors

- discrimination
- microwave sensors
- preamplifiers
- signal measurement
- sound transducers
- telecommunication

signal discriminators

USE **signal detectors**

signal distortion

GS distortion

- . signal distortion

RT intersymbolic interference

- radio signals
- scrambling (communication)

signal encoding

GS coding

- . signal encoding
- . . amplitude modulation
- . . . quadrature amplitude modulation
- . . frequency modulation
- . . . feedback frequency modulation
- . . . FM/PM (modulation)
- . . . frequency shift keying
- . . pulse frequency modulation
- . . phase modulation
- . . . FM/PM (modulation)
- . . phase shift keying
- . . . binary phase shift keying
- . . . quadrature phase shift keying
- . . pulse modulation
- . . . pulse amplitude modulation
- . . . pulse code modulation
- . . . delta modulation
- . . . differential pulse code modulation
- . . . pulse frequency modulation
- . . . pulse time modulation
- . . . pulse duration modulation
- . . . pulse position modulation
- . . trellis coding

RT concatenated codes

- digital to analog converters
- pulse frequency modulation telemetry
- redundancy encoding
- Reed-Solomon codes
- scrambling (communication)
- telecommunication
- transmitters
- video compression
- Viterbi decoders
- voice data processing
- wavelet analysis

signal fadeout

USE **signal fading**

signal fading

UF signal fadeout

GS fading

- . signal fading
- . . Rayleigh fading
- . . selective fading

RT acoustic instability

- atmospheric scattering
- attenuation
- diffraction patterns
- electromagnetic absorption
- ground effect (communications)
- radio frequency interference
- radio scattering

- reception diversity
- signal measurement
- smear
- sound intensity
- signal fading rate**
 - GS rates (per time)
 - . **signal fading rate**
 - RT fading
 - selective fading
 - sound intensity
- signal flow graphs**
 - RT duality principle
 - ∞ flow graphs
 - network analysis
 - Richards theorem
 - sneak circuit analysis
- signal generators**
 - DEF Shielded sources of voltage or power, the output level and frequency of which are calibrated, and usually variable over a range.
 - GS **signal generators**
 - . frequency synthesizers
 - . function generators
 - RT circuits
 - ∞ generators
 - Hall generators
 - oscillators
 - sirens
 - solid state devices
 - sound generators
 - subharmonic generators
 - voltage generators
- signal measurement**
 - UF *electronic signal measurement*
 - RT electromagnetic measurement
 - ionospheric propagation
 - ∞ measurement
 - signal analysis
 - signal detection
 - signal detectors
 - signal fading
 - signal processing
 - signal to noise ratios
- signal mixing**
 - GS mixing
 - . **signal mixing**
 - RT auditory signals
 - error signals
 - four-wave mixing
 - magnetic signals
 - radio signals
- signal processing**
 - GS data processing
 - . **signal processing**
 - . . . space-time adaptive processing
 - RT audio signals
 - companding
 - direction finding
 - discrete cosine transform
 - equalizers (circuits)
 - frequency domain analysis
 - interference immunity
 - maximum entropy method
 - message processing
 - multisensor fusion
 - onboard data processing
 - ∞ processing
 - signal measurement
 - smoke detectors
 - surface acoustic wave devices
 - telemetry
 - time domain analysis
 - VHSIC (circuits)
 - video signals
 - Viterbi decoders
 - wavelet analysis
- signal reception**
 - GS **signal reception**
 - . homodyne reception
 - . radar reception
 - . radio reception
 - . television reception
 - RT antenna gain
- preamplifiers
- ∞ receiving
- sentences
- transmission rate (communications)
- vocoders
- signal reflection**
 - GS echoes
 - . **signal reflection**
 - reflection
 - . **signal reflection**
 - RT cepstral analysis
 - spread reflection
 - transmission
 - wave reflection
- signal stabilization**
 - GS stabilization
 - . **signal stabilization**
 - RT frequency control
 - transmission circuits
- signal to noise ratios**
 - DEF Ratios which measure the comprehensibility of a data source or transmission link, usually expressed as the root mean square signal amplitude divided by the root mean square noise amplitude.
 - GS ratios
 - . **signal to noise ratios**
 - RT amplitude distribution analysis
 - attenuation
 - background noise
 - bit error rate
 - carrier to noise ratios
 - channel noise
 - communication theory
 - companding
 - correlation detection
 - dark current
 - dynamic range
 - electromagnetic interference
 - electromagnetic noise
 - false alarms
 - image contrast
 - image enhancement
 - interference immunity
 - low noise
 - matched filters
 - maximum entropy method
 - ∞ noise
 - noise propagation
 - noise spectra
 - noise threshold
 - random noise
 - random signals
 - signal measurement
 - ∞ signals
 - white noise
- signal transmission**
 - GS transmission
 - . **signal transmission**
 - . . . data transmission
 - automatic picture transmission
 - multiple access
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - frequency division multiple access
 - time division multiple access
 - packet transmission
 - Aloha system
 - single channel per carrier transmission
 - . . . microwave attenuation
 - . . . radar transmission
 - . . . radio transmission
 - double sideband transmission
 - ionospheric propagation
 - ionospheric F-scatter propagation
 - microwave transmission
 - multipath transmission
 - short wave radio transmission
 - single sideband transmission
 - spread spectrum transmission
- . . . transequatorial propagation
- . . . transhorizon radio propagation
- . . . satellite transmission
- . . . telemetry
 - biotelemetry
 - P.A.C.M. telemetry
 - PCM telemetry
 - radio telemetry
 - pulse frequency modulation telemetry
- . . . television transmission
- RT audio signals
- code division multiplexing
- message processing
- messages
- multiplexing
- orthogonal multiplexing theory
- packet switching
- pulse communication
- radar attenuation
- radio attenuation
- radio scattering
- sentences
- sound transmission
- syllables
- talking
- telecommunication
- transmission efficiency
- transmission rate (communications)
- video signals
- wireless communication
- signal-processing-in-the-element detectors*
(added January 2000)
- USE **infrared detectors**
- ∞ **signals**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT audio signals
 - auditory signals
 - beacons
 - bells
 - chirp signals
 - electric pulses
 - error signals
 - horns
 - magnetic signals
 - messages
 - pseudorandom sequences
 - pyrotechnics
 - radio signals
 - random signals
 - signal to noise ratios
 - sirens
 - sound generators
 - symbols
 - telecommunication
 - time signals
 - video signals
 - visual signals
 - visual stimuli
- signature analysis**
 - RT ∞ analyzing
 - cepstral analysis
 - detection
 - imagery
 - infrared signatures
 - microwave signatures
 - missile signatures
 - radar signatures
 - signatures
 - target recognition
- signatures**
 - GS **signatures**
 - . infrared signatures
 - . magnetic signatures
 - . missile signatures
 - . radar signatures
 - . spectral signatures
 - . . . microwave signatures
 - RT amplitude distribution analysis
 - biomarkers
 - detection
 - representations
 - signature analysis
 - target recognition

significance

video landmark acquisition and tracking

significance

RT confidence limits
correlation
covariance
degrees of freedom
finite difference theory
null hypothesis
numerical analysis
regression analysis
statistical tests
teleconnections (meteorology)

signs (symbols)

USE **symbols**

signs and symptoms

UF *symptoms*
syndromes
GS **signs and symptoms**
. acquired immunodeficiency syndrome

. bradycardia
. cough
. dizziness
. dyspnea
. edema
. headache
. hematuria
. kidney stones
. leukopenia
. nausea
. vertigo

RT asphyxia
diseases
hallucinations
∞ indication
symptomology

Sikhote-Alin meteorite

GS celestial bodies
. meteorites
. iron meteorites
. . . **Sikhote-Alin meteorite**

Sikkim

GS nations
. **Sikkim**
RT Asia
Bhutan
Himalayas
India

Sikorsky aircraft

GS **Sikorsky aircraft**
. CH-3 helicopter
. CH-34 helicopter
. CH-54 helicopter
. H-19 helicopter
. H-53 helicopter
. H-56 helicopter
. H-60 Helicopter
. S-58 helicopter
. S-61 helicopter
. S-67 helicopter
. SH-3 helicopter
. SH-4 helicopter
. Sikorsky Whirlwind helicopter
. UH-34 helicopter
. UH-60A helicopter
. UH-61A helicopter
RT ∞ aircraft

Sikorsky HSS-2 helicopter

USE **SH-3 helicopter**

Sikorsky S-58 helicopter

USE **S-58 helicopter**

Sikorsky S-61 helicopter

USE **S-61 helicopter**

Sikorsky S-64 helicopter

USE **CH-54 helicopter**

Sikorsky S-65 helicopter

USE **H-53 helicopter**

Sikorsky S-67 helicopter

USE **S-67 helicopter**

Sikorsky Whirlwind helicopter

GS Sikorsky aircraft

. **Sikorsky Whirlwind helicopter**
V/STOL aircraft
. rotary wing aircraft
. . helicopters
. . . military helicopters
. . . . **Sikorsky Whirlwind helicopter**
RT ∞ aircraft

silanes

GS hydrogen compounds
. hydrides
. . **silanes**
. . . chlorosilanes
. . . methyl chlorosilanes
silicon compounds
. **silanes**
. chlorosilanes
. methyl chlorosilanes
RT disilicides
polycarbosilanes
polysilanes

silence

RT noise reduction
transmission loss

silencers

RT attenuators
damping
inhibitors
mufflers
shock absorbers
squelch circuits
suppressors
zero sound

silica

USE **silicon dioxide**

silica gel

DEF A colloidal, highly absorbent silica used as a dehumidifying and dehydrating agent, as a catalyst carrier, and sometimes as a catalyst.

GS gels
. **silica gel**

RT aerogels
dehumidification
dehydration
drying
silicon dioxide
xerogels

silica glass

GS glass
. **silica glass**
RT glass coatings
glass electrodes
glass fibers
glassware
sands
silicon dioxide

silicates

GS silicon compounds
. **silicates**
. . aluminum silicates
. . . andesite
. . . feldspars
. . . gehlenite
. . . kaolinite
. . . montmorillonite
. . . pyrophyllite
. . . plagioclase
. . aragonite
. beryl
. . alexandrite
. . calcium silicates
. . gehlenite
. . cordierite
. . fayalite
. . fluorosilicates
. . forsterite
. . garnets
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet
. . merwinite
. . monticellite
. . nepheline

. . potassium silicates
. . pyroxenes
. . . enstatite
. . sodium silicates
. . . spodumene
. . . talc
. . . tourmaline
. . zeolites
RT akermanite
amphiboles
disilicides
minerals
silicides
silicon dioxide
tetraethyl orthosilicate
vermiculite

silicides

GS silicon compounds
. **silicides**
. . disilicides
RT intermetallics
silicates

silicon

GS chemical elements
. metalloids
. . **silicon**
. . . amorphous silicon
. . . porous silicon
. . . silicon isotopes
RT float zones
reaction bonding
Schottky diodes
silicon alloys

silicon alloys

GS alloys
. **silicon alloys**
RT aluminum alloys
germanium alloys
iron alloys
magnesium alloys
microstructure
nickel alloys
silicon

silicon carbides

GS carbon compounds
. carbides
. . **silicon carbides**
silicon compounds
. **silicon carbides**
RT abrasives
carbon-silicon carbide composites
Carborandum (trademark)
ceramic fibers
nanocomposites
polycarbosilanes

silicon compounds

GS **silicon compounds**
. flint
. organic silicon compounds
. . triphenyl silicon
. silanes
. . chlorosilanes
. . methyl chlorosilanes
. silicates
. . aluminum silicates
. . . andesite
. . . feldspars
. . . gehlenite
. . . kaolinite
. . . montmorillonite
. . . pyrophyllite
. . . plagioclase
. . aragonite
. beryl
. . alexandrite
. . calcium silicates
. . . gehlenite
. . cordierite
. . fayalite
. . fluorosilicates
. . forsterite
. . garnets
. . . gadolinium-gallium garnet
. . . yttrium-aluminum garnet
. . . yttrium-iron garnet

- . . merwinite
 - . . monticellite
 - . . nepheline
 - . . potassium silicates
 - . . pyroxenes
 - . . . enstatite
 - . . sodium silicates
 - . . . spodumene
 - . . . talc
 - . . . tourmaline
 - . . zeolites
 - . silicides
 - . . disilicides
 - . silicon carbides
 - . silicon nitrides
 - . silicon oxides
 - . . muscovite
 - . . nephelite
 - . . silicon dioxide
 - . . . quartz
 - coesite
 - stishovite
 - . . spodumene
 - . silicon tetrachloride
 - RT akermanite
 - ∞ chemical compounds
 - ∞ Group 4A compounds
 - methyl polysiloxanes
 - polysiloxanes
 - silicones
 - siloxanes
- silicon controlled rectifiers**
- UF *SCR (rectifiers)*
 - GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . thyristors
 - **silicon controlled rectifiers**
 - rectifiers
 - . thyristors
 - . . **silicon controlled rectifiers**
 - RT current converters (AC to DC)
 - thyratrons
- silicon dioxide**
- DEF The chemically resistant dioxide of silicon. Used for Refrasil (trademark) and silica.
 - UF *Refrasil (trademark)*
 - silica*
 - GS chalcogenides
 - . oxides
 - . . dioxides
 - . . . **silicon dioxide**
 - quartz
 - coesite
 - stishovite
 - . . silicon oxides
 - . . . **silicon dioxide**
 - quartz
 - coesite
 - stishovite
 - silicon compounds
 - . silicon oxides
 - . . **silicon dioxide**
 - . . . quartz
 - coesite
 - stishovite
 - RT borosilicate glass
 - ceramics
 - E glass
 - glass
 - metallic glasses
 - obsidian
 - porcelain
 - quartz crystals
 - rhyolite
 - S glass
 - sands
 - silica gel
 - silica glass
 - silicates
 - Vycor
 - xerogels
- silicon films**
- RT amorphous silicon
 - ∞ films
 - semiconductor devices
 - SOI (semiconductors)
- thin films
- silicon isotopes**
- GS chemical elements
 - . metalloids
 - . . silicon
 - . . . **silicon isotopes**
 - nuclides
 - isotopes
 - . . . **silicon isotopes**
- silicon junctions**
- GS semiconductor junctions
 - . **silicon junctions**
 - RT amorphous silicon
 - heterojunctions
 - homojunctions
 - SIS (semiconductors)
 - SOI (semiconductors)
 - threshold voltage
- silicon nitrides**
- GS nitrogen compounds
 - . nitrides
 - . . **silicon nitrides**
 - silicon compounds
 - . **silicon nitrides**
 - RT ceramic matrix composites
 - nanocomposites
 - reaction bonding
 - sialon
- silicon oxides**
- GS chalcogenides
 - . oxides
 - . . **silicon oxides**
 - . . . muscovite
 - . . . nephelite
 - . . . silicon dioxide
 - quartz
 - coesite
 - stishovite
 - . . . spodumene
 - silicon compounds
 - . **silicon oxides**
 - . . muscovite
 - . . nephelite
 - . . silicon dioxide
 - . . . quartz
 - coesite
 - stishovite
 - . . spodumene
 - RT akermanite
- silicon polymers**
- GS **silicon polymers**
 - . silicone resins
 - . silicones
 - . . polysiloxanes
 - . . siloxanes
 - . . . methyl polysiloxanes
 - . . polysilanes
 - . . polycarbosilanes
 - RT ∞ polymers
- silicon radiation detectors**
- GS measuring instruments
 - . radiation measuring instruments
 - . . radiation detectors
 - . . . **silicon radiation detectors**
 - RT ∞ radiation
- silicon rectifiers*
- USE **crystal rectifiers**
- silicon solar cells*
- USE **solar cells**
- silicon tetrachloride**
- GS halogen compounds
 - . chlorine compounds
 - . . chlorides
 - . . . **silicon tetrachloride**
 - . . . halides
 - . . . chlorides
 - **silicon tetrachloride**
 - silicon compounds
- . **silicon tetrachloride**
- silicon transistors**
- GS electronic equipment
 - . solid state devices
 - . . semiconductor devices
 - . . . transistors
 - **silicon transistors**
 - SOS (semiconductors)
 - RT SOI (semiconductors)
- silicone resins**
- GS resins
 - . **silicone resins**
 - silicon polymers
 - . **silicone resins**
 - RT thermosetting resins
- silicone rubber**
- GS elastomers
 - . rubber
 - . . synthetic rubbers
 - . . . **silicone rubber**
 - RTV-40 rubber (trademark)
 - RTV-60 rubber (trademark)
- silicones**
- GS silicon polymers
 - . **silicones**
 - . . polysiloxanes
 - . . siloxanes
 - . . . methyl polysiloxanes
 - RT ∞ polymers
 - silicon compounds
- siliconizing**
- GS hardening (materials)
 - . **siliconizing**
 - RT coating
 - coatings
 - corrosion prevention
 - corrosion resistance
 - oxidation resistance
 - passivity
- silicon-on-insulator semiconductors*
- USE **SOI (semiconductors)**
- silicon-on-sapphire junctions*
- USE **SOS (semiconductors)**
- silicon-on-sapphire semiconductors*
- USE **SOS (semiconductors)**
- silicon-on-sapphire transistors*
- USE **SOS (semiconductors)**
- silk**
- GS fabrics
 - . **silk**
 - fibers
 - . **silk**
 - RT crepe
 - organic materials
- silkworms**
- GS animals
 - . invertebrates
 - . . arthropods
 - . . . insects
 - moths
 - **silkworms**
 - larvae
 - . **silkworms**
 - RT infestation
- silos (missile storage)*
- USE **missile silos**
- siloxanes**
- GS silicon polymers
 - . silicones
 - . . **siloxanes**
 - RT ∞ polymers
 - polysiloxanes

silver

silicon compounds

silts

USE **sediments**

silver

GS chemical elements
. **silver**
. . silver isotopes
metals
. noble metals
. . **silver**
. . . silver isotopes
. transition metals
. . **silver**
. . . silver isotopes

silver alloys

GS alloys
. **silver alloys**
RT bearing alloys
gold alloys

silver bromides

GS halogen compounds
. bromine compounds
. . bromides
. . . **silver bromides**
. halides
. . bromides
. . . **silver bromides**
. . metal halides
. . . silver halides
. . . . **silver bromides**
silver compounds
. silver halides
. . **silver bromides**

silver cadmium batteries

UF *cadmium silver batteries*
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **silver cadmium batteries**
RT nickel cadmium batteries

silver chlorides

GS halogen compounds
. chlorine compounds
. . chlorides
. . . **silver chlorides**
. halides
. . chlorides
. . . **silver chlorides**
. . metal halides
. . . silver halides
. . . . **silver chlorides**
silver compounds
. silver halides
. . **silver chlorides**

silver compounds

GS **silver compounds**
. silver halides
. . silver bromides
. . silver chlorides
. . silver iodides
. silver nitrates
. silver oxides
RT ∞ chemical compounds
∞ Group 1B compounds
∞ metal compounds

silver halides

GS halogen compounds
. halides
. . metal halides
. . . **silver halides**
. . . . silver bromides
. . . . silver chlorides
. . . . silver iodides
silver compounds
. **silver halides**
. . silver bromides
. . silver chlorides
. . silver iodides

silver hydrogen batteries

DEF Secondary batteries having silver and

hydrogen electrodes. They have good energy density and cycle life.

GS electrochemical cells
. electric batteries
. . storage batteries
. . . **silver hydrogen batteries**

silver iodides

GS halogen compounds
. halides
. . metal halides
. . . silver halides
. . . . **silver iodides**
. iodine compounds
. . iodides
. . . **silver iodides**
silver compounds
. silver halides
. . **silver iodides**

silver isotopes

GS chemical elements
. nuclides
. . isotopes
. . . **silver isotopes**
. silver
. . **silver isotopes**
metals
. noble metals
. . silver
. . . **silver isotopes**
. transition metals
. . silver
. . . **silver isotopes**

silver nitrates

GS nitrogen compounds
. nitrates
. . inorganic nitrates
. . . **silver nitrates**
silver compounds
. **silver nitrates**

silver oxide zinc batteries

USE **silver zinc batteries**

silver oxides

GS chalcogenides
. oxides
. . metal oxides
. . . **silver oxides**
silver compounds
. **silver oxides**

silver zinc batteries

UF *silver oxide zinc batteries*
zinc silver batteries
zinc silver oxide batteries
GS electrochemical cells
. electric batteries
. . storage batteries
. . . **silver zinc batteries**

silviculture

DEF The theory and practice of controlling the establishment, composition, and growth of stands of trees for the harvesting of foliage limbs, and possibly the trees themselves for biomass.

GS agriculture
. **silviculture**
RT biomass
botany
cultivation
forests
orchards
planting
trees (plants)

SIM

UF *scientific instrument modules*
GS modules
. spacecraft modules
. . **SIM**
spacecraft components
. spacecraft modules
. . **SIM**
RT Apollo 15 flight
Apollo project
cameras

instrument packages
∞ instruments

SIMD (computers)

DEF A type of parallel computer with multiple memories and an arithmetic logic unit for each memory. A single control unit allocates instruction execution according to the memory that holds the required operands. Used for single instruction multiple datastream.

UF *single instruction multiple datastream*
GS data processing equipment
. computers
. . digital computers
. . . parallel computers
. . . . **SIMD (computers)**
RT architecture (computers)
computer design
computer programming
concurrent processing
interprocessor communication
MIMD (computers)
operating systems (computers)
parallel processing (computers)

SIMICOR (image correlator)

USE **image correlators**

similarities

USE **analogies**

similarity numbers

GS dimensionless numbers
. **similarity numbers**
ratios
. **similarity numbers**
RT dimensional analysis
scaling laws

similarity theorem

GS theorems
. **similarity theorem**
. . Lagrange similarity hypothesis
RT dynamic models
mathematical models
scale models

similitude law

GS laws
. **similitude law**
RT gravitation
inertia
scale models
viscosity

simple harmonic motion

DEF A motion such that the displacement is a sinusoidal function of time.

GS harmonic motion
. **simple harmonic motion**
harmonics
. **simple harmonic motion**
RT acoustics
Fourier analysis
harmonic excitation

simplex method

DEF A finite iterative algorithm used in linear programming whereby successive solutions are obtained and tested for optimality.

GS mathematical logic
. algorithms
. . **simplex method**
optimization
. **simplex method**
RT linear programming
mathematical programming
matrices (mathematics)
∞ methodology
problem solving

simplification

RT assumptions

- linearization
- SIMS (spectrometry)*
 - USE **secondary ion mass spectrometry**
- simulated altitude*
 - USE **altitude simulation**
- simulated annealing**
 - (added December 1992)
 - RT annealing
 - computerized simulation
 - laser annealing
 - optimization
 - pulse heating simulation
- simulation**
 - GS **simulation**
 - . atmospheric entry simulation
 - . computerized simulation
 - . . . analog simulation
 - . . . digital simulation
 - . . . distributed interactive simulation
 - . control simulation
 - . data simulation
 - . environment simulation
 - . . . acoustic simulation
 - . . . altitude simulation
 - . . . space environment simulation
 - . . . thermal simulation
 - . . . weightlessness simulation
 - neutral buoyancy simulation
 - . exhaust flow simulation
 - . flight simulation
 - . . in-flight simulation
 - . landing simulation
 - . motion simulation
 - . rheoelectrical simulation
 - . solar simulation
 - . systems simulation
 - . . . computer systems simulation
 - . direct numerical simulation
 - . hardware-in-the-loop simulation
 - . large eddy simulation
 - . magnetohydrodynamic simulation
 - . scene generation
 - RT analogies
 - bionics
 - bond graphs
 - data processing equipment
 - deception
 - Earth analogs
 - game theory
 - heuristic methods
 - hypervelocity projectiles
 - mathematical models
 - Monte Carlo method
 - operations research
 - simulated annealing
 - simulators
 - spacecraft cabin simulators
 - systems analysis
 - validity
 - virtual reality
 - war games
- simulator training*
 - USE **training simulators**
- simulators**
 - GS **simulators**
 - . environment simulators
 - . . . Lunar Gravity Simulator
 - . . . solar simulators
 - . . . space simulators
 - clinostats
 - . . . High Vacuum Orbital Simulator
 - . . . Langley complex coordinator
 - . lunar orbit and landing simulators
 - . motion simulators
 - . shock simulators
 - . Shuttle Engineering Simulator
 - . Shuttle Mission Simulator
 - . target simulators
 - . training simulators
 - . . . flight simulators
 - . . . cockpit simulators
 - . . . spacecraft cabin simulators
 - . vibration simulators
- RT . . vertical motion simulators
- analog
- computer systems simulation
- dummies
- ∞ missile simulators
- models
- simulation
- ∞ test equipment
- test facilities
- training devices
- simultaneous equations**
 - RT ∞ equations
 - least squares method
 - matrices (mathematics)
- simultaneous image correlator*
 - USE **image correlators**
- sine series**
 - GS analysis (mathematics)
 - . calculus
 - . . series (mathematics)
 - . . . **sine series**
 - . real variables
 - . . periodic functions
 - . . . trigonometric functions
 - **sine series**
 - . . series (mathematics)
 - . . . **sine series**
 - functions (mathematics)
 - . transcendental functions
 - . . periodic functions
 - . . . trigonometric functions
 - **sine series**
 - sine waves**
 - DEF Waves which can be expressed as the sine of a linear function of time, or space, or both. Used for sinusoids.
 - UF *sinusoids*
 - RT elastic waves
 - electromagnetic radiation
 - trigonometric functions
 - wavelet analysis
 - ∞ waves
 - Singapore**
 - GS nations
 - . **Singapore**
 - RT Asia
 - single channel per carrier transmission**
 - DEF Voice and data transmission system for satellite communication featuring the use of a carrier frequency for each channel of communication. Used for SCPC transmission.
 - UF *SCPC transmission*
 - GS telecommunication
 - . **single channel per carrier transmission**
 - transmission
 - . signal transmission
 - . . data transmission
 - . . . **single channel per carrier transmission**
 - RT carrier frequencies
 - channels (data transmission)
 - satellite communication
 - satellite transmission
 - spacecraft communication
 - telegraph systems
 - telemetry
 - telephony
 - voice communication
 - voice data processing
 - single crystals**
 - UF *monocrystals*
 - GS crystals
 - . **single crystals**
 - RT bicrystals
 - boules
 - Bravais crystals
 - Bridgman method
 - crystal lattices
 - diamonds
 - graphite
 - kink bands
 - needles
 - piezoelectric crystals
 - polycrystals
 - space processing
 - ultrapure metals
 - single electron transistors**
 - (added July 2008)
 - DEF Three-terminal, solid-state, nanoelectronic switching devices that use quantum mechanical electron tunneling to control the movement of single electrons and amplify current.
 - GS electronic equipment
 - . solid state devices
 - . . . semiconductor devices
 - transistors
 - **single electron transistors**
 - nanostructures (devices)
 - . **single electron transistors**
 - RT carbon nanotubes
 - electron mobility
 - electron tunneling
 - nanotechnology
 - quantum dots
 - tunnel junctions
 - single engine aircraft**
 - GS **single engine aircraft**
 - . Cessna 172 aircraft
 - . Cessna 205 aircraft
 - . Cessna 210 aircraft
 - . F-8 aircraft
 - . F-9 aircraft
 - . F-16 aircraft
 - . F-84 aircraft
 - . F-86 aircraft
 - . F-94 aircraft
 - . F-100 aircraft
 - . F-101 aircraft
 - . F-102 aircraft
 - . F-104 aircraft
 - . F-105 aircraft
 - . F-106 aircraft
 - . Jaguar aircraft
 - . jet provost aircraft
 - . L-29 jet trainer
 - . MiG aircraft
 - . Mirage aircraft
 - . . . Mirage 3 aircraft
 - . P-51 aircraft
 - . P-1127 aircraft
 - . P-1154 aircraft
 - . T-2 aircraft
 - . T-28 aircraft
 - . T-33 aircraft
 - . Vampire MK 35 aircraft
 - . VJ-101 aircraft
 - RT ∞ aircraft
 - fighter aircraft
 - general aviation aircraft
 - single event upsets**
 - DEF Radiation-induced errors in microelectronic circuits caused when charged particles (usually from the radiation belts or from cosmic rays) lose energy by ionizing the medium through which they pass, leaving behind a wake of electron-hole pairs.
 - GS radiation effects
 - . **single event upsets**
 - RT astronics
 - avionics
 - charged particles
 - cosmic rays
 - electron-hole drops
 - inner radiation belt
 - ionization
 - microelectronics
 - radiation damage
 - radiation dosage
 - satellite-borne instruments
 - secondary cosmic rays
 - spacecraft charging

single sideband transmission

spacecraft electronic equipment

single input single output systems
USE **SISO (control systems)**

single instruction multiple datastream
USE **SIMD (computers)**

single sideband modulation
USE **single sideband transmission**

single sideband transmission
UF *single sideband modulation*
GS transmission
. electromagnetic wave transmission
. . . radio transmission
. . . **single sideband transmission**
. signal transmission
. . . radio transmission
. . . **single sideband transmission**
RT amplitude modulation
double sideband transmission
sidebands
television transmission
voice communication
wave propagation

single stage rocket vehicles
GS rocket vehicles
. **single stage rocket vehicles**
. . . Agena rocket vehicles
. . . . Agena A rocket vehicle
. . . . Agena B rocket vehicle
. . . . Agena C rocket vehicle
. . . . Agena D rocket vehicle
. . . Arcas rocket vehicles
. . . Black Brant sounding rockets
. . . . Black Brant 1 sounding rocket
. . . . Black Brant 2 sounding rocket
. . . . Black Brant 3 sounding rocket
. . . . Black Brant 4 sounding rocket
. . . . Black Brant 5 sounding rocket
. . . Black Knight rocket vehicle
. . . Dornier paraglider rocket vehicle
. . . Genie rocket vehicle
. . . Honest John rocket vehicle
. . . Hyla-Star rocket vehicle
. . . Little John rocket vehicle
. . . Loki rocket vehicle
. . . Nomad launch vehicle
. . . Veronique rocket vehicles
. . . Viking rocket vehicle
. . . Zuni rocket vehicle
RT Mauler missile
rocket engines
∞ vehicles

single stage to orbit vehicles
DEF Second and third generation (post-Space Shuttle) vehicles studied for Earth orbit international space transportation system.
GS launch vehicles
. reusable launch vehicles
. . . **single stage to orbit vehicles**
. . . . Delta Clipper
. . . . HOTOL launch vehicle
reentry vehicles
. recoverable spacecraft
. reusable spacecraft
. . . **single stage to orbit vehicles**
. . . . Delta Clipper
. . . . HOTOL launch vehicle
RT NASA programs
rocket-based combined-cycle engines
space shuttles
space transportation
∞ vehicles
X-30 vehicle

single-phase flow
UF *one-phase flow*
uniphase flow
GS fluid flow
. **single-phase flow**
RT critical flow
gas flow
laminar flow
liquid flow
mass flow
multiphase flow

orifice flow
pipe flow
steady flow
steam flow
subcritical flow
supercritical flow
turbulent flow
two phase flow
uniform flow
unsteady flow

singular integral equations
GS analysis (mathematics)
. functional analysis
. . . integral equations
. . . **singular integral equations**
RT ∞ equations

singularity (mathematics)
GS analysis (mathematics)
. complex variables
. . **singularity (mathematics)**
. . . naked singularities
RT points (mathematics)
uniqueness

sinkholes
DEF Circular depressions in a Karst area. Their drainage is subterraneous, their size is measured in meters or tens of meters, and they are commonly funnel shaped.
GS landforms
. structural basins
. . karst
. . . **sinkholes**
RT kettles (geology)
structural properties (geology)

sinking
RT falling
refraction
submerging
water immersion

sinks
SN (EXCLUDES PLUMBING FIXTURES--LIMITED TO AREAS FOR ABSORPTIVE DISPOSAL OF HEAT OR FLUIDS)
GS **sinks**
. heat sinks
RT absorbers (materials)
disposal
∞ sources

sinks (geology)
USE **structural basins**

Sinope
(added January 1996)
DEF A natural satellite of Jupiter orbiting at a mean distance of 23,700,000 kilometers.
GS celestial bodies
. natural satellites
. . Jupiter satellites
. . . **Sinope**
RT Jupiter (planet)

sintered aluminum powder
GS particles
. metal particles
. . metal powder
. . . powdered aluminum
. . . . **sintered aluminum powder**
. powder (particles)
. . metal powder
. . . powdered aluminum
. . . . **sintered aluminum powder**
RT aluminum
powder metallurgy

sintering
DEF The bonding of adjacent surfaces of particles in a mass of powders, usually metal, by heating. Used for presintering.
UF *presintering*
GS **sintering**
. liquid phase sintering
RT agglomeration
combustion synthesis
furnaces

growth
heating
hot isostatic pressing
hot pressing
metal powder
mixed crystals
porosity
powder metallurgy
pyrometallurgy
reaction bonding
roasting
shrinkage
sialon

sinuses
DEF A term used in anatomical nomenclature to designate a cavity or hollow space.
GS **sinuses**
. paranasal sinuses
RT carotid sinus body
carotid sinus reflex
nose (anatomy)
respiration

sinusoids
USE **sine waves**

Sioux helicopter
USE **OH-13 helicopter**

siphoning
DEF The transfer of a liquid from a high to a lower level by atmospheric pressure forcing it up the shorter leg while the weight of the liquid in the longer leg causes continuous downward flow.
RT ∞ fluids
siphons
thermosiphons

siphons
RT materials handling
pipelines
pipes (tubes)
pumps
siphoning
∞ tubes

SIR-A
USE **Shuttle Imaging Radar**

SIR-B
USE **Shuttle Imaging Radar**

SIR-C
USE **Shuttle Imaging Radar**

SIR-D
USE **Shuttle Imaging Radar**

sirens
RT horns
noise intensity
signal generators
∞ signals
sound generators
sound intensity
sound transmission
warning systems

SIRIO satellite
GS artificial satellites
. synchronous satellites
. . **SIRIO satellite**
RT Italian space program
Italy

SIRS B satellite
GS artificial satellites
. meteorological satellites
. . **SIRS B satellite**
RT meteorological flight
meteorological instruments
satellite observation
unmanned spacecraft

SIRTF
USE **Space Infrared Telescope Facility**

SIS (semiconductors)
DEF Semiconductor devices consisting of

an electrically insulating layer sandwiched between two semiconducting materials. Used for semiconductor insulator semiconductors.

- UF *semiconductor insulator semiconductors*
- GS electronic equipment
 - . solid state devices
 - . . **SIS (semiconductors)**
- RT barrier layers
 - MIM (semiconductors)
 - MIS (semiconductors)
 - MSM (semiconductors)
 - photodiodes
 - photovoltaic cells
 - p-n junctions
 - Schottky diodes
 - semiconductor diodes
 - semiconductor junctions
 - silicon junctions
 - SOI (semiconductors)
 - solar cells
 - SOS (semiconductors)
 - tin oxides
 - transistors

SIS (superconductors)

(added March 1989)

- UF *superconductor insulator superconductors*
- GS electronic equipment
 - . solid state devices
 - . . **SIS (superconductors)**
 - superconducting devices
 - . **SIS (superconductors)**
- RT high temperature superconductors
 - Josephson effect
 - Josephson junctions
 - squid (detectors)

SISO (control systems)

(added October 1988)

- UF *single input single output systems*
- RT ∞ control
 - control stability
 - control systems design
 - control theory
 - feedback control
- ∞ systems
 - systems stability

site data processors

- UF *SDP (computers)*
- GS data processing equipment
 - . computers
 - . . **site data processors**
- RT Apollo project
 - ∞ data
 - data links
 - data processing

site selection

DEF Selecting the location for any physical plant (nuclear power, solar house, etc.) while considering the environmental impact, safety, etc.

- GS selection
 - . **site selection**
- RT airports
 - certification
 - ∞ facilities
 - industrial areas
 - land use
 - leasing
 - logistics
 - Mars landing sites
 - options
 - resources
 - roads
 - routes
 - services
 - sites
 - terminal facilities
 - transportation
 - utilities

sites

- UF *tracts*
- GS **sites**
 - . Central Atlantic Regional Ecol Test Site

- . landing sites
 - . . lunar landing sites
 - . . Mars landing sites
 - . launching sites
 - . . launching pads
 - . offshore reactor sites
- RT airport planning
 - barren land
 - ∞ facilities
 - land
 - ∞ plots
 - position (location)
 - regions
 - rural land use
 - site selection

sitting position

- RT prone position
 - rest
 - seats
 - supine position

situational awareness

(added October 2001)

- DEF The degree and accuracy to which a human or robotic agent perceives the operating environment.
- RT accident prevention
 - air traffic control
 - alertness
 - decision support systems
 - display devices
 - flight management systems
 - human factors engineering
 - operator performance
 - perception
 - pilot performance
 - pilot support systems
 - reconnaissance
 - runway incursions
 - surveillance
 - threat evaluation

size (dimensions)

- GS **size (dimensions)**
 - . grain size
- RT fineness

size determination

- GS **size determination**
 - . precipitation particle measurement
- RT body measurement (biology)
 - classifiers
 - dimensional measurement
 - ∞ measurement
 - particle size distribution
 - ∞ sizing

size distribution

DEF The study of the size of objects or features and their distribution.

- GS **size distribution**
 - . particle size distribution
- RT drop size
 - mass distribution
 - statistical distributions

size separation

- UF *sizing (separation)*
- RT beneficiation
 - classifiers
 - ∞ classifying
 - concentrators
 - filtration
 - flotation
 - metal powder
 - particle size distribution
 - powder (particles)
 - ∞ separation
 - settling
 - ∞ sizing

∞ sizing

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT body measurement (biology)
 - size determination
 - size separation
 - sizing (shaping)
 - sizing (surface treatment)

sizing materials

sizing (separation)

USE **size separation**

sizing (shaping)

- GS metal working
 - . **sizing (shaping)**
- RT coining
 - pressing (forming)
- ∞ sizing

sizing (surface treatment)

- SN (EXCLUDES MECHANICAL SHAPING OR REMOVAL OF SURFACE MATERIALS)
- RT finishes
 - ∞ sizing
 - sizing materials
 - ∞ surfaces

sizing materials

- SN (MATERIALS USED FOR SURFACE TREATMENT)
- RT binders (materials)
 - clays
 - fillers
 - glues
 - ∞ materials
 - ∞ sizing
 - sizing (surface treatment)
 - starches

sizing screens

- GS separators
 - . classifiers
 - . . **sizing screens**
- RT agitation
 - concentrators
 - fluid filters
 - ∞ screens
 - shakers
 - sieves

skeletal muscle

(added August 2004)

DEF Striated muscles having fibers connected at either or both extremities with the bony framework of the body. These are found in appendicular and axial muscles.

- UF *striated muscle voluntary muscle*
- GS anatomy
 - . musculoskeletal system
 - . . muscles
 - . . . **skeletal muscle**
- RT muscle fibers
 - muscular strength
 - smooth muscle
 - striation

skeletal myocytes

(added December 2004)

USE **muscle fibers**

skeleton

USE **musculoskeletal system**

skewness

- RT asymmetry
 - deformation
 - displacement
 - distortion
 - distribution moments
 - eccentricity
 - moments

skid landings

- RT air cushion landing systems
 - crash landing
 - hydroplaning
 - skidding

skidding

- RT hydroplaning
 - landing gear
 - sideslip
 - skid landings
 - sleds

skin (anatomy)

yaw

skills
USE **abilities**

skin (anatomy)
GS anatomy
. **skin (anatomy)**
. . . epidermis
RT albinism
∞ blisters
carotene
chlorophylls
collagens
contact dermatitis
cytochromes
dermatitis
dermatology
epithelium
evaporation
hair
homeostasis
leather
melanin
membranes
perspiration
petechia
pigments
secretions
sense organs
thermoreceptors
touch

skin (structural member)
GS membranes
. membrane structures
. . **skin (structural member)**
structural members
. membrane structures
. . **skin (structural member)**
RT aircraft construction materials
∞ construction materials
hulls (structures)
metal shells
shells (structural forms)
stressed-skin structures
thin walled shells
thin walls
toroidal shells
webs (supports)

skin friction
UF *friction pressure drop*
GS friction
. **skin friction**
. . friction drag
. . . aerodynamic drag
. . . . supersonic drag
. . . viscous drag
RT aerodynamic heating
drag
drag devices
flow resistance
fluid flow
friction factor
riblets
streamlining

skin grafts
RT surgery
therapy

skin resistance
GS electrical properties
. electrical impedance
. . electrical resistance
. . . **skin resistance**
impedance
. electrical impedance
. . electrical resistance
. . . **skin resistance**
RT ∞ resistance

skin temperature (biology)
GS temperature
. **skin temperature (biology)**
RT ∞ biology
fever
hyperthermia

hypothermia

skin temperature (non-biological)
GS surface properties
. surface temperature
. . **skin temperature (non-biological)**
temperature
. surface temperature
. . **skin temperature (non-biological)**
RT aerodynamic heating
aerothermodynamics

Skinner boxes
RT behavior
psychological tests
psychometrics

skirts
RT afterbodies
boattails
conical nozzles
exhaust nozzles
foundations
∞ jet nozzles
rocket nozzles

skis
RT hydrofoils
hydroplanes (surfaces)
landing gear

Skua rocket vehicles
GS rocket vehicles
. sounding rockets
. . **Skua rocket vehicles**
RT solid propellant rocket engines
∞ vehicles

skull
GS anatomy
. head (anatomy)
. . **skull**
. . . cranium
. . . . intracranial cavity
. . . mastoids
. musculoskeletal system
. . bones
. . . **skull**
. . . . cranium
. intracranial cavity
. mastoids
RT forehead
intercranial circulation

sky
GS **sky**
. night sky
RT cloud cover
clouds (meteorology)
dayglow
Rayleigh scattering
sunlight

sky brightness
GS electromagnetic properties
. optical properties
. . brightness
. . . **sky brightness**
RT airglow
auroras
cloud cover
daytime
gegenschein
glare
light (visible radiation)
light emission
luminance
night
night sky
nightglow
solar radiation
sunlight
zodiacal light

sky radiation
GS atmospheric radiation
. **sky radiation**
. . airglow

. . . geocoronal emissions
. . . nightglow
. . . twilight glow
. . dayglow
. . elves
. . sprites (atmospheric physics)
electromagnetic radiation
. light (visible radiation)
. . **sky radiation**
. . . airglow
. . . . geocoronal emissions
. . . . nightglow
. . . . twilight glow
. . . dayglow
. . . elves
. . . sprites (atmospheric physics)
RT background radiation
pyranometers
∞ radiation
stratosphere radiation
sunlight
thermal radiation
tropospheric radiation

sky surveys (astronomy)
GS observation
. **sky surveys (astronomy)**
surveys
. **sky surveys (astronomy)**
RT asteroid detection
astronomical catalogs
astronomy
indexes (documentation)
northern sky
Southern sky
Wide-field Infrared Survey Explorer

sky waves
DEF In radio, radio energy that is received after having been reflected by the ionosphere.
GS electromagnetic radiation
. radio waves
. . **sky waves**
. . . whistlers
RT ground wave propagation
ionospheric noise

Skybolt missile
GS missiles
. ballistic missiles
. . **Skybolt missile**
RT solid propellant rocket engines

Skycrane helicopter
USE **CH-54 helicopter**

Skydrol (trademark)
GS liquids
. hydraulic fluids
. . **Skydrol (trademark)**
RT esters
phosphates
plasticizers

Skyhawk aircraft
USE **A-4 aircraft**

skyhook balloons
DEF Large free balloons having plastic envelopes, used especially for constant level meteorological observations at very high altitudes. (Originally a code name for a U.S. Navy project.)
GS expandable structures
. inflatable structures
. . balloons
. . . high altitude balloons
. . . . **skyhook balloons**
RT high altitude
meteorological balloons
ROBIN balloons
rockoons

Skylab 1
UF *SKYLAB space station (unmanned)*
SL 1
GS artificial satellites
. orbital workshops
. . **Skylab 1**
. . space stations
. . **Skylab 1**

- laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Skylab 1**
- manned spacecraft
 - . manned orbital laboratories
 - . . **Skylab 1**
 - . orbital workshops
 - . . **Skylab 1**
- stations
 - . space stations
 - . . **Skylab 1**
- RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - space missions
- Skylab 2**
 - UF *SL 2*
 - GS artificial satellites
 - . orbital workshops
 - . . **Skylab 2**
 - . space stations
 - . . **Skylab 2**
 - laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Skylab 2**
 - manned spacecraft
 - . manned orbital laboratories
 - . . **Skylab 2**
 - . orbital workshops
 - . . **Skylab 2**
 - stations
 - . space stations
 - . . **Skylab 2**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab 3**
 - UF *SL 3*
 - GS artificial satellites
 - . orbital workshops
 - . . **Skylab 3**
 - . space stations
 - . . **Skylab 3**
 - laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Skylab 3**
 - manned spacecraft
 - . manned orbital laboratories
 - . . **Skylab 3**
 - . orbital workshops
 - . . **Skylab 3**
 - stations
 - . space stations
 - . . **Skylab 3**
 - RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab 4**
 - UF *SL 4*
 - GS artificial satellites
 - . orbital workshops
 - . . **Skylab 4**
 - . space stations
 - . . **Skylab 4**
 - laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Skylab 4**
 - manned spacecraft
 - . manned orbital laboratories
 - . . **Skylab 4**
 - . orbital workshops
 - . . **Skylab 4**
 - stations
 - . space stations
- . . **Skylab 4**
- RT airlock modules
 - command service modules
 - EREP
 - multiple docking adapters
 - Saturn 1B launch vehicles
 - Saturn 5 launch vehicles
 - space missions
- Skylab program**
 - GS programs
 - . NASA programs
 - . . NASA space programs
 - . . . **Skylab program**
 - . space programs
 - . . NASA space programs
 - . . . **Skylab program**
 - RT AAP 1 mission
 - AAP 2 mission
 - AAP 3 mission
 - AAP 4 mission
 - airlock modules
 - Apollo applications program
 - Apollo flights
 - Apollo project
 - Apollo spacecraft
 - Apollo telescope mount
 - Earth Resources Information System
 - Earth Resources Program
 - Earth Resources Survey Program
 - orbital workshops
 - Saturn 1 workshop
 - Saturn 5 workshop
 - Saturn workshops
 - Spacelab
- SKYLAB space station (unmanned)*
- USE **Skylab 1**
- Skylark*
- USE **Skylark rocket vehicle**
- Skylark rocket vehicle**
 - UF *Skylark*
 - GS rocket vehicles
 - . multistage rocket vehicles
 - . . **Skylark rocket vehicle**
 - . sounding rockets
 - . . **Skylark rocket vehicle**
 - RT solid propellant rocket engines
- Skymaster aircraft*
- USE **C-54 aircraft**
- Skynet satellites**
 - GS artificial satellites
 - . **Skynet satellites**
 - RT communication satellites
 - satellite networks
 - UK satellites
- Skyraider aircraft*
- USE **A-1 aircraft**
- Skyrocket aircraft*
- USE **D-558 aircraft**
- Skystreak aircraft*
- USE **D-558 aircraft**
- Skyvan aircraft*
- USE **SC-7 aircraft**
- Skywarrior aircraft*
- USE **A-3 aircraft**
- SL 1*
- USE **Skylab 1**
- SL 2*
- USE **Skylab 2**
- SL 3*
- USE **Skylab 3**
- SL 4*
- USE **Skylab 4**
- SL-3 rocket engine**
 - GS engines
 - . rocket engines
- . . solid propellant rocket engines
- . . . **SL-3 rocket engine**
- slabs**
 - RT billets
 - blocks
 - flat plates
 - metal plates
 - plates (structural members)
 - ∞ platforms
 - structural members
- slags**
 - RT aggregates
 - reaction products
 - wastes
- SLAM*
- USE **supersonic low altitude missile**
- slamming**
 - RT fluid dynamics
- slant*
- USE **slopes**
- slant perception*
- USE **space perception**
- slashes*
- USE **clearings (openings)**
- Slater orbitals**
 - GS orbitals
 - . **Slater orbitals**
 - RT Hartree-Fock-Slater method
- sleds**
 - GS surface vehicles
 - . **sleds**
 - . . rocket propelled sleds
 - RT dollies
 - skidding
 - towed bodies
 - tractors
 - trailers
- sleep**
 - UF *drowsiness*
 - GS **sleep**
 - . hypersomnia
 - . hypnosis
 - . insomnia
 - RT dreams
 - ∞ drives
 - melatonin
 - rapid eye movement state
 - rest
- sleep deprivation**
 - GS deprivation
 - . **sleep deprivation**
 - RT consciousness
 - fatigue (biology)
 - insomnia
 - wakefulness
- sleeves**
 - SN (EXCLUDES CLOTHING)
 - RT connectors
 - couplings
 - fasteners
 - fittings
 - joints (junctions)
- slender bodies**
 - GS **slender bodies**
 - . slender cones
 - RT aerodynamic configurations
 - aerodynamics
 - axisymmetric bodies
 - ∞ bodies
 - ducted bodies
 - fineness ratio
 - missile bodies
 - power law bodies
 - ∞ sharpness
 - streamlined bodies
 - symmetrical bodies

slender cones

∞ thin bodies

slender cones

- GS cones
 - . conical bodies
 - . . **slender cones**
- slender bodies
 - . **slender cones**
 - . symmetrical bodies
 - . bodies of revolution
 - . . conical bodies
 - . . . **slender cones**
- RT aerodynamic configurations
- axisymmetric bodies

slender wings

- UF *high aspect ratio wings*
- GS airfoils
 - . wings
 - . . **slender wings**
 - . . . infinite span wings
- RT fixed wings
- wing planforms
- wing rock

slenderness ratio

- (added March 2000)
- USE **aspect ratio**

slewing

- DEF Of a gyro, the rotation of the spin axis caused by applying torque about the axis of rotation. In radar, changing the scale on the display.
- RT antennas
- error signals
- positioning devices (machinery)
- radar tracking
- servomotors
- ∞ spinners

slicing

- GS cutting
 - . **slicing**
- RT metal cutting
- planing
- planning
- scarfing
- ∞ separation
- splitting

slicks

- USE **oil slicks**

slides

- USE **chutes**

slides (microscopy)

- DEF Rectangular pieces of glass on which objects are mounted for microscopic examination.
- RT microscopy

sliding

- DEF Relative displacement between two bodies along a surface, without loss of contact between the bodies.
- RT interfacial tension
- lubrication
- mass flow
- ∞ slip
- slumping
- static friction

∞ sliding contact

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT contact loads
- electric contacts
- sliding friction
- vapor phase lubrication

sliding friction

- GS friction
 - . kinetic friction
 - . . **sliding friction**
- RT coefficient of friction
- dry friction
- electric contacts
- ∞ sliding contact

- static friction
- tribometers
- wear
- wear resistance

∞ slip

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT plastic deformation
- polyslips
- sideslip
- sliding

slip bands

- USE **edge dislocations**

slip casting

- GS forming techniques
 - . casting
 - . . **slip casting**

slip flow

- SN (LIMITED TO RAREFIED GAS FLOW IN THE REGION BETWEEN KNUDSEN NUMBERS 0. 01 AND 0. 1 ONLY--EXCLUDES TRANSITION FLOW, FREE MOLECULE FLOW CREEP, SHEAR FLOW, AND PLASTIC FLOW)
- DEF Rarefied gas flow in the region between Knudsen numbers 0. 01 and 0. 1.
- GS fluid flow
 - . gas flow
 - . . molecular flow
 - . . . **slip flow**
- RT continuum flow
- free molecular flow
- low density wind tunnels
- rarefied gas dynamics
- transition flow

slipstreams

- GS wakes
 - . aircraft wakes
 - . . **slipstreams**
 - . . . propeller slipstreams
 - . turbulent wakes
 - . . **slipstreams**
 - . . . propeller slipstreams
- RT backwash
- Strouhal number
- turbulence

slits

- GS openings
 - . **slits**
- RT apertures
- Fresnel reflectors
- slots

slivers

- RT fibers
- wood

slopes

- DEF The inclined surfaces of any part of the Earth's surface, as in hillslopes; also broad parts of a continent descending toward an ocean, as in the Pacific slope. Used for cant, slant, and steepness.
- UF *cant*
- slant*
- steepness*
- GS **slopes**
 - . glide paths
- RT angles (geometry)
- cliffs
- escarpments
- ∞ grade
- gradients
- height
- ∞ inclination
- landforms
- landslides
- level (horizontal)
- pitch (inclination)
- ∞ profiles
- ∞ rakes
- ramp functions
- ramps (structures)

topography

slushing

- USE **liquid slushing**

slot antennas

- UF *slotted antennas*
- GS antennas
 - . directional antennas
 - . . **slot antennas**
- RT antenna design
- horn antennas
- microwave antennas
- radant
- radar antennas
- waveguide antennas

slots

- GS **slots**
 - . wing slots
- RT lift devices
- louvers
- openings
- slits

slotted antennas

- USE **slot antennas**

slotted wind tunnels

- GS test facilities
 - . wind tunnels
 - . . **slotted wind tunnels**
- RT supersonic wind tunnels
- transonic wind tunnels
- trisonic wind tunnels
- vents

Slovakia

- (added September 1994)
- GS nations
 - . **Slovakia**
- RT Czech Republic
- Czechoslovakia
- Europe

slow neutrons

- USE **thermal neutrons**

SLR (ranging)

- (added July 2001)
- USE **satellite laser ranging**

sludge

- DEF A water-formed sedimentary deposit.
- GS **sludge**
 - . activated sludge
- RT deposits
- liquid wastes
- mud
- ocean bottom
- organic wastes (fuel conversion)
- reaction products
- sediments
- sewage treatment
- solid wastes
- waste treatment
- wastes

slumping

- RT geomorphology
- mass flow
- sliding

slurries

- GS mixtures
 - . **slurries**
- RT dispersions
- emulsions
- gels
- rheocasting
- slurry propellants
- slush hydrogen

slurry propellants

- GS propellants
 - . rocket propellants
 - . . liquid rocket propellants
 - . . . **slurry propellants**
 - slush hydrogen
- RT aircraft fuels
- colloidal propellants

- dispersions
gelled rocket propellants
metal fuels
metal propellants
monopropellants
slurries
solid rocket propellants
- slush**
RT bay ice
cryogenic rocket propellants
ice
runway conditions
snow
water
- slush hydrogen**
(added March 1990)
GS propellants
. rocket propellants
. . . liquid rocket propellants
. . . . slurry propellants
. . . . **slush hydrogen**
RT hydrogen fuels
liquid hydrogen
slurries
- SLV
USE **Standard Launch Vehicles**
- SLV (soft landing vehicles)
USE **soft landing spacecraft**
- SLWT (propellant tank)
(added June 1998)
USE **external tanks**
propellant tanks
- SM-65 missile
USE **Atlas launch vehicles**
- SM-68 missile
USE **Titan 1 ICBM**
- SM-68B missile
USE **Titan 2 ICBM**
- SMA (image analysis)
(added July 2000)
USE **spectral mixture analysis**
- Small Astronomy Satellite 1
USE **SAS-1**
- Small Astronomy Satellite 2
USE **SAS-2**
- Small Astronomy Satellite 3
USE **SAS-3**
- Small Astronomy Satellites
USE **SAS**
- small perturbation flow**
GS fluid flow
. **small perturbation flow**
RT flow distortion
oscillating flow
- small satellite technology**
(added January 1996)
UF *Small Satellite Technology Initiative*
SSTI
GS technologies
. **small satellite technology**
RT cost reduction
microsatellites
nanosatellites
remote sensing
satellite design
small scientific satellites
- Small Satellite Technology Initiative
USE **small satellite technology**
- small scientific satellites**
GS artificial satellites
. scientific satellites
. . . **small scientific satellites**
. . . . Submillimeter Wave Astronomy
Satellite
- . . . Transition Region and Coronal
Explorer
- RT microsatellites
nanosatellites
small satellite technology
- Small Water Plane Area Twin Hull*
USE **SWATH (ship)**
- smallpox**
GS diseases
. infectious diseases
. . . viral diseases
. . . **smallpox**
- smart materials**
(added March 1998)
DEF Engineered materials capable of responding to their environment to a significant degree, by virtue of intrinsic properties and/or built-in sensor/actuator elements. Applications of these materials include vibration suppression/isolation, precision positioning, damage detection, and tunable devices.
UF *intelligent materials*
GS **smart materials**
. thermochromic coatings
RT actuators
biomimetics
composite materials
electrorheological fluids
electrostriction
ferroelastic materials
ferroelasticity
ferroelectric materials
ferromagnetic materials
magnetorheological fluids
∞ materials
piezoelectric actuators
piezoelectric ceramics
∞ sensors
shape memory alloys
smart structures
vibration damping
- smart structures**
(added August 1990)
DEF Structures and/or structural components which contain embedded internal sensors. The sensors serve as lifetime health monitors analogous to a central nervous system, and give information on structural properties, providing real time nondestructive evaluation.
UF *intelligent structures*
RT active control
adaptive control
biomimetics
composite structures
fiber optics
large space structures
piezoelectric actuators
smart materials
space station structures
spacecraft structures
strain measurement
structural engineering
structural health monitoring
structural members
∞ structures
systems health monitoring
tensegrity structures
- smear**
RT frequency response
image contrast
signal fading
television transmission
video data
- smectite*
(added October 2001)
USE **montmorillonite**
- smell*
USE **olfactory perception**
- smelting**
RT melting
∞ metallurgy
reduction (chemistry)
- refining
- Smith chart**
RT electrical impedance
impedance
polar coordinates
reactance
standing wave ratios
transmission lines
wavaguides
- SMM-A
USE **Solar Maximum Mission-A**
- smog**
RT air pollution
air sampling
carbon monoxide
combustion products
environmental chemistry
exhaust gases
flames
fog
hydrocarbon combustion
hydrocarbon poisoning
lead poisoning
particulates
smoke
- smoke**
GS mixtures
. dispersions
. . . platisols
. . . **smoke**
RT aerosols
air pollution
biomass burning
combustion products
dust
exhaust gases
fire damage
fog
forest fires
fumes
haze detection
∞ markers
particles
particulates
smog
smoldering
soot
vapors
visibility
- smoke abatement**
RT aerosols
air pollution
carbon dioxide removal
exhaust gases
pollution
soot
- smoke detectors**
GS measuring instruments
. indicating instruments
. . . **smoke detectors**
RT fire prevention
fumes
gas detectors
safety devices
signal processing
- smoke trails**
RT ∞ tracks
wind direction
wind measurement
wind profiles
- smoldering**
(added July 1997)
DEF A slow, flameless combustion of a solid fuel.
GS combustion
. **smoldering**
RT burning rate
combustion stability
erosive burning
fires
flammability

smooth muscle

smoke

smooth muscle

(added August 2004)

DEF Unstriated and unstriped muscle, one of the muscles of the internal organs, blood vessels, hair follicles, etc. Contractile elements are elongated, usually spindle-shaped cells with centrally located nuclei. Smooth muscle fibers are bound together into sheets or bundles by reticular fibers and frequently elastic nets are also abundant.

UF *involuntary muscle*

GS anatomy
. musculoskeletal system
. muscles
. . . **smooth muscle**

RT muscle cells
muscular function
skeletal muscle

smoothing

GS **smoothing**

. data smoothing

RT adjusting
flattening
honing
leveling
planing
polishing
roughness
structured grids (mathematics)

SMS

USE **Synchronous Meteorological Satellite**

SMS 1

DEF A meteorological satellite in synchronous orbit over the Atlantic Ocean to give coverage to the Eastern US. It was launched in May 1974 and is no longer operational, but still in orbit.

GS artificial satellites
. meteorological satellites
. . Synchronous Earth Observatory satellite
. . . **SMS 1**
. . Synchronous Meteorological Satellite
. . . **SMS 1**
. synchronous satellites
. . Synchronous Earth Observatory satellite
. . . **SMS 1**
. . Synchronous Meteorological Satellite
. . . **SMS 1**
RT GOES 2
NOAA satellites

SMS 2

DEF Meteorological satellite in synchronous orbit over Honolulu to give coverage to the Western US. It was launched in February 1975 and is no longer operational, but still in orbit.

GS artificial satellites
. meteorological satellites
. . Synchronous Earth Observatory satellite
. . . **SMS 2**
. . Synchronous Meteorological Satellite
. . . **SMS 2**
. synchronous satellites
. . Synchronous Earth Observatory satellite
. . . **SMS 2**
. . Synchronous Meteorological Satellite
. . . **SMS 2**
RT GOES 2
NOAA satellites

SMS (Shuttle)

USE **Shuttle Mission Simulator**

SMU (maneuvering units)

USE **self maneuvering units**

S-N diagrams

UF *fatigue diagrams*

GS diagrams

. **S-N diagrams**

RT bending fatigue
cyclic loads
fatigue (materials)
fatigue life
fatigue tests
metal fatigue
stress analysis
stress cycles
stress measurement
stress ratio

snails

GS animals
. invertebrates
. mollusks
. . . **snails**

snakes

GS animals
. vertebrates
. reptiles
. . . **snakes**

snaking

USE **lateral oscillation**

SNAP

UF *Systems for Nuclear Auxiliary Power*

GS auxiliary power sources
. nuclear auxiliary power units
. . **SNAP**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . . SNAP 1
. . . . SNAP 3
. . . . SNAP 7
. . . . SNAP 9A
. . . . SNAP 11
. . . . SNAP 13
. . . . SNAP 15
. . . . SNAP 17
. . . . SNAP 19
. . . . SNAP 21
. . . . SNAP 23
. . . . SNAP 27
. . . . SNAP 29
. . . . SNAP 50
nuclear electric power generation
. nuclear auxiliary power units
. . **SNAP**
. . . fission electric cells
. . . . SNAP 2
. . . . SNAP 4
. . . . SNAP 8
. . . . SNAP 10A
. . . . SNAP 1
. . . . SNAP 3
. . . . SNAP 7
. . . . SNAP 9A
. . . . SNAP 11
. . . . SNAP 13
. . . . SNAP 15
. . . . SNAP 17
. . . . SNAP 19
. . . . SNAP 21
. . . . SNAP 23
. . . . SNAP 27
. . . . SNAP 29
. . . . SNAP 50
RT electric generators
heat exchangers
nuclear power reactors
SNAPTRAN reactor
space power unit reactors
[∞] systems
thermionic converters
thermionic power generation
thermoelectric generators
thermoelectric power generation
Transient Reactor Test Facility
turbogenerators

SNAP 1

GS auxiliary power sources
. nuclear auxiliary power units

. . SNAP

. . . **SNAP 1**

nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 1**
RT heat exchangers
turbogenerators

SNAP 2

GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 2**
. . . . space power reactors
. . . . fission electric cells
. . . . **SNAP 2**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 2**
. . . . space power reactors
. . . . fission electric cells
. . . . **SNAP 2**
. . . . nuclear power reactors
. . . . space power reactors
. . . . fission electric cells
. . . . **SNAP 2**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 2**
RT heat exchangers
space power unit reactors
turbogenerators

SNAP 3

GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 3**
electric generators
. direct power generators
. . thermoelectric generators
. . . **SNAP 3**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 3**

SNAP 4

GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 4**
. . . . space power reactors
. . . . fission electric cells
. . . . **SNAP 4**
nuclear electric power generation
. nuclear auxiliary power units
. . SNAP
. . . fission electric cells
. . . . **SNAP 4**
. . . . space power reactors
. . . . fission electric cells
. . . . **SNAP 4**
. . . . nuclear power reactors
. . . . space power reactors
. . . . fission electric cells
. . . . **SNAP 4**
nuclear reactors
. nuclear power reactors
. . space power reactors
. . . fission electric cells
. . . . **SNAP 4**
RT space power unit reactors

SNAP 7

GS auxiliary power sources
. nuclear auxiliary power units
. . SNAP
. . . **SNAP 7**
electric generators
. direct power generators
. . radioisotope batteries
. . . **SNAP 7**

sneak circuit analysis

(less than 1.3 billion years), which together point to a Martian origin. The name of these meteorites is derived from first three known examples-- Shergotty, Nakhla, and Chassigny.

- UF *Martian meteorites*
Shergotty Nakhla Chassigny meteorites
- GS celestial bodies
 - . meteorites
 - . . stony meteorites
 - . . . achondrites
 - **SNC meteorites**
- RT chassignites
Mars (planet)
Mars surface
nakhrites
shergottites

sneak circuit analysis

DEF In electrical or electronic circuits, the detection and/or prevention of "sneak circuits" -- paths having latent electrical conditions resulting from unapparent stimulus-response relationships which cause unwanted functions or inhibit desired function.

- GS network analysis
 - . **sneak circuit analysis**
- RT automatic test equipment
circuit protection
circuit reliability
critical path method
electric networks
electrical faults
reliability engineering
short circuits
signal flow graphs
trees (mathematics)

sneezing

- GS reflexes
 - . respiratory reflexes
 - . . **sneezing**
- RT involuntary actions
vasoconstriction

Snellen tests

- RT ∞ tests
visual acuity

Snells law

DEF A law of geometric optics that defines the amount of bending that takes place when a light ray strikes a refractive boundary (e.g., an air-glass interface) at a non-normal angle.

- GS laws
 - . **Snells law**
- RT geometrical optics
- ∞ optics
refraction
refractivity

snow

DEF A form of ice composed of small white or translucent hexagonal crystals of frozen water, formed directly by sublimation of atmospheric water vapor around solid nuclei at a temperature below the freezing point. The crystals grow while floating or falling to the ground, and are often agglomerated into snowflakes.

- GS precipitation (meteorology)
 - . **snow**
- RT acid rain
cirques (landforms)
cloud glaciation
graupel
ice formation
precipitation measurement
slush
storms (meteorology)

Snow aerial applicator aircraft S-2B

USE **agricultural aircraft**

snow cover

- GS precipitation (meteorology)
 - . **snow cover**
- RT cloud glaciation
cold weather
Earth cryosphere
storm damage

storms
storms (meteorology)

Snow S-2 aircraft

USE **agricultural aircraft**

snowplow effect

USE **plasma dynamics**

snowstorms

- GS storms
 - . storms (meteorology)
 - . . **snowstorms**
- RT climatology
precipitation (meteorology)
storm enhancement
storm suppression
weather forecasting
weather modification

SOAC (electronics)

(added May 2001)

USE **systems-on-a-chip**

∞ soaking

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT baths
heat treatment
heating
submerging
water immersion
wetting

soaps

- RT detergents
stearates
surfactants
wetting

soaring

- RT climbing flight
coasting flight
- ∞ flight
gliders
gliding
hang gliders
horizontal flight
man powered aircraft
vertical air currents

Sobolev space

DEF A Banach space whose elements are functions defined in a domain in Euclidean space and whose norm measures the size and smoothness of the functions.

- GS algebra
 - . vector spaces
 - . . Banach space
 - . . . Hilbert space
 - **Sobolev space**
- analysis (mathematics)
 - . function space
 - . . Banach space
 - . . . Hilbert space
 - **Sobolev space**
- functional analysis
 - . . Banach space
 - . . . Hilbert space
 - **Sobolev space**
- geometry
 - . topology
 - . . metric space
 - . . . Hilbert space
 - **Sobolev space**
- RT boundary value problems
Euclidean geometry

SoC (microelectronics)

(added December 2005)

USE **systems-on-a-chip**

social factors

- GS sociology
 - . **social factors**
 - . . ethnic factors
- RT anthropology
crime
culture (social sciences)
police

race factors
space psychology
Starsite program
urban planning
urban research
∞ variable

social isolation

- GS isolation
 - . **social isolation**
- RT sociology

social psychiatry

- GS medical science
 - . psychiatry
 - . . **social psychiatry**
- RT sociology

sociology

- GS **sociology**
 - . social factors
 - . . ethnic factors
- RT anthropology
case histories
cities
communities
culture (social sciences)
demography
dependence
group dynamics
human relations
minorities
politics
race factors
retirement
social isolation
social psychiatry
systems analysis
urban planning

socks

- GS clothing
 - . **socks**
- RT fabrics
shoes

sod

DEF The top stratum of soil usually containing grassy plants with their matted roots.

- GS soils
 - . **sod**
- RT canopies (vegetation)
farmlands
grasses
grasslands
land
plowing

sodalite

- RT chemical reactions
photochemical reactions
photochromism

sodar

DEF Meteorological instrument used to measure the scattering of sound waves by atmospheric turbulence.

- RT acoustic scattering
atmospheric sounding
atmospheric turbulence
Doppler radar
echo sounding
meteorological instruments
meteorology
sound waves
wind measurement
wind profiles

sodium

- GS chemical elements
 - . alkali metals
 - . . **sodium**
 - . . . liquid sodium
 - . . . sodium isotopes
 - sodium 22
 - sodium 24
 - . . . sodium vapor
- metals
 - . alkali metals
 - . . **sodium**

- ... liquid sodium
 - ... sodium isotopes
 - ... sodium 22
 - ... sodium 24
 - ... sodium vapor
- RT dawsonite
- electrolyte metabolism
- liquid metal cooled reactors
- sodium 22**
 - GS chemical elements
 - . alkali metals
 - . sodium
 - ... sodium isotopes
 - ... **sodium 22**
 - . nuclides
 - . isotopes
 - ... radioactive isotopes
 - ... **sodium 22**
 - ... sodium isotopes
 - ... **sodium 22**
 - metals
 - . alkali metals
 - . sodium
 - ... sodium isotopes
 - ... **sodium 22**
- sodium 24**
 - GS chemical elements
 - . alkali metals
 - . sodium
 - ... sodium isotopes
 - ... **sodium 24**
 - . nuclides
 - . isotopes
 - ... radioactive isotopes
 - ... **sodium 24**
 - ... sodium isotopes
 - ... **sodium 24**
 - metals
 - . alkali metals
 - . sodium
 - ... sodium isotopes
 - ... **sodium 24**
- sodium alloys**
 - GS alloys
 - . **sodium alloys**
- sodium azides**
 - GS nitrogen compounds
 - . azides (inorganic)
 - . **sodium azides**
 - . azides (organic)
 - . **sodium azides**
 - sodium compounds
 - . **sodium azides**
- RT detonators
- explosives
- sodium bromides**
 - GS halogen compounds
 - . bromine compounds
 - . bromides
 - ... **sodium bromides**
 - . halides
 - . bromides
 - ... **sodium bromides**
 - . metal halides
 - ... alkali halides
 - ... **sodium bromides**
 - sodium compounds
 - . **sodium bromides**
- sodium carbonates**
 - GS carbon compounds
 - . carbonates
 - . **sodium carbonates**
 - sodium compounds
 - . **sodium carbonates**
- RT dawsonite
- sodium channels (biology)*
(added August 2002)
- USE **ion channels (biology)**
- sodium chlorides**
 - GS halogen compounds
 - . chlorine compounds
 - . chlorides
- ... **sodium chlorides**
- . halides
- . chlorides
- ... **sodium chlorides**
- . metal halides
- ... alkali halides
- ... **sodium chlorides**
- sodium compounds
- . **sodium chlorides**
- RT molten salts
- salt beds
- ∞ salts
- sodium chlorodifluoroacetates**
 - GS acetates
 - . **sodium chlorodifluoroacetates**
 - esters
 - . **sodium chlorodifluoroacetates**
- sodium chromites**
 - GS chromium compounds
 - . **sodium chromites**
 - sodium compounds
 - . **sodium chromites**
- sodium compounds**
 - GS **sodium compounds**
 - . cryolite
 - . Nembutal (trademark)
 - . nepheline
 - . sodium azides
 - . sodium bromides
 - . sodium carbonates
 - . sodium chlorides
 - . sodium chromites
 - . sodium fluorides
 - . sodium gallates
 - . sodium hydrides
 - . sodium hydroxides
 - . sodium iodides
 - . sodium nitrates
 - . sodium peroxides
 - . sodium salicylates
 - . sodium silicates
 - . spodumene
 - . talc
 - . tourmaline
 - . sodium sulfates
 - . sodium sulfites
- RT ∞ alkali metal compounds
- bleedite
- ∞ chemical compounds
- ∞ metal compounds
- sodium cooling**
 - SN (COOLING WITH SODIUM)
 - GS cooling
 - . **sodium cooling**
- RT coolants
- liquid cooled reactors
- liquid cooling
- sodium fluorides**
 - GS halogen compounds
 - . fluorine compounds
 - . fluorides
 - ... metal fluorides
 - ... **sodium fluorides**
 - . halides
 - . fluorides
 - ... metal fluorides
 - ... **sodium fluorides**
 - . metal halides
 - ... alkali halides
 - ... **sodium fluorides**
 - ... metal fluorides
 - ... **sodium fluorides**
 - sodium compounds
 - . **sodium fluorides**
- sodium gallates**
 - GS gallium compounds
 - . gallates
 - . **sodium gallates**
 - sodium compounds
 - . **sodium gallates**
- sodium graphite reactors**
 - UF *SGR (nuclear reactors)*
 - GS nuclear reactors
- . liquid cooled reactors
- . liquid metal cooled reactors
- ... **sodium graphite reactors**
- RT Hallam Nuclear Power Facility
- nuclear power reactors
- sodium hydrides**
 - GS hydrogen compounds
 - . hydrides
 - . metal hydrides
 - ... **sodium hydrides**
 - sodium compounds
 - . **sodium hydrides**
- sodium hydroxides**
 - GS bases (chemical)
 - . alkalies
 - . **sodium hydroxides**
 - hydroxides
 - . **sodium hydroxides**
 - sodium compounds
 - . **sodium hydroxides**
- sodium iodides**
 - GS halogen compounds
 - . halides
 - . metal halides
 - ... alkali halides
 - ... **sodium iodides**
 - . iodine compounds
 - . iodides
 - ... **sodium iodides**
 - sodium compounds
 - . **sodium iodides**
- sodium isotopes**
 - GS chemical elements
 - . alkali metals
 - . sodium
 - ... **sodium isotopes**
 - ... sodium 22
 - ... sodium 24
 - . nuclides
 - . isotopes
 - ... **sodium isotopes**
 - ... sodium 22
 - ... sodium 24
 - metals
 - . alkali metals
 - . sodium
 - ... **sodium isotopes**
 - ... sodium 22
 - ... sodium 24
- sodium nitrates**
 - GS nitrogen compounds
 - . nitrates
 - . inorganic nitrates
 - ... **sodium nitrates**
 - sodium compounds
 - . **sodium nitrates**
- sodium peroxides**
 - GS chalcogenides
 - . oxides
 - . anhydrides
 - . peroxides
 - ... **sodium peroxides**
 - . metal oxides
 - ... **sodium peroxides**
 - sodium compounds
 - . **sodium peroxides**
- sodium reactor experiment**
 - UF *SRE reactor*
 - GS nuclear reactors
 - . liquid cooled reactors
 - . liquid metal cooled reactors
 - ... **sodium reactor experiment**
 - . nuclear research and test reactors
 - . **sodium reactor experiment**
- sodium salicylates**
 - GS esters
 - . **sodium salicylates**
 - salicylates
 - . **sodium salicylates**
 - sodium compounds

sodium silicates

. sodium salicylates

sodium silicates

GS silicon compounds
. silicates
. . sodium silicates
. . . spodumene
. . . talc
. . . tourmaline
sodium compounds
. sodium silicates
. . spodumene
. . talc
. . tourmaline
RT minerals
plagioclase

sodium sulfates

DEF Sodium compounds containing the -SO₄ group.
GS sodium compounds
. sodium sulfates
sulfur compounds
. sulfates
. . sodium sulfates

sodium sulfites

GS sodium compounds
. sodium sulfites
sulfur compounds
. sulfites
. . sodium sulfites

sodium sulfur batteries

DEF One of several types of rechargeable batteries under consideration as power sources for electrically actuated vehicles. This battery uses a solid electrolyte as well as a sodium reservoir made of metal.
GS electric generators
. direct power generators
. . primary batteries
. . . sodium sulfur batteries
electrochemical cells
. electric batteries
. . primary batteries
. . . sodium sulfur batteries
RT ∞ electric cells

sodium vapor

GS chemical elements
. alkali metals
. . sodium
. . . sodium vapor
metals
. alkali metals
. . sodium
. . . sodium vapor
. metal vapors
. . sodium vapor
vapors
. metal vapors
. . sodium vapor
RT mercury vapor

SO FAR

USE sound fixing and ranging

SOFIA (airborne observatory)

(added March 1990)
SN (STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY)
UF *Stratospheric Observatory for IR Astronomy*
GS observatories
. astronomical observatories
. . SOFIA (airborne observatory)
RT airborne equipment
Boeing 747 aircraft
infrared astronomy
Kuiper Airborne Observatory
spaceborne astronomy

soft gamma repeaters

(added January 2000)

DEF A class of x-ray source which emits repeating bright bursts of "soft" or low-energy gamma rays, along with steady x-ray pulsations. By the end of 1999 only a handful of these sources had been identified in our galaxy and in the Large Magellanic Cloud. Since they are

associated with supernova remnants, these sources are probably some kind of young neutron star. One theory holds that these stars are young magnetars (magnetically-powered neutron stars). Bright bursts occur when the evolving, ultra-strong magnetic field stresses the neutron star's solid crust to breaking, in a sudden starquake. X-ray pulsations are due to the rotation of the star, with it's hot surface bright in x-rays.

UF *SGR (astronomy)*
GS celestial bodies
. stars
. . neutron stars
. . . soft gamma repeaters
. . x ray stars
. . . soft gamma repeaters
gamma ray sources (astronomy)
. soft gamma repeaters
x ray sources
. x ray stars
. . soft gamma repeaters
RT gamma ray astronomy
gamma ray bursts
magnetars
supernova remnants

soft landing

SN (SPACECRAFT OR AIRCRAFT)
DEF The act of landing on the surface of a planet or natural satellite without damage to any portion of the vehicle or payload except possibly the landing gear. Used for soft recovery.
UF *soft recovery*
GS landing
. soft landing
RT aircraft landing
∞ astronautics
crash landing
glide landings
hard landing
horizontal spacecraft landing
lunar landing
Mars landing
planetary landing
spacecraft landing
Surveyor project
Viking 1975 entry vehicle
water landing

soft landing spacecraft

UF *SLV (soft landing vehicles)*
GS soft landing spacecraft
. aerospace planes
. . HOPE aerospace plane
. . HOTOL launch vehicle
. . VentureStar launch vehicle
. . X-30 vehicle
. . X-37 vehicle
. . X-40A vehicle
. Apollo spacecraft
. . Apollo lunar experiment module
. Astro vehicle
. Buran space shuttle
. Gemini B spacecraft
. Gemini spacecraft
. . Gemini 2 spacecraft
. . Gemini (GT-1) spacecraft
. Janus spacecraft
. landing modules
. . lunar landing modules
. . . Lunar Module
. . . . Apollo lunar experiment module
. . . . LSSM
. . . . Lunar Module 5
. . . . Lunar Module 7
. . . Altair Lunar Lander
. . Mars Excursion Module
. Mercury spacecraft
. . Aurora 7
. . Faith 7
. . Friendship 7
. . SIGMA 7
. Surveyor lunar probes
. . Surveyor 1 lunar probe
. . Surveyor 2 lunar probe
. . Surveyor 3 lunar probe
. . Surveyor 4 lunar probe
. . Surveyor 5 lunar probe
. . Surveyor 6 lunar probe

. . Surveyor 7 lunar probe
. voskhod manned spacecraft
. . Voskhod 1 spacecraft
. . Voskhod 2 spacecraft
. Vostok spacecraft
. . Vostok 1 spacecraft
. . Vostok 2 spacecraft
. . Vostok 3 spacecraft
. . Vostok 4 spacecraft
. . Vostok 5 spacecraft
. . Vostok 6 spacecraft
RT Apollo project
ferry spacecraft
hovering rocket vehicles
lunar probes
reusable spacecraft
space capsules
∞ spacecraft
spacecraft landing
Surveyor project
X-20 aircraft

soft recovery

USE soft landing

softening

SN (EXCLUDES WATER SOFTENING)
GS softening
. work softening
RT annealing
deionization
demineralizing
digesting
dissolving
hardening (materials)
ion exchanging

softness

RT ductility
elastic properties
flexibility
hardness
stiffness

software (computers)

USE computer programs

software development tools

DEF Computer programs that aid in the specification, construction, testing, analysis, management, documentation, and maintenance of other computer programs.
UF *software tools*
GS computer programs
. software development tools
tools
. software development tools
RT applications programs (computers)
architecture (computers)
computer systems design
object-oriented programming
program verification (computers)
programming environments
reverse engineering
scientific visualization
software engineering
software reuse

software engineering

DEF The systematic approach to the development, operation, maintenance, and retirement of software.
RT computer programming
computer programs
computer systems design
computer systems programs
computer viruses
data bases
∞ engineering
object-oriented programming
open source licensing (computers)
programming environments
reverse engineering
software development tools
software reliability
software reuse
structured programming
systems engineering

- UNIX (operating system)
- software engineering environments*
USE **programming environments**
- software reliability**
(added January 1993)
UF *computer program reliability*
program reliability (computers)
reliability
GS . **software reliability**
. . . computer program integrity
RT computer programming
computer programs
computer systems performance
program verification (computers)
reliability analysis
software engineering
systems health monitoring
- software reuse**
(added May 1992)
GS utilization
. reuse
. . **software reuse**
RT computer programming
computer programs
productivity
software development tools
software engineering
- software tools*
USE **software development tools**
- SOHO Mission**
(added September 1989)
DEF One of the joint NASA/ESA missions comprising the International Solar Terrestrial Program. The SOHO Mission will investigate the physical processes in the solar corona and solar wind and the structure and dynamics of the solar interior.
UF *Solar and Heliospheric Observatory*
GS space missions
. **SOHO Mission**
RT Cluster Mission
ESA satellites
European space programs
heliosphere
international cooperation
∞ missions
scientific satellites
solar corona
solar interior
solar observatories
solar wind
Transition Region and Coronal Explorer
- SOI (semiconductors)**
DEF Semiconductor devices consisting of a silicon layer coupled to an electrically insulating layer. Used for silicon-on-insulator semiconductors.
UF *silicon-on-insulator semiconductors*
GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **SOI (semiconductors)**
RT field effect transistors
metal oxide semiconductors
silicon films
silicon junctions
silicon transistors
SIS (semiconductors)
SOS (semiconductors)
- soil contamination*
USE **soil pollution**
- soil erosion**
GS erosion
. **soil erosion**
RT abrasion
atmospheric effects
deterioration
environment effects
hydrogeology
landslides
outliers (landforms)
- rain erosion
rain impact damage
soils
water erosion
weathering
wind effects
- soil mapping**
GS mapping
. **soil mapping**
RT geographic applications program
ground penetrating radar
maps
Mars Reconnaissance Orbiter
photomapping
soils
SPOT (French satellite)
surveys
terrain analysis
- soil mechanics**
DEF Mechanical properties of unconsolidated accumulations of particles produced by the disintegration and chemical decomposition of rocks.
RT crustal fractures
fracture mechanics
geotechnical engineering
geotechnical fabrics
rock mechanics
- soil moisture**
GS moisture
. **soil moisture**
RT lysimeters
moisture content
plant stress
soil sampling
soils
vegetation growth
- soil pollution**
(added September 1995)
UF *soil contamination*
GS pollution
. environment pollution
. . **soil pollution**
RT contaminants
environmental cleanup
ground water
heavy metals
industrial wastes
pollution monitoring
radioactive wastes
sediments
toxicity and safety hazard
waste disposal
water pollution
- soil sampling**
(added March 1995)
GS sampling
. **soil sampling**
RT alkalinity
Mars surface samples
pH factor
salinity
soil moisture
terrain analysis
- soil science**
UF *pedology*
RT agriculture
conservation
erosion
soils
vegetation growth
- soils**
GS **soils**
. alluvium
. dirt
. gravels
. laterites
. lunar soil
. . lunar dust
. mud
. permafrost
. sands
. . monazite sands
- . . tar sands
. sod
RT andesite
anorthosite
arid lands
ataxite
barren land
basalt
bedrock
bentonite
boreholes
breccia
carbonaceous rocks
clays
coal
conservation
cultivation
deltas
diorite
dunite
Earth resources
eclogite
enstatite
formations
geology
gneiss
granite
igneous rocks
illite
kaolinite
land
landslides
lava
limestone
lysimeters
magma
minerals
moldavite
muskegs
obsidian
olivine
peridotite
planting
polyurethane foam
porous materials
pumice
pyroxenes
quartz
rocks
sandstones
sedimentary rocks
serpentine
shales
soil erosion
soil mapping
soil moisture
soil science
strip mining
syenite
trachyte
tunneling (excavation)
vadose water
vegetation growth
- solar activity**
DEF Any type of variation in the appearance of energy output of the sun.
GS stellar activity
. **solar activity**
. . faculae
. . solar flares
. . solar prominences
. . solar storms
. . spicules
. . sunspots
RT ∞ activity
auroras
∞ disturbances
International Quiet Sun Year
interplanetary shock waves
IRIS satellites
magnetic disturbances
prominences
radio auroras
solar convection (astronomy)
solar interior
solar planetary interactions
starspots
STEREO (observatory)

solar activity effects

sun
sunspot cycle

solar activity effects

RT blackout (propagation)
∞ effects
galactic cosmic rays
heliosphere
interplanetary shock waves
magnetic disturbances
secular variations
solar oscillations
solar planetary interactions
space weather
sudden ionospheric disturbances
sudden storm commencements
sun

Solar and Heliospheric Observatory

USE **SOHO Mission**

solar arrays

UF *rollup solar arrays*
GS arrays
. **solar arrays**
. . solar blankets
RT electrostatic bonding
payload delivery (STS)
photovoltaic conversion
power modules (STS)
satellite power transmission
self shadowing
solar atriums
solar energy conversion
space station power supplies
sun

solar atmosphere

GS environments
. extraterrestrial environments
. . stellar atmospheres
. . . **solar atmosphere**
. . . . solar transition region
RT ∞ atmospheres
chromosphere
M region
photosphere
solar convection (astronomy)
solar oscillations
spicules
stellar structure
sun
Transition Region and Coronal Explorer

solar atriums

DEF Open courts within buildings designed for passive solar heating.
RT solar arrays
solar heating
solar reflectors
space heating (buildings)
sun

solar auxiliary power units

GS auxiliary power sources
. **solar auxiliary power units**
. . ASTEC solar turboelectric generator
electric generators
. solar generators
. . **solar auxiliary power units**
. . . ASTEC solar turboelectric generator
RT sun

solar azimuth

USE **azimuth**
solar position

Solar Backscatter UV Spectrometer

DEF A spaceborne spectrometer that measures solar UV spectral irradiance incident on the Earth and backscattered radiance from the Earth and thereby estimates the total atmospheric ozone content of the atmosphere and the attitude distribution of ozone.

GS measuring instruments
. spectrometers
. . **Solar Backscatter UV**

Spectrometer

RT irradiance
NOAA 11 satellite
NOAA 14 satellite
satellite-borne instruments

solar blankets

DEF Large, high-temperature, low-mass solar arrays consisting of ultrathin silicon solar cells interconnected, welded, and bonded to flexible substances.
GS arrays
. solar arrays
. . **solar blankets**
electric generators
. direct power generators
. . thermionic converters
. . . **solar blankets**
RT ∞ blankets
∞ converters
sun

Solar Cell Calibration Facility

DEF One of the spacelab payloads. Used for SCCF.

UF *SCCF*
GS payloads
. Spacelab payloads
. . **Solar Cell Calibration Facility**
RT calibrating
∞ facilities
Space Transportation System flights

solar cells

DEF Photovoltaic cells that convert sunlight into electrical energy. Used for silicon solar cells and wraparound contact solar cells.

UF *silicon solar cells*
wraparound contact solar cells
GS electric generators
. direct power generators
. . photoelectric generators
. . . photovoltaic cells
. . . . **solar cells**
. vertical junction solar cells
. solar generators
. . **solar cells**
. . . vertical junction solar cells
electronic equipment
. solid state devices
. . semiconductor devices
. . . photovoltaic cells
. . . . **solar cells**
. vertical junction solar cells
photoelectric cells
. photovoltaic cells
. . **solar cells**
. . . vertical junction solar cells
RT amorphous silicon
antireflection coatings
carrier lifetime
carrier transport (solid state)

∞ cells
copper indium selenides
diffusion length
∞ electric cells
electrostatic bonding
float zones
fuel cells
heterojunctions
homojunctions
indium selenides
open circuit voltage
photodiodes
photovoltaic conversion
p-i-n junctions
quantum efficiency
satellite power transmission
satellite solar energy conversion
satellite solar power stations
short circuit currents
SIS (semiconductors)
solar energy conversion
solar powered aircraft
space station power supplies
spectrophotovoltaics
sun
thermionic converters
thermoelectric generators
thermophotovoltaic conversion

tunnel junctions

solar collectors

DEF Devices designed to absorb incident solar radiation and transfer the energy to a fluid passing through it. Used for solar receivers.
UF *solar receivers*
GS accumulators
. **solar collectors**
reflectors
. solar reflectors
. . **solar collectors**
RT concentrators
mirrors
photothermal conversion
selective surfaces
solar dynamic power systems
solar energy conversion
space cooling (buildings)
spectrophotovoltaics
sun

solar companion star

USE **Nemesis (star)**

solar compasses

GS measuring instruments
. indicating instruments
. . compasses
. . . **solar compasses**
navigation aids
. navigation instruments
. . compasses
. . . **solar compasses**
RT air navigation
air traffic control
aircraft safety
airport beacons
all-weather air navigation
approach indicators
automatic flight control
automatic pilots
beacons
Decca navigation
display devices
distance measuring equipment
flight control
flight instruments
flight paths
gyrocompasses
heliports
homing devices
landing aids
loran
magnetic compasses
omnidirectional radio ranges
position indicators
radar beacons
radio beacons
radio navigation
self calibrating omnirange
Shoran
sun
Tacan
VHF omnirange navigation
weather

solar constant

DEF The rate at which solar radiation is received outside the Earth's atmosphere on a surface normal to the incident radiation and at the Earth's mean distance from the sun.

GS constants
. **solar constant**
rates (per time)
. flux density
. . radiant flux density
. . . irradiance
. . . . **solar constant**
. solar flux density
. **solar constant**
solar energy
. solar flux density
. . **solar constant**
RT illuminance
particle flux density
sun

solar convection (astronomy)

(added June 1992)

- SN (LIMITED TO CONVECTION PHENOMENA OF THE SOLAR ATMOSPHERE AND INTERIOR)
- GS convection
 . stellar convection
 . . **solar convection (astronomy)**
- RT Benard cells
 convection currents
 convective flow
 dynamo theory
 fluid flow
 free convection
 Rayleigh-Benard convection
 solar activity
 solar atmosphere
 solar interior
 solar magnetic field
 solar physics
- solar converters*
 USE **solar generators**
- solar cooling**
 DEF Conversion of solar energy into refrigeration energy.
 GS cooling
 . **solar cooling**
- RT cooling systems
 domestic energy
 energy technology
 residential energy
 solar energy conversion
 space cooling (buildings)
 sun
- solar corona**
 GS coronas
 . stellar coronas
 . . **solar corona**
 . . . coronal holes
 . . . coronal loops
- RT chromosphere
 coronal mass ejection
 electric corona
 interplanetary shock waves
 magnetic clouds
 nebulae
 SOHO Mission
 solar transition region
 stellar structure
 sun
 Transition Region and Coronal Explorer
- solar corpuscular radiation**
 UF *solar streams*
 GS extraterrestrial radiation
 . solar radiation
 . . **solar corpuscular radiation**
 . . . solar electrons
 . . . solar neutrinos
 . . . solar neutrons
 . . . solar protons
 particles
 . corpuscular radiation
 . . **solar corpuscular radiation**
 . . . solar electrons
 . . . solar neutrinos
 . . . solar neutrons
 . . . solar protons
- RT Advanced Composition Explorer
 M region
- ∞ radiation
 solar planetary interactions
 sudden storm commencements
 sun
 Wind/GGS spacecraft
- solar cosmic rays**
 DEF Cosmic rays supposedly originating in the sun.
 GS extraterrestrial radiation
 . primary cosmic rays
 . . **solar cosmic rays**
 . solar radiation
 . . **solar cosmic rays**
 ionizing radiation
 . cosmic rays
 . . primary cosmic rays
 . . . **solar cosmic rays**
- particles
 . corpuscular radiation
 . . primary cosmic rays
 . . . **solar cosmic rays**
- RT Advanced Composition Explorer
 electron acceleration
 energetic particles
 GRIST (telescope)
 sun
- solar cycles**
 GS cycles
 . **solar cycles**
 . . sunspot cycle
- RT International Quiet Sun Year
 IRIS satellites
 secular variations
 sun
 sunspots
 twenty-seven day variation
- solar diameter**
 DEF Observable dimension of the sun.
 RT astrometry
 ∞ science
 solar eclipses
- solar disk*
 USE **sun**
- solar dynamic power systems**
 DEF Electric power systems using a solar heated working fluid to drive a turboalternator. Primary applications are for space stations and spacecraft.
 GS electric generators
 . solar generators
 . . **solar dynamic power systems**
 electric power supplies
 . **solar dynamic power systems**
- RT Brayton cycle
 heat storage
 photothermal conversion
 Rankine cycle
 solar collectors
 solar energy conversion
 solar thermal electric power plants
 space station power supplies
 spacecraft power supplies
 Stirling cycle
- solar dynamics*
 USE **helioseismology**
- solar eclipses**
 DEF Obscurations of the light of the sun by the moon.
 GS eclipses
 . **solar eclipses**
 occultation
 . lunar occultation
 . . **solar eclipses**
- RT lunar shadow
 solar diameter
 sun
- solar electric propulsion**
 GS propulsion
 . electric propulsion
 . . **solar electric propulsion**
 . low thrust propulsion
 . . solar propulsion
 . . . **solar electric propulsion**
 . spacecraft propulsion
 . . solar propulsion
 . . . **solar electric propulsion**
- RT Deep Space 1 Mission
 solar powered aircraft
 solar thermal propulsion
 space station propulsion
 sun
- solar electrons**
 GS extraterrestrial radiation
 . solar radiation
 . . solar corpuscular radiation
 . . . **solar electrons**
 particles
 . charged particles
 . . energetic particles
- . . . electrons
 . . . **solar electrons**
 . corpuscular radiation
 . . energetic particles
 . . . electrons
 . . . **solar electrons**
 . . solar corpuscular radiation
 . . . **solar electrons**
 . elementary particles
 . . fermions
 . . . leptons
 electrons
 **solar electrons**
- RT sun
- solar energy**
 SN (LIMITED TO DISCUSSIONS OF THE RADIANT ENERGY ORIGINATING FROM THE SUN. FOR SOLAR ENERGY TECHNOLOGIES REFER TO 'SOLAR ENERGY CONVERSION' AND ITS ASSOCIATED TERMS)
 DEF The radiant energy originating from the sun. Approximately 998 of solar energy lies between the wavelengths of 300 to 3,500 nm.
 GS **solar energy**
 . solar flux
 . solar flux density
 . . solar constant
 . insolation
- RT ∞ energy
 IRIS satellites
 solar radiation
 sun
 sunlight
 Surface Meteorology and Solar Energy project
- solar energy absorbers**
 GS absorbers (materials)
 . **solar energy absorbers**
- RT electromagnetic absorption
 photothermal conversion
 selective surfaces
 sun
 Trombe walls
- solar energy conversion**
 GS energy conversion
 . **solar energy conversion**
 . . photothermal conversion
 . . . thermophotovoltaic conversion
 . . photovoltaic conversion
 . . . thermophotovoltaic conversion
 . . solar total energy systems
- RT cogeneration
 ∞ conversion
 energy technology
 heterojunction devices
 hydrogen production
 phase change materials
 photoelectric generators
 photoelectrochemical devices
 renewable energy
 solar arrays
 solar cells
 solar collectors
 solar cooling
 solar dynamic power systems
 solar generators
 solar heating
 solar-pumped lasers
 space cooling (buildings)
 sun
- solar faculae*
 USE **faculae**
- solar flares**
 DEF A rapid release of electromagnetic (visible, radio, ultraviolet, x ray) and particulate (protons, electrons) energy from the sun. Flares are classified according to the optically observed area of the solar surface covered, franging from zero for the smallest to 3 for the largest, and their intensity, either faint, normal, or brilliant.
 GS stellar activity
 . solar activity
 . . **solar flares**
 . stellar flares

solar flux

- . . **solar flares**
- RT coronal loops
- coronal mass ejection
- flare stars
- ∞ flares
- ∞ flash
- Forbush decreases
- force-free magnetic fields
- interplanetary shock waves
- IRIS satellites
- magnetic disturbances
- Solar Maximum Mission
- solar neutrons
- sudden storm commencements
- sun
- sunspots

solar flux

- SN (LIMITED TO ENERGY OR PARTICLES EMITTED FROM THE SUN PER UNIT TIME--SEE SOLAR FLUX DENSITY FOR ENERGY OR PARTICLE EMISSION OR DETECTION RATE PER UNIT AREA)
- GS rates (per time)
- . flux (rate)
- . . **solar flux**
- solar energy
- . **solar flux**
- RT heat flux
- limb brightening
- sun

solar flux density

- SN (LIMITED TO SOLAR ENERGY OR PARTICLE EMISSION OR DETECTION RATE UNIT AREA--SEE SOLAR FLUX FOR EMISSION RATE PER UNIT TIME)
- GS rates (per time)
- . flux density
- . . radiant flux density
- . . . **solar flux density**
- solar constant
- solar energy
- . **solar flux density**
- . . solar constant
- RT electron flux density
- Helios satellites
- illuminance
- irradiance
- limb brightening
- luminance
- luminous intensity
- particle flux density
- proton flux density
- radiance
- radiancy
- radiation pressure
- sun

solar furnaces

- GS heating equipment
- . furnaces
- . . **solar furnaces**
- RT Forbush decreases
- melting
- sun
- vacuum furnaces

solar generators

- UF *solar converters*
- solar power generation*
- solar power sources*
- GS electric generators
- . **solar generators**
- . . solar auxiliary power units
- . . . ASTEC solar turboelectric generator
- . . solar cells
- . . . vertical junction solar cells
- . . solar dynamic power systems
- RT direct power generators
- fuel cells
- paddles
- photoelectric cells
- photoelectric generators
- photovoltaic cells
- ∞ power supplies
- Rankine cycle
- solar energy conversion
- solar sea power plants
- sun
- thermoelectric generators

- turbogenerators

solar granulation

- GS photosphere
- . **solar granulation**
- RT Benard cells
- brightness distribution
- convection currents
- limb brightening
- sun
- surface layers
- temperature effects

solar gravitation

- UF *evection*
- GS gravitation
- . stellar gravitation
- . . **solar gravitation**
- RT sun

solar heating

- GS heating
- . **solar heating**
- RT bioconversion
- hydrothermal systems
- insolation
- phase change materials
- radiant heating
- residential energy
- solar atriums
- solar energy conversion
- space heating (buildings)
- sun
- sunlight
- Trombe walls

solar houses

- DEF Habitable buildings designed with large expanses of glass or other transparent materials to collect solar radiation for heating.
- RT buildings
- domestic energy
- energy technology
- heat storage
- residential energy
- space heating (buildings)
- sun
- Trombe walls

solar instruments

- GS **solar instruments**
- . spectroheliographs
- RT telescopes
- filtergrams
- optical measuring instruments
- radiation measuring instruments
- solar optical telescope
- spectrometers
- sun
- telescopes

solar interior

- GS stellar interiors
- . **solar interior**
- RT helioseismology
- SOHO Mission
- solar activity
- solar convection (astronomy)
- solar physics
- stellar cores
- stellar structure
- sun

solar lasers

- USE **solar-pumped lasers**

solar limb

- RT coronal loops
- limb brightening
- limb darkening
- ∞ limbs
- planetary limb
- sun

solar longitude

- GS longitude
- . **solar longitude**
- RT astronomical coordinates
- celestial reference systems

sun

solar magnetic field

- UF *heliomagnetism*
- GS magnetic fields
- . stellar magnetic fields
- . . **solar magnetic field**
- RT electromagnetic fields
- force-free magnetic fields
- interplanetary magnetic fields
- magnetic field reconnection
- solar convection (astronomy)
- sun
- Transition Region and Coronal Explorer

Solar Maximum Mission

- DEF Use of the multimission modular spacecraft for the study of solar particles, emissions, and flares.
- GS space missions
- . **Solar Maximum Mission**
- . . Solar Maximum Mission-A
- RT ∞ flares
- flux density
- gamma ray spectrometers
- ∞ missions
- multimission modular spacecraft
- polarimeters
- programs
- solar flares
- space programs
- sun
- ultraviolet spectrometers
- Ulysses mission

Solar Maximum Mission-A

- DEF The solar maximum mission spacecraft. Used for SMM-A.
- UF *SMM-A*
- GS space missions
- . Solar Maximum Mission
- . . **Solar Maximum Mission-A**
- RT ∞ missions
- space exploration
- ∞ spacecraft
- sun

Solar Mesosphere Explorer

- DEF A satellite whose experiments provided a comprehensive study of atmospheric ozone and the processes which form and destroy it. The satellite was launched in October of 1981. On May 15, 1989, the mission was terminated due to battery problems.
- GS artificial satellites
- . scientific satellites
- . . Explorer satellites
- . . . **Solar Mesosphere Explorer**
- RT atmospheric composition
- mesosphere
- ozone
- sun

solar nebula

- (added June 2001)
- DEF Clouds of gas and dust from which the Sun, planets, and other solar system bodies formed.
- UF *protosolar nebula*
- GS celestial bodies
- . nebulae
- . . **solar nebula**
- RT meteoritic composition
- planetary evolution
- protoplanets
- protostars
- solar system
- solar system evolution
- star formation
- stellar evolution
- sun

solar neighborhood

- DEF The portion of the Milky Way Galaxy centering around the sun and containing the nearest neighboring stars.
- RT astronomy
- celestial bodies
- local group (astronomy)

- Milky Way Galaxy
Nemesis (star)
solar system
star clusters
stars
sun
- solar neutrinos**
DEF Neutral particles originating from nuclear reactions in the core of the sun.
GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrinos** particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrinos**
. elementary particles
. . fermions
. . . leptons
. . . . neutrinos
. **solar neutrinos**
RT astronomical models
astrophysics
nuclear reactions
stellar models
sun
weakly interacting massive particles
- solar neutrons**
GS extraterrestrial radiation
. solar radiation
. . solar corpuscular radiation
. . . **solar neutrons** particles
. corpuscular radiation
. . solar corpuscular radiation
. . . **solar neutrons**
. elementary particles
. . fermions
. . . neutrons
. . . . **solar neutrons**
. neutral particles
. . neutrons
. . . **solar neutrons**
RT neutron flux density
solar flares
- solar noise*
USE **solar radio emission**
- solar oblateness**
RT oblate spheroids
sun
- solar observatories**
GS observatories
. astronomical observatories
. . **solar observatories**
. . . OSO
. . . . AOSO
. . . . OSO-1
. . . . OSO-2
. . . . OSO-3
. . . . OSO-4
. . . . OSO-5
. . . . OSO-6
. . . . OSO-7
. . . . OSO-8
. . . . OSO-C
. . . Pinhole Occulter Facility
. . . STEREO (observatory)
RT coronagraphs
SOHO Mission
sun
Transition Region and Coronal Explorer
- solar optical telescope**
DEF A 1-M class, high resolution solar telescope which NASA had planned to operate on the Shuttle Spacelab during the mid and late 1980s. Used for SOT.
UF SOT
GS telescopes
. spaceborne telescopes
. . **solar optical telescope**
RT solar instruments
- solar physics
- solar orbits**
SN (RESTRICTED TO ORBITS AROUND THE SUN)
UF *heliocentric orbits*
planetary motion
GS orbits
. **solar orbits**
RT aphelions
circular orbits
∞ Earth motion
ecliptic
elliptical orbits
HEOS satellites
interplanetary trajectories
∞ motion
orbital resonances (celestial mechanics)
perihelions
protoplanets
spacecraft orbits
sun
transfer orbits
- solar oscillations**
DEF Irregular oscillations in the solar atmosphere.
GS oscillations
. stellar oscillations
. . **solar oscillations** stellar motions
. stellar oscillations
. . **solar oscillations**
RT astronomical models
atmospheric models
cataclysmic variables
solar activity effects
solar atmosphere
stellar models
sun
variable stars
- solar parallax**
DEF The angle at the sun subtended by the equatorial diameter of the Earth.
GS parallax
. **solar parallax**
RT astronomy
stellar parallax
sun
- solar physics**
DEF The study of the structure and activities of the Sun.
GS astrophysics
. stellar physics
. . **solar physics**
RT filtergrams
helioseismology
International Quiet Sun Year
photosphere
∞ physics
plasmas (physics)
∞ science
solar convection (astronomy)
solar interior
solar optical telescope
Spartan satellites
sun
Transition Region and Coronal Explorer
- solar planetary interactions**
DEF The interactions and subsequent effects caused by the interactions of solar activity and/or wind with a planet, its magnetic field, its atmosphere, or natural satellites.
GS **solar planetary interactions**
. solar terrestrial interactions
RT Earth magnetosphere
magnetic disturbances
magnetosheath
Nozomi Mars Orbiter
planetary atmospheres
planetary magnetic fields
planetary magnetospheres
planetary magnetotails
plasma interactions
solar activity
- solar activity effects
solar corpuscular radiation
solar wind
solar wind velocity
- solar plasma (radiation)*
USE **solar wind**
- solar ponds (heat storage)**
DEF Large, shallow ponds covered with thin, transparent plastic shields and used for collecting and storing solar heat for conversion to electric power.
RT electric generators
energy conversion
ponds
reservoirs
sun
- solar position**
UF *solar azimuth*
GS position (location)
. **solar position**
RT astrolabes
celestial navigation
equinoxes
seasons
solstices
sun
zenith
- solar power generation*
USE **solar generators**
- solar power satellites**
DEF Proposed very large space structures consisting of hundreds of square miles of solar thermal collectors and/or photovoltaic converters constructed or assembled in space. Power would be transmitted to Earth in microwave form.
GS artificial satellites
. **solar power satellites**
RT large space structures
power beaming
satellite power transmission
sun
- solar power sources*
USE **solar generators**
- solar powered aircraft**
DEF Aircraft powered by solar energy.
RT ∞ aircraft
solar cells
solar electric propulsion
solar propulsion
sun
- solar probes**
GS unmanned spacecraft
. space probes
. . **solar probes**
. . . Helios 1
. . . Helios 2
. . . Helios A
. . . Helios B
. . . Starprobe spacecraft
. . . Sunblazer space probe
RT Helios Project
Pioneer space probes
sun
Ulysses mission
- solar prominences**
DEF Filamentlike protuberances from the chromosphere of the sun. Used for filaments (solar physics).
UF *filaments (solar physics)*
GS prominences
. **solar prominences**
stellar activity
. solar activity
. . **solar prominences**
RT chromosphere
sun
- solar propulsion**
GS propulsion
. low thrust propulsion

- sun
- solar rotation**
 - UF *Carrington rotation*
 - GS gyration
 - . rotation
 - . . stellar rotation
 - . . . **solar rotation**
 - stellar motions
 - . stellar rotation
 - . . **solar rotation**
 - RT sun
 - twenty-seven day variation
- solar sails**
 - GS sails
 - . **solar sails**
 - RT propulsion
 - space flight
 - spacecraft propulsion
 - sun
- solar sea power plants**
 - GS electric generators
 - . direct power generators
 - . . thermoelectric generators
 - . . . **solar sea power plants**
 - RT electric power plants
 - energy conversion
 - ∞ generators
 - ocean temperature
 - ocean thermal energy conversion
 - ∞ power plants
 - solar generators
 - sun
- solar seismology*
 - USE **helioseismology**
- solar selective coatings*
 - USE **selective surfaces**
- solar sensors**
 - UF *sun sensors*
 - RT attitude control
 - guidance sensors
 - IRIS satellites
 - navigation aids
 - navigation instruments
 - star trackers
 - sun
 - tracking (position)
- solar simulation**
 - GS simulation
 - . **solar simulation**
 - RT space environment simulation
 - sun
 - thermal simulation
- solar simulators**
 - DEF Devices which produce thermal energy, equivalent in intensity and spectral distribution to that from the sun, used in testing materials and space vehicles.
 - GS simulators
 - . environment simulators
 - . . **solar simulators**
 - RT space simulators
 - sun
 - test facilities
- solar spectra**
 - GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . stellar spectra
 - **solar spectra**
 - RT absorption spectra
 - astronomical spectroscopy
 - continuous spectra
 - coronas
 - D lines
 - emission spectra
 - filtergrams
 - Fraunhofer lines
 - H alpha line
 - H beta line
 - H gamma line
 - H lines
- infrared spectra
- line spectra
- Lyman spectra
- molecular spectra
- oxygen spectra
- sun
- ultraviolet spectra
- visible spectrum
- x ray spectra
- solar spectrometers**
 - GS measuring instruments
 - . radiation measuring instruments
 - . . actinometers
 - . . . **solar spectrometers**
 - . . . spectrometers
 - . . . **solar spectrometers**
 - RT absorption spectra
 - emission spectra
 - filter wheel infrared spectrometers
 - infrared spectrometers
 - spectroheliographs
 - sun
 - ultraviolet spectrometers
- solar storms**
 - GS stellar activity
 - . solar activity
 - . . **solar storms**
 - storms
 - . **solar storms**
 - RT Forbush decreases
 - ionospheric storms
 - magnetic storms
 - noise storms
 - sun
- solar streams*
 - USE **solar corpuscular radiation**
- solar system**
 - DEF The sun and other celestial bodies within its gravitational influence, including planets, asteroids, satellites, comets, and meteors.
 - GS celestial bodies
 - . **solar system**
 - planetary systems
 - . **solar system**
 - RT Amalthea
 - Amor asteroid
 - Apollo asteroids
 - Arend-Roland comet
 - asteroid belts
 - asteroid capture
 - asteroids
 - Brorsen-Metcalf comet
 - celestial mechanics
 - Charon
 - Chiron
 - comet heads
 - comet nuclei
 - comet tails
 - comets
 - Earth-Moon system
 - gas giant planets
 - Giacobini-Zinner comet
 - Grigg-Skjellerup comet
 - Halley's comet
 - Humason comet
 - IRAS-Araki-Alcock comet
 - Jupiter satellites
 - Kohoutek comet
 - Kuiper belt
 - Mercury surface
 - meteoroids
 - Morehouse comet
 - Mrkos comet
 - natural satellites
 - Oort cloud
 - planetary geology
 - planets
 - protoplanets
 - Quaoar
 - Rhea (astronomy)
 - Saturn rings
 - Schwassmann-Wachmann comet
 - solar nebula
 - solar neighborhood
 - solar system evolution
 - sun
- solar system evolution**
 - (added January 1991)
 - DEF The origin and development of the solar system.
 - GS evolution (development)
 - . **solar system evolution**
 - RT Genesis mission
 - Kuiper belt
 - lunar evolution
 - planetary evolution
 - planetary systems
 - planets
 - protoplanetary disks
 - solar nebula
 - solar system
 - stellar evolution
 - sun
- solar temperature**
 - GS temperature
 - . **solar temperature**
 - RT solar transition region
 - sun
- solar terrestrial interactions**
 - GS solar planetary interactions
 - . **solar terrestrial interactions**
 - RT Cluster Mission
 - corpuscular radiation
 - Earth magnetosphere
 - ∞ flares
 - ∞ interactions
 - International Geosphere-Biosphere program
 - magnetic disturbances
 - magnetic storms
 - magnetosheath
 - Polar/GGS spacecraft
 - space weather
 - STEREO (observatory)
 - storms
 - sun
 - sunspots
 - weather
 - Wind/GGS spacecraft
- Solar Terrestrial Relations Observatory*
 - (added July 2007)
 - USE **STEREO (observatory)**
- solar thermal electric power plants**
 - DEF The use of solar energy to generate steam for producing electricity.
 - GS electric power plants
 - . **solar thermal electric power plants**
 - RT photothermal conversion
 - ∞ power plants
 - solar dynamic power systems
 - thermal energy
- solar thermal propulsion**
 - DEF Proposed energy source for spacecraft propulsion by passing hydrogen through a heat exchanger placed at the focal point of a large parabolic dish solar concentrator mirror.
 - GS propulsion
 - . low thrust propulsion
 - . . solar propulsion
 - . . . **solar thermal propulsion**
 - . spacecraft propulsion
 - . . solar propulsion
 - . . . **solar thermal propulsion**
 - RT propulsion system performance
 - solar electric propulsion
 - sun
- solar total energy systems**
 - DEF Systems for converting solar energy directly into electrical and thermal energy.
- ∞ systems
 - Tempel 2 comet
 - terrestrial planets
 - Toro asteroid
 - trans-Neptunian objects
 - Venus surface
 - Vesta asteroid
 - Voyager 1977 mission
 - West comet

solar transition region

- GS energy conversion
 - . solar energy conversion
 - . . **solar total energy systems**
- total energy systems
 - . **solar total energy systems**
- RT ∞ conversion
 - direct power generators
- ∞ energy
 - sun
- ∞ systems

solar transition region

(added September 1993)

DEF A layer of the solar atmosphere only a few hundred miles thick between the chromosphere and the corona across which the temperature rises rapidly from a few times 10(exp 4) K to the order of 10(exp 6) K.

- GS environments
 - . extraterrestrial environments
 - . . stellar atmospheres
 - . . . solar atmosphere
 - **solar transition region**

- RT chromosphere
- solar corona
- solar temperature
- Transition Region and Coronal Explorer

solar velocity

- GS rates (per time)
 - . **solar velocity**
- velocity
 - . **solar velocity**
- RT sun

solar wind

DEF Streams of plasma flowing approximately radially outward from the sun. Used for solar plasma (radiation).

UF *solar plasma (radiation)*

- GS extraterrestrial radiation
 - . solar radiation
 - . . **solar wind**
- particles
 - . charged particles
 - . . energetic particles
 - . . . plasmas (physics)
 - space plasmas
 - **solar wind**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- space plasmas
- **solar wind**

- RT Advanced Composition Explorer
- AMPTE (satellites)
- Chapman-Ferraro problem
- Cluster Mission
- comet tails
- coronal holes
- coronal mass ejection
- cosmic plasma
- galactic cosmic rays
- Genesis mission
- Grigg-Skjellerup comet
- heliosphere
- hydrogen plasma
- interplanetary gas
- interplanetary medium
- interplanetary shock waves
- M region
- magnetic clouds
- magnetic sails
- magnetopause
- magnetosheath
- planetary magnetotails
- plasmopause
- Polar/GGS spacecraft
- ∞ radiation
- radiation pressure
- SOHO Mission
- solar planetary interactions
- stellar winds
- sun
- Wind/GGS spacecraft

solar wind velocity

- GS dynamic characteristics
 - . flow characteristics

- . . flow velocity
 - . . . **solar wind velocity**
- rates (per time)
 - . flow velocity
 - . . **solar wind velocity**
- . wind velocity
 - . . **solar wind velocity**
- velocity
 - . flow velocity
 - . . **solar wind velocity**
- . wind velocity
 - . . **solar wind velocity**
- RT alpha particles
- Earth magnetosphere
- magnetic disturbances
- magnetohydrodynamic flow
- solar planetary interactions
- stellar winds
- sun
- velocity measurement

solar x-rays

- GS electromagnetic radiation
 - . x rays
 - . . **solar x-rays**
- extraterrestrial radiation
 - . solar radiation
 - . . **solar x-rays**
- ionizing radiation
 - . x rays
 - . . **solar x-rays**
- RT coronal holes
- sun

solar-pumped lasers

- UF *solar lasers*
- GS stimulated emission devices
 - . lasers
 - . . **solar-pumped lasers**
- RT laser pumping
- optical pumping
- solar energy conversion
- solar radiation

soldered joints

- GS joints (junctions)
 - . metal joints
 - . . **soldered joints**
- RT beam leads
- bonded joints
- butt joints
- lap joints
- soldering

soldering

- GS **soldering**
 - . ultrasonic soldering
- RT bonding
- brazing
- fluxes
- heat affected zone
- ∞ joining
- laser welding
- low temperature brazing
- metal bonding
- metal-metal bonding
- sealing
- soldered joints
- solders
- welding

solders

- GS alloys
 - . **solders**
- RT lead alloys
- sealers
- soldering
- tin alloys
- zinc alloys

solenoid valves

- GS valves
 - . **solenoid valves**
- RT automatic control valves
- electric control
- ∞ electric equipment
 - electric relays
 - electric switches
 - hydraulic control
 - off-on control

solenoids

solenoids

- SN (EXCLUDES METEOROLOGICAL SOLENOIDS)
- RT actuators
- electric relays
- electromagnets
- magnet coils
- solenoid valves
- toroidal plasmas

solettas

- DEF Orbiting solar mirrors (reflectors).
- GS mirrors
 - . **solettas**
- reflectors
 - . solar reflectors
 - . . **solettas**
- RT ∞ platforms
- ∞ spacecraft

sol-gel processes

- RT alkoxides
- ceramic nuclear fuels
- nuclear fuels
- ∞ processes
- xerogels

solid argon

USE **solidified gases**

solid cryogen cooling

- DEF Cooling with solidified cryogenic fluids.
- GS cooling
 - . **solid cryogen cooling**
- RT cryogenic fluids
- cryogenics
- liquefied gases

solid cryogenics

- DEF Solidified cryogenic fluids.
- GS gases
 - . solidified gases
 - . . **solid cryogenics**
- . . . solid nitrogen
- solids
 - . solidified gases
 - . . **solid cryogenics**
- . . . solid nitrogen
- RT cooling systems
- cryogenic equipment
- cryogenics
- liquid nitrogen

solid electrodes

- GS electrodes
 - . **solid electrodes**
- RT transconductance

solid electrolytes

- DEF Single crystals, certain alloys, alkaline metals, and other compact compounds used in galvanic cells (batteries).
- GS conductors
 - . electrolytes
 - . . **solid electrolytes**
- RT solid oxide fuel cells

solid lubricants

- SN (EXCLUDES SEMISOLIDS SUCH AS GREASES)
- GS lubricants
 - . **solid lubricants**
- RT binders (materials)
- gas lubricants
- graphite
- self lubricating materials

solid mechanics

- GS mechanics (physics)
 - . **solid mechanics**
- . . fracture mechanics
- RT computational mechanics
- continuum mechanics
- finite element method
- mechanical properties
- meshfree methods
- ∞ science
- solids

structural analysis

solid nitrogen

GS chemical elements
 . nitrogen
 . . **solid nitrogen**
 gases
 . nitrogen
 . . **solid nitrogen**
 . solidified gases
 . . solid cryogenes
 . . . **solid nitrogen**
 solids
 . solidified gases
 . . solid cryogenes
 . . . **solid nitrogen**

RT cryogenics
 refrigerants

solid oxide fuel cells
(added December 1995)

GS electric generators
 . direct power generators
 . . fuel cells
 . . . **solid oxide fuel cells**
 electrochemical cells
 . fuel cells
 . . **solid oxide fuel cells**

RT oxides
 solid electrolytes

solid phases

GS **solid phases**
 . Laves phases

RT eutectics
 gas-metal interactions
 gas-solid interfaces
 liquid phases
 liquid-solid interfaces
 liquidus
 metallic hydrogen
 phase diagrams
 phase separation (materials)
 ∞ phases
 solidified gases
 solidus
 syntectic alloys

solid propellant combustion

DEF The burning of solid propellants by rapid oxidation and production of expanding gases, heat, and light.

GS combustion
 . propellant combustion
 . . **solid propellant combustion**
 . . . solid propellant ignition

RT burning rate
 combustion stability
 erosive burning
 fuel combustion
 heat generation
 metal combustion
 propellant chemistry
 propellant consumption

solid propellant ignition

GS combustion
 . propellant combustion
 . . solid propellant combustion
 . . . **solid propellant ignition**
 ignition
 . **solid propellant ignition**

RT hybrid propellants
 hypergolic rocket propellants
 igniters
 ignition temperature
 inhibitors
 metal combustion
 pyrophoric materials
 squibs

solid propellant rocket engines

DEF Rocket engines fueled with solid propellants. Such motors consist essentially of a combustion chamber containing the propellant, and a nozzle for the exhaust jet, although they often contain other components, such as grids or liners.

GS engines
 . rocket engines

. . **solid propellant rocket engines**

. . . Algol engine
 . . . apogee boost motors
 . . . ASROC engine
 . . . Hercules engine
 . . . M-46 engine
 . . . M-55 engine
 . . . M-56 engine
 . . . M-57 engine
 . . . Nike booster rocket engines
 . . . P-1 engine
 . . . SL-3 rocket engine
 . . . Space Shuttle Boosters
 Advanced Solid Rocket Motor (STS)
 . . . SYNCOM apogee engines
 . . . TX-77 engine
 . . . TX-354 engine
 . . . X-248 engine
 . . . X-254 engine
 . . . X-258 engines
 X-258-B1 engine
 . . . X-259 engine
 . . . XM-33 engine

RT air slew missiles
 Antares rocket vehicle
 Arcas rocket vehicles
 Argo rocket vehicles
 Astrobee 1500 rocket vehicle
 Astrobee rocket vehicles
 Athena rocket vehicle
 BE-3 engine
 Berenice rocket vehicle
 Black Brant 1 sounding rocket
 Black Brant 2 sounding rocket
 Black Brant 3 sounding rocket
 Black Brant 4 sounding rocket
 Black Brant 5 sounding rocket
 Black Brant sounding rockets
 Blue Goose missile
 Blue Scout rocket vehicle
 BOMARC A missile
 BOMARC B missile
 bonded joints
 booster rocket engines
 burning rate
 burnout
 Cajun rocket vehicle
 Diamant launch vehicle
 ducted rocket engines
 EXOS sounding rocket
 Falcon missile
 Folding Fin aircraft rocket vehicle
 Genie rocket vehicle
 Hawk missile
 Honest John rocket vehicle
 hybrid propellant rocket engines
 ∞ hybrid rocket engines
 integral rocket ramjets
 internal combustion engines
 Jaguar rocket vehicle
 JATO engines
 Javelin rocket vehicle
 Juno 1 launch vehicle
 Juno 2 launch vehicle
 Juno launch vehicles
 Jupiter C rocket vehicle
 Kappa 8 rocket vehicle
 Kappa 9 rocket vehicle
 Kappa rocket vehicles
 Lambda rocket vehicles
 liquid propellant rocket engines
 Little Joe 2 launch vehicle
 Little John rocket vehicle
 Loki rocket vehicle
 Mace missiles
 Matra missile
 Mauler missile
 Meteor 1 rocket vehicle
 Minuteman ICBM
 Nike-Ajax missile
 Nike-Apache rocket vehicle
 Nike-Cajun rocket vehicle
 Nike-Hercules missile
 Nike-Javelin rocket vehicle
 Nike-Tomahawk rocket vehicle
 Nike-Zeus missile
 Pershing missile
 Phoenix sounding rocket

polaris missiles
 RAM B launch vehicle
 Redeye missile
 Regulus missile
 restartable rocket engines
 retrorocket engines
 Rubis rocket vehicle
 Scout launch vehicle
 sergeant missiles
 Shrike missile
 Skua rocket vehicles
 Skybolt missile
 Skylark rocket vehicle
 Space Shuttle upper stage D
 Sparrow 2 missile
 Sparrow missiles
 Sprint missile
 SS-11 missile
 Sunblazer space probe
 sustainer rocket engines
 Talos missile
 tartar missile
 terrier missile
 Thor Able rocket vehicle
 Thor Delta launch vehicle
 Thor launch vehicles
 Titan launch vehicles
 Trailblazer 1 reentry vehicle
 Trailblazer 2 reentry vehicle
 ullage rocket engines
 vanguard 2 launch vehicle
 Vernier engines
 WASP sounding rocket
 X-17 reentry vehicle
 Zuni rocket vehicle

solid propellants

DEF Specifically, a rocket propellant in the solid form, usually containing both fuel and oxidizer combined or mixed, and formed into a monolithic (not powdered or granulated) grain.

GS propellants

. **solid propellants**

. . case bonded propellants
 . . composite propellants
 . . nitramine propellants
 . . plastic propellants
 . . solid rocket propellants
 . . . double base rocket propellants
 . . . HMX
 . . . HTPB propellants
 . . . metal propellants

RT

aircraft fuels
 chemical fuels
 colloidal propellants
 gelled propellants
 high temperature propellants
 hybrid propellants
 inhibitors
 metal fuels
 nitroguanidine
 plasticizers
 propellant binders
 propellant grains
 RDX
 rocket propellants
 storable propellants

solid rocket binders

GS additives

. propellant additives
 . . propellant binders
 . . . **solid rocket binders**
 binders (materials)
 . propellant binders
 . . **solid rocket binders**

RT glycidyl azide polymer
 plasticizers

Solid Rocket Boosters (Space Shuttle)

USE **Space Shuttle Boosters**

solid rocket propellants

GS propellants

. rocket propellants
 . . **solid rocket propellants**
 . . . double base rocket propellants
 . . . HMX
 . . . HTPB propellants
 . . . metal propellants

solid solutions

- . solid propellants
- .. **solid rocket propellants**
- ... double base rocket propellants
- ... HMX
- ... HTPB propellants
- ... metal propellants
- RT ammonium perchlorates
- burning rate
- case bonded propellants
- composite propellants
- Domino propellants
- gelled rocket propellants
- hybrid propellants
- liquid rocket propellants
- monopropellants
- potassium perchlorates
- propellant grains
- RDX
- rocket engines
- slurry propellants

solid rotation

USE **rotating bodies**

solid solutions

- GS mixtures
- . solutions
- .. **solid solutions**
- solids
- .. **solid solutions**
- RT aging (metallurgy)
- alloying
- alloys
- antiphase boundaries
- cluster variation method
- liquid phases
- liquidus
- melting points
- order-disorder transformations
- Ostwald ripening
- phase diagrams
- precipitation hardening
- supersaturation
- ternary systems

solid state

- RT crystallization
- energy gaps (solid state)
- melting points
- metallic hydrogen
- solids

solid state devices

- DEF Devices which utilize the electric, magnetic, and photic properties of the solid materials, e.g., binary magnetic cores or transistors.
- GS electronic equipment
- . **solid state devices**
- .. cryotrons
- .. crystal rectifiers
- .. metal-nitride-oxide-semiconductors
- .. multispectral linear arrays
- .. semiconductor devices
- ... avalanche diodes
- ... cryosar
- ... Barritt diodes
- ... charge transfer devices
- ... bucket brigade devices
- ... charge coupled devices
- ... charge injection devices
- ... germanium diodes
- ... heterojunction devices
- ... high electron mobility transistors
- ... MODFETS
- ... junction diodes
- ... MIM diodes
- ... step recovery diodes
- ... light emitting diodes
- ... metal oxide semiconductors
- ... CMOS
- ... ITO (semiconductors)
- ... SOS (semiconductors)
- ... MIM (semiconductors)
- ... MIS (semiconductors)
- ... MOM (semiconductors)
- ... MSM (semiconductors)
- ... NDM semiconductor devices
- ... neuristors
- ... parametric diodes
- ... photodiodes

- ... photovoltaic cells
- ... solar cells
- ... vertical junction solar cells
- ... Schottky diodes
- ... semiconductor lasers
- ... aluminum gallium arsenide lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... YLF lasers
- ... SOI (semiconductors)
- ... thermistors
- ... thyristors
- ... silicon controlled rectifiers
- ... transferred electron devices
- ... transistor amplifiers
- ... transistors
- ... bipolar transistors
- ... field effect transistors
- ... charge flow devices
- ... JFET
- ... MODFETS
- ... high electron mobility transistors
- ... MODFETS
- ... junction transistors
- ... JFET
- ... phototransistors
- ... silicon transistors
- ... SOS (semiconductors)
- ... single electron transistors
- ... cascode devices
- ... quantum well infrared photodetectors
- ... resonant tunneling diodes
- ... TRAPATT devices
- ... varactor diodes
- ... varistors
- ... SIS (semiconductors)
- ... SIS (superconductors)
- ... solid state lasers
- ... aluminum gallium arsenide lasers
- ... DBR lasers
- ... fiber lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... ruby lasers
- ... YAG lasers
- ... YLF lasers

RT

- amplifiers
- bubble technique
- capacitors
- circuits
- ∞ devices
- electric bridges
- laser cavities
- lasers
- MBM junctions
- miniature electronic equipment
- oscillators
- photomasks
- rectifiers
- resistors
- signal generators
- superconductors (materials)
- thin films
- threshold voltage
- transformers
- wafers

solid state lasers

- GS electronic equipment
- . solid state devices
- .. **solid state lasers**
- ... aluminum gallium arsenide lasers
- ... DBR lasers
- ... fiber lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... ruby lasers
- ... YAG lasers
- ... YLF lasers
- stimulated emission devices
- . lasers
- .. **solid state lasers**
- ... aluminum gallium arsenide lasers
- ... DBR lasers

- ... fiber lasers
- ... gallium arsenide lasers
- ... quantum cascade lasers
- ... quantum well lasers
- ... ruby lasers
- ... YAG lasers
- ... YLF lasers

RT

- continuous wave lasers
- distributed feedback lasers
- infrared lasers
- laser cavities
- Q switched lasers
- semiconductor lasers
- surface emitting lasers

∞ solid state physics

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF The study of the physical structure and properties of solid matter, including electrical conduction in metal crystals and semiconductors, superconductivity, and photoconductivity.

RT condensed matter physics

- crystallography
- electrical properties
- electron mobility
- energy gaps (solid state)
- forbidden transitions
- hole mobility
- magnetic properties
- optical properties
- ∞ physics
- quantum electronics
- resonant tunneling diodes
- ∞ science
- semiconductors (materials)
- superconductivity
- theoretical physics
- thin films
- transport properties

solid surfaces

- GS **solid surfaces**
- . crystal surfaces
- RT liquid surfaces
- metal surfaces
- surface cracks
- surface finishing
- surface properties
- ∞ surfaces

solid suspensions

- GS mixtures
- . **solid suspensions**
- RT colloidal propellants
- composite materials
- metallography
- particulates
- phase diagrams
- ∞ suspensions

solid wastes

- GS wastes
- resistors
- RT **solid wastes**
- composting
- garbage
- human wastes
- industrial wastes
- landfills
- liquid wastes
- metabolic wastes
- pollution
- radioactive wastes
- residues
- sewage
- sludge
- waste disposal
- waste energy utilization
- waste utilization

solidification

- UF *rapid solidification*
- GS **solidification**
- . directional solidification (crystals)
- . melt spinning
- RT casting
- castings
- coagulation
- crystallization

- freezing
gelation
ingots
melting points
mushy zones
occlusion
Ostwald ripening
phase transformations
rheocasting
∞ setting
∞ solidified gases
transition temperature
vitrification
- solidified gases**
UF *solid argon*
GS gases
. **solidified gases**
. . . solid cryogenes
. . . solid nitrogen
solids
. **solidified gases**
. . . solid cryogenes
. . . solid nitrogen
RT cryogenic fluids
cryogenic temperature
cryogenics
freezing
low temperature physics
melting points
metallic hydrogen
solid phases
solidification
- solids**
GS **solids**
. organic solids
. solid solutions
. solidified gases
. . . solid cryogenes
. . . solid nitrogen
RT ∞ bodies
∞ fluids
∞ materials
metallic hydrogen
phase transformations
semisolids
solid mechanics
solid state
thermochromatic materials
vapor phases
- solids flow**
GS fluid flow
. **solids flow**
RT ∞ flow
flow measurement
flow theory
mass flow
multiphase flow
particle size distribution
steady flow
two phase flow
uniform flow
unsteady flow
- solid-solid interfaces**
GS interfaces
. **solid-solid interfaces**
RT antiphase boundaries
gas-solid interfaces
liquid-solid interfaces
surface properties
- solidus**
RT binary systems (materials)
liquid phases
liquidus
solid phases
- solisons**
RT circuits
diodes
integrators
ion currents
- solitary waves**
DEF Nonlinear waves capable of propagation without spreading out, breaking up, or dissipating their strength over distance. Used for Solitrons.
UF *solitons*
GS traveling waves
. **solitary waves**
RT backward waves
cnoidal waves
elastic waves
electromagnetic radiation
plane waves
pulses
radio waves
rates (per time)
velocity
- solithanes**
RT elastomers
∞ polymers
synthetic rubbers
- solitons*
USE **solitary waves**
- Solomon computers**
GS data processing equipment
. computers
. . . digital computers
. . . **Solomon computers**
- Solrad 10 satellite*
USE **Explorer 44 satellite**
- solstices**
DEF The two points of the ecliptic farthest from the celestial equator; two points on the celestial sphere occupied by the sun at maximum declination.
RT equinoxes
seasons
solar position
summer
winter
- solubility**
UF *immiscibility*
miscibility
RT clarity
concentration (composition)
diffusivity
dissolved gases
dissolving
gas-solid interfaces
Henry law
hydrophobicity
hygroscopicity
incompatibility
liquid phases
liquid-gas mixtures
liquid-liquid interfaces
liquid-vapor interfaces
miscibility gap
mixtures
phase diagrams
phase separation (materials)
precipitation (chemistry)
solutions
supercritical fluids
thermodynamic properties
thixotropy
turbidity
viscosity
- solutes**
RT dissolved organic matter
dissolving
solutions
- ∞ **solution**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT dissolving
problem solving
solutions
- solutions**
GS mixtures
. **solutions**
. . . aqueous solutions
. . . gas mixtures
. . . air
- alveolar air
. . . . compressed air
. . . . expired air
. . . . high temperature air
. . . . liquid air
. . . . detonable gas mixtures
. . . . photographic emulsions
. . . . nuclear emulsions
. . . . solid solutions
RT azeotropes
composition (property)
dissolved gases
emulsions
eutectics
Henry law
Raoult law
solubility
solutes
∞ solution
solvents
titration
- solvation**
DEF The process of swelling, getting, or dissolving of a material by a solvent; for resins, the solvent can be plasticized.
RT aqueous solutions
chemical reactions
reaction kinetics
solvents
- solvent extraction**
GS extraction
. **solvent extraction**
RT ion extraction
purification
∞ separation
- solvent refined coal**
DEF Low-sulfur distillate fuels from coal, plus the byproducts of methane, light hydrocarbons, and naphtha, all useful for making pipeline gas, ethylene, and high-octane unleaded gasoline.
GS fuels
. chemical fuels
. . . hydrocarbon fuels
. . . fossil fuels
. . . . coal
. . . . **solvent refined coal**
resources
. Earth resources
. . . fossil fuels
. . . coal
. . . . **solvent refined coal**
rocks
. sedimentary rocks
. . . carbonaceous rocks
. . . coal
. . . . **solvent refined coal**
RT benzene
bitumens
carbonaceous materials
coal liquefaction
coal utilization
fractionation
fuel oils
gasoline
hydrocarbon fuel production
methane
product development
- solvent retention**
DEF The occurrence of solvent residues in chemical or material end products or intermediates.
RT dissolving
solvents
- solvents**
DEF The liquid part of an aerosol formulation used to dissolve solid or other liquid parts. Used for thinners.
UF *thinners*
GS **solvents**
. tetrahydrofuran
. turpentine
RT additives
coatings
dilutents

solvolysis

dissolving
extraction
furans
paint removal
solutions
solvation
solvent retention
solvolysis
toluene
triacetin
trichloroethylene

solvolysis

GS reclamation
. materials recovery
. . **solvolysis**
RT recycling
solvents

Somalia

GS nations
. **Somalia**
RT Africa

Sommerfeld approximation

GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **Sommerfeld approximation**
RT antenna radiation patterns
directional antennas
electromagnetic fields
radio transmission

Sommerfeld waves

GS electromagnetic radiation
. **Sommerfeld waves**
surface waves
. **Sommerfeld waves**
RT dielectric properties
electric conductors

sonar

DEF A method or system, analogous to radar used under water, in which high frequency sound waves are emitted so as to be reflected back from objects, and used to detect the objects of interest. Called asdic by the British. (From SOund, NAvigation, and Ranging.)

GS **sonar**
. sonobuoys
RT distance measuring equipment
echo sounding
echo suppressors
hydrophones
LOFAR
navigation aids
sound localization
sound ranging
ultrasonic wave transducers
underwater acoustics
underwater communication

sondes

UF *meteorological probes*
GS measuring instruments
. **sondes**
. . dropsondes
. . Judi-Dart rocket
. . radiosondes
. . . ionosondes
. . . rawinsondes
. . ozonesondes
RT Apache rocket vehicle
Cajun rocket vehicle
 ∞ probes
sounding
sounding rockets

sonic anemometers

GS measuring instruments
. anemometers
. . **sonic anemometers**
RT acoustics
flowmeters
hot-film anemometers
velocity measurement

sonic booms

DEF Noises created by shock waves that

emanate from aircraft or other objects traveling at or above sonic velocity.

GS elastic waves
. shock waves
. . **sonic booms**
. sound waves
. . noise (sound)
. . . aircraft noise
. . . . **sonic booms**
RT acoustic velocity
aerodynamic noise
 ∞ boom
caustic lines
jet aircraft noise
supersonic flight
transonic flight

sonic fatigue

USE **acoustic fatigue**

sonic flow

USE **transonic flow**

sonic nozzles

RT acoustic nozzles
conical nozzles
 ∞ nozzles
supersonic nozzles
transonic flow
transonic nozzles

sonic soldering

USE **ultrasonic soldering**

sonic speed

USE **acoustic velocity**

sonic waveguides

USE **acoustic delay lines**

sonobuoys

GS radio equipment
. radio transmitters
. . **sonobuoys**
sonar
. **sonobuoys**
transmitters
. radio transmitters
. . **sonobuoys**
RT antisubmarine warfare
hydrophones
underwater acoustics
underwater communication

sonochemistry

(added June 1998)
USE **ultrasonic processing**

sonograms

RT recording instruments
sound waves
whistler recorders
whistlers

sonoholography

USE **acoustical holography**

sonoluminescence

GS emission
. light emission
. . luminescence
. . . **sonoluminescence**

soot

GS carbonaceous materials
. **soot**
particles
. particulates
. . **soot**
products
. reaction products
. . combustion products
. . . **soot**
RT air pollution
carbon
fire damage
Glory Mission satellite
smoke

smoke abatement

sorbates

DEF Gas taken up by sorbents.
RT sorbents
sorption

sorbents

DEF The materials which take up gas by sorption.
GS **sorbents**
. adsorbents
. adsorbents
RT sorbates
sorption

Soret coefficient

GS coefficients
. diffusion coefficient
. . **Soret coefficient**
transport properties
. diffusion coefficient
. . **Soret coefficient**
RT liquid flow
thermal diffusion

sorghum

DEF Any of a number of related cereal grasses with sweet juicy stalks cultivated as farm crops for grain, fodder, syrup, etc.

GS farm crops
. grains (food)
. . **sorghum**
plants (botany)
. grasses
. . **sorghum**
RT agriculture
crop identification
 ∞ crops
Earth resources

sorption

DEF The taking up of gas by absorption, adsorption, chemisorption, or any combination of these processes. Used for cryosorption.

UF *cryosorption*
GS **sorption**
. adsorption
. . chemisorption
RT ∞ absorption
bioavailability
chromatography
concentrating
extraction
gas chromatography
hydrophobicity
liquid chromatography
material absorption
permeating
 ∞ separation
sorbates
sorbents
surface properties

sortie can

USE **sortie systems**

sortie lab

USE **sortie systems**

sortie systems

UF *sortie can*
sortie lab
GS payloads
. **sortie systems**
RT space laboratories
Space Shuttle payloads
space shuttles
space stations
Spacelab payloads

sorting

USE **classifying**

sorting algorithms

(added November 1994)

DEF An algorithm that finds the most significant element in a set which is then compared to each element in succession to achieve an efficient sorting process.

GS mathematical logic
 . algorithms
 . . **sorting algorithms**
 RT ∞ classifying
 computer techniques
 heuristic methods
 hypercube multiprocessors
 iterative solution
 parallel processing (computers)
 Poisson density functions
 selection
 sequential analysis

SOS (semiconductors)

UF *silicon-on-sapphire junctions*
silicon-on-sapphire semiconductors
silicon-on-sapphire transistors
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . metal oxide semiconductors
 **SOS (semiconductors)**
 transistors
 silicon transistors
 **SOS (semiconductors)**
 semiconductors (materials)
 . metal oxide semiconductors
 . . **SOS (semiconductors)**
 RT ITO (semiconductors)
 SIS (semiconductors)
 SOI (semiconductors)

SOT

USE **solar optical telescope**

sound

USE **acoustics**

sound absorption

USE **sound transmission**

sound amplification

GS amplification
 . **sound amplification**
 RT acoustic attenuation
 acoustic excitation
 acoustics

sound barrier

USE **acoustic velocity**

sound detecting and ranging

(added February 1993)
 UF *acoustic detection*
 RT acoustic scattering
 atmospheric temperature
 ∞ instruments
 measuring instruments
 meteorological instruments
 meteorology
 temperature measurement

sound detectors

USE **sound transducers**

sound fields

DEF Regions containing sound waves.
 RT acoustics
 field theory (physics)
 microsonics
 propeller noise

sound fixing and ranging

DEF A method for acoustically tracking submerged bodies or floats utilizing fixed hydrophones. Used for SFAR and SOFAR.
 UF *SFAR*
SOFAR
 RT sound ranging
 sound transmission
 underwater acoustics

sound frequencies

USE **acoustic frequencies**

sound generators

DEF Transducers which convert electrical, mechanical or other forms of energy into sound. Used for acoustic generators.
 UF *acoustic generators*
 RT acoustic nozzles

audio frequencies
 auditory stimuli
 bells
 continuous noise
 ∞ generators
 horns
 loudspeakers
 noise generators
 radiation sources
 signal generators
 ∞ signals
 sirens
 warning systems

sound holography

USE **acoustical holography**

sound intensity

DEF In a specified direction at a point, the average rate of sound energy transmitted in the specified direction through a unit area normal to this direction at the point considered.

GS acoustic properties
 . **sound intensity**
 . . zero sound rates (per time)
 . flux density
 . . **sound intensity**
 . . . zero sound

RT

auditory stimuli
 bioacoustics
 effective perceived noise levels
 loudness
 noise intensity
 noise measurement
 radiant flux density
 signal fading
 signal fading rate
 sirens

sound localization

GS perception
 . **sound localization**
 RT auditory perception
 bearing (direction)
 binaural hearing
 detection
 echo sounding
 ∞ orientation
 position indicators
 range finders
 sonar
 space perception
 tracking (position)

sound measurement

USE **acoustic measurement**

sound perception

USE **auditory perception**

sound pressure

DEF At a point, the total instantaneous pressure at that point in the presence of a sound wave minus the static pressure at that point.

GS pressure
 . radiation pressure
 . . **sound pressure**
 RT acoustic measurement
 acoustic velocity
 explosions
 flux density
 loudness
 noise (sound)
 shock waves
 static pressure

sound propagation

GS transmission
 . wave propagation
 . . acoustic propagation
 . . . **sound propagation**
 RT acoustics
 attenuation
 ∞ conduction
 diffusion
 noise generators
 noise propagation

shock wave propagation

sound ranging

GS rangefinding
 . **sound ranging**
 RT detection
 distance measuring equipment
 echo sounding
 position (location)
 sonar
 sound fixing and ranging
 target acquisition
 tracking (position)

sound transducers

UF *sound detectors*
 GS transducers
 . **sound transducers**
 . . electroacoustic transducers
 . . . hydrophones
 . . . loudspeakers
 . . . microphones
 RT electroacoustics
 ∞ radiators
 signal detection
 signal detectors
 underwater acoustics
 underwater communication

sound transmission

UF *sound absorption*
 GS transmission
 . **sound transmission**
 RT ∞ absorption
 acoustics
 attenuation
 audio frequencies
 ∞ conduction
 earphones
 elastic waves
 energy absorption
 monaural signals
 multipath transmission
 ∞ paths
 propeller noise
 signal transmission
 sirens
 sound fixing and ranging
 telephony
 thermoclines
 wave propagation

sound velocity

USE **acoustic velocity**

sound waves

SN (ELASTIC WAVES IN THE AUDIBLE RANGE)
 DEF Mechanical disturbances advancing with infinite velocity through an elastic medium, and consisting of longitudinal displacements of the medium, i.e., consisting of compressional and rarefactional displacements parallel to the direction of advance of the disturbance; a longitudinal wave. Sound waves are small amplitude adiabatic oscillations. Used for acoustic radiation and acoustic vibrations.
 UF *acoustic radiation*
acoustic vibrations
 GS elastic waves
 . **sound waves**
 . . electroacoustic waves
 . . ion acoustic waves
 . . Lamb waves
 . . noise (sound)
 . . . aircraft noise
 blade slap noise
 jet aircraft noise
 propeller noise
 sonic booms
 . . engine noise
 . . . rocket engine noise
 . . flow noise
 . . thermal noise
 . . . aerodynamic noise
 blade slap noise
 propeller noise
 screech tones
 RT acoustic coupling
 acoustic frequencies

sounding

- acoustic measurement
- acoustic properties
- acoustic streaming
- acoustical holography
- acoustics
- aeolian tones
- audio frequencies
- auditory perception
- ∞ blasts
- computational aeroacoustics
- deep scattering layers
- detonation waves
- diffusion
- longitudinal waves
- loudness
- Mach cones
- magnetoelastic waves
- microsonics
- noise pollution
- noise prediction (aircraft)
- phonons
- plane waves
- polarized elastic waves
- ∞ radiation
- reverberation
- shock waves
- sodar
- sonograms
- surface acoustic wave devices
- thermoacoustic effects
- ultrasonic radiation
- ∞ waves

sounders

USE **sounding**

sounding

DEF Any penetration of the natural environment for scientific observation usually by sounding rockets or balloons. Used for sounders.

UF *sounders*

GS **sounding**

- . acoustic sounding
- . atmospheric sounding
- . balloon sounding
- . echo sounding
- . ionospheric sounding
- . microwave sounding
- . rocket sounding
- . satellite sounding

RT

- bathymeters

- depth measurement

∞ measurement

- meteorological balloons
- meteorological flight
- ROBIN balloons
- sondes

sounding rockets

DEF Rockets designed primarily for routine upper air observation (as opposed to research) in the lower 250,000 feet of the atmosphere, especially that portion inaccessible to balloons, i.e., above 100,000. Used for meteorological rockets and rocket sondes.

UF *meteorological rockets*
rocket sondes

GS **sounding rockets**

- . . Aerobee rocket vehicle
- . . Antares rocket vehicle
- . . Apache rocket vehicle
- . . Arcas rocket vehicles
- . . Aries sounding rocket
- . . Astrobee rocket vehicles
- . . . Astrobee 1500 rocket vehicle
- . . Black Brant sounding rockets
- . . . Black Brant 1 sounding rocket
- . . . Black Brant 2 sounding rocket
- . . . Black Brant 3 sounding rocket
- . . . Black Brant 4 sounding rocket
- . . . Black Brant 5 sounding rocket
- . . Cajun rocket vehicle
- . . Dornier paraglider rocket vehicle
- . . EXOS sounding rocket
- . . Jaguar rocket vehicle
- . . Judi-Dart rocket
- . . Kappa rocket vehicles
- . . . Kappa 8 rocket vehicle
- . . . Kappa 9 rocket vehicle

- . . Lambda rocket vehicles
- . . Loki rocket vehicle
- . . Petrel sounding rocket
- . . Phoenix sounding rocket
- . . Skua rocket vehicles
- . . Skylark rocket vehicle
- . . Venus fly trap rocket vehicle
- . . Veronique rocket vehicles
- . . Vertical rockets
- . . WASP sounding rocket

RT acoustic sounding

Argo rocket vehicles

ionosondes

Javelin rocket vehicle

meteorological instruments

meteorological satellites

Nike-Javelin rocket vehicle

payload control

radiosondes

rocket sounding

sondes

Viking rocket vehicle

sounds (topographic features)

GS **sounds (topographic features)**

- . Block Island Sound (RI)
- . McMurdo sound
- . Prince William Sound (AK)

RT Chesapeake Bay (US)

inlets (topography)

oceans

rivers

water

sound-sound interactions

RT harmonics

∞ interactions

intermodulation

wave dispersion

source programs

GS computer programs

. **source programs**

RT open source licensing (computers)

∞ sources

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT causes

derivation

electron sources

extragalactic radio sources

ion sources

nonpoint sources

radiation sources

radio sources (astronomy)

sinks

South Africa

USE **Republic of South Africa**

South America

GS continents

. **South America**

RT Andes Mountains (South America)

Argentina

Bolivia

Brazil

Central America

Chile

Colombia

Ecuador

French Guiana

Guyana

Magdalena-Cauca Valley (Colombia)

Paraguay

Peru

Surinam

Trinidad and Tobago

Uruguay

Venezuela

South Carolina

GS nations

. United States

. . **South Carolina**

RT Sand Hills Region (GA-NC-SC)

South Dakota

GS nations

- . United States
- . . **South Dakota**

RT Black Hills (SD-WY)

Missouri River (US)

South Korea

UF *Republic of Korea*

GS nations

. **South Korea**

RT Asia

∞ Korea

North Korea

South Vietnam

USE **Vietnam**

South West Africa

USE **Namibia**

Southeast Asia

GS regions

. **Southeast Asia**

RT Asia

Vietnam

Southern California

GS regions

. **Southern California**

RT California

Mexico

Nevada

Pacific Ocean

United States

Southern Hemisphere

GS **Southern Hemisphere**

. Antarctic regions

. . McMurdo sound

. . Ross ice shelf

RT ∞ hemispheres

Northern Hemisphere

Southern Oscillation

Southern sky

Southern Oscillation

GS oscillations

. **Southern Oscillation**

RT anomalies

atmospheric circulation

atmospheric pressure

climate

el Nino

Madden-Julian Oscillation

periodic variations

pressure oscillations

quasi-biennial oscillation

Southern Hemisphere

Southern sky

DEF That portion of the celestial sphere between the celestial equator and the celestial south pole (and generally visible from areas in the Earth's southern hemisphere).

RT astronomical catalogs

astronomical observatories

astronomical photography

astronomical spectroscopy

astronomy

northern sky

sky surveys (astronomy)

Southern Hemisphere

Southern Yemen

UF *Aden*

GS nations

. **Southern Yemen**

regions

. **Southern Yemen**

RT Asia

sovereignty

RT international cooperation

international law

politics

voting

Soviet satellites

GS artificial satellites

. **Soviet satellites**

. . Cosmos 782 satellite

. . Cosmos 936 satellite

- . . Cosmos satellites
 - . . . Cosmos 2 satellite
 - . . . Cosmos 3 satellite
 - . . . Cosmos 5 satellite
 - . . . Cosmos 6 satellite
 - . . . Cosmos 14 satellite
 - . . . Cosmos 44 satellite
 - . . . Cosmos 54 satellite
 - . . . Cosmos 71 satellite
 - . . . Cosmos 110 satellite
 - . . . Cosmos 137 satellite
 - . . . Cosmos 144 satellite
 - . . . Cosmos 149 satellite
 - . . . Cosmos 166 satellite
 - . . . Cosmos 186 satellite
 - . . . Cosmos 188 satellite
 - . . . Cosmos 206 satellite
 - . . . Cosmos 213 satellite
 - . . . Cosmos 224 satellite
 - . . . Cosmos 225 satellite
 - . . . Cosmos 381 satellite
 - . . . Cosmos 954 satellite
 - . . . Cosmos 1129 satellite
 - . . . Interkosmos satellites
 - . . . Granat satellite
 - . . . Molniya satellites
 - . . . Prognoz satellites
 - . . . Proton satellites
 - Proton 1 satellite
 - Proton 2 satellite
 - Proton 3 satellite
 - Proton 4 satellite
 - . . . Raduga satellite
 - . . . Sputnik satellites
 - Sputnik 1 satellite
 - Sputnik 2 satellite
 - Sputnik 3 satellite
 - Sputnik 4 satellite
 - Sputnik 5 satellite
 - . . . Venera satellites
 - Venera 2 satellite
 - Venera 3 satellite
 - Venera 4 satellite
 - Venera 5 satellite
 - Venera 6 satellite
 - Venera 7 satellite
 - Venera 8 satellite
 - Venera 9 satellite
 - Venera 10 satellite
 - Venera 11 satellite
 - Venera 12 satellite
 - RT Russian Space Program
- Soviet spacecraft**
- GS **Soviet spacecraft**
 - . Buran space shuttle
 - . Lunik lunar probes
 - . . Lunik 2 lunar probe
 - . . Lunik 3 lunar probe
 - . . Lunik 9 lunar probe
 - . . Lunik 10 lunar probe
 - . . Lunik 11 lunar probe
 - . . Lunik 12 lunar probe
 - . . Lunik 13 lunar probe
 - . . Lunik 14 lunar probe
 - . . Lunik 16 lunar probe
 - . . Lunik 17 lunar probe
 - . . Lunik 19 lunar probe
 - . . Lunik 20 lunar probe
 - . . Lunik 22 lunar probe
 - . Mars 1 spacecraft
 - . Mars 2 spacecraft
 - . Mars 3 spacecraft
 - . Mars 4 Spacecraft
 - . Mars 5 spacecraft
 - . Mars 6 spacecraft
 - . Mars 7 spacecraft
 - . Mir space station
 - . Salyut space station
 - . Soyuz spacecraft
 - . Sputnik satellites
 - . . Sputnik 1 satellite
 - . . Sputnik 2 satellite
 - . . Sputnik 3 satellite
 - . . Sputnik 4 satellite
 - . . Sputnik 5 satellite
 - . Venera satellites
 - . . Venera 2 satellite
 - . . Venera 3 satellite
- . . Venera 4 satellite
 - . . Venera 5 satellite
 - . . Venera 6 satellite
 - . . Venera 7 satellite
 - . . Venera 8 satellite
 - . . Venera 9 satellite
 - . . Venera 10 satellite
 - . . Venera 11 satellite
 - . . Venera 12 satellite
 - . Zond space probes
 - . . Zond 1 space probe
 - . . Zond 2 space probe
 - . . Zond 3 space probe
 - . . Zond 4 space probe
 - . . Zond 5 space probe
 - . . Zond 6 space probe
 - . . Zond 7 space probe
 - . . Zond 8 space probe
 - . Phobos spacecraft
 - RT Russian Space Program
 - ∞ spacecraft
- Soviet Union*
- USE **U.S.S.R.**
- soybeans**
- GS farm crops
 - . leguminous plants
 - . . **soybeans**
 - . plants (botany)
 - . leguminous plants
 - . . **soybeans**
 - RT ∞ food
- Soyuz spacecraft**
- GS manned spacecraft
 - . **Soyuz spacecraft**
 - . Soviet spacecraft
 - . **Soyuz spacecraft**
 - RT Apollo Soyuz test project
 - . Assured Crew Return Vehicle
 - . Kvant modules
 - . Salyut space station
 - . U.S.S.R. space program
- ∞ **space**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT algebra
 - . analysis (mathematics)
 - . Cartan space
 - . cislunar space
 - . deep space
 - . fractals
 - . function space
 - . hyperspaces
 - . set theory
 - . spatial dependencies
- space adaptation syndrome**
- RT aerospace medicine
 - . bioastronautics
 - . biological effects
 - . long duration space flight
 - . manned space flight
 - . motion sickness
 - . physiological effects
 - . psychological effects
 - . space flight stress
 - . space psychology
 - . weightlessness
- Space Arrow satellite*
- USE **Cosmos 149 satellite**
- space based radar**
- DEF Radar systems installed on large space structures.
 - GS radar
 - . **space based radar**
 - . . Shuttle Imaging Radar
 - RT airborne radar
 - . antenna arrays
 - . radiation effects
 - . radiation shielding
- space bases**
- GS **space bases**
 - . lunar bases
 - . planetary bases
- . space colonies
 - . . Mars bases
 - RT ∞ bases
 - . Mir space station
 - . Salyut space station
 - . space stations
 - . stations
- space biology*
- USE **exobiology**
- space buses*
- USE **ferry spacecraft**
- space capsules**
- DEF Containers used for carrying out experiments in space. Used for capsules (spacecraft).
 - UF *capsules (spacecraft)*
 - GS **space capsules**
 - . Discoverer recovery capsules
 - . escape capsules
 - . Mercury spacecraft
 - . . Aurora 7
 - . . Faith 7
 - . . Friendship 7
 - . . SIGMA 7
 - RT artificial satellites
 - . biosatellites
 - . cabin atmospheres
 - ∞ capsules
 - . cockpits
 - . Gemini spacecraft
 - . interplanetary spacecraft
 - . landing modules
 - . lunar spacecraft
 - . manned spacecraft
 - . Mercury flights
 - . recoverable spacecraft
 - . reentry vehicles
 - . rendezvous spacecraft
 - . soft landing spacecraft
 - ∞ spacecraft
 - . spacecraft cabins
 - . spacecraft modules
 - . unmanned spacecraft
 - . voskhod manned spacecraft
 - . Vostok spacecraft
- space charge**
- DEF The electric charge carries by a cloud or stream of electrons or ions in a vacuum or a region of low gas pressure when the charge is sufficient to produce local changes in the potential distribution. The net electric charge within a given volume.
 - GS electric charge
 - . **space charge**
 - RT bunching
 - . Child-Langmuir law
 - . electric discharges
 - . electron clouds
 - . Landau damping
 - . magnetohydrodynamics
 - . nonohmic effect
 - . orbitrons
 - . perveance
 - . plasmas (physics)
 - . static electricity
- space colonies**
- GS communities
 - . **space colonies**
 - . space bases
 - . **space colonies**
 - RT lunar bases
 - . lunar shelters
 - . Mars bases
 - . Mars exploration
 - . space habitats
 - . space stations
 - . terraforming
- space commercialization**
- DEF For profit activities in space or prefatory to space activity.
 - GS commercialization
 - . **space commercialization**
 - RT aerospace industry
 - . Ariane 4 launch vehicle

space communication

- Ariane 5 launch vehicle
- commerce lab
- commercial spacecraft
- communication satellites
- data products
- direct broadcast satellites
- Energiya launch vehicle
- insurance (contracts)
- lunar mining
- ∞ microgravity applications
- Proton launch vehicle
- space industrialization
- space manufacturing
- space processing
- space tourism
- spacecraft launching
- technology transfer

space communication

DEF The act of, or methods for, conveying information to, from, or through outer space.

GS telecommunication

. space communication

- . . extraterrestrial communication
- . . interplanetary communication
- . . lunar communication
- . . . circumlunar communication
- . . spacecraft communication
- . . . reentry communication
- . . . satellite communication

RT

- communication satellites
- Defense Communications Satellite System
- extraterrestrial intelligence
- free-space optical communication
- furlable antennas
- interstellar communication
- lasers
- line of sight communication
- manned space flight
- optical communication
- pulse communication
- radio communication
- radio telemetry
- television systems
- wireless communication

space cooling (buildings)

DEF The cooling of buildings with a solar energy system which incorporates water chillers controlled by thermostats and other devices to provide a comfortable living environment.

GS cooling

. space cooling (buildings)

RT

- cooling systems
- energy technology
- heat exchangers
- heat pumps
- liquid cooling
- residential energy
- solar collectors
- solar cooling
- solar energy conversion
- temperature control

space debris

GS debris

. space debris

RT

- asteroid belts
- asteroids
- Chiron
- cosmic dust
- dust
- meteoroids
- micrometeoroids
- near Earth objects
- ∞ spacecraft
- spacecraft breakup
- spacecraft design
- Toro asteroid
- Vesta asteroid

space density

GS density (mass/volume)

. space density

- density (number/volume)

. space density

RT

- atmospheric density
- electron density (concentration)
- ion density (concentration)

- particle density (concentration)
- plasma density
- plasma interaction experiment
- proton density (concentration)

space detection and tracking system

UF *SPADATS (tracking system)*

GS

- networks

- . tracking networks

. . space detection and tracking system

- . tracking (position)

. space detection and tracking system

RT

- minitrack system
- missile tracking
- optical tracking
- photographic tracking
- polystation doppler tracking system
- spacecraft tracking
- STDN (network)
- ∞ systems
- tracking stations

space diversity

USE **reception diversity**

space electric rocket tests

UF *SERT (rocket tests)*

GS

- engine tests

. space electric rocket tests

RT

- electric rocket engines
- flight tests
- ground tests
- SERT 1 spacecraft
- SERT 2 spacecraft
- ∞ tests

space elevators

(added March 2005)

DEF Elevators designed to provide access to space from ground or low altitude.

GS

- elevators (lifts)

. space elevators

RT

- space transportation

space environment

USE **aerospace environments**

space environment simulation

GS simulation

- . environment simulation

. . space environment simulation

- . . . weightlessness simulation

- neutral buoyancy simulation

RT

- altitude simulation
- atmospheric entry simulation
- clinorotation
- clinostats
- flight simulation
- flight simulators
- High Vacuum Orbital Simulator
- Langley complex coordinator
- motion simulators
- solar simulation
- thermal simulation
- vacuum chambers
- virtual reality

space environmental lubrication

USE **spacecraft lubrication**

space erectable structures

GS **space erectable structures**

- . inflatable spacecraft

- . . Beacon satellites

- . . . Beacon Explorer A

- . . . Explorer 22 satellite

RT

- expandable structures
- folding structures
- inflatable space structures
- inflatable structures
- Large Deployable Reflector
- large space structures
- maypole antennas
- orbital assembly
- rigid structures
- self erecting devices
- space station modules
- space station structures

- space technology experiments
- spacecraft modules
- spacecraft structures
- ∞ structures

Space Exper with Particle Accelerators

USE **SEPAC (payload)**

space exploration

UF *planetary exploration*

GS

- exploration

. space exploration

- . . lunar exploration

- . . Mars exploration

RT

- aerospace environments
- asteroid missions
- astrodynamics

∞ astronautics

- bioastronautics
- Cassini mission
- Constellation program
- extraterrestrial environments
- extraterrestrial resources
- French space program
- International Space Year
- interplanetary flight
- interplanetary spacecraft
- interstellar spacecraft
- Jupiter rings
- Magellan project (NASA)
- manned Mars missions
- manned space flight
- Mars 69 project
- Mars 71 project
- Mars sample return missions
- MESSENGER (spacecraft)
- New Horizons mission
- planetary aerial vehicles
- planetary bases
- planetary composition
- planetary geology
- sample return missions
- Solar Maximum Mission-A
- TOPS (spacecraft)
- Viking 1 spacecraft
- Viking 2 spacecraft
- Viking lander 1
- Viking lander 2
- Viking lander spacecraft
- Viking Mars program
- Viking orbiter 1
- Viking orbiter 2
- Viking orbiter spacecraft

space flight

GS

space flight

- . interplanetary flight

- . interstellar travel

- . long duration space flight

- . lunar flight

- . manned space flight

- . . Apollo flights

- . . . Apollo 5 flight

- . . . Apollo 6 flight

- . . . Apollo 7 flight

- . . . Apollo 8 flight

- . . . Apollo 9 flight

- . . . Apollo 10 flight

- . . . Apollo 11 flight

- . . . Apollo 12 flight

- . . . Apollo 13 flight

- . . . Apollo 14 flight

- . . . Apollo 15 flight

- . . . Apollo 16 flight

- . . . Apollo 17 flight

- . . Gemini flights

- . . . Gemini 3 flight

- . . . Gemini 4 flight

- . . . Gemini 5 flight

- . . . Gemini 6 flight

- . . . Gemini 7 flight

- . . . Gemini 8 flight

- . . . Gemini 9 flight

- . . . Gemini 10 flight

- . . . Gemini 11 flight

- . . . Gemini 12 flight

- . . manned reentry

- . . Mercury flights

- . . . Mercury MA-1 flight

- . . . Mercury MA-2 flight

- ... Mercury MA-3 flight
- ... Mercury MA-4 flight
- ... Mercury MA-5 flight
- ... Mercury MA-6 flight
- ... Mercury MA-7 flight
- ... Mercury MA-8 flight
- ... Mercury MA-9 flight
- ... Mercury MR-1 flight
- ... Mercury MR-2 flight
- ... Mercury MR-3 flight
- ... Mercury MR-4 flight
- .. Space Shuttle missions
 - ... Space Shuttle mission 31-A
 - ... Space Shuttle mission 31-B
 - ... Space Shuttle mission 31-C
 - ... Space Shuttle mission 31-D
 - ... Space Shuttle mission 41-A
 - ... Space Shuttle mission 41-B
 - ... Space Shuttle mission 41-C
 - ... Space Shuttle mission 41-D
 - ... Space Shuttle mission 41-G
 - ... Space Shuttle mission 51-A
 - ... Space Shuttle mission 51-B
 - ... Space Shuttle mission 51-C
 - ... Space Shuttle mission 51-D
 - ... Space Shuttle mission 51-E
 - ... Space Shuttle mission 51-F
 - ... Space Shuttle mission 51-G
 - ... Space Shuttle mission 51-H
 - ... Space Shuttle mission 51-I
 - ... Space Shuttle mission 51-J
 - ... Space Shuttle mission 51-L
 - ... Space Shuttle mission 61-A
 - ... Space Shuttle mission 61-B
 - ... Space Shuttle mission 61-C
 - ... Space Shuttle mission 61-E
- . return to Earth space flight
- RT aerospace environments
 - Apollo Soyuz test project
 - ascent propulsion systems
 - astrodynamics
 - ∞ astronautics
 - atmospheric entry
 - auxiliary propulsion
 - bioastronautics
 - celestial bodies
 - expeditions
 - exploration
 - extravehicular activity
 - ∞ flight
 - flight mechanics
 - flight optimization
 - flight simulation
 - flyby missions
 - Grand Tours
 - Mariner Jupiter-Saturn flyby
 - Mariner Jupiter-Uranus flyby
 - meteorological flight
 - ∞ missions
 - orbits
 - Physics and Chemistry Experiment in Space
 - pointing control systems
 - propulsion
 - reentry
 - rocket flight
 - ∞ rockets
 - solar sails
 - Space Transportation System flights
 - spacecraft guidance
 - spacecraft maneuvers
 - spacecraft propulsion
 - suborbital flight
 - trajectories
 - Viking 1 spacecraft
 - Viking 2 spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking lander spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter spacecraft
- space flight feeding**
 - RT consumables (spacecrew supplies)
 - dehydrated food
 - diets
 - eating
 - ∞ food
- food intake
- food production (in space)
- life support systems
- nutrition
- nutritional requirements
- waste disposal
- space flight stress**
 - GS stress (biology)
 - . flight stress (biology)
 - .. **space flight stress**
 - RT boredom
 - ∞ flight stress
 - gravitational physiology
 - gravity perception
 - lower body negative pressure
 - manned space flight
 - space adaptation syndrome
 - space psychology
 - stress (physiology)
 - stress (psychology)
 - weightlessness
- Space Flight Tracking and Data Network**
 - GS networks
 - . tracking networks
 - .. **Space Flight Tracking and Data Network**
 - RT ∞ data
 - data acquisition
 - Global Tracking Network
 - ground stations
 - satellite tracking
 - stations
 - STDN (network)
 - tracking stations
- space flight training**
 - GS education
 - . flight training
 - .. **space flight training**
 - ... astronaut training
 - RT pilot training
 - spacecraft cabin simulators
 - training simulators
- space gliders*
- USE **lifting reentry vehicles**
- space glossaries**
 - RT bibliographies
 - dictionaries
 - documentation
 - indexes (documentation)
 - information retrieval
 - thesauri
- space habitats**
 - RT aerospace environments
 - closed ecological systems
 - life support systems
 - Mars bases
 - space colonies
 - space stations
 - spacecrews
 - terraforming
- space heating (buildings)**
 - DEF Heating of living areas for the comfort of occupants (human and/ or animal) by any means (electricity, fuels, solar radiation, etc.).
 - GS heating
 - . **space heating (buildings)**
 - RT air conditioning
 - environmental engineering
 - heating equipment
 - residential energy
 - solar atriums
 - solar heating
 - solar houses
 - temperature control
 - waste energy utilization
- space industrialization**
 - GS **space industrialization**
 - . space manufacturing
 - . space processing
 - . space tourism
 - RT commercial spacecraft
 - economic development
- energy conversion
- industries
- lunar mining
- manufacturing
- ∞ processes
 - product development
 - products
 - research facilities
 - space commercialization
- Space Infrared Telescope Facility**
 - UF *SIRTF*
 - Spitzer Space Telescope*
 - GS artificial satellites
 - . scientific satellites
 - .. astronomical satellites
 - ... **Space Infrared Telescope Facility**
 - observatories
 - . astronomical observatories
 - .. astronomical satellites
 - ... **Space Infrared Telescope Facility**
 - telescopes
 - . infrared telescopes
 - .. **Space Infrared Telescope Facility**
 - . spaceborne telescopes
 - ... **Space Infrared Telescope Facility**
 - RT infrared astronomy
 - spaceborne astronomy
- space laboratories**
 - GS laboratories
 - . **space laboratories**
 - .. Advanced Technology Laboratory
 - .. Atmospheric Cloud Physics Lab (Spacelab)
 - .. Earth Viewing Applications Laboratory
 - .. Long Duration Exposure Facility
 - .. manned orbital laboratories
 - ... Columbus module
 - ... Destiny Laboratory Module
 - ... Kibo Japanese Experiment Module
 - ... Skylab 1
 - ... Skylab 2
 - ... Skylab 3
 - ... Skylab 4
 - ... Spacelab
 - RT ∞ aerospace sciences
 - artificial satellites
 - geophysical satellites
 - lunar laboratories
 - Mir space station
 - orbital workshops
 - research facilities
 - research vehicles
 - SAIL project
 - Salyut space station
 - sortie systems
 - Space Station Freedom
 - space stations
 - spaceborne experiments
 - ∞ spacecraft
- space law**
 - GS law (jurisprudence)
 - . international law
 - .. **space law**
 - RT air law
 - direct broadcast satellites
 - insurance (contracts)
 - outer space treaty
 - planetary protection
 - sabotage
- space logistics**
 - GS logistics
 - . **space logistics**
 - RT Automated Transfer Vehicle
 - consumables (spacecraft)
 - consumables (spacecrew supplies)
 - extraterrestrial resources
 - manned space flight
 - spacecraft cabin simulators
 - spacecrew transfer

space maintenance

stowage (onboard equipment)

space maintenance

GS maintenance
 . **space maintenance**
RT astronaut training
∞ astronautics
 extravehicular activity
 orbital workers
 payload transfer
 remote manipulator system
 Space Station Mobile Servicing System

space manufacturing

GS fabrication
 . **space manufacturing**
 manufacturing
 . **space manufacturing**
 space industrialization
 . **space manufacturing**
RT aerospace environments
 assembling
 commercial spacecraft
 construction
 high vacuum
 industries
 levitation melting
 liquid bridges
 low gravity manufacturing
∞ microgravity applications
 space commercialization
 space processing
 spaceborne experiments
 technologies
 vacuum effects
 weightlessness

space mechanics

GS mechanics (physics)
 . classical mechanics
 . . . **space mechanics**
 astrodynamics
 celestial mechanics
 orbital mechanics
 Kepler laws
 minimum variance orbit determination
RT flight mechanics
 magnetohydrodynamics
 orbital space tests
 quadratures

space medicine

USE **aerospace medicine**

space missions

GS **space missions**
 . Cassini mission
 . Cluster Mission
 . flyby missions
 . . Giotto mission
 . . Grand Tours
 . . . Mariner Jupiter-Saturn flyby
 . . . Mariner Jupiter-Uranus flyby
 . . . Voyager 1977 mission
 . . Comet Nucleus Tour
 . . Comet Rendezvous Asteroid Flyby Mission
 . . Deep Impact Mission
 . . Mariner Venus-Mercury 1973
 . . Mariner-Mercury 1973
 . . Near Earth Asteroid Rendezvous Mission
 . . New Horizons mission
 . . Stardust Mission
 . . SOHO Mission
 . . Solar Maximum Mission
 . . Solar Maximum Mission-A
 . . asteroid missions
 . . Starprobe mission
 . . Ulysses mission
 . . Comet Rendezvous Asteroid Flyby Mission
 . . Near Earth Asteroid Rendezvous Mission
 . . Rosetta mission
 . . Deep Space 1 Mission
 . . Genesis mission
 . . Mars missions

. . 2001 Mars Odyssey
. . manned Mars missions
. . Mars sample return missions
. . Mars Surveyor 2001 Mission
. . sample return missions
. . Mars sample return missions
. . Stardust Mission
. . GRACE mission
. . GRAIL mission
. . Juno mission
. . Kepler mission

RT Apollo Soyuz test project
 Chinese space program
 Earth-Venus trajectories
 European space programs
 French space program
 Indian space program
 Japanese space program
 Magellan project (NASA)
 MESSENGER (spacecraft)
∞ missions
 Skylab 1
 Skylab 2
 Skylab 3
 Skylab 4
 space programs
 Space Shuttle missions
∞ spacecraft
 STEREO (observatory)
 TOPS (spacecraft)

space navigation

GS navigation
 . **space navigation**
 . . interplanetary navigation
RT air navigation
 astrodynamics
∞ astronautics
 astronavigation
 autonomous navigation
 celestial navigation
 digital navigation
 Earth-Venus trajectories
 formation flying
 Global Positioning System
 inertial navigation
 interplanetary flight
 interplanetary trajectories
 manned spacecraft
 orbit determination
 orbital maneuvers
 orbital mechanics
 orbits
 radar navigation
 radio navigation
 reference stars
 satellite guidance
 satellite navigation systems
 spacecraft guidance
 spacecraft position indicators
 standardized space guidance

space observations (from Earth)

DEF Surveillance of extraterrestrial phenomena from the Earth's surface.

GS observation
 . **space observations (from Earth)**
RT asteroid detection
 astronomical interferometry
 detection
 observation scheduling
 radio observation
 reconnaissance
 seeing (astronomy)
 space surveillance (ground based)

Space Operations Center (NASA)

DEF A proposed NASA space station to be assembled in space that is designed for conducting space based operations such as satellite servicing, orbit transfer vehicle launch and recovery, and assembly of large space structures. Onboard capabilities could include space manufacturing and research experiments. When fully assembled it will be larger in size than the Space Shuttle.

GS artificial satellites
 . space stations
 . . **Space Operations Center (NASA)**
 manned spacecraft

. **Space Operations Center (NASA)**
 stations
 . space stations
 . . **Space Operations Center (NASA)**
RT large space structures
 orbital assembly
 orbital servicing

∞ space orientation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT attitude (inclination)
 bearing (direction)
 vertical perception
 visual perception

space perception

DEF The ability to estimate depth or distance between points in the field of vision. Used for depth perception, distance perception, form perception, and slant perception.

UF *depth perception*
 distance perception
 form perception
 slant perception
GS perception
 . sensory perception
 . . visual perception
 . . . **space perception**
 autokinesis

RT binocular vision
 monocular vision
 peripheral vision
 range finders
 sound localization
 visual fields

space photography

USE **spaceborne photography**

space plasma H/V interaction experiments

USE **SPHINX**

space plasmas

DEF Concentrations of free electrons and protons in the ionosphere, plasmasphere, and beyond.

GS particles
 . charged particles
 . . energetic particles
 . . . plasmas (physics)
 **space plasmas**
 solar wind
 stellar winds
 . . corpuscular radiation
 . . energetic particles
 . . . plasmas (physics)
 **space plasmas**
 solar wind
 stellar winds

RT AMPTE (satellites)
 Cluster Mission
 CRRES (satellite)
 dusty plasmas
 Earth magnetosphere
 flux transfer events
 galactic winds
 geomagnetism
 IMAGE satellite
 ionopause
 magnetic field reconnection
 magnetohydrodynamic stability
 magnetohydrodynamics
 OPEN Project
 plasma density
 plasma diagnostics
 plasma interactions
 plasma layers
 plasma physics
 plasma waves
 plasma-electromagnetic interaction
 polar cusps
 Polar/GGS spacecraft
 space weather
 SPHINX
 wave-particle interactions
 Wind/GGS spacecraft

space platforms

DEF Gimbal-mounted platforms equipped

with gyros and accelerometers for maintaining a desired orientation in inertial space independent of spacecraft motion.

GS **space platforms**

- . Columbus space station
- . Eureka (ESA)
- . Long Duration Exposure Facility
- . man tended free flyers
- . space station polar platforms
- . synchronous platforms

RT Earth Observing System (EOS)

- intraorbit transfer vehicles
- orbital servicing

∞ platforms

- shape control
- Space Station Freedom
- space stations

space power reactors

GS

- auxiliary power sources
- . nuclear auxiliary power units
- . **space power reactors**
- . . . fission electric cells
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- nuclear electric power generation
- . nuclear auxiliary power units
- . **space power reactors**
- . . . fission electric cells
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- nuclear power reactors
- . **space power reactors**
- . . . fission electric cells
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors
- nuclear reactors
- . nuclear power reactors
- . **space power reactors**
- . . . fission electric cells
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 10A
- SNAP 50
- . . . space power unit reactors

RT

- heat exchangers
- space station power supplies
- turbogenerators

space power unit reactors

UF

SPUR (reactors)

GS

- auxiliary power sources
- . nuclear auxiliary power units
- . space power reactors
- . . **space power unit reactors**
- nuclear electric power generation
- . nuclear auxiliary power units
- . space power reactors
- . . **space power unit reactors**
- . nuclear power reactors
- . space power reactors
- . . **space power unit reactors**
- nuclear reactors
- . nuclear power reactors
- . space power reactors
- . . **space power unit reactors**

RT

- fission electric cells
- heat exchangers
- SNAP
- SNAP 2
- SNAP 4
- SNAP 8
- SNAP 50
- turbogenerators

space probes

GS

- unmanned spacecraft

space probes

- . . Explorer 18 satellite
- . . Giotto mission
- . . Jupiter probes
- . . . Galileo probe
- . . . Galileo spacecraft
- . . lunar probes
- . . . Lunik lunar probes
- Lunik 2 lunar probe
- Lunik 3 lunar probe
- Lunik 9 lunar probe
- Lunik 10 lunar probe
- Lunik 11 lunar probe
- Lunik 12 lunar probe
- Lunik 13 lunar probe
- Lunik 14 lunar probe
- Lunik 16 lunar probe
- Lunik 17 lunar probe
- Lunik 19 lunar probe
- Lunik 20 lunar probe
- Lunik 22 lunar probe
- . . Ranger lunar probes
- . . . Ranger 1 lunar probe
- . . . Ranger 2 lunar probe
- . . . Ranger 3 lunar probe
- . . . Ranger 4 lunar probe
- . . . Ranger 5 lunar probe
- . . . Ranger 6 lunar probe
- . . . Ranger 7 lunar probe
- . . . Ranger 8 lunar probe
- . . . Ranger 9 lunar probe
- . . . Ranger lunar landing vehicles
- . . Surveyor lunar probes
- . . . Surveyor 1 lunar probe
- . . . Surveyor 2 lunar probe
- . . . Surveyor 3 lunar probe
- . . . Surveyor 4 lunar probe
- . . . Surveyor 5 lunar probe
- . . . Surveyor 6 lunar probe
- . . . Surveyor 7 lunar probe
- . . LCROSS (satellite)
- . . Lunar Reconnaissance Orbiter
- . . Mariner space probes
- . . . Mariner 1 space probe
- . . . Mariner 2 space probe
- . . . Mariner 3 space probe
- . . . Mariner 4 space probe
- . . . Mariner 5 space probe
- . . . Mariner 6 space probe
- . . . Mariner 7 space probe
- . . . Mariner 8 space probe
- . . . Mariner 9 space probe
- . . . Mariner 10 space probe
- . . . Mariner 11 space probe
- . . . Mariner R 2 space probe
- . . Mariner spacecraft
- . . Mariner C spacecraft
- . . Mariner Venus 67 spacecraft
- . . Mars probes
- . . . Advanced Recon Electric Spacecraft
- . . . Mariner 3 space probe
- . . . Mariner 4 space probe
- . . . Mariner 6 space probe
- . . . Mariner 7 space probe
- . . . Mariner 8 space probe
- . . . Mariner 9 space probe
- . . . Mars 1 spacecraft
- . . . Mars 2 spacecraft
- . . . Mars 3 spacecraft
- . . . Mars 4 Spacecraft
- . . . Mars 5 spacecraft
- . . . Mars 6 spacecraft
- . . . Mars 7 spacecraft
- . . . Mars Observer
- . . . Mars Pathfinder
- . . . Viking 1975 entry vehicle
- . . . Viking spacecraft
- Viking 1 spacecraft
- Viking lander 1
- Viking orbiter 1
- Viking 2 spacecraft
- Viking lander 2
- Viking orbiter 2
- Viking lander spacecraft
- Viking lander 1
- Viking lander 2
- Viking orbiter spacecraft
- Viking orbiter 1

- Viking orbiter 2
- Viking orbiter 1975
- . . . Mars Climate Orbiter
- . . . Mars Express
- . . . Mars Global Surveyor
- . . . Mars Polar Lander
- . . . Mars Reconnaissance Orbiter
- . . . Nozomi Mars Orbiter
- . . . Phobos spacecraft
- . . . Phoenix Mars Lander
- . . . Zond 2 space probe
- . . Pioneer space probes
- . . . Pioneer 1 space probe
- . . . Pioneer 2 space probe
- . . . Pioneer 3 space probe
- . . . Pioneer 4 space probe
- . . . Pioneer 5 space probe
- . . . Pioneer 6 space probe
- . . . Pioneer 7 space probe
- . . . Pioneer 8 space probe
- . . . Pioneer 9 space probe
- . . . Pioneer 10 space probe
- . . . Pioneer 11 space probe
- . . . Pioneer Venus 2 entry probes
- . . . Pioneer Venus 2 night probe
- . . . Pioneer Venus 2 sounder probe
- . . solar probes
- . . . Helios 1
- . . . Helios 2
- . . . Helios A
- . . . Helios B
- . . Starprobe spacecraft
- . . Sunblazer space probe
- . . Venus probes
- . . . Magellan spacecraft (NASA)
- . . . Mariner 1 space probe
- . . . Mariner 2 space probe
- . . . Mariner 5 space probe
- . . . Mariner 10 space probe
- . . . Pioneer Venus 2 spacecraft
- . . . Pioneer Venus 2 entry probes
- . . . Pioneer Venus 2 night probe
- . . . Pioneer Venus 2 sounder probe
- . . . Pioneer Venus 2 transporter bus
- . . Venera satellites
- . . . Venera 2 satellite
- . . . Venera 3 satellite
- . . . Venera 4 satellite
- . . . Venera 5 satellite
- . . . Venera 6 satellite
- . . . Venera 7 satellite
- . . . Venera 8 satellite
- . . . Venera 9 satellite
- . . . Venera 10 satellite
- . . . Venera 11 satellite
- . . . Venera 12 satellite
- . . Zond 1 space probe
- . . Zond 3 space probe
- . . Zond 4 space probe
- . . Zond 5 space probe
- . . Zond 6 space probe
- . . Zond 7 space probe
- . . Zond 8 space probe
- . . Huygens probe
- . . MESSENGER (spacecraft)
- . . Microwave Anisotropy Probe
- . . Voyager 1 spacecraft
- . . Voyager 2 spacecraft

RT

- Atlas Able 5 launch vehicle
- Cassini mission
- Deep Impact Mission
- interplanetary spacecraft
- magnetic probes
- maneuverable spacecraft
- Mariner program
- meteorological satellites
- Pioneer project
- Pioneer Venus 1 spacecraft
- Pioneer Venus spacecraft
- ∞ probes
- radio occultation
- satellite television
- Voyager 1977 mission
- Voyager project

space processing

- DEF Synthesis, processing, forming, and fabrication of compounds or materials in space

Space Processing Applications Rocket

or in a simulated space environment; normally involving techniques that exploit low-gravity or high-vacuum conditions.

GS space industrialization

. space processing

RT acoustic levitation
bioprocessing
commercial spacecraft
containerless melts
crystal growth
diamond films
electric furnaces
float zones
levitation melting
liquid bridges
low gravity manufacturing
Marangoni convection
metalorganic chemical vapor deposition
microgravity
∞ microgravity applications
miscibility gap
orbital workshops
protein crystal growth
single crystals
space commercialization
space manufacturing
spaceborne experiments
thermocapillary migration
ultrapure metals

Space Processing Applications Rocket

DEF Sounding rocket used for space processing experiments by NASA. Used for SPAR (rocket).

UF *SPAR (rocket)*

RT launch vehicles
metal foams
payloads
rocket vehicles
weightlessness

space programs

GS programs
. space programs
.. Argentine space program
.. Australian space program
.. Brazilian space program
.. Canadian space program
.. Alouette project
.. Chinese space program
.. European space programs
.. Austrian space program
.. Belgian space program
.. Czechoslovakian space program
.. Danish space program
.. Finnish space program
.. French space program
.. German space program
.. Greek space program
.. Hungarian space program
.. Icelandic space program
.. Italian space program
.. Luxembourg space program
.. Netherlands space program
.. Norwegian space program
.. Portuguese space program
.. Spanish space program
.. Swedish space program
.. Swiss space program
.. Turkish space program
.. UK space program
.. geographic applications program
.. Indian space program
.. Indonesian space program
.. Israeli space program
.. Japanese space program
.. Mexican space program
.. NASA space programs
.. Apollo applications program
.. Apollo project
.. Bioastronautical Orbital Space System
.. Centaur project
.. Earth & Ocean Physics Applications Program
.. Earth Resources Program
.. Earth Resources Survey Program

.. SEASAT program
.. Echo project
.. Galileo project
.. Gemini project
.. Helios Project
.. Jupiter project
.. Magellan project (NASA)
.. Mariner program
.. Mariner Venus-Mercury 1973
.. Mariner-Mercury 1973
.. Mars 69 project
.. Mars 71 project
.. Mercury project
.. National Launch Vehicle Program
.. NEW MOONS project
.. Nimbus project
.. OPEN Project
.. Pioneer project
.. Project SETI
.. Ranger project
.. Agena B Ranger Program
.. Constellation program
.. Mars Surveyor 98 Program
.. New Horizons mission
.. Rover project
.. SAIL project
.. Saturn project
.. Scout project
.. Skylab program
.. Starprobe mission
.. Surveyor project
.. Synchronous Communications Satellite Proj
.. Tektite project
.. TIROS project
.. Titan project
.. Vanguard project
.. Viking Mars program
.. Voyager project
.. New Zealand space program
.. Pakistan space program
.. Russian Space Program
.. Saudi Arabian space program
.. U.S.S.R. space program
.. Ukrainian space program
RT Apollo Soyuz test project
European Space Agency
International Space Year
ISRO
manned space flight
NASA programs
∞ research projects
Solar Maximum Mission
space missions

space psychology

GS medical science
. aerospace medicine
. space psychology
psychology
RT . space psychology
astronaut performance
astronaut training
aviation psychology
manned space flight
military psychology
psychological effects
psychological factors
social factors
space adaptation syndrome
space flight stress
stress (psychology)

space radiation

USE extraterrestrial radiation

space radiators

USE spacecraft radiators

space rations

GS consumables (spacecrew supplies)
. space rations
rations
RT ∞ food
food production (in space)
provisioning

stowage (onboard equipment)

space rendezvous

UF *spacecraft rendezvous*
GS rendezvous
. space rendezvous
.. orbital rendezvous
.. Earth orbital rendezvous
.. lunar orbital rendezvous
RT Apollo Soyuz test project
autonomous docking
rendezvous trajectories
spacecraft docking
transfer orbits

space sciences

USE aerospace sciences

space self maneuvering units

USE self maneuvering units

Space Shuttle Ascent Stage

DEF Shuttle take-off configuration comprising the orbiter, solid rocket boosters, and external tank.

GS spacecraft configurations

. Space Shuttle Ascent Stage

RT Advanced Solid Rocket Motor (STS)
ascent propulsion systems
external tanks
Space Shuttle Boosters
Space Shuttle orbiters
Space Shuttle upper stages
space shuttles
stage separation

Space Shuttle Boosters

UF *Shuttle Boosters*
Solid Rocket Boosters (Space Shuttle)
Space Shuttle Solid Rocket Motors SRB (Solid Rocket Boosters)
GS engines
. rocket engines
.. booster rocket engines
.. Space Shuttle Boosters
.. Advanced Solid Rocket Motor (STS)
.. solid propellant rocket engines
.. Space Shuttle Boosters
.. Advanced Solid Rocket Motor (STS)
RT ∞ boosters
manned spacecraft
O ring seals
reusable spacecraft
Space Shuttle Ascent Stage

Space Shuttle Main Engine

DEF Liquid propellant propulsion system using fuel drawn from external tanks to provide power for the orbiter to attain orbital speed.

GS engines
. rocket engines
.. liquid propellant rocket engines
.. Space Shuttle Main Engine

RT propulsion
space transportation system
Space Transportation System flights

Space Shuttle mission 31-A

GS space flight
. manned space flight
.. Space Shuttle missions
.. Space Shuttle mission 31-A
RT Columbia (Orbiter)

Space Shuttle mission 31-B

GS space flight
. manned space flight
.. Space Shuttle missions
.. Space Shuttle mission 31-B
RT Challenger (Orbiter)

Space Shuttle mission 31-C

UF *Space Shuttle Orbital Flight 7*
GS space flight
. manned space flight
.. Space Shuttle missions
.. Space Shuttle mission 31-C

| | | |
|--|---|---|
| RT Challenger (Orbiter) | . . . Space Shuttle missions | RT Get Away Specials (STS) |
| Space Shuttle mission 31-D | . . . Space Shuttle mission 51-G | ∞ missions |
| UF <i>Space Shuttle Orbital Flight 8</i> | RT Discovery (Orbiter) | space missions |
| GS space flight | Saudi Arabian space program | space transportation system |
| . manned space flight | Space Shuttle mission 51-H | <i>Space Shuttle Orbital Flight 7</i> |
| . . . Space Shuttle missions | GS space flight | USE Space Shuttle mission 31-C |
| . . . Space Shuttle mission 31-D | . manned space flight | <i>Space Shuttle Orbital Flight 8</i> |
| RT Challenger (Orbiter) | . . . Space Shuttle missions | USE Space Shuttle mission 31-D |
| Space Shuttle mission 41-A | . . . Space Shuttle mission 51-H | <i>Space Shuttle Orbital Flight 9</i> |
| UF <i>Space Shuttle Orbital Flight 9</i> | RT Atlantis (orbiter) | USE Space Shuttle mission 41-A |
| GS space flight | Space Shuttle mission 51-I | <i>Space Shuttle Orbital Flight Test 1</i> |
| . manned space flight | GS space flight | USE Space Transportation System 1 flight |
| . . . Space Shuttle missions | . manned space flight | <i>Space Shuttle Orbital Flight Test 2</i> |
| . . . Space Shuttle mission 41-A | . . . Space Shuttle missions | USE Space Transportation System 2 flight |
| RT Columbia (Orbiter) | . . . Space Shuttle mission 51-I | <i>Space Shuttle Orbital Flight Test 3</i> |
| Space Shuttle mission 41-B | RT Discovery (Orbiter) | USE Space Transportation System 3 flight |
| GS space flight | Space Shuttle mission 51-J | <i>Space Shuttle Orbital Flight Test 4</i> |
| . manned space flight | GS space flight | USE Space Transportation System 4 flight |
| . . . Space Shuttle missions | . manned space flight | <i>Space Shuttle Orbital Flight Tests</i> |
| . . . Space Shuttle mission 41-B | . . . Space Shuttle missions | USE Space Transportation System flights |
| RT Challenger (Orbiter) | . . . Space Shuttle mission 51-J | <i>Space Shuttle Orbital Flights</i> |
| Space Shuttle mission 41-C | RT Atlantis (orbiter) | USE Space Transportation System flights |
| GS space flight | Space Shuttle mission 51-L | <i>Space Shuttle Orbiter 099</i> |
| . manned space flight | GS space flight | USE Challenger (Orbiter) |
| . . . Space Shuttle missions | . manned space flight | <i>Space Shuttle Orbiter 101</i> |
| . . . Space Shuttle mission 41-C | . . . Space Shuttle missions | USE Enterprise (Orbiter) |
| RT Challenger (Orbiter) | . . . Space Shuttle mission 51-L | <i>Space Shuttle Orbiter 102</i> |
| Space Shuttle mission 41-D | RT Challenger (Orbiter) | USE Columbia (Orbiter) |
| GS space flight | Space Shuttle mission 61-A | <i>Space Shuttle Orbiter 103</i> |
| . manned space flight | GS space flight | USE Discovery (Orbiter) |
| . . . Space Shuttle missions | . manned space flight | <i>Space Shuttle Orbiter 104</i> |
| . . . Space Shuttle mission 41-D | . . . Space Shuttle missions | USE Atlantis (orbiter) |
| RT Discovery (Orbiter) | . . . Space Shuttle mission 61-A | <i>Space Shuttle Orbiter 105</i> |
| Space Shuttle mission 41-G | RT Challenger (Orbiter) | USE Endeavour (orbiter) |
| GS space flight | Columbia (Orbiter) | Space Shuttle orbiters |
| . manned space flight | Space Shuttle mission 61-B | UF <i>Shuttle Orbiters</i> |
| . . . Space Shuttle missions | GS space flight | GS manned spacecraft |
| . . . Space Shuttle mission 41-G | . manned space flight | . space shuttles |
| RT Challenger (Orbiter) | . . . Space Shuttle missions | . . . Space Shuttle orbiters |
| Space Shuttle mission 51-A | . . . Space Shuttle mission 61-B | . . . Atlantis (orbiter) |
| GS space flight | RT Atlantis (orbiter) | . . . Challenger (Orbiter) |
| . manned space flight | Space Shuttle mission 61-C | . . . Columbia (Orbiter) |
| . . . Space Shuttle missions | GS space flight | . . . Discovery (Orbiter) |
| . . . Space Shuttle mission 51-A | . manned space flight | . . . Endeavour (orbiter) |
| RT Discovery (Orbiter) | . . . Space Shuttle missions | . . . Enterprise (Orbiter) |
| Space Shuttle mission 51-B | . . . Space Shuttle mission 61-C | reentry vehicles |
| GS space flight | RT Columbia (Orbiter) | . recoverable spacecraft |
| . manned space flight | Space Shuttle mission 61-E | . reusable spacecraft |
| . . . Space Shuttle missions | GS space flight | . . . space shuttles |
| . . . Space Shuttle mission 51-B | . manned space flight | . . . Space Shuttle orbiters |
| RT Challenger (Orbiter) | . . . Space Shuttle missions | Atlantis (orbiter) |
| Space Shuttle mission 51-C | . . . Space Shuttle mission 61-E | Challenger (Orbiter) |
| GS space flight | RT Columbia (Orbiter) | Columbia (Orbiter) |
| . manned space flight | Space Shuttle missions | Discovery (Orbiter) |
| . . . Space Shuttle missions | GS space flight | Endeavour (orbiter) |
| . . . Space Shuttle mission 51-C | . manned space flight | Enterprise (Orbiter) |
| RT Discovery (Orbiter) | . . . Space Shuttle missions | reentry vehicles |
| Space Shuttle mission 51-D | . . . Space Shuttle mission 31-A | . recoverable spacecraft |
| GS space flight | . . . Space Shuttle mission 31-B | . reusable spacecraft |
| . manned space flight | . . . Space Shuttle mission 31-C | . . . space shuttles |
| . . . Space Shuttle missions | . . . Space Shuttle mission 31-D | . . . Space Shuttle orbiters |
| . . . Space Shuttle mission 51-D | . . . Space Shuttle mission 41-A | Atlantis (orbiter) |
| RT Discovery (Orbiter) | . . . Space Shuttle mission 41-B | Challenger (Orbiter) |
| Space Shuttle mission 51-E | . . . Space Shuttle mission 41-C | Columbia (Orbiter) |
| GS space flight | . . . Space Shuttle mission 41-D | Discovery (Orbiter) |
| . manned space flight | . . . Space Shuttle mission 41-G | Endeavour (orbiter) |
| . . . Space Shuttle missions | . . . Space Shuttle mission 51-A | Enterprise (Orbiter) |
| . . . Space Shuttle mission 51-E | . . . Space Shuttle mission 51-B | RT Inertial Upper Stage |
| RT Challenger (Orbiter) | . . . Space Shuttle mission 51-C | manned space flight |
| Space Shuttle mission 51-F | . . . Space Shuttle mission 51-D | microwave scanning beam landing system |
| GS space flight | . . . Space Shuttle mission 51-E | payload integration plan |
| . manned space flight | . . . Space Shuttle mission 51-F | Shuttle Derived Vehicles |
| . . . Space Shuttle missions | . . . Space Shuttle mission 51-G | Space Shuttle Ascent Stage |
| . . . Space Shuttle mission 51-F | . . . Space Shuttle mission 51-H | space transportation system |
| RT Challenger (Orbiter) | . . . Space Shuttle mission 51-I | spacecraft recovery |
| Space Shuttle mission 51-G | . . . Space Shuttle mission 51-J | terminal area energy management |
| GS space flight | . . . Space Shuttle mission 51-L | Space Shuttle payloads |
| . manned space flight | . . . Space Shuttle mission 61-A | GS payloads |
| | . . . Space Shuttle mission 61-B | |
| | . . . Space Shuttle mission 61-C | |
| | . . . Space Shuttle mission 61-E | |

Space Shuttle upper stage A

- . **Space Shuttle payloads**
- .. Advanced Technology Laboratory
- .. Astro missions (STS)
- .. Atmospheric General Circulation Experiment
- .. Earth radiation budget experiment
- .. Earth Viewing Applications Laboratory
- .. electromagnetic environment experiment
- .. Get Away Specials (STS)
- .. Halogen Occultation Experiment
- .. OSS-1 payload
- .. OSTA-1 payload
- .. OSTA-3 payload
- .. Physics and Chemistry Experiment in Space
- .. plasma interaction experiment
- .. Spacelab
- .. X Ray Astrophysics Facility
- RT commerce lab
- extravehicular activity
- Feature Identification and Location Exper
- Hubble Space Telescope
- Multi-Purpose Logistics Modules
- orbital servicing
- payload assist module
- payload integration
- payload integration plan
- Shuttle Imaging Radar
- sortie systems
- space station payloads
- space technology experiments
- space transportation system
- spaceborne experiments
- Starlab

Space Shuttle Solid Rocket Motors

USE **Space Shuttle Boosters**

Space Shuttle upper stage A

DEF A version of a spinning solid upper stage centered around an Atlas Centaur launch vehicle. Used for SSUS-A.

UF *SSUS-A*

GS Space Shuttle upper stages

. **Space Shuttle upper stage A**

RT Atlas Centaur launch vehicle

Space Shuttle upper stage D

DEF A version of a spinning solid upper stage centered around a Delta launch vehicle. Used for SSUS-D.

UF *SSUS-D*

GS Space Shuttle upper stages

. **Space Shuttle upper stage D**

RT Delta launch vehicle

solid propellant rocket engines

spin stabilization

Space Shuttle upper stages

DEF A collective term for the various types of upper stages planned for the Space Shuttle.

GS **Space Shuttle upper stages**

. Space Shuttle upper stage A

. Space Shuttle upper stage D

. spinning solid upper stage

RT Space Shuttle Ascent Stage

space shuttles

GS manned spacecraft

. **space shuttles**

.. Buran space shuttle

.. Hermes manned spaceplane

.. Space Shuttle orbiters

... Atlantis (orbiter)

... Challenger (Orbiter)

... Columbia (Orbiter)

... Discovery (Orbiter)

... Endeavour (orbiter)

... Enterprise (Orbiter)

reentry vehicles

. recoverable spacecraft

.. reusable spacecraft

... **space shuttles**

... Buran space shuttle

... Hermes manned spaceplane

... Space Shuttle orbiters

... Atlantis (orbiter)

- ... Challenger (Orbiter)
- ... Columbia (Orbiter)
- ... Discovery (Orbiter)
- ... Endeavour (orbiter)
- ... Enterprise (Orbiter)
- RT Advanced Launch System (STS)
- AEPS
- Aeromaneuvering Orbit to Orbit Shuttle
- annular suspension and pointing system
- approach and landing tests (STS)
- Assess program
- auxiliary propulsion
- BESS (satellite)
- Columbus space station
- entry guidance (STS)
- Eureca (ESA)
- extendable stages (spacecraft)
- German Infrared Laboratory
- HOTOL launch vehicle
- Inertial Upper Stage
- interim stages (spacecraft)
- International Space Station
- intraorbit transfer vehicles
- LIRTS (telescope)
- manned space flight
- Orbit Maneuvering Engine (Space Shuttle)
- orbit transfer vehicles
- orbital maneuvers
- payload control
- payload deployment & retrieval system
- payload retrieval (STS)
- SAIL project
- Shuttle Derived Vehicles
- Shuttle Engineering Simulator
- Shuttle pallet satellites
- single stage to orbit vehicles
- sortie systems
- Space Shuttle Ascent Stage
- space transportation system
- Space Transportation System flights
- ∞ spacecraft
- spacecraft recovery
- Spacelab

space simulators

DEF Devices used to simulate one or more parameters of the space environment used for testing space systems or components. Specifically, a closed chamber capable of approximating the vacuum and normal environments of space. Used for orbital simulators.

UF *orbital simulators*

GS simulators

. environment simulators

.. **space simulators**

... clinostats

... High Vacuum Orbital Simulator

... Langley complex coordinator

RT centrifuges

flight simulators

neutral buoyancy simulation

solar simulators

spacecraft environments

vacuum chambers

Space Station Freedom

(added August 1991)

UF *Freedom Space Station*

GS artificial satellites

. space stations

.. **Space Station Freedom**

stations

. space stations

.. **Space Station Freedom**

RT Columbus space station

International Space Station

large space structures

NASA space programs

orbital servicing

space laboratories

space platforms

space station payloads

space station polar platforms

space station power supplies

space station propulsion

space station structures

Space Station Mobile Servicing System

(added September 2001)

DEF Canadian robotic arm system for the International Space Station (ISS), used for ISS assembly, maintenance and payload servicing. Includes three primary components: the Space Station Remote Manipulator System, Mobile Base System, and Special Purpose Dexterous Manipulator.

UF *Canadarm (ISS)*

Mobile Servicing System (ISS)

MSS (International Space Station)

Space Station Remote Manipulator

System

GS manipulators

. remote manipulator system

.. **Space Station Mobile Servicing**

System

robot arms

. **Space Station Mobile Servicing**

System

RT Canadian space program

International Space Station

orbital assembly

payload deployment & retrieval

system

remote handling

robots

space maintenance

space station modules

space station modules

(added November 1998)

GS modules

. **space station modules**

.. Columbus module

.. Cupola Module

.. Destiny Laboratory Module

.. Kibo Japanese Experiment Module

.. Kvant modules

.. Multi-Purpose Logistics Modules

.. Priroda module

.. Service Module (ISS)

.. Unity connecting module

.. Zarya control module

RT

airlock modules

compartments

International Space Station

Mir space station

orbital assembly

space erectable structures

Space Station Mobile Servicing

System

space station structures

spacecraft docking modules

spacecraft modules

space station payloads

GS payloads

. **space station payloads**

RT Alpha Magnetic Spectrometer

Earth Observing System (EOS)

man tended free flyers

Space Shuttle payloads

Space Station Freedom

space station polar platforms

space stations

Spacelab payloads

space station polar platforms

UF *polar platforms (space stations)*

GS artificial satellites

. space stations

.. **space station polar platforms**

space platforms

. **space station polar platforms**

stations

. space stations

.. **space station polar platforms**

RT Columbus space station

Earth Observing System (EOS)

polar orbits

remote sensing

Space Station Freedom

space station payloads

space station power supplies

GS electric power supplies

- . **space station power supplies**
- RT electric batteries
- energy storage
- solar arrays
- solar cells
- solar dynamic power systems
- space power reactors
- Space Station Freedom
- space stations
- spacecraft power supplies
- thermoelectric generators
- space station propulsion**
- GS propulsion
- . **space station propulsion**
- RT auxiliary propulsion
- electric propulsion
- hydrogen oxygen engines
- ion engines
- low thrust propulsion
- propulsion system configurations
- resistojet engines
- solar electric propulsion
- Space Station Freedom
- space stations
- spacecraft propulsion
- Space Station Remote Manipulator System*
(added September 2001)
- USE **Space Station Mobile Servicing System**
- space station structures**
- GS **space station structures**
- . Integrated Truss Structure P1
- . Integrated Truss Structure S1
- . Integrated Truss Structure Z1
- RT Kvant modules
- large space structures
- orbital assembly
- Priroda module
- smart structures
- space erectable structures
- Space Station Freedom
- space station modules
- space stations
- spacecraft structures
- structural design
- ∞ structures
- space stations**
- UF *Earth orbiting space stations*
- manned orbital space stations*
- MOSS (space stations)*
- self deploying space stations*
- GS artificial satellites
- . **space stations**
- .. Automatic Universal Orbiting Stations
- .. Columbus space station
- .. Halo Orbit space station
- .. International Space Station
- .. man tended free flyers
- .. Mir space station
- .. orbiting lunar stations
- .. Salyut space station
- .. Skylab 1
- .. Skylab 2
- .. Skylab 3
- .. Skylab 4
- .. Space Operations Center (NASA)
- .. Space Station Freedom
- .. space station polar platforms stations
- . **space stations**
- .. Automatic Universal Orbiting Stations
- .. Columbus space station
- .. Halo Orbit space station
- .. International Space Station
- .. man tended free flyers
- .. Mir space station
- .. orbiting lunar stations
- .. Salyut space station
- .. Skylab 1
- .. Skylab 2
- .. Skylab 3
- .. Skylab 4
- .. Space Operations Center (NASA)
- .. Space Station Freedom
- .. space station polar platforms
- RT AEPS
- autonomous docking
- bioastronautics
- ferry spacecraft
- inflatable structures
- large space structures
- manned orbital laboratories
- manned spacecraft
- military spacecraft
- orbital servicing
- orbital space tests
- orbital workshops
- ∞ platforms
- rendezvous spacecraft
- Saturn 1 workshop
- Saturn 5 workshop
- Saturn workshops
- sortie systems
- space bases
- space colonies
- space habitats
- space laboratories
- space platforms
- space station payloads
- space station power supplies
- space station propulsion
- space station structures
- spacecraft docking
- spin stabilization
- X-38 crew return vehicle
- space storage**
- RT cryogenic fluid storage
- cryogenic rocket propellants
- cryogenic tanks
- propellant storage
- storable propellants
- ∞ storage
- storage tanks
- space suits**
- DEF Pressure suits for wear in space or at very low ambient pressures within the atmosphere, designed to permit the wearer to leave the protection of a pressurized cabin.
- GS clothing
- . protective clothing
- . . pressure suits
- . . . **space suits**
- extravehicular mobility units
- . suits
- . . pressure suits
- . . . **space suits**
- extravehicular mobility units
- RT safety devices
- ∞ **space surveillance**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT space surveillance (ground based)
- space surveillance (spaceborne)
- space surveillance (ground based)**
- GS surveillance
- . **space surveillance (ground based)**
- RT air defense
- antimissile defense
- asteroid detection
- minitrack system
- space observations (from Earth)
- ∞ space surveillance
- spacecraft tracking
- space surveillance (spaceborne)**
- GS surveillance
- . **space surveillance (spaceborne)**
- RT air defense
- antimissile defense
- high altitude nuclear detection
- ice mapping
- ice reporting
- military spacecraft
- optical countermeasures
- reconnaissance
- satellite-borne photography
- satellite-to-satellite tracking
- ∞ space surveillance
- spacecraft tracking
- space systems engineering*
- USE **aerospace engineering**
- space technology experiments**
- RT antenna design
- antennas
- large space structures
- space erectable structures
- Space Shuttle payloads
- spaceborne experiments
- space temperature**
- GS temperature
- . **space temperature**
- RT cryogenic temperature
- electron energy
- ion temperature
- space tools**
- GS tools
- . **space tools**
- RT low gravity manufacturing
- orbital workers
- telerobotics
- space tourism**
- (added April 1999)
- GS space industrialization
- . **space tourism**
- tourism
- . **space tourism**
- RT space commercialization
- space transportation
- space transportation**
- DEF The conveyance of payloads or personnel to, through, or from outer space.
- GS transportation
- . **space transportation**
- . . space transportation system
- . . . Advanced Launch System (STS)
- . . . Saenger space transportation system
- RT Delta Clipper
- HOPE aerospace plane
- HOTOL launch vehicle
- Inertial Upper Stage
- Japanese space program
- orbit transfer vehicles
- payload stations
- payloads
- single stage to orbit vehicles
- space elevators
- space tourism
- terminal area energy management
- space transportation system**
- DEF A joint NASA-DOD advanced space transportation concept for the 1980s. The main element of the STS is the Space Shuttle. Another element is the orbit transfer vehicles-OTV. A third element called Spacelab is designed and manufactured by the European Space Agency, has no propulsive capability and is carried by the Space Shuttle. Used for STS.
- UF STS
- GS transportation
- . space transportation
- . . **space transportation system**
- . . . Advanced Launch System (STS)
- . . . Saenger space transportation system
- RT Advanced Solid Rocket Motor (STS)
- annular suspension and pointing system
- approach and landing tests (STS)
- Atmospheric General Circulation Experiment
- defense program
- extravehicular mobility units
- Hermes manned spaceplane
- Inertial Upper Stage
- manned maneuvering units
- NASA programs
- orbital servicing
- OSS-1 payload
- OSTA-1 payload
- OSTA-2 payload

Space Transportation System 1 flight

- OSTA-3 payload
 - payload assist module
 - payload delivery (STS)
 - payload integration plan
 - payload retrieval (STS)
 - power modules (STS)
 - remote manipulator system
 - Space Shuttle Main Engine
 - Space Shuttle missions
 - Space Shuttle orbiters
 - Space Shuttle payloads
 - space shuttles
 - Space Transportation System flights
 - space tugs
 - Spacelab
 - ∞ systems
- Space Transportation System 1 flight**
- UF *OFT 1*
Orbital Flight Test 1 (shuttle)
Space Shuttle Orbital Flight Test 1 STS-1
 - GS Space Transportation System flights
. **Space Transportation System 1 flight**
- Space Transportation System 2 flight**
- UF *OFT 2*
Orbital Flight Test 2 (shuttle)
Space Shuttle Orbital Flight Test 2 STS-2
 - GS Space Transportation System flights
. **Space Transportation System 2 flight**
- Space Transportation System 3 flight**
- UF *OFT 3*
Orbital Flight Test 3 (shuttle)
Space Shuttle Orbital Flight Test 3 STS-3
 - GS Space Transportation System flights
. **Space Transportation System 3 flight**
- Space Transportation System 4 flight**
- UF *OFT 4*
Orbital Flight Test 4 (shuttle)
Space Shuttle Orbital Flight Test 4 STS-4
 - GS Space Transportation System flights
. **Space Transportation System 4 flight**
- Space Transportation System flights**
- DEF Revised collective designation for all Space Shuttle flights. Used for OFT, orbital flight tests (shuttle), Space Shuttle orbital flight tests, and Space Shuttle orbital flights.
- UF *OFT*
orbital flight tests (shuttle)
Space Shuttle Orbital Flight Tests
Space Shuttle Orbital Flights
 - GS **Space Transportation System flights**
. Space Transportation System 1 flight
. Space Transportation System 2 flight
. Space Transportation System 3 flight
. Space Transportation System 4 flight
 - RT entry guidance (STS)
geophysical fluid flow cells
Solar Cell Calibration Facility
space flight
Space Shuttle Main Engine
space shuttles
space transportation system
 - ∞ systems
 - ∞ tests
- space tugs**
- RT Inertial Upper Stage
modules
orbit transfer vehicles
orbital servicing
payloads
propulsion
space transportation system
- spacecraft propulsion
- space vehicle checkout program**
- UF *spacecraft prelaunch tests*
 - RT checkout
countdown
performance tests
prefiring tests
spacecraft maintenance
 - ∞ tests
- space vehicle control*
- USE **spacecraft control**
- space vehicles*
- USE **spacecraft**
- space weapons**
- GS weapons
. **space weapons**
 - RT air to air missiles
antimissile missiles
Chaparral missile
laser weapons
Minuteman ICBM
nuclear weapons
surface to air missiles
weapon systems
weapons delivery
- space weather**
- (added June 1999)
- SN (FOR METEOROLOGICAL CONDITIONS RELATED TO THE MIDDLE AND LOWER ATMOSPHERES OF NON-EARTH PLANETS USE "PLANETARY METEOROLOGY")
 - DEF The dynamic, highly variable conditions of the geospace environment that encompasses the sun, the interplanetary medium, and the Earth magnetosphere-ionosphere-thermosphere system. Major contributing factors include variations in the solar wind, solar flares, and solar mass ejections. Effects of space weather phenomena include performance degradation of communication, navigation, and power systems on both spacecraft and ground-based systems; and potential health hazards during extravehicular activity.
 - RT Advanced Composition Explorer
aerospace environments
aerospace safety
Earth ionosphere
Earth magnetosphere
Earth orbital environments
geomagnetism
GOES 13
interplanetary shock waves
ionospheric disturbances
magnetic disturbances
magnetic storms
Polar/GGS spacecraft
radiation hazards
solar activity effects
solar terrestrial interactions
space plasmas
weather
- space weathering**
- (added July 2001)
- DEF All processes that act on material exposed to the space environment including micrometeorite impacts and interactions with solar wind, cosmic rays, and ambient plasma. Includes processes associated with exposure at the surface of airless planets or small bodies.
- GS exposure
. weathering
. . **space weathering**
 - RT aerospace environments
damage
erosion
extraterrestrial environments
Long Duration Exposure Facility
lunar soil
micrometeorites
- spaceborne astronomy**
- GS astronomy
. **spaceborne astronomy**
 - RT Alpha Magnetic Spectrometer
- Astro missions (STS)
astronomical interferometry
astronomical satellites
Constellation-X
Cosmic Background Explorer satellite
faint object camera
Fermi Gamma-ray Space Telescope
Gamma Ray Observatory
Granat satellite
Hipparcos satellite
Hubble Space Telescope
Infrared Space Observatory (ISO)
IUE
James Webb Space Telescope
LISA (observatory)
Magellan ultraviolet astronomy satellite
Microwave Anisotropy Probe
Pinhole Occulter Facility
Quasar
ROSAT mission
SAS-2
SAS-3
SOFIA (airborne observatory)
Space Infrared Telescope Facility
Starsat telescope
Submillimeter Wave Astronomy Satellite
Swift observatory
telescopes
ultraviolet telescopes
X Ray Astrophysics Facility
- spaceborne experiments**
- DEF A collective term designating the various experiments performed or planned in orbiting spacecraft and usually involving physical phenomena in space environments.
- GS **spaceborne experiments**
. Orbiting Frog Otolith
. Physics and Chemistry Experiment in Space
. plasma interaction experiment
 - RT aerospace environments
AMPTE (satellites)
bioprocessing
Columbus module
CRRES (satellite)
Destiny Laboratory Module
experimentation
geophysical fluid flow cells
Get Away Specials (STS)
gloveboxes
International Space Station
Kibo Japanese Experiment Module
Long Duration Exposure Facility
man tended free flyers
molecular shields
Multi-Purpose Logistics Modules
OSS-1 payload
OSTA-1 payload
OSTA-3 payload
payload assist module
payload integration plan
payloads
space laboratories
space manufacturing
space processing
Space Shuttle payloads
space technology experiments
Spacelab
weightlessness
- spaceborne lasers**
- GS stimulated emission devices
. lasers
. . **spaceborne lasers**
 - RT airborne lasers
laser applications
remote sensors
- spaceborne photography**
- UF *space photography*
 - GS imagery
. photography
. . **spaceborne photography**
. . . satellite-borne photography
 - RT aerial photography
astronomical photography
black and white photography

cloud photographs
 cloud photography
 diffraction limited cameras
 Earth resources
 lunar photographs
 lunar photography
 Mars photographs
 multispectral band scanners
 photomapping
 photomaps
 rocket-borne photography
 satellite observation

spaceborne telescopes

GS telescopes
 . **spaceborne telescopes**
 . . Constellation-X
 . . Fermi Gamma-ray Space Telescope
 . . German Infrared Laboratory
 . . Hubble Space Telescope
 . . Infrared Space Observatory (ISO)
 . . James Webb Space Telescope
 . . Large Deployable Reflector
 . . LIRTS (telescope)
 . . solar optical telescope
 . . Space Infrared Telescope Facility
 . . Starlab
 . . Starsat telescope
 . . Wide-field Infrared Survey Explorer
 . . X Ray Astrophysics Facility
 . . XMM-Newton telescope
 RT Astro missions (STS)
 astronomical observatories
 astronomical photography
 astronomy
 diffraction limited cameras
 faint object camera
 Gamma Ray Observatory
 multi-anode microchannel arrays
 Next Generation Space Telescope project
 optical transfer function
 ROSAT mission
 Swift observatory

∞ spacecraft

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF Devices, manned and unmanned, which are designed to be placed into an orbit about the Earth or into a trajectory to another celestial body. Used for space vehicles.
 UF *space vehicles*
 RT Advanced Reconnaissance Electric Spacecraft
 aerospace vehicles
 air data systems
 Astro vehicle
 aerodynamics
 Atlantis (orbiter)
 auxiliary propulsion
 biosatellites
 Canadian spacecraft
 cargo spacecraft
 Challenger (Orbiter)
 Chinese spacecraft
 Clementine spacecraft
 Columbia (Orbiter)
 Czechoslovakian spacecraft
 Discovery (Orbiter)
 dual spin spacecraft
 Endeavour (orbiter)
 Enterprise (Orbiter)
 ESA spacecraft
 escape rockets
 expandable structures
 flexible spacecraft
 flight test vehicles
 French space program
 Galileo probe
 Galileo spacecraft
 ground support equipment
 hypersonic vehicles
 Indian space program
 Indian spacecraft
 inflatable spacecraft
 interplanetary spacecraft
 Israeli spacecraft
 Japanese space program

Japanese spacecraft
 launch vehicles
 lunar spacecraft
 Magellan spacecraft (NASA)
 maneuverable spacecraft
 manned orbital laboratories
 manned spacecraft
 Mariner Mark 2 Spacecraft
 Mark 1 spacecraft
 military spacecraft
 orbit transfer vehicles
 orbital maneuvering vehicles
 orbiting lunar stations
 outer planets explorers
 photo reconnaissance spacecraft
 Pioneer Venus 2 spacecraft
 power limited spacecraft
 Radiation Meteoroid spacecraft
 recoverable spacecraft
 reentry vehicles
 research vehicles
 ∞ satellites
 ∞ SERT 1 spacecraft
 SERT 2 spacecraft
 Shuttle Derived Vehicles
 soft landing spacecraft
 Solar Maximum Mission-A
 solettas
 Soviet spacecraft
 space capsules
 space debris
 space laboratories
 space missions
 space shuttles
 spacecraft cabin simulators
 spacecraft modules
 technology feasibility spacecraft
 test vehicles
 TOPS (spacecraft)
 transatmospheric vehicles
 unidentified flying objects
 unmanned spacecraft
 ∞ vehicles
 Viking orbiter 1
 Viking orbiter 2
 Viking orbiter spacecraft
 Voyager 1 spacecraft
 Voyager 2 spacecraft
 X-30 vehicle
 X-37 vehicle

spacecraft antennas

GS antennas
 . **spacecraft antennas**
 radio equipment
 . **spacecraft antennas**
 telecommunication
 . **spacecraft antennas**
 RT furlable antennas

spacecraft breakup

(added August 1989)
 UF *breakup (spacecraft)*
orbital breakup
reentry breakup
satellite breakup
 RT *satellite fragmentation*
 atmospheric entry
 destruction
 hazards
 meteoroid hazards
 orbit decay
 reentry effects
 space debris
 spacecraft reentry
 spacecraft survivability
 uncontrolled reentry (spacecraft)
 wreckage

spacecraft cabin atmospheres

GS controlled atmospheres
 . cabin atmospheres
 . . **spacecraft cabin atmospheres**
 RT carbon dioxide concentration
 closed ecological systems
 cockpits
 environmental control
 high pressure oxygen
 pressurized cabins

rebreathing

spacecraft cabin simulators

GS simulators
 . training simulators
 . . **spacecraft cabin simulators**
 training devices
 . training simulators
 . . **spacecraft cabin simulators**
 RT aerospace environments
 cockpit simulators
 manned spacecraft
 simulation
 space flight training
 space logistics
 ∞ spacecraft
 test facilities

spacecraft cabins

GS compartments
 . **spacecraft cabins**
 spacecraft components
 . **spacecraft cabins**
 RT ∞ cabins
 cockpits
 crew experiment stations
 crew observation stations
 crew workstations
 pressurized cabins
 space capsules

spacecraft charging

DEF Electric charge induction upon the surface of a spacecraft by magnetospheric plasmas or other ion sources.
 RT electric fields
 external surface currents
 single event upsets
 spacecraft glow
 system generated electromagnetic pulses

Spacecraft Charging at High Altitude

USE **SCATHA satellite**

spacecraft communication

SN (COMMUNICATION OF SPACECRAFT WITH GROUND OR OTHER SPACECRAFT)
 DEF The act of, or methods for, conveying information to or from manned or unmanned spacecraft.
 GS telecommunication
 . space communication
 . . **spacecraft communication**
 . . . reentry communication
 . . . satellite communication
 RT ARPA computer network
 astronics
 circumlunar communication
 Earth terminals
 facsimile communication
 ground-air-ground communication
 hoop column antennas
 interplanetary communication
 lunar communication
 optical communication
 packet transmission
 plasma antennas
 radio communication
 satellite communications ships
 satellite ground support
 single channel per carrier
 transmission
 system generated electromagnetic pulses
 unified S band
 wireless communication

spacecraft components

GS **spacecraft components**
 . service modules
 . . Multi-Purpose Logistics Modules
 . spacecraft cabins
 . spacecraft docking modules
 . spacecraft modules
 . . command modules
 . . command service modules
 . . landing modules
 . . . Lunar landing modules
 . . . Lunar Module

spacecraft configurations

- Apollo lunar experiment module
- LSSM
- Lunar Module 5
- Lunar Module 7
- Altair Lunar Lander
- . . . Mars Excursion Module
- . . SIM
- RT airborne/spaceborne computers
- boron-epoxy composites
- commonality
- ∞ components
- nose cones
- rocket engines

spacecraft computers

- USE **airborne/spaceborne computers**

spacecraft configurations

- GS **spacecraft configurations**
 - . satellite configurations
 - . Space Shuttle Ascent Stage
- RT aerodynamic configurations
- aircraft configurations
- Apollo short stack
- ∞ configurations
- flared bodies
- launch vehicle configurations
- propulsion system configurations
- Radiation Meteoroid spacecraft
- reentry vehicles
- upper stage rocket engines

spacecraft construction materials

- RT ∞ construction materials
- functionally gradient materials
- Ludox (trademark)
- ∞ materials
- materials selection

spacecraft contamination

- GS contamination
 - . **spacecraft contamination**
- RT decontamination
- exobiology
- lab-on-a-chip devices

spacecraft control

- UF *space vehicle control*
- GS **spacecraft control**
 - . satellite control
 - . . satellite attitude control
- RT attitude control
- automatic control
- ∞ control
- control simulation
- crew procedures (preflight)
- engine control
- flexible spacecraft
- flight control
- fly by wire control
- formation flying
- ground based control
- manual control
- Marquardt R4D engine
- missile control
- orbit determination
- pointing control systems
- radio control
- remote control
- rocket engine control
- shape control
- stationkeeping
- thrust vector control
- visual control

spacecraft defense

- DEF The protection of spacecraft from undesirable external forces. Used for satellite defense.
- UF *satellite defense*
- RT spacecraft survivability
- stealth technology
- vulnerability

spacecraft design

- DEF The act of conceiving and planning the structure, systems, and performance characteristics of any type of spacecraft including space

probes, satellites, space platforms and space stations.

GS **spacecraft design**

- . IPAD
- . satellite design
- RT Advanced Launch System (STS)
- aeroshells
- computer aided design
- ∞ design
- engine design
- Hermes manned spaceplane
- Indian space program
- Japanese space program
- lofting
- product development
- satellite temperature
- Shuttle Derived Vehicles
- space debris
- spacecraft temperature
- structural design
- systems engineering
- transatmospheric vehicles
- weight reduction

spacecraft docking

DEF The act of coupling two or more orbiting objects; the operation of mechanically connecting together, or in some manner bring together orbital payloads.

- GS maneuvers
 - . docking
 - . . **spacecraft docking**
 - . spacecraft maneuvers
 - . . **spacecraft docking**

- RT ∞ astronautics
- autonomous docking
- interception
- Mir space station
- mooring
- multiple docking adapters
- orbital rendezvous
- rendezvous trajectories
- Salyut space station
- space rendezvous
- space stations
- spacecraft docking modules
- transfer orbits
- Unity connecting module

spacecraft docking modules

- GS modules
 - . **spacecraft docking modules**
 - spacecraft components
 - . **spacecraft docking modules**
- RT airlock modules
- command modules
- command service modules
- landing modules
- Multi-Purpose Logistics Modules
- service modules
- space station modules
- spacecraft docking

spacecraft electronic equipment

- GS electronic equipment
 - . **spacecraft electronic equipment**
 - onboard equipment
 - . spacecraft equipment
 - . . **spacecraft electronic equipment**
- RT airborne/spaceborne computers
- astrionics
- single event upsets

spacecraft environments

- (added August 1989)
- SN (LIMITED TO SPACECRAFT INTERNAL COMPARTMENTS AND CABINS; FOR SPACECRAFT EXTERNAL ENVIRONMENTS REFER TO 'EXTRATERRESTRIAL ENVIRONMENTS')
- GS environments
 - . **spacecraft environments**
- RT aerospace medicine
- Automatic Universal Orbiting Stations
- bioastronautics
- closed ecological systems
- controlled atmospheres
- environmental control
- exobiology
- extraterrestrial environments
- intravehicular activity

life support systems

- rotating environments
- satellite temperature
- space simulators
- thermal environments
- weightlessness

spacecraft equipment

- GS onboard equipment
 - . **spacecraft equipment**
 - . . spacecraft electronic equipment
- RT ∞ equipment
- OSTA-3 payload
- spacecraft instruments

spacecraft glow

- UF *shuttle glow*
- GS decay
 - . **spacecraft glow**
 - emission
 - . light emission
 - . . luminescence
 - . . . **spacecraft glow**
- RT Earth orbital environments
- spacecraft charging
- surface reactions

spacecraft guidance

- GS guidance (motion)
 - . **spacecraft guidance**
 - . . satellite guidance
- RT automatic control
- autonomous docking
- autonomous navigation
- CCD star tracker
- celestial navigation
- command guidance
- formation flying
- ground based control
- inertial guidance
- injection guidance
- interplanetary flight
- interplanetary trajectories
- laser gyroscopes
- manual control
- midcourse guidance
- orbits
- reentry guidance
- rendezvous guidance
- space flight
- space navigation
- star trackers
- terminal guidance

spacecraft instruments

DEF Electronic, optical, gyroscopic, and other instruments that play a role in the control of the spacecraft, or that function to measure, record, display, or process different values or quantities encountered in the flight of a spacecraft.

- UF *spacecraft sensors*
- GS **spacecraft instruments**
 - . satellite instruments
 - . . multispectral linear arrays
 - . spacecraft position indicators
- RT astronics
- Atmospheric Cloud Physics Lab (Spacelab)
- autonomous spacecraft clocks
- bubble technique
- flight instruments
- flight test instruments
- guidance sensors
- I2S cameras
- instrument packages
- ∞ instruments
- laser altimeters
- measuring instruments
- onboard equipment
- spacecraft equipment

spacecraft landing

- GS landing
 - . **spacecraft landing**
 - . . horizontal spacecraft landing
 - . . lunar landing
 - . . planetary landing
 - . . . Mars landing
- RT aircraft landing

- approach and landing tests (STS)
 - crash landing
 - emergency landing
 - glide landings
 - hard landing
 - landing simulation
 - soft landing
 - soft landing spacecraft
 - terminal area energy management
 - touchdown
 - vertical landing
 - water landing
- spacecraft launching**
- UF *satellite launching*
 - GS launching
 - . **spacecraft launching**
 - . . . liftoff (launching)
 - RT countdown
 - Delta 4 Heavy launch vehicle
 - heavy lift launch vehicles
 - HOTOL launch vehicle
 - launch costs
 - launch dates
 - launch vehicles
 - launch windows
 - launching pads
 - missiles
 - orbit insertion
 - orbital launching
 - orbital shots
 - postlaunch reports
 - prelaunch summaries
 - railgun accelerators
 - reusable launch vehicles
 - rocket launching
 - space commercialization
- spacecraft lubrication**
- UF *space environmental lubrication*
 - GS lubrication
 - . **spacecraft lubrication**
 - RT self lubricating materials
- spacecraft maintenance**
- GS maintenance
 - . **spacecraft maintenance**
 - RT checkout
 - prelaunch tests
 - space vehicle checkout program
 - spacecraft reliability
 - turnaround (STS)
- spacecraft maneuvers**
- UF *satellite maneuvers*
 - GS maneuvers
 - . **spacecraft maneuvers**
 - . . . spacecraft docking
 - RT control simulation
 - formation flying
 - maneuverability
 - maneuverable spacecraft
 - orbit insertion
 - space flight
- spacecraft models**
- GS models
 - . **spacecraft models**
 - RT aircraft models
 - dynamic models
 - mathematical models
 - scale models
- spacecraft modules**
- GS modules
 - . **spacecraft modules**
 - . . . command modules
 - . . . command service modules
 - . . . landing modules
 - lunar landing modules
 - Lunar Module
 - Apollo lunar experiment module
 - LSSM
 - Lunar Module 5
 - Lunar Module 7
 - Altair Lunar Lander
 - Mars Excursion Module
 - SIM
 - RT spacecraft components
- spacecraft motion**
- SN (NONTRAJECTORY MOTION)
 - RT aerodynamic balance
 - aerodynamic stability
 - attitude stability
 - buffeting
 - control stability
 - dynamic stability
 - flexible spacecraft
 - flutter
 - ∞ motion
 - motion stability
 - oscillations
 - sideslip
 - stability
 - tumbling motion
 - vibration
- spacecraft orbital assembly*
- USE **orbital assembly**
- spacecraft orbits**
- GS orbits
 - . **spacecraft orbits**
 - . . . satellite orbits
 - geosynchronous orbits
 - parking orbits
 - stationary orbits
 - twenty-four hour orbits
 - transfer orbits
 - interplanetary transfer orbits
 - RT circular orbits
 - Earth orbits
 - elliptical orbits
 - equatorial orbits
 - lunar orbits
 - orbit insertion
 - orbital mechanics
 - orbital position estimation
 - planetary orbits
 - retrograde orbits
 - solar orbits
- spacecraft performance**
- DEF The manner or effectiveness in which any space vehicle, space platform, or space station functions while in operation in space, or in a simulated space environment.
 - RT astronaut performance
 - ∞ performance
 - postlaunch reports
- spacecraft position indicators**
- GS display devices
 - . position indicators
 - . . **spacecraft position indicators**
 - . . . measuring instruments
 - indicating instruments
 - position indicators
 - **spacecraft position indicators**
 - spacecraft instruments
 - **spacecraft position indicators**
 - RT flight instruments
 - head-up displays
 - orbit determination
- spacecraft power supplies**
- DEF Sources of electrical energy, including batteries, generators, and energy conversion devices, that support the normal operation of spacecraft.
 - GS electric power supplies
 - . **spacecraft power supplies**
 - RT auxiliary power sources
 - cryocycle principle
 - direct power generators
 - electric batteries
 - ∞ energy sources
 - free-piston engines
 - laser power beaming
 - microwave power beaming
 - nickel hydrogen batteries
 - nuclear auxiliary power units
 - power beaming
 - power modules (STS)
 - ∞ power supplies
 - propellants
 - solar dynamic power systems
 - space station power supplies
 - thermophotovoltaic conversion
- spacecraft prelaunch tests*
- USE **space vehicle checkout program**
- spacecraft propulsion**
- DEF The action or process of imparting motion to a spacecraft by means of a force such as a thrust of air or energy released by burning fuel.
 - GS propulsion
 - . **spacecraft propulsion**
 - . . . electromagnetic propulsion
 - magnetic sails
 - electrostatic propulsion
 - ion propulsion
 - matter-antimatter propulsion
 - negative matter propulsion
 - photonic propulsion
 - laser propulsion
 - plasma propulsion
 - solar propulsion
 - solar electric propulsion
 - solar thermal propulsion
 - RT chemical propulsion
 - descent propulsion systems
 - electric propulsion
 - fusion propulsion
 - Hall thrusters
 - laser propulsion
 - low thrust propulsion
 - magnetic nozzles
 - magnetoplasmadynamic thrusters
 - magnetoplasmadynamics
 - mass drivers
 - nuclear electric propulsion
 - nuclear propulsion
 - oxygen-hydrocarbon rocket engines
 - post boost propulsion system
 - propellants
 - pulsed inductive thrusters
 - pulsed plasma thrusters
 - rocket engines
 - rocket-based combined-cycle engines
 - Rover project
 - solar sails
 - space flight
 - space station propulsion
 - space tugs
 - total impulse
 - VASIMR (propulsion system)
- spacecraft radiators**
- UF *space radiators*
 - GS heat radiators
 - . **spacecraft radiators**
 - RT condensers (liquefiers)
 - cooling
 - cooling systems
 - radiative heat transfer
 - solar reflectors
- spacecraft recovery**
- UF *satellite capture*

spacecraft reentry

- snatching*
 - RT booster recovery
 - Discoverer recovery capsules
 - recoverable spacecraft
 - ∞ recovery
 - recovery parachutes
 - recovery zones
 - rescue operations
 - reusable launch vehicles
 - Space Shuttle orbiters
 - space shuttles
 - water landing
- spacecraft reentry**
- GS atmospheric entry
 - . reentry
 - . . . **spacecraft reentry**
 - . . . uncontrolled reentry (spacecraft)
 - RT Earth-Venus trajectories
 - entry guidance (STS)
 - flight mechanics
 - hypersonic reentry
 - lifting reentry vehicles
 - manned reentry
 - return to Earth space flight
 - satellite lifetime
 - spacecraft breakup
- spacecraft reliability**
- GS reliability
 - . **spacecraft reliability**
 - RT circuit reliability
 - component reliability
 - controllability
 - prelaunch problems
 - quality control
 - spacecraft maintenance
- spacecraft rendezvous*
- USE **space rendezvous**
- spacecraft sensors*
- USE **spacecraft instruments**
- spacecraft shielding**
- GS shielding
 - . **spacecraft shielding**
 - RT aeroshells
 - heat shielding
 - ∞ insulated structures
 - meteoroid protection
 - nose cones
 - radiation shielding
 - radio frequency shielding
 - reentry shielding
 - reusable heat shielding
 - safety devices
 - solar radiation shielding
- spacecraft stability**
- UF *satellite attitude disturbance*
 - GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . **spacecraft stability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . **spacecraft stability**
 - RT aerodynamic balance
 - aerodynamic stability
 - attitude stability
 - buffeting
 - control stability
 - counterbalances
 - directional stability
 - Discos (satellite attitude control)
 - dual spin spacecraft
 - lateral stability
 - liquid sloshing
 - longitudinal stability
 - low speed stability
 - nutaton dampers
 - satellite perturbation
 - tumbling motion
 - wind tunnel stability tests
- spacecraft sterilization**
- GS cleaning
 - . sterilization

- . . **spacecraft sterilization**
 - decontamination
 - . **spacecraft sterilization**
 - RT chemical sterilization
 - ethylene oxide
 - exobiology
 - planetary protection
 - planetary quarantine
 - purification
 - sterilization effects
- spacecraft structures**
- RT aeroshells
 - aircraft structures
 - folding structures
 - fuel tanks
 - large space structures
 - meteoroid protection
 - orbital assembly
 - rocket engines
 - satellite design
 - smart structures
 - space erectable structures
 - space station structures
 - structural design
 - ∞ structures
- spacecraft survivability**
- DEF The ability of a spacecraft to survive adverse conditions including reentry problems.
 - RT aircraft survivability
 - spacecraft breakup
 - spacecraft defense
 - survival
 - uncontrolled reentry (spacecraft)
 - vulnerability
- spacecraft television**
- GS communication equipment
 - . **spacecraft television**
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
 - telecommunication
 - . **spacecraft television**
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
 - television systems
 - . **spacecraft television**
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
 - RT color television
 - satellite transmission
 - stereotelevision
 - television transmission
- spacecraft temperature**
- GS **spacecraft temperature**
 - . satellite temperature
 - RT heat pipes
 - spacecraft design
 - temperature control
- spacecraft tracking**
- DEF The process of following the movements of a spacecraft or space platform by radar, optical, or other means.
 - GS tracking (position)
 - . **spacecraft tracking**
 - . . satellite tracking
 - . . . satellite-to-satellite tracking
 - RT Advanced Range Instrumentation Ship
 - Deep Space Network
 - minitrack system
 - missile tracking
 - optical tracking
 - polystation doppler tracking system
 - radar tracking
 - radio tracking
 - space detection and tracking system
 - space surveillance (ground based)
 - space surveillance (spaceborne)
 - tracking networks
 - tracking stations
 - transponder control group

- unified S band
- Spacecraft Tracking and Data Network*
- USE **STDN (network)**
- spacecraft trajectories**
- GS trajectories
 - . **spacecraft trajectories**
 - . . interplanetary trajectories
 - . . . Earth-Mars trajectories
 - . . . Earth-Mercury trajectories
 - . . . Earth-Venus trajectories
 - . . lunar trajectories
 - . . . circumlunar trajectories
 - . . . Earth-Moon trajectories
 - . . . moon-Earth trajectories
 - RT ascent trajectories
 - descent trajectories
 - Earth orbital rendezvous
 - flight mechanics
 - Goddard Trajectory Determination System
 - hyperbolic trajectories
 - interorbital trajectories
 - lunar orbital rendezvous
 - ∞ motion
 - orbital rendezvous
 - radio occultation
 - reentry trajectories
 - rendezvous trajectories
 - round trip trajectories
 - swingby technique
- spacecrew transfer**
- UF *intervehicle spacecrew transfer*
 - RT Apollo Soyuz test project
 - command modules
 - manned space flight
 - rendezvous spacecraft
 - space logistics
- spacecrews**
- GS personnel
 - . crews
 - . . flight crews
 - . . . **spacecrews**
 - . flying personnel
 - . . flight crews
 - . . . **spacecrews**
 - RT astronauts
 - cosmonauts
 - crew experiment stations
 - crew observation stations
 - crew procedures (inflight)
 - crew procedures (preflight)
 - crew workstations
 - space habitats
 - toilets
- Spacelab**
- GS laboratories
 - . space laboratories
 - . . manned orbital laboratories
 - . . . **Spacelab**
 - manned spacecraft
 - manned orbital laboratories
 - . . **Spacelab**
 - payloads
 - . Space Shuttle payloads
 - . . **Spacelab**
 - RT Advanced Technology Laboratory
 - annular suspension and pointing system
 - EXPOS (Spacelab payload)
 - geophysical fluid flow cells
 - German Infrared Laboratory
 - Get Away Specials (STS)
 - GRIST (telescope)
 - LIRTS (telescope)
 - NASA programs
 - OSTA-2 payload
 - SEPAC (payload)
 - Skylab program
 - space shuttles
 - space transportation system
 - spaceborne experiments
 - Starlab
- Spacelab payloads**
- DEF A general, collective term for the di-

verse and numerous ESA payloads planned for space experiments.

- GS payloads
 - . **Spacelab payloads**
 - .. AMPS (satellite payload)
 - .. Atmospheric Cloud Physics Lab (Spacelab)
 - .. Atmospheric General Circulation Experiment
 - .. geophysical fluid flow cells
 - .. Solar Cell Calibration Facility
- RT annular suspension and pointing system
 - Astro missions (STS)
 - Get Away Specials (STS)
 - sortie systems
 - space station payloads

Spacelab simulation flights
USE **Assess program**

Spacelab UV-Optical Telescope Facility
USE **Starlab**

spacers

- RT bushings
- dividers
- fasteners
- inserts
- isolators
- separators
- spacing
- washers (spacers)

spacetennas

DEF The transmitting antennas of a solar power satellite transmission system which directs the high-power beam from space to a focus on the rectennas on Earth.

- GS antennas
 - . radio antennas
 - .. microwave antennas
 - ... **spacetennas**
- microwave equipment
 - . microwave antennas
 - .. **spacetennas**
- radio equipment
 - . radio antennas
 - .. microwave antennas
 - ... **spacetennas**
- RT microwave transmission rectennas

space-time adaptive processing

(added November 2002)

DEF Multidimensional filtering technique that reduces the effects of airborne radar clutter and white noise jamming by using the input from a phased-array antenna to produce an adaptive weight vector which can then be applied to the signal.

- UF *STAP (radar)*
- GS data processing
 - . signal processing
 - .. **space-time adaptive processing**
- RT adaptive filters
 - airborne radar
 - clutter
 - interference immunity
 - jamming
 - radar detection
 - radar filters
 - surveillance radar

space-time CE/SE method

(added June 2002)

DEF A numerical framework used for solving conservation laws in continuum mechanics, where both local and global flux conservations are enforced in space and time. The method is characterized by low dispersion errors and low dissipation.

- UF *CE/SE method*
conservation element and solution element
- GS analysis (mathematics)
 - . numerical analysis
 - .. **space-time CE/SE method**
- RT aeroacoustics
 - computational fluid dynamics

conservation equations
conservation laws
flow equations

space-time continuum
USE **relativity**

space-time functions

- UF *space-time metric*
- GS functions (mathematics)
 - . **space-time functions**
- RT light-cone expansion
- Minkowski space
- naked singularities
- relativity
- Yang-Mills theory

space-time metric
USE **space-time functions**

spacewalks
(added April 2001)
USE **extravehicular activity**

spacing

- GS **spacing**
 - . aircraft approach spacing
- RT altitude control
- attitude control
- clearances
- intervals
- isolation
- positioning
- ∞ separation
- spacers
- thickness

SPADATS (tracking system)
USE **space detection and tracking system**

Spain

- GS nations
 - . **Spain**
 - .. Canary Islands
- RT Andorra
- Europe
- Gibraltar
- Pyrenees Mountains (Europe)
- Spanish Sahara
- Spanish space program

spallation

- GS nuclear radiation
 - . **spallation**
- nuclear reactions
- . **spallation**
- RT particle production

spalling

- DEF Spontaneous separation of a surface layer from a metal.
- RT chipping
- flaking
- fracturing
- fragmentation
- wear
- wear tests

∞ span

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT aspect ratio
- dimensions
- life span
- width
- wing span

Spanish Sahara

- RT Africa
- nations
- Spain

Spanish space program

- (added March 1989)
- GS programs
 - . space programs
 - .. European space programs
 - ... **Spanish space program**

RT Spain

spanloader aircraft

DEF Advanced distributed-load cargo aircraft configurations in which the payloads are distributed across the span of the wing for a close match between aerodynamic and inertial loading for minimal bending stresses.

- GS transport aircraft
 - . cargo aircraft
 - .. **spanloader aircraft**
- RT ∞ aircraft
 - supercritical wings
 - swept wings

spanwise blowing

- GS blowing
 - . **spanwise blowing**
- RT cross flow
 - externally blown flaps
 - jet flow
 - lift augmentation
 - pressure distribution
 - tangential blowing
 - wing span

SPAR (rocket)

USE **Space Processing Applications Rocket**

spare parts

- RT ∞ components
 - damage assessment
 - downtime
 - engine parts
 - inventory management
 - logistics management
 - maintenance
 - modules
 - redundant components
 - retirement for cause

spark chambers

- GS ionization chambers
 - . **spark chambers**
- measuring instruments
 - . counters
 - .. radiation counters
 - ... **spark chambers**
- . radiation measuring instruments
 - .. radiation counters
 - ... **spark chambers**
- RT bubble chambers
- ∞ chambers
 - cloud chambers
 - electric sparks
 - neutron counters

spark discharges

USE **electric sparks**

spark gaps

- GS gaps
 - . **spark gaps**
- RT arc generators
 - dielectrics
 - electric fields
 - electric sparks
 - electrical faults
 - multipactor discharges
 - potential gradients
 - trigatrons

spark ignition

- GS ignition
 - . **spark ignition**
- RT combustion
 - electric ignition
 - electric sparks
 - eudiometers

spark machining

- UF *electroerosion*
electrostatic erosion
- GS cutting
 - . **spark machining**
- machining
 - . **spark machining**
- RT electroforming
- erosion

spark plugs

metal cutting
piercing

spark plugs

RT arc generators
combustion chambers
electric sparks
igniters
ignition systems
internal combustion engines

spark shadowgraph photography

USE **shadowgraph photography**

sparks

GS **sparks**
. electric sparks
RT ignition

Sparrow 2 missile

GS missiles
. air to air missiles
. . . Sparrow missiles
. . . **Sparrow 2 missile**
RT solid propellant rocket engines

Sparrow 3 missile

GS missiles
. air to air missiles
. . . Sparrow missiles
. . . **Sparrow 3 missile**
RT liquid propellant rocket engines

Sparrow missiles

GS missiles
. air to air missiles
. . . **Sparrow missiles**
. . . Sparrow 2 missile
. . . Sparrow 3 missile
RT solid propellant rocket engines

Spartan missile

GS missiles
. antimissile missiles
. . . **Spartan missile**
RT Nike-Zeus missile
Sentinel system
Sprint missile
surface to air missiles

Spartan satellites

GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **Spartan satellites**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **Spartan satellites**
RT astrophysics
solar physics
ultraviolet astronomy

SPAS (ESA platforms)

USE **Shuttle pallet satellites**

spasms

GS muscular function
. **spasms**
RT contraction
involuntary actions
muscles

spatial dependencies

GS dependence
. **spatial dependencies**
RT mathematical models
∞ space
time dependence

spatial distribution

UF *Moliere formula*
spatial isotropy
GS distribution (property)
. **spatial distribution**
. . . horizontal distribution
. . . vertical distribution
. . . star distribution
. . . geographic distribution
RT anisotropy
ion distribution

meteoroid concentration
particle density (concentration)
position (location)
satellite constellations
stereochemistry
teleconnections (meteorology)
temporal distribution
Voronoi diagrams

spatial filtering

GS filtration
. **spatial filtering**
RT aberration
attenuation
augmentation
blurring
∞ filters
Gabor filters
holography
images
∞ noise
photographs
photointerpretation
plane waves
resolution
speckle holography

spatial isotropy

USE **isotropy**
spatial distribution

spatial marching

DEF Techniques for solving partial differential equations that move along in a space direction.
RT acoustic ducts
duct geometry
numerical analysis
time marching

spatial orientation

USE **attitude (inclination)**

spatial resolution

DEF The precision with which an optical instrument can produce separable images of different points on an object.
GS resolution
. **spatial resolution**
RT atmospheric correction
high resolution
image processing
image resolution
imaging techniques
spectral resolution
temporal resolution

SPDL

USE **document markup languages**

species diffusion

GS diffusion
. **species diffusion**
RT biological diversity
evolution (development)
genetics
geographic distribution

specific gravity

USE **density (mass/volume)**

specific heat

DEF The ratio of the heat absorbed (or released) by unit mass of a system to the corresponding temperature rise (or fall). Used for Debye temperature and heat capacity.
UF *Debye temperature*
heat capacity
GS heat
. **specific heat**
thermodynamic properties
. thermophysical properties
. . . **specific heat**
RT enthalpy
equipartition theorem
Gruneisen constant
heat budget
heat of fusion
ion temperature
Lewis numbers

melting points
neel temperature
thermal conductivity
thermal resistance

specific impulse

GS impulses
. **specific impulse**
RT mass flow rate
propellant mass ratio
propellants
propulsion system performance
propulsive efficiency
rocket propellants
rocket thrust
thermodynamic efficiency
thrust
total impulse

specifications

DEF Precise statements or sets of requirements to be satisfied by materials, products, systems, or services.
GS **specifications**
. aircraft specifications
. equipment specifications
. functional design specifications
RT aircraft performance
commonality
drawings
inspection
maintenance
∞ materials tests
mechanical properties
naming
performance tests
process control (industry)
procurement
quality
quality control
reliability
requirements
standardization
standards
technical writing
tolerances (mechanics)
user requirements

specimen geometry

GS geometry
. **specimen geometry**
RT fatigue tests
load tests
mechanical properties
tensile tests

specimens

RT Mars surface samples
samples
sampling

speckle holography

DEF An imaging technique whereby a speckle pattern results from laser illumination of a diffusely reflecting surface when interference occurs between the fields passing through the various portions of lens aperture. Information about the motion of an object can then be obtained from the imaged fringes resulting from the translation of two speckle patterns.
GS imagery
. photography
. . . holography
. . . **speckle holography**
imaging techniques
. **speckle holography**
RT coherent light
diffraction patterns
hologrammetry
holographic interferometry
image correlators
laser applications
scatter plates (optics)
spatial filtering
speckle interferometry
speckle patterns

speckle interferometry

DEF An imaging process whereby the pattern on the image plane of an interferometer is

the result of interference between two mutually coherent, but randomly speckled, fields of two, lens formed images from laser illuminated, diffusely reflecting surfaces.

- GS interferometry
- . **speckle interferometry**
- RT diffraction patterns
- Fresnel diffraction
- Fresnel reflectors
- infrared interferometers
- isochromatics
- laser applications
- null zones
- plasma flux measurement
- Sagnac effect
- scatter plates (optics)
- speckle holography

speckle patterns

- RT diffraction patterns
- holography
- laser outputs
- light scattering
- ∞ patterns
- speckle holography
- surface roughness effects

spectra

- UF *optical spectrum*
- GS **spectra**
- . atomic spectra
- . continuous spectra
- . energy spectra
- . . . electronic spectra
- . . . neutron spectra
- . mass spectra
- . molecular spectra
- . . . electronic spectra
- . . . Raman spectra
- . . . rotational spectra
- . . . vibrational spectra
- . noise spectra
- . oxygen spectra
- . plasma spectra
- . power spectra
- . . . cepstra
- . radiation spectra
- . . . absorption spectra
- Fraunhofer lines
- Herzberg bands
- telluric lines
- . . . electromagnetic spectra
- . . . gamma ray spectra
- . . . infrared spectra
- . . . line spectra
- Balmer series
- D lines
- electronic spectra
- Fraunhofer lines
- H lines
- H alpha line
- H beta line
- H gamma line
- K lines
- Lyman spectra
- Paschen series
- Rydberg series
- telluric lines
- . . . radio spectra
- microwave spectra
- . . . Raman spectra
- . . . stellar spectra
- solar spectra
- UVB spectra
- ultraviolet spectra
- vibrational spectra
- . . . visible spectrum
- . . . x ray spectra
- . . emission spectra
- . shock spectra
- . spectral bands
- . . absorption spectra
- . . . Fraunhofer lines
- . . . Herzberg bands
- . . . telluric lines
- . . diffuse interstellar bands
- . . photoluminescent bands
- . . Schumann-Runge bands
- . . Swan bands

- . . Vegard-Kaplan bands
- RT astronomical spectroscopy
- color
- excitons
- flux density
- gamma ray spectrometers
- isoelectronic sequence
- spectral sensitivity
- spectral shift control
- spectral theory
- spectrograms
- spectrographs
- spectrometers
- spectroscopy
- spectrum analysis
- transition probabilities

spectral absorption

- USE **absorption spectra**

spectral analysis

- USE **spectrum analysis**

spectral bands

- GS spectra
- . **spectral bands**
- . . absorption spectra
- . . . Fraunhofer lines
- . . . Herzberg bands
- . . . telluric lines
- . . diffuse interstellar bands
- . . photoluminescent bands
- . . Schumann-Runge bands
- . . Swan bands
- . . Vegard-Kaplan bands
- RT band ratioing
- ∞ bands
- electronic spectra
- energy bands
- frequencies
- line spectra
- visible spectrum
- white noise

spectral correlation

- GS correlation
- . **spectral correlation**
- RT electromagnetic spectra
- spectrophotography

spectral counterparts (astronomy)

- (*added August 2005*)
- DEF Corresponding radiation sources of different spectral regions that are believed to be associated with the same astronomical object.
- RT gamma ray sources (astronomy)
- radiation sources
- radio sources (astronomy)
- Swift observatory
- x ray sources

spectral emission

- GS emission
- . **spectral emission**
- RT continuous spectra
- electromagnetic radiation
- emittance
- incandescence
- light emission
- line spectra
- nongray gas
- ∞ radiation
- spectrograms
- spectroscopy
- spectrum analysis
- spontaneous emission
- ultraviolet emission
- wavelengths

spectral energy distribution

- GS distribution (property)
- . energy distribution
- . . **spectral energy distribution**
- RT ∞ distribution
- electromagnetic radiation
- energy spectra
- fine structure

line spectra

spectral line width

- GS bandwidth
- . **spectral line width**
- RT line spectra
- oscillator strengths

spectral lines

- USE **line spectra**

spectral methods

- RT computational fluid dynamics
- differential equations
- ∞ methodology
- spectrum analysis

spectral mixture analysis

- (*added July 2000*)
- DEF Linear algebraic method for defining subpixel fractions for each of the spectral end-members (e.g., ground cover categories) that constitute a mixed-pixel spectral signature.
- UF *SMA (image analysis)*
- GS discrimination
- . **spectral mixture analysis**
- image analysis
- . **spectral mixture analysis**
- spectrum analysis
- . **spectral mixture analysis**
- RT image processing
- pixels
- principal components analysis
- remote sensing
- spectral reflectance

spectral noise

- USE **white noise**

spectral reconnaissance

- GS reconnaissance
- . **spectral reconnaissance**
- RT Earth resources
- electromagnetic spectra
- multispectral band scanners
- multispectral photography
- multispectral radar
- photoreconnaissance
- radar photography
- satellite-borne photography
- spectrophotography

spectral reflectance

- DEF The ratio of the reflected flux to the spectrally homogeneous incident flux.
- GS electromagnetic properties
- . optical properties
- . . reflectance
- . . . **spectral reflectance**
- surface properties
- . **spectral reflectance**
- RT bidirectional reflectance
- imaging spectrometers
- leaf area index
- plant stress
- spectral mixture analysis
- spectrometers
- spectroscopy
- spectrum analysis
- vegetative index

spectral resolution

- GS resolution
- . **spectral resolution**
- RT analog computers
- Landsat 6
- Landsat 7
- line spectra
- Q factors
- radar resolution
- radiometric resolution
- spatial resolution
- spectrum analysis

spectral response

- (*added August 2000*)
- USE **spectral sensitivity**

spectral sensitivity

- DEF In electronics, radiant sensitivity con-

spectral shift control

sidered as a function of wavelength, or in physics, the response of a device or material to monochromatic light as a function of wavelength; also known as spectral response.

UF *spectral response*

GS sensitivity
. **spectral sensitivity**

RT frequency response
instrument errors
photothermal conversion
spectra

spectral shift control

DEF Type of reactor moderator control in which the neutron spectrum is intentionally changed.

RT ∞ control
spectra

spectral shift control reactor

GS nuclear reactors
. liquid cooled reactors
. . . water cooled reactors
. . . . pressurized water reactors
. . . . **spectral shift control reactor**

RT ∞ control

spectral signatures

GS signatures
. **spectral signatures**
. . . microwave signatures

RT cepstral analysis
chemical analysis
chemical composition
crop identification
emission spectra
identifying
optical measurement
spectrum analysis

spectral theory

RT Lyman spectra
spectra
 ∞ theories

spectrograms

RT line spectra
spectra
spectral emission
spectrographs
spectrophotography
spectroscopy
spectrum analysis

spectrographs

GS **spectrographs**
. high dispersion spectrographs

RT spectra
spectrograms
spectrometers
spectroscopic analysis
spectroscopy

spectroheliographs

DEF Instruments for taking photographs (spectroheliograms) of the image of the sun in monochromatic light. The wavelength of light chosen for this purpose corresponds to one of the Fraunhofer lines, usually the light of hydrogen or ionized calcium. Used for heliographs, heliography, and spectrohelioscopes.

UF *heliographs*
heliography
spectrohelioscopes

GS imagery
. **spectroheliographs**
measuring instruments
. radiation measuring instruments
. . . actinometers
. . . **spectroheliographs**
. spectrometers
. . **spectroheliographs**
optical equipment
. **spectroheliographs**
solar instruments
. **spectroheliographs**

RT black and white photography
coronagraphs
solar spectrometers

Starsat telescope

spectrohelioscopes

USE **spectroheliographs**

spectrometers

UF *spectrosopes*

GS measuring instruments
. **spectrometers**
. . Ebert spectrometers
. . Fabry-Perot spectrometers
. . gamma ray spectrometers
. . imaging spectrometers
. . infrared spectrometers
. . . filter wheel infrared spectrometers
. . laser spectrometers
. . mass spectrometers
. . microwave spectrometers
. . neutron spectrometers
. . Solar Backscatter UV Spectrometer
. . solar spectrometers
. . spectroheliographs
. . time of flight spectrometers
. . ultraviolet spectrometers
. . . high dispersion spectrographs
. . . Total Ozone Mapping Spectrometer
. . Alpha Magnetic Spectrometer
. . x ray spectrometers

RT actinometers
chemical analysis
diffractometers
electron probes
goniometers
infrared spectroscopy
Michelson interferometers
optical equipment
optical measurement
photogoniometers
photographic measurement
photometers
radiation counters
solar instruments
spectra
spectral reflectance
spectrographs
spectroradiometers
spectroscopic analysis
spectroscopy
spectrum analysis

spectrometry

USE **spectroscopy**

spectrophotography

GS imagery
. photography
. . **spectrophotography**
spectroscopy
. **spectrophotography**

RT black and white photography
ground truth
spectral correlation
spectral reconnaissance
spectrograms

spectrophotometers

GS measuring instruments
. optical measuring instruments
. . **spectrophotometers**
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers
. radiation measuring instruments
. . actinometers
. . . **spectrophotometers**
. . . . infrared spectrophotometers
. . . . ultraviolet spectrophotometers
optical equipment
. optical measuring instruments
. . **spectrophotometers**
. . . infrared spectrophotometers
. . . ultraviolet spectrophotometers

RT chemical analysis
duochromators
monochromators
optical measurement
photometers
radiometers
spectroradiometers

spectroscopic analysis
spectroscopy

spectrophotometry

GS optical measurement
. photometry
. . **spectrophotometry**
. . . stellar spectrophotometry
spectroscopy
. **spectrophotometry**
. . stellar spectrophotometry

RT astronomical photometry
colorimetry
imaging spectrometers
spectroscopic analysis

spectrophotovoltaics

DEF The enhancement of solar cell productivity by concentrating and subdividing the sunlight spectrum and focusing on specific spectrum efficient solar cells.

RT energy conversion efficiency
energy spectra
solar cells
solar collectors

spectropolarimeters

USE **polarimeters**

spectroradiometers

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . **spectroradiometers**
. . . . MISR (radiometry)
. . . . MODIS (radiometry)

RT spectrometers
spectrophotometers

spectrosopes

USE **spectrometers**

spectroscopic analysis

SN (FOR SPECTROSCOPIC TOOLS IN CHEMICAL ANALYSIS)

GS chemical tests
. chemical analysis
. . **spectroscopic analysis**
spectroscopy
. **spectroscopic analysis**

RT Auger spectroscopy
auroral spectroscopy
electrophotometry
flame spectroscopy
Fraunhofer line discriminators
gas spectroscopy
inductively coupled plasma mass spectrometry
infrared spectroscopy
laser spectroscopy
laser-induced breakdown spectroscopy
magnetic spectroscopy
mass spectroscopy
metallicity
microanalysis
molecular spectroscopy
neutron activation analysis
nuclear radiation spectroscopy
photoelectron spectroscopy
qualitative analysis
quantitative analysis
Raman spectroscopy
spectrographs
spectrometers
spectrophotometers
spectrophotometry
ultraviolet spectroscopy
vacuum spectroscopy
x ray spectroscopy

spectroscopic telescopes

UF *diffraction telescopes*

GS telescopes
. **spectroscopic telescopes**
. . multispectral tracking telescopes
. . stratoscope telescopes

RT astronomical spectroscopy
reflecting telescopes

- refracting telescopes
stellar spectrophotometry
- spectroscopy**
UF *spectrometry*
GS **spectroscopy**
. absorption spectroscopy
. . . optogalvanic spectroscopy
. astronomical spectroscopy
. . . stellar spectrophotometry
. Auger spectroscopy
. auroral spectroscopy
. electron spectroscopy
. flame spectroscopy
. gas spectroscopy
. holographic spectroscopy
. infrared spectroscopy
. ion mobility spectroscopy
. laser-induced breakdown spectroscopy
. magnetic spectroscopy
. . . magnetic resonance spectroscopy
. mass spectroscopy
. . . inductively coupled plasma mass spectrometry
. . . secondary ion mass spectrometry
. molecular spectroscopy
. . . Raman spectroscopy
. nuclear radiation spectroscopy
. optical emission spectroscopy
. . . laser spectroscopy
. . . . optogalvanic spectroscopy
. photoacoustic spectroscopy
. photoelectron spectroscopy
. radio spectroscopy
. spectrophotography
. spectrophotometry
. . . stellar spectrophotometry
. photothermal deflection spectroscopy
. spectroscopic analysis
. ultrasonic spectroscopy
. ultraviolet spectroscopy
. vacuum spectroscopy
. x ray spectroscopy
- RT chemical analysis
cinespectrographs
colorimetry
electrophotometry
Fraunhofer line discriminators
isoelectronic sequence
Lallemand cameras
- ∞ optics
photometry
pressure broadening
spectra
spectral emission
spectral reflectance
spectrograms
spectrographs
spectrometers
spectrophotometers
spectrum analysis
time of flight spectrometers
visible spectrum
x ray spectrometers
Zeeman effect
- spectrum analysis**
UF *spectral analysis*
GS **spectrum analysis**
. cepstral analysis
. flame spectroscopy
. maximum entropy method
. spectral mixture analysis
- RT absorption spectra
- ∞ analyzing
emission spectra
frequency analyzers
frequency scanning
gamma ray spectrometers
holographic spectroscopy
hyperfine structure
Kramers-Kronig formula
laser spectroscopy
line spectra
magnetic resonance
optical resonance
signal analysis
- spectra
spectral emission
spectral methods
spectral reflectance
spectral resolution
spectral signatures
spectrograms
spectrometers
spectroscopy
Stark effect
toroidal discharge
ultrasonic spectroscopy
ultraviolet spectroscopy
Zeeman effect
- specular reflection**
DEF Reflection in which the reflected radiation is not diffused; reflection as from a mirror.
GS reflection
. **specular reflection**
RT diffuse radiation
etalons
glare
mirrors
- speech**
GS **speech**
. articulation (speech)
. conversation
. phonemes
. phonetics
. talking
RT acoustics
auditory perception
consonants (speech)
English language
languages
lectures
linguistics
phonemics
public speaking
semantics
sentences
syntax
voice
voice communication
words (language)
- speech baseband compression**
DEF Technique for reducing the bandwidth required to represent the human voice waveform.
GS compressing
. **speech baseband compression**
RT bandwidth
vocoders
voice communication
waveforms
- speech defects**
GS defects
. **speech defects**
RT articulation (speech)
phonemics
phonetics
- speech discrimination*
USE **speech recognition**
- speech recognition**
UF *speech discrimination*
GS intelligibility
. **speech recognition**
recognition
. **speech recognition**
RT cepstral analysis
linguistics
phonemes
phonemics
phonetics
sensory discrimination
voice control
- speeches*
USE **lectures**
- speed*
USE **velocity**
- speed control**
UF *speed regulation*
- RT automatic control
∞ control
control equipment
controllers
engine control
helicopter control
manual control
regulators
- speed indicators**
UF *Preston tubes*
speedometers
GS display devices
. **speed indicators**
. . tachometers
measuring instruments
. indicating instruments
. . **speed indicators**
. . . tachometers
RT accelerometers
aircraft instruments
anemometers
approach indicators
flight instruments
flowmeters
landing instruments
pitot tubes
velocity measurement
- speed regulation*
USE **speed control**
- speed regulators**
UF *governors*
GS control equipment
. regulators
. . **speed regulators**
RT controllers
engines
- speedometers*
USE **speed indicators**
- spent fuels**
DEF Nuclear reactor fuels irradiated to the extent that they no longer can effectively sustain a chain reaction.
GS fuels
. nuclear fuels
. . **spent fuels**
RT fuel capsules
neutron sources
∞ nuclear energy
nuclear fuel reprocessing
reactor materials
recycling
- spermatocytes*
USE **gametocytes**
- spermatogenesis**
RT abiogenesis
gametocytes
spermatozoa
- spermatozoa**
GS cells (biology)
. gametocytes
. . **spermatozoa**
RT fertilization
spermatogenesis
zygotes
- Spert reactors**
GS nuclear reactors
. liquid cooled reactors
. . water cooled reactors
. . . boiling water reactors
. . . . **Spert reactors**
. nuclear research and test reactors
. . **Spert reactors**
- SPF (materials)*
USE **superplastic forming**
- sphalerite*
USE **zincblende**
- spheres**
GS symmetrical bodies
. bodies of revolution

spherical antennas

- . . . **spheres**
- celestial sphere
- concentric spheres
- falling spheres
- Poincaré spheres
- rotating spheres
- RT aerodynamic configurations
- asphericity
- balls
- circles (geometry)
- Euclidean geometry
- geometry
- ∞ globes
- globules
- ∞ hemispheres
- hemispherical shells
- microballoons
- nodules
- ogives
- spherical shells
- spheroids
- spherules

spherical antennas

- GS antennas
- . **spherical antennas**
- RT communication equipment
- electronic equipment

spherical caps

- GS shells (structural forms)
- . spherical shells
- . . . **spherical caps**
- RT ∞ caps
- coverings
- nose cones
- seals (stoppers)

spherical coordinates

DEF A system of curvilinear coordinates in which the position of a point in space is designated by its distance from the origin or pole (the radius vector), the angle phi between the radius vector and a vertically directed polar axis (the cone angle or coaltitude) and the angle theta between the plane of the phi and a fixed meridian plane through the polar axis (the polar angle or longitude). Used for curvilinear coordinates.

- UF *curvilinear coordinates*
- GS coordinates
- . **spherical coordinates**
- RT astronomical coordinates
- celestial reference systems
- geocentric coordinates
- planetocentric coordinates
- polar coordinates
- position (location)
- ∞ reference systems

spherical harmonics

- GS analysis (mathematics)
- . complex variables
- . . . **spherical harmonics**
- functions (mathematics)
- . **spherical harmonics**
- harmonics
- . **spherical harmonics**
- RT Legendre functions

spherical plasmas

- DEF Confined circular plasmas.
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **spherical plasmas**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- **spherical plasmas**

spherical shells

- GS shells (structural forms)
- . **spherical shells**
- . . spherical caps
- RT bodies of revolution
- circular shells
- hemispherical shells
- metal shells
- reinforced shells

- rotating spheres
- spheres
- stressed-skin structures
- thin walled shells

spherical tanks

- GS tanks (containers)
- . **spherical tanks**
- RT fuel tanks
- pressure vessels
- propellant tanks
- storage tanks

spherical waves

- RT cylindrical waves
- diffraction paths
- diffraction propagation
- elastic waves
- electromagnetic radiation
- Huygens principle
- plane waves
- point sources
- three dimensional flow
- ∞ waves

spheroids

- DEF Ellipsoids; figure resembling spheres.
- GS geometry
- . Euclidean geometry
- . . analytic geometry
- . . . **spheroids**
- oblate spheroids
- prolate spheroids
- RT falling spheres
- geoids
- spheres

spheromaks

- DEF Toroidal fusion reactors.
- GS nuclear reactors
- . fusion reactors
- . . **spheromaks**
- RT dense plasmas
- magnetic field configurations
- magnetic mirrors
- plasma control
- plasma currents
- ∞ reactors
- tokamak devices
- toroidal plasmas

spherules

- GS **spherules**
- . spherulites
- RT crystals
- spheres

spherulites

- GS crystals
- . crystallites
- . . **spherulites**
- spherules
- . **spherulites**
- RT crystal structure
- microcrystals
- microstructure
- nodules
- rosette shapes

SPHINX

- SN (SPACE PLASMA HIGH VOLTAGE INTERACTION EXPERIMENTS)
- UF *space plasma H/V interaction experiments*
- RT NASA programs
- plasma interaction experiment
- plasma-particle interactions
- plasmas (physics)
- ∞ research projects
- space plasmas

sphygmography

- RT arteries
- bioinstrumentation
- blood pressure
- heart rate
- ∞ measurement
- recording instruments

spicules

- DEF Bright spikes extending into the chro-

- mosome of the sun from below.

- GS stellar activity
- . solar activity
- . . **spicules**
- RT chromosphere
- photosphere
- solar atmosphere

spiders

- GS animals
- . invertebrates
- . . arthropods
- . . . **spiders**

spike antennas

- USE **monopole antennas**

spike nozzles

- GS exhaust nozzles
- . **spike nozzles**
- RT aerospike engines
- conical nozzles
- nozzle geometry
- ∞ nozzles
- plug nozzles
- rocket nozzles
- ∞ spikes

spike potentials

- GS potential energy
- . electric potential
- . . **spike potentials**
- RT bioelectricity
- depolarization
- ∞ spikes

∞ spikes

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT fasteners
- holders
- monopole antennas
- pins
- spike nozzles
- spike potentials
- spikes (aerodynamic configurations)

spikes (aerodynamic configurations)

- RT ∞ spikes
- wind tunnels

spiking

- RT electron beam welding
- melting
- metal cutting

spilling

- RT dumping
- emptying
- jettisoning
- oil slicks
- releasing
- spreading

spin

- GS **spin**
- . metal spinning
- . . hydrospinning
- . . particle spin
- . . electron spin
- . . isotopic spin
- . . nuclear spin
- . . spin-orbit interactions
- . . electron capture
- . . spin-spin coupling
- RT angular momentum
- nuclear capture
- ∞ spinners
- yo-yo devices

spin decoupling

- GS decoupling
- . **spin decoupling**
- RT photomagnetic effects

spin dynamics

- RT aircraft spin
- artificial gravity
- dynamic tests
- ∞ dynamics

electron spin
gyration
lunar rotation
rotating matter

spin exchange

GS exchanging
. **spin exchange**
RT resonance charge exchange

spin forging

USE **metal spinning**

spin glass

DEF A magnetic alloy in which the concentration of magnetic atoms is such that below a certain temperature their magnetic moments are no longer able to fluctuate thermally in time but are still directed at random in loose analogy to the atoms of ordinary glass.

GS glass
. **spin glass**
RT amorphous materials
magnetic properties
metallic glasses
spin-lattice relaxation
superconductivity

spin reduction

UF *despinning*
jet damping
GS rates (per time)
. acceleration (physics)
. . . deceleration
. . . **spin reduction**
RT angular acceleration
destabilization
gravity gradient satellites
∞ reduction
satellite rotation
yo-yo devices

spin resonance

GS resonance
. **spin resonance**
RT nuclear magnetic resonance
particle spin

spin stabilization

DEF Directional stability of a spacecraft obtained by the action of gyroscopic forces which result from spinning the body about its axis of symmetry.

GS stabilization
. **spin stabilization**
RT attitude control
coning motion
dual spin spacecraft
missiles
OV-1 satellites
OV-2 satellites
OV-3 satellites
OV-4 satellites
OV-5 satellites
satellite orientation
satellite rotation
Space Shuttle upper stage D
space stations
∞ spinners

spin temperature

SN (LIMITED TO ASTROPHYSICS)
GS temperature
. **spin temperature**
RT absorption spectra
astrophysics
hydrogen clouds
interstellar gas
interstellar matter

spin tests

UF *whirling tests*
RT angular momentum
dynamic tests
environmental tests
load tests
polarization (spin alignment)
∞ tests

whirl towers

spin waves

USE **magnons**

spinach

GS farm crops
. **spinach**
plants (botany)
. **spinach**
vegetables
. **spinach**
RT ∞ food

spinal cord

GS anatomy
. nervous system
. . . central nervous system
. . . **spinal cord**
RT bones
brain
neuroglia
spinal cord injuries
spine

spinal cord injuries

(added August 2004)

DEF Penetrating and non-penetrating injuries to the spinal cord resulting from traumatic external forces.

GS injuries
. **spinal cord injuries**
RT back injuries
spinal cord
spine
whiplash injuries

spindles

RT shafts (machine elements)
spools
winding

spine

UF *vertebral column*
GS anatomy
. musculoskeletal system
. . . bones
. . . **spine**
. . . . vertebrae
RT sciatic region
spinal cord
spinal cord injuries

spinel

GS minerals
. **spinel**
RT aluminates
ferrites
igneous rocks

spin-lattice relaxation

GS magnetic properties
. magnetic relaxation
. . **spin-lattice relaxation**
relaxation (mechanics)
. **spin-lattice relaxation**
RT lattice vibrations
nuclear magnetic resonance
relaxation time
spin glass

∞ **spinners**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT antenna components
fairings
slewing
spin
spin stabilization

spinning (metallurgy)

USE **metal spinning**

spinning solid upper stage

DEF Space Shuttle upper stage designed for launching of satellites not requiring the full capacity of the interim upper stage; does not require inertial guidance system nor three-axis stabilization; can handle payloads of the class now launched by Delta or Atlas/ Centaur.

GS Space Shuttle upper stages
. **spinning solid upper stage**
RT booster rocket engines
upper stage rocket engines

spinning unguided rocket trajectory

UF *SPURT (trajectories)*
GS trajectories
. **spinning unguided rocket trajectory**
RT equations of motion
missile trajectories
rotating bodies
symmetrical bodies

spinor groups

GS algebra
. lie groups
. . **spinor groups**
geometry
. differential geometry
. . lie groups
. . . **spinor groups**

spin-orbit interactions

GS nuclear reactions
. nuclear interactions
. . **spin-orbit interactions**
. . . electron capture
particle interactions
. nuclear interactions
. . **spin-orbit interactions**
. . . electron capture
spin
. **spin-orbit interactions**
. . electron capture
RT ∞ interactions

spin-spin coupling

GS coupling
. **spin-spin coupling**
spin
. **spin-spin coupling**
RT couples
cross relaxation

spiral antennas

GS antennas
. **spiral antennas**
. . log spiral antennas
RT antenna design
broadband
telemetry

spiral bevel gears

(added May 1999)
GS gears
. bevel gears
. . **spiral bevel gears**

spiral galaxies

GS celestial bodies
. galaxies
. . **spiral galaxies**
. . . Andromeda Galaxy
. . . barred galaxies
. . . Milky Way Galaxy
RT corotation
density wave model
disk galaxies
elliptical galaxies
galactic bulge
galactic halos
local group (astronomy)
Maffei galaxies
peculiar galaxies
ring galaxies
Seyfert galaxies
Tully-Fisher relation
Virgo galactic cluster

spiral wrapping

RT composite materials
composite wrapping
isotensoid structures
packaging
∞ spirals

spirals

winding

∞ spirals

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT curves (geometry)

∞ helices

spiral wrapping

spirals (concentrators)

spirals (concentrators)

GS concentrators

. spirals (concentrators)

separators

. spirals (concentrators)

RT classifiers

∞ spirals

spirometers

RT heart minute volume

lungs

respiratory rate

Spitsbergen (Norway)

RT archipelagoes

Arctic Ocean

ocean currents

Spitzer Space Telescope

(added December 2003)

USE Space Infrared Telescope Facility

splashing

UF swash

RT agitation

surface waves

ullage

water landing

spleen

GS anatomy

. immune systems

. . lymphatic system

. . . spleen

RT polycythemia

splicing

RT fasteners

∞ joining

∞ tapes

wiring

spline functions

GS functions (mathematics)

. spline functions

RT approximation

matrix methods

splines

RT couplings

fasteners

holders

splints

RT bones

casts

first aid

split flaps

GS airfoils

. flaps (control surfaces)

. . split flaps

brakes (for arresting motion)

. aerodynamic brakes

. . split flaps

. aircraft brakes

. . split flaps

control surfaces

. flaps (control surfaces)

. . split flaps

drag devices

. aerodynamic brakes

. . split flaps

RT jet flaps

leading edge slats

trailing edge flaps

wing flaps

splits (geology)

USE geological faults

splitting

GS splitting

. flux difference splitting

. flux vector splitting

. water splitting

RT chipping

cutting

fission

flaking

fracturing

laser cutting

∞ separation

slicing

spodumene

GS aluminum compounds

. spodumene

chalcogenides

. oxides

. . silicon oxides

. . . spodumene

lithium compounds

. spodumene

minerals

. spodumene

silicon compounds

. silicates

. . sodium silicates

. . . spodumene

. silicon oxides

. . spodumene

sodium compounds

. sodium silicates

. . spodumene

spoiler slot ailerons

GS airfoils

. ailerons

. . spoiler slot ailerons

control surfaces

. ailerons

. . spoiler slot ailerons

RT spoilers

spoilers

DEF Plates, series of plates, combs, tubes, bars, or other devices that project into the airstream about bodies to break up or spoil the smoothness of the flow, especially such devices that project from the upper surface of an airfoil, giving increased drag and decreased lift.

GS airfoils

. spoilers

control surfaces

. spoilers

drag devices

. spoilers

RT aerodynamic brakes

boundary layer control

deflectors

flaps (control surfaces)

gust alleviators

leading edge slats

spoiler slot ailerons

vortex alleviation

wings

spokes

RT hubs

wheels

sponges (materials)

SN (ORGANIC OPEN-CELL STRUCTURES)

RT elastomers

∞ materials

polyurethane foam

porous materials

spontaneous combustion

UF autoignition

self ignition

GS combustion

. spontaneous combustion

RT combustion temperature

explosions

fire point

fire prevention

flammability

flash point

fuel combustion

hazards

hypergolic rocket propellants

ignition

ignition temperature

propellant sensitivity

pyrophoric materials

spontaneous emission

GS emission

. spontaneous emission

RT atomic energy levels

electromagnetic radiation

emission spectra

spectral emission

spools

RT ∞ containers

inserts

magazines (supply chambers)

reels

spindles

sporadic E layer

GS Earth atmosphere

. upper atmosphere

. . Earth ionosphere

. . . E region

. . . . sporadic E layer

regions

. E region

. . sporadic E layer

RT E-1 layer

E-2 layer

midlatitude atmosphere

sporadic meteoroids

SN (METEORIODS NOT ASSOCIATED WITH A METEOROID SHOWER OR STREAM)

GS celestial bodies

. meteoroids

. . sporadic meteoroids

RT meteor trails

meteoroid concentration

spores

DEF The reproductive elements of the lower forms of living organisms, usually unicellular.

GS spores

. microspores

RT biological weapons

fungi

microorganisms

plants (botany)

protozoa

tetrad theory

sports medicine

GS medical science

. sports medicine

RT aerospace medicine

athletes

clinical medicine

exercise physiology

physical fitness

physiological effects

SPOT (French satellite)

DEF French satellite with high visible resolution for observations of the Earth. It was launched in February 1986. The acronym is derived from the French, Satellite Pour Observation de la Terre.

GS artificial satellites

. French satellites

. . SPOT (French satellite)

RT crop identification

Earth observations (from space)

Earth resources

land use

mapping

soil mapping

stereophotography

spot welds

GS joints (junctions)

. metal joints

. . . welded joints
 . . . **spot welds**
 RT arc welding
 beads
 electric welding
 fusion welding
 pressure welding
 ultrasonic welding

spray characteristics
 RT ∞ characteristics
 sprayers
 spraying

spray condensers
 RT jet condensers
 sprayers

spray ingestion
 RT gas turbines
 landing gear
 salt spray tests

spray nozzles
 RT annular nozzles
 conical nozzles
 fuel injection
 fuel systems
 injectors
 ∞ nozzles
 orifices
 sprayers

sprayed coatings
 UF *sprayed protective coatings*
 GS coatings
 . **sprayed coatings**
 RT ceramic coatings
 finishes
 HVOF thermal spraying
 lacquers
 metal coatings
 paints
 plasma spraying
 plastic coatings
 primers (coatings)
 protective coatings
 varnishes

sprayed protective coatings
 USE **protective coatings**
sprayed coatings

sprayers
 UF *spraying apparatus*
sprays
 RT atomizers
 blowers
 colloidal generators
 contactors
 ∞ containers
 ∞ diffusers
 dispensers
 distributors
 drops (liquids)
 ejectors
 fuel sprays
 ∞ jets
 materials handling
 mixers
 ∞ nozzles
 propellant sprays
 spray characteristics
 spray condensers
 spray nozzles
 spraying
 vaporizers

spraying
 GS **spraying**
 . arc spraying
 . crop dusting
 . flame spraying
 . . HVOF thermal spraying
 . metal spraying
 . plasma spraying
 RT aeration
 aerosols
 atomizing
 blowing

coating
 coatings
 diffusion
 dispersing
 entrainment
 forming techniques
 fumigation
 liquid atomization
 metallizing
 mixing
 premixing
 sealing
 spray characteristics
 sprayers
 sprinkling
 vaporizing
 wetting

spraying apparatus
 USE **sprayers**

sprays
 USE **sprayers**

spread F
 RT F 2 region
 ionospheric storms
 magnetic storms

spread reflection
 DEF Reflection of electromagnetic radiation from a rough surface with large irregularities. Also known as mixed reflection.

GS reflection
 . **spread reflection**
 RT glare
 infrared reflection
 optical reflection
 scattering
 signal reflection
 ultraviolet reflection
 wave reflection

spread spectrum transmission
 DEF Communications technique with many different signal waveforms transmitted in a wide band; power is spread thinly over the band so that narrow-band radios can operate within the band without interference.

GS transmission
 . electromagnetic wave transmission
 . . radio transmission
 . . . **spread spectrum transmission**
 . signal transmission
 . . radio transmission
 . . . **spread spectrum transmission**
 RT communication
 frequency hopping

spreading
 RT adhesion
 cohesion
 diffusion
 dispersing
 disposal
 dumping
 emptying
 interfacial tension
 internal pressure
 materials handling
 scattering
 ∞ separation
 spilling
 swelling
 throwing
 unloading

spreadsheets
 (added March 2001)
 DEF Software applications that present a display of multiple columns and rows, and allow a user to input and manipulate numerical data for planning, tracking, analysis, and financial calculations.
 GS computer programs
 . applications programs (computers)
 . . **spreadsheets**
 RT computer techniques

tables (data)

spring (season)
 DEF The season of the year between winter and summer. Its beginning is the vernal equinox and its end the summer solstice.
 GS seasons
 . **spring (season)**
 RT autumn
 summer
 winter

springs (elastic)
 RT ∞ coils
 energy storage
 frames
 oscillation dampers
 oscillations
 resilience
 shock absorbers
 suspension systems (vehicles)
 vibration isolators

springs (water)
 DEF Places where ground water flows naturally from rocks onto the land surface or into a body of surface water. Their occurrence depends on the nature and relationship of rocks, especially permeable and impermeable strata, on the position of the water table, and on the topography.

GS resources
 . Earth resources
 . . **springs (water)**
 water
 . **springs (water)**
 RT aquifers
 fresh water
 ground water
 inland waters
 lakes
 oases
 potable water
 water tables
 wells

sprinkling
 RT scattering
 spraying
 wetting

Sprint missile
 GS missiles
 . antimissile missiles
 . . **Sprint missile**
 . surface to air missiles
 . . **Sprint missile**
 RT Nike-Zeus missile
 Sentinel system
 solid propellant rocket engines
 Spartan missile

SPRITE detectors
 (added January 2000)
 USE **infrared detectors**

sprites (atmospheric physics)
 (added January 2000)
 DEF Short-lived luminosities observed at high altitudes above thunderstorms, apparently associated with upward discharges of thunderstorm electricity. They appear as columnar diffuse reddish glows between 30 km and 80 km above ground, lasting tens of milliseconds, following large positive cloud-to-ground lightning strokes.

UF *red sprites*
 GS atmospheric radiation
 . sky radiation
 . . **sprites (atmospheric physics)**
 electromagnetic radiation
 . light (visible radiation)
 . . sky radiation
 . . . **sprites (atmospheric physics)**
 RT atmospheric electricity
 atmospheric ionization
 cloud-to-ground discharges
 elves
 lightning

Sputnik 1 satellite

thunderstorms

SPUR (reactors)

USE **space power unit reactors**

SPURT (trajectories)

USE **spinning unguided rocket trajectory**

Sputnik 1 satellite

GS artificial satellites
. meteorological satellites
. . . **Sputnik 1 satellite**
. Soviet satellites
. . . Sputnik satellites
. . . . **Sputnik 1 satellite**
Soviet spacecraft
. Sputnik satellites
. . . **Sputnik 1 satellite**

Sputnik 2 satellite

GS artificial satellites
. biosatellites
. . . **Sputnik 2 satellite**
. meteorological satellites
. . . **Sputnik 2 satellite**
. Soviet satellites
. . . Sputnik satellites
. . . . **Sputnik 2 satellite**
Soviet spacecraft
. Sputnik satellites
. . . **Sputnik 2 satellite**

Sputnik 3 satellite

GS artificial satellites
. geophysical satellites
. . . **Sputnik 3 satellite**
. meteorological satellites
. . . **Sputnik 3 satellite**
. Soviet satellites
. . . Sputnik satellites
. . . . **Sputnik 3 satellite**
Soviet spacecraft
. Sputnik satellites
. . . **Sputnik 3 satellite**

Sputnik 4 satellite

GS artificial satellites
. Soviet satellites
. . . Sputnik satellites
. . . . **Sputnik 4 satellite**
Soviet spacecraft
. Sputnik satellites
. . . **Sputnik 4 satellite**

Sputnik 5 satellite

GS artificial satellites
. Soviet satellites
. . . Sputnik satellites
. . . . **Sputnik 5 satellite**
Soviet spacecraft
. Sputnik satellites
. . . **Sputnik 5 satellite**
RT Venus probes

Sputnik satellites

GS artificial satellites
. Soviet satellites
. . . **Sputnik satellites**
. . . . Sputnik 1 satellite
. . . . Sputnik 2 satellite
. . . . Sputnik 3 satellite
. . . . Sputnik 4 satellite
. . . . Sputnik 5 satellite
Soviet spacecraft
. **Sputnik satellites**
. . . Sputnik 1 satellite
. . . Sputnik 2 satellite
. . . Sputnik 3 satellite
. . . Sputnik 4 satellite
. . . Sputnik 5 satellite

sputtering

DEF Dislocation of surface atoms of a material from bombardment of high energy atomic particles.

GS **sputtering**

. magnetron sputtering

RT arc welding

∞ bombardment

deposition
duoplasmatrons
electron bombardment
emission
ion plating
ion sources
metal particles
plasma etching
surface finishing
thermal instability

sputtering gages

GS measuring instruments
. **sputtering gages**
RT metal films
thin films

squalls

GS wind (meteorology)
. **squalls**
RT ground wind
storms (meteorology)

squama

DEF A scale or structure resembling a scale.
RT fishes

square waves

DEF Oscillations, the amplitudes of which show periodic discontinuities between two values, remaining constant between jumps. Specifically, in radar pulses initiated by a rapid rise to peak power, maintained at a constant peak power over the finite pulse length, and terminated by rapid decrease from peak power.

GS waveforms

. **square waves**

RT form factors
pulse amplitude
pulse duration
sawtooth waveforms
time functions
wave functions
wave propagation
∞ waves

square wells

DEF The impurity potential areas which bound an electron or hole in semiconducting crystals such as silicon.
RT electron mobility
magnetic fields
photoconductivity
vacancies (crystal defects)
wells

squares (mathematics)

GS geometry
. Euclidean geometry
. . . polygons
. . . . tetragons
. . . . **squares (mathematics)**

squeeze casting

(added September 1993)

DEF The technique of working liquid metals under pressure into near net shapes; it includes the technique of forging metal compounds.

GS forming techniques

. casting

. . **squeeze casting**

RT cast alloys
compressing
extruding
fabrication
forging
liquid metals
metal matrix composites
metal working

squeeze films

DEF Thin viscoelastic fluid films squeezed between two usually planar structures to serve as sealants, load dampers, lubricants, etc.

GS fluid films

. **squeeze films**

RT boundary lubrication
elastohydrodynamics
∞ films

gas bearings
gas lubricants
liquid-solid interfaces
lubricants
thin films
vapor phase lubrication
viscoelasticity
viscous fluids

squeezed states (quantum theory)

DEF Single mode minimum uncertainty states for which the fluctuations in one quadrature phase of the field are smaller than would occur for a coherent state. Used for two photon coherent states.

UF *two photon coherent states*

RT coherent electromagnetic radiation

coherent light

electromagnetic fields

fluctuation theory

light transmission

∞ optics

photon density

quantum mechanics

quantum theory

squeezing

USE **compressing**

snelch circuits

GS circuits

. **snelch circuits**

RT background noise

electromagnetic noise

noise reduction

silencers

suppressors

switching circuits

squibs

DEF Various small explosive devices. Explosive devices used in the ignition of a rocket. Used for XM-6 squib and XM-8 squib.

UF *XM-6 squib*

XM-8 squib

GS igniters

. **squibs**

RT electric ignition

ignition systems

primers (explosives)

solid propellant ignition

starters

squid (detectors)

DEF Superconducting quantum interference device magnetometers. Used for superconducting quantum interferometers.

UF *superconducting quantum interferometers*

GS superconducting devices

. **squid (detectors)**

RT ∞ detectors

Josephson junctions

magnetic measurement

quantum counters

SIS (superconductors)

superconductors (materials)

SQUID project

GS programs

. projects

. . . **SQUID project**

RT jet propulsion

squirrels

GS animals

. vertebrates

. . mammals

. . . rodents

. . . . **squirrels**

. . . . ground squirrels

SR (reactors)

USE **saturable reactors**

SR-71 aircraft

(added March 1990)

UF *Blackbird aircraft*

GS Lockheed aircraft

. **SR-71 aircraft**

reconnaissance aircraft
 . **SR-71 aircraft**
 supersonic aircraft
 . **SR-71 aircraft**
 RT ∞ aircraft
 blended-wing-body configurations
 ∞ military aircraft

SRB (Solid Rocket Boosters)
 USE **Space Shuttle Boosters**

SRB project
 (added October 2007)
 USE **Surface Radiation Budget project**

SRE reactor
 USE **sodium reactor experiment**

SRET 1 satellite
 GS artificial satellites
 . French satellites
 . . SRET satellites
 . . . **SRET 1 satellite**
 . meteorological satellites
 . . SRET satellites
 . . . **SRET 1 satellite**
 RT French space program

SRET 2 satellite
 GS artificial satellites
 . French satellites
 . . SRET satellites
 . . . **SRET 2 satellite**
 . meteorological satellites
 . . SRET satellites
 . . . **SRET 2 satellite**

SRET satellites
 GS artificial satellites
 . French satellites
 . . **SRET satellites**
 . . . SRET 1 satellite
 . . . SRET 2 satellite
 . meteorological satellites
 . . **SRET satellites**
 . . . SRET 1 satellite
 . . . SRET 2 satellite
 RT French space program

Sri Lanka
 UF *Ceylon*
 GS nations
 . **Sri Lanka**
 RT Asia

SR-N2 ground effect machine
 USE **Westland ground effect machines**

SR-N3 ground effect machine
 USE **Westland ground effect machines**

SR-N5 ground effect machine
 USE **Westland ground effect machines**

SS-11 missile
 GS missiles
 . **SS-11 missile**
 RT multistage rocket vehicles
 solid propellant rocket engines

SSE project
 (added October 2007)
 USE **Surface Meteorology and Solar Energy project**

SSGS (standardized space guidance)
 USE **standardized space guidance**

SSTI
 USE **small satellite technology**

SSUS-A
 USE **Space Shuttle upper stage A**

SSUS-D
 USE **Space Shuttle upper stage D**

St Lawrence Valley (North America)
 GS landforms
 . **St Lawrence Valley (North America)**

valleys
 . **St Lawrence Valley (North America)**

RT Canada
 Maine
 New Hampshire
 New York
 Vermont

St Louis-Kansas City Corridor (MO)
 GS corridors
 . **St Louis-Kansas City Corridor (MO)**
 RT Missouri
 regional planning

St Venant flexure problem
 USE **Saint Venant principle**

stability
 DEF The property of a body, as an aircraft or rocket, to maintain its attitude or to resist displacement, and, if displaced to develop forces and moments tending to restore the original condition. Of a fuel, the capability of a fuel to retain its characteristics in an adverse environment, e.g. extreme temperature. Used for instability.

UF *instability*
 GS **stability**
 . acoustic instability
 . baroclinic instability
 . dynamic stability
 . . combustion stability
 . . . flame stability
 . . control stability
 . . frequency stability
 . . motion stability
 . . . aerodynamic stability
 . . . aircraft stability
 hovering stability
 . . . attitude stability
 directional stability
 gyroscopic stability
 lateral stability
 longitudinal stability
 . . flow stability
 . . . boundary layer stability
 . . . flame stability
 . . . magnetohydrodynamic stability
 Weibel instability
 . . . Goertler instability
 . . . Taylor instability
 . . low speed stability
 . . rotary stability
 . . . gyroscopic stability
 . . spacecraft stability
 . . gravitational instability
 . interface stability
 . laser stability
 . magnetospheric instability
 . numerical stability
 . phase stability (materials)
 . static stability
 . . dimensional stability
 . . structural stability
 . . . shell stability
 . storage stability
 . surface stability
 . systems stability
 . thermal stability
 RT amplification
 ballast (mass)
 chemical compatibility
 compatibility
 controllability
 ∞ drift
 drift rate
 durability
 dynamic characteristics
 equations of motion
 ∞ equilibrium
 metastable state
 quality
 reliability
 ∞ resistance
 safety factors
 spacecraft motion
 stabilizers (agents)
 steady state

tolerances (mechanics)
 Tresca flow
 unity
 unsteady state
 variability
 vlasov equations
 vulnerability

stability augmentation
 DEF Maintenance of aircraft stability in flight by means of automatic control devices which supplement a pilot's manipulation of the aircraft controls. The automatic controls are used to modify inherent aircraft handling problems.
 GS augmentation
 . **stability augmentation**
 RT aerodynamic stability
 aircraft control
 attitude (inclination)
 automatic control
 control stability
 directional stability
 feedback control
 flight control
 lateral oscillation
 pitch (inclination)

stability derivatives
 UF *aerodynamic moments*
 GS moments
 . **stability derivatives**
 . . pitching moments
 . . rolling moments
 . . yawing moments
 RT complex variables
 damping
 differential equations
 moments of inertia
 real variables
 vector analysis

stability tests
 GS **stability tests**
 . flight stability tests
 . wind tunnel stability tests
 RT corrosion tests
 damping tests
 electronic equipment tests
 flight tests
 fuel tests
 ground tests
 missile tests
 propellant tests
 resonance testing
 ∞ tests
 vibration tests

stabilization
 UF *missile stabilization*
 GS **stabilization**
 . signal stabilization
 . spin stabilization
 . three axis stabilization
 RT acid base equilibrium
 balancing
 consolidation
 ∞ control
 ∞ equilibrium
 heat treatment
 horizontal orientation
 laser gyroscopes
 phase stability (materials)
 stabilizers (agents)
 stress relieving
 vertical orientation

stabilized platforms
 RT gimbals
 gyroscopic stability
 gyrostabilizers
 inertial guidance
 ∞ platforms
 three axis stabilization

∞ **stabilizers**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT gyroscopes
 sea keeping
 stabilizers (agents)

stabilizers (agents)

stabilizers (fluid dynamics)

stabilizers (agents)

RT additives
∞ agents
anticoagulants
antioxidants
neutralizers
preservatives
retardants
stability
stabilization
∞ stabilizers

stabilizers (fluid dynamics)

UF *horizontal stabilizers*
vertical stabilizers
vertical tails
GS **stabilizers (fluid dynamics)**
. horizontal tail surfaces
RT aerial rudders
airfoils
control surfaces
∞ dynamics
elevators (control surfaces)
fins
keels
rudders
∞ stabilizers
sweptback tail surfaces
T tail surfaces
tabs (control surfaces)
tail assemblies
tail surfaces
trapezoidal tail surfaces

stable oscillations

GS oscillations
. **stable oscillations**
RT dynamic stability
frequency pulling
frequency stability
gyroscopic stability
motion stability
nonstabilized oscillation
pilot induced oscillation
resonant vibration
transverse oscillation
undamped oscillations
wing oscillations

stacking fault energy

RT crystal defects
∞ energy
twinning

stacking faults

USE **crystal defects**

stacking sequence (composite materials)

(added June 1997)
RT composite materials
fiber composites
fiber orientation
laminates
lay-up
ply orientation

stacks

RT chimneys
crystal defects
materials handling

STADAN (satellite tracking network)

USE **STDN (network)**

stadimeters

DEF Instruments for determining the distance to an object of known dimension by measuring the angle subtended at the observer by the object. The instrument is graduated directly in distance.

GS measuring instruments
. distance measuring equipment
. . . **stadimeters**

RT range finders
sextants

stage separation

UF *staging (rockets)*

RT booster rocket engines
expendable stages (spacecraft)
interim stages (spacecraft)
Lunar Module Ascent Stage
missiles
multistage rocket vehicles
propellant mass ratio
rocket vehicles
∞ separation
Space Shuttle Ascent Stage
sustainer rocket engines
thrust termination
upper stage rocket engines

staggering

RT ∞ configurations
disorientation

staging (rockets)

USE **stage separation**

stagnation flow

GS fluid flow
. inviscid flow
. . . **stagnation flow**
RT boundary layer flow
boundary layer separation
compressible flow
stagnation point

stagnation point

DEF Point in a field of flow about a body where the fluid particles have zero velocity with respect to the body. Used for stagnation region.

UF *stagnation region*
RT blunt bodies
boundary layer flow
flow distribution
fluid dynamics
heat transfer
stagnation flow

stagnation pressure

GS pressure
. **stagnation pressure**
RT compressible flow
inlet pressure

stagnation region

USE **stagnation point**

stagnation temperature

GS temperature
. **stagnation temperature**
RT adiabatic flow
compressible flow
inviscid flow

staining

RT chemical tests
discoloration
marking
methylene blue
methylene blue

stainless steels

GS alloys
. iron alloys
. . steels
. . . **stainless steels**
. . . . austenitic stainless steels
. . . . ferritic stainless steels
. . . . martensitic stainless steels
RT chromium alloys
maraging steels
molybdenum alloys
nickel alloys
nickel steels

staircases

USE **stairways**

stairsteps

RT backward facing steps
formations
∞ steps
topography

stairways

UF *staircases*
RT buildings

escalators
ladders
treads

∞ stalling

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT aerodynamic stalling
boundary layer separation
engine failure
rotating stalls

stamping

SN (EXCLUDES IDENTIFICATION MARKING)
GS forming techniques
. pressing (forming)
. . **stamping**
RT ∞ blanking
blanking (cutting)
coining
cold working
dies
dimpling
forging
hot isostatic pressing
hot pressing
metal working
punches
shearing
swaging
upsetting

standard atmospheres

USE **reference atmospheres**

standard deviation

DEF A measure of the agreement between test results.
GS moments
. distribution moments
. . **standard deviation**
statistical analysis
. **standard deviation**
RT confidence limits
estimating
heterogeneity
quality control
range (extremes)
variability
variance (statistics)

standard electroweak model

USE **electroweak model**

standard launch vehicle 3

USE **Atlas SLV-3 launch vehicle**

Standard Launch Vehicle 5

GS launch vehicles
. Standard Launch Vehicles
. . **Standard Launch Vehicle 5**
rocket vehicles
. Standard Launch Vehicles
. . **Standard Launch Vehicle 5**

Standard Launch Vehicles

UF *SLV*
GS launch vehicles
. **Standard Launch Vehicles**
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
rocket vehicles
. **Standard Launch Vehicles**
. . Atlas SLV-3 launch vehicle
. . Standard Launch Vehicle 5
RT Atlas D ICBM
∞ vehicles

standard model (particle physics)

(added April 1994)
GS field theory (physics)
. gauge theory
. . unified field theory
. . . **standard model (particle physics)**
models
. **standard model (particle physics)**
RT bosons
CP violation
electroweak interactions (field theory)

electroweak model
 elementary particles
 particle theory
 quantum chromodynamics
 quantum theory
 quark models
 strong interactions (field theory)
 weak interactions (field theory)

standardization

DEF The act or process of reducing something to, or comparing it with, a standard. A measure of uniformity. A special case of calibration whereby a known input is applied to a device or system for the purpose of verifying the output of adjusting the output to a desired level or scale factor.

- GS **standardization**
 - . commonality
- RT calibrating
 intercalibration
 metrication
 naming
 numerical control
 product development
 production engineering
 quality control
 specifications
 standards
 variability

standardized space guidance

- UF *SSGS (standardized space guidance)*
- GS guidance (motion)
 - . **standardized space guidance**
- RT space navigation

standards

DEF References used as a basis for comparison or calibration. Concepts that have been established by authority, custom, or agreement to serve as models or rules in the measurement of quantity of the establishment of a practice or a procedure. Used for references (standards).

- UF *references (standards)*
- GS **standards**
 - . frequency standards
 - . reference atmospheres
- RT acceptability
 accuracy
 calibrating
- ∞ codes
 conventions
 criteria
 document markup languages
 inspection
 interoperability
- ∞ measurement
- ∞ measures
- ∞ metrology
- ∞ performance
 performance tests
 quality control
 reliability
 sampling
 specifications
 standardization
 temperature scales
 tolerances (mechanics)
 validity
 value engineering

standing wave ratios

- GS ratios
 - . **standing wave ratios**
- RT amplitudes
 electrical properties
 Smith chart
 transmission lines

standing waves

DEF Periodic waves having fixed distribution in space which are the result of interference of progressive waves of the same frequency and kind. Such waves are characterized by the existence of nodes or partial nodes and antinodes that are fixed in space.

- RT antinodes
 beat frequencies
 frequencies

harmonics
 nodes (standing waves)
 ∞ radiation
 resonant frequencies
 vibration
 wavelengths
 ∞ waves

stands

USE **supports**

stannates

- GS tin compounds
 - . **stannates**
- RT ∞ oxygen compounds

stannides

- GS tin compounds
 - . **stannides**
 - . . niobium stannides
- RT tin alloys

Stanton number

- GS dimensionless numbers
 - . **Stanton number**
 - ratios
 - . **Stanton number**
- RT forced convection
 heat transfer

STAP (radar)

(added November 2002)
 USE **space-time adaptive processing**

staphylococcus

- GS microorganisms
 - . bacteria
 - . . **staphylococcus**
- RT pleurotin

star catalogs

USE **astronomical catalogs**

star clusters

- DEF Groups of stars physically close together.
- GS celestial bodies
 - . **star clusters**
 - . . globular clusters
 - . . open clusters
 - . . . Pleiades cluster
 - . . . Praesepe star clusters
 - RT barred galaxies
 - ∞ clusters
 - color-magnitude diagram
 - disk galaxies
 - elliptical galaxies
 - galactic clusters
 - galaxies
 - irregular galaxies
 - Magellanic clouds
 - metallicity
 - solar neighborhood
 - stars
 - stellar systems
 - Virgo galactic cluster

star distribution

- UF *star fields*
stellar fields
- GS distribution (property)
 - . spatial distribution
 - . . vertical distribution
 - . . . **star distribution**
- RT angular distribution
 astrolabes
 barred galaxies
 cosmology
 galactic clusters
 galactic evolution
 galactic halos
 globular clusters
 mass distribution
 radial distribution
 star formation
 stellar systems

Virgo galactic cluster

star fields

USE **star distribution**

star formation

DEF The collapse under gravity of molecular clouds of interstellar matter to form clusters of protostars, and the continuing collapse of the protostars to form main-sequence stars.

- GS evolution (development)
 - . stellar evolution
 - . . **star formation**
- RT astrophysics
 cooling flows (astrophysics)
 cosmology
 early stars
 hydrogen clouds
 interstellar gas
 interstellar matter
 molecular clouds
 nebulae
 nuclear fusion
 pre-main sequence stars
 protogalaxies
 protostars
 solar nebula
 star distribution
 star formation rate
 starburst galaxies
 stars
 stellar mass accretion
 Submillimeter Wave Astronomy
 Satellite
 T Tauri stars

star formation rate

DEF The rate at which stars are formed within a specified region or galaxy; sometimes expressed as the number of solar masses per year.

- GS rates (per time)
 - . **star formation rate**
- RT galactic evolution
 galaxies
 star formation
 starburst galaxies
 stellar evolution

star trackers

DEF Telescopic instruments on rockets or other flight borne vehicles that lock onto a celestial body and give guidance reference to the vehicles during flight. Used for star tracking.

- UF *star tracking*
- GS tracking (position)
 - . **star trackers**
 - . . CCD star tracker
- RT Astroguide Navigation System
 astrolabes
 attitude control
 celestial navigation
 charge injection devices
 flight instruments
 guidance sensors
 inertial navigation
 laser guide stars
 missile control
 navigation
 navigation aids
 navigation instruments
 solar sensors
 spacecraft guidance

star tracking

USE **star trackers**

starburst galaxies

- GS celestial bodies
 - . galaxies
 - . . **starburst galaxies**
- RT galactic nuclei
 star formation
 star formation rate

starches

- GS biopolymers
 - . polysaccharides
 - . . **starches**
- organic compounds

Stardust Mission

- . carbohydrates
- . . polysaccharides
- . . . **starches**
- RT chitin
- ∞ food
- sizing materials

Stardust Mission

(added March 1999)

DEF First U.S. mission launched to robotically obtain samples in deep space and return them to Earth. The NASA Discovery-class mission will return dust samples collected from the debris cloud surrounding the nucleus of Comet Wild 2. Interstellar dust will also be collected. The mission spacecraft takes advantage of an Earth gravity-assist maneuver to reach the comet, and uses an aerogel-based dust collector.

- GS space missions
- . flyby missions
- . . **Stardust Mission**
- . sample return missions
- . . **Stardust Mission**
- RT comet nuclei
- interstellar matter
- Wild 2 comet

Starfighter aircraft

USE **F-104 aircraft**

Stark effect

DEF The broadening or splitting of a spectral line observed when a luminous gas is acted upon by a strong electric field.

- RT ∞ effects
- electric fields
- electro-optics
- hydrogen plasma
- line spectra
- resolution
- spectrum analysis
- Zeeman effect

Starlab

DEF A proposed satellite ultraviolet telescope that was a joint project between the United States, Canada, and Australia. It is currently in abeyance. Used for Spacelab UV-Optical Telescope Facility.

- UF *Spacelab UV-Optical Telescope Facility*
- GS telescopes
- . spaceborne telescopes
- . . **Starlab**
- . ultraviolet telescopes
- . . **Starlab**
- RT ∞ optics
- Space Shuttle payloads
- Spacelab

Starlifter aircraft

USE **C-141 aircraft**

Starprobe mission

- GS programs
- . NASA programs
- . . NASA space programs
- . . . **Starprobe mission**
- . space programs
- . . NASA space programs
- . . . **Starprobe mission**
- space missions
- . **Starprobe mission**
- RT Starprobe spacecraft

Starprobe spacecraft

- GS unmanned spacecraft
- . space probes
- . . solar probes
- . . . **Starprobe spacecraft**
- RT Starprobe mission

starquakes

(added July 1989)

- RT asteroseismology
- gamma ray bursts
- neutron stars
- pulsars
- stars

- stellar activity
- stellar physics
- stellar rotation
- stellar structure

stars

DEF Self-luminous celestial bodies exclusive of nebulas, comets, and meteors; suns seen in the heavens. Distinguished from planets or natural satellites that shine by reflected light.

- GS celestial bodies
- . **stars**
- . . black holes (astronomy)
- . . brown dwarf stars
- . . double stars
- . . . binary stars
- cataclysmic variables
- companion stars
- Nemesis (star)
- eclipsing binary stars
- dwarf novae
- Lambda Tauri stars
- Zeta Aurigae star
- Sigma Orionis
- symbiotic stars
- x ray binaries
- . . early stars
- . . hot stars
- A stars
- B stars
- shell stars
- Sigma Orionis
- blue stars
- O stars
- white dwarf stars
- Wolf-Rayet stars
- . . F stars
- . . G stars
- . . sun
- . . giant stars
- . . . asymptotic giant branch stars
- . . . Omicron Ceti star
- . . . red giant stars
- . . . carbon stars
- . . horizontal branch stars
- . . infrared stars
- . . late stars
- . . cool stars
- . . . carbon stars
- . . . flare stars
- K stars
- M stars
- Van Biesbroeck star
- Mira variables
- Omicron Ceti star
- S stars
- . . magnetic stars
- . . magnetars
- . . main sequence stars
- . . dwarf stars
- . . . dwarf novae
- . . . flare stars
- . . . red dwarf stars
- . . sun
- . . massive stars
- . . metallic stars
- . . neutron stars
- . . magnetars
- . . pulsars
- . . soft gamma repeaters
- . . peculiar stars
- . . shell stars
- . . . Sigma Orionis
- . . . symbiotic stars
- . . Praesepe star clusters
- . . protostars
- . . pre-main sequence stars
- . . . T Tauri stars
- . . radio stars
- . . pulsars
- . . reference stars
- . . subdwarf stars
- . . subgiant stars
- . . supergiant stars
- . . . R Coronae Borealis stars
- . . supermassive stars
- . . triple stars
- . . variable stars
- . . . cataclysmic variables

- . . . cepheid variables
- . . . flare stars
- . . . irregular variable stars
- R Coronae Borealis stars
- . . . Lambda Tauri stars
- . . . Mira variables
- Omicron Ceti star
- . . . novae
- dwarf novae
- Hercules nova
- . . . semiregular variable stars
- . . . supernovae
- supernova 1987A
- . . . symbiotic stars
- . . . T Tauri stars
- . . white holes (astronomy)
- . . x ray stars
- . . soft gamma repeaters
- . . . x ray binaries
- . . Population I stars
- . . Population II stars
- . . Population III stars
- RT Aries constellation
- astrolabes
- barred galaxies
- Cassiopeia constellation
- celestial mechanics
- Centaurus constellation
- constellations
- Corona Borealis constellation
- Cygnus constellation
- faint objects
- galaxies
- irregular galaxies
- Lyra constellation
- Magellanic clouds
- metallicity
- Milky Way Galaxy
- quasars
- solar neighborhood
- star clusters
- star formation
- starquakes
- starspots
- stellar activity
- stellar composition
- stellar cores
- stellar gravitation
- stellar interiors
- stellar magnitude
- stellar oscillations
- Virgo galactic cluster

stars (mathematics)

RT ∞ mathematics

Starsat telescope

DEF An anastigmatic 3-mirror reflecting telescope for ultraviolet astronomy purposes aboard the Starsat satellite.

- GS telescopes
- . reflecting telescopes
- . . **Starsat telescope**
- . spaceborne telescopes
- . . **Starsat telescope**

- RT coronagraphs
- spaceborne astronomy
- spectroheliographs
- ultraviolet astronomy

Starsite program

- GS programs
- . **Starsite program**
- RT architecture
- buildings
- communities
- conferences
- construction
- decision making
- ∞ development
- environmental engineering
- information retrieval
- land use
- management methods
- NASA programs
- planning
- recreation
- shelters
- social factors
- technology transfer

- urban development
- urban planning
- starspots**
 - DEF Temporary disturbed areas in the stellar photosphere that appear dark because they are colder than the surrounding areas.
 - GS stellar activity
 - . **starspots**
 - . . sunspots
 - RT faculae
 - magnetic disturbances
 - photosphere
 - solar activity
 - stars
 - stellar atmospheres
 - stellar luminosity
 - stellar magnetic fields
 - stellar radiation
 - sunspot cycle
 - twenty-seven day variation
- starters**
 - GS **starters**
 - . engine starters
 - RT actuators
 - ignition systems
 - squibs
 - starting
- starting**
 - GS **starting**
 - . air start
 - RT activation
 - actuation
 - cycles
 - electric ignition
 - engine primers
 - excitation
 - firing (igniting)
 - ignition
 - initiation
 - launching
 - ∞ priming
 - reactor startup tests
 - starters
 - stimulation
- state equations*
 - USE **equations of state**
- state estimation**
 - RT algorithms
 - Kalman filters
 - linear systems
 - orbital position estimation
 - state vectors
 - stochastic processes
- state vectors**
 - GS algebra
 - . vector spaces
 - . . vectors (mathematics)
 - . . . **state vectors**
 - RT observability (systems)
 - phase-space integral
 - state estimation
 - steady state
 - strange attractors
- static aerodynamic characteristics**
 - GS aerodynamic characteristics
 - . **static aerodynamic characteristics**
 - static characteristics
 - . **static aerodynamic characteristics**
 - RT aerodynamic balance
 - aerodynamic stability
 - ∞ characteristics
- static alternators**
 - GS electric generators
 - . AC generators
 - . . **static alternators**
- static characteristics**
 - SN (EXCLUDES STATICS)
 - GS **static characteristics**
 - . static aerodynamic characteristics
 - RT static loads
 - static stability
- static tests
 - static deformation
 - GS deformation
 - . **static deformation**
 - RT creep properties
 - Maxwell-Mohr method
 - Saint Venant principle
 - static dischargers
 - UF *antistatic devices*
 - GS dischargers
 - . **static dischargers**
 - static electricity
 - GS electricity
 - . **static electricity**
 - RT atmospheric electricity
 - atmospherics
 - electric corona
 - electric fields
 - electric potential
 - electric sparks
 - electrostatic charge
 - electrostatics
 - lightning
 - open circuit voltage
 - space charge
 - static firing
 - DEF The firing of a rocket engine in a hold down position to measure thrust and accomplish other tests.
 - GS captive tests
 - . static tests
 - . . **static firing**
 - engine tests
 - . **static firing**
 - firing (igniting)
 - . test firing
 - . . **static firing**
 - ground tests
 - . prelaunch tests
 - . . **static firing**
 - RT rocket firing
 - static friction
 - GS friction
 - . **static friction**
 - RT coefficient of friction
 - dry friction
 - friction measurement
 - kinetic friction
 - sliding
 - sliding friction
 - static inverters
 - GS inverters
 - . **static inverters**
 - RT electric generators
 - static loads
 - UF *deadweight*
 - GS loads (forces)
 - . **static loads**
 - RT aerodynamic loads
 - axial compression loads
 - axial loads
 - ballast (mass)
 - bending moments
 - compression loads
 - critical loading
 - dynamic loads
 - edge loading
 - flexural strength
 - loading moments
 - mass distribution
 - moment distribution
 - pressure distribution
 - random loads
 - Saint Venant principle
 - static characteristics
 - structural design criteria
 - transverse loads
 - wing loading
 - static models
 - DEF Sets of equations of physical laws to determine a balance of systems at rest.
 - GS models
- . **static models**
 - RT approximation
 - dynamic models
 - optimization
- static pressure**
 - GS pressure
 - . **static pressure**
 - . . hydrostatic pressure
 - RT isostatic pressure
 - pitot tubes
 - sound pressure
- static stability**
 - GS stability
 - . **static stability**
 - . . dimensional stability
 - . . . structural stability
 - shell stability
 - RT aircraft stability
 - counterbalances
 - drift (instrumentation)
 - dynamic stability
 - magneto-hydrostatics
 - static characteristics
 - storage stability
 - stratification
 - surface stability
- static tests**
 - SN (ENCOMPASSES MATERIALS, ENGINE, AND VEHICLE TESTS)
 - GS captive tests
 - . **static tests**
 - . . static firing
 - RT cold flow tests
 - compression tests
 - creep tests
 - dynamic tests
 - engine tests
 - fatigue tests
 - ground tests
 - hardness tests
 - inspection
 - load tests
 - ∞ materials tests
 - missile tests
 - nondestructive tests
 - prefiring tests
 - prelaunch tests
 - quality control
 - resonance testing
 - static characteristics
 - tensile tests
 - test firing
 - ∞ tests
 - vibration tests
 - wear tests
- static thrust**
 - GS thrust
 - . **static thrust**
 - RT jet thrust
 - rocket thrust
- statics**
 - GS **statics**
 - . aerostatics
 - . electrostatics
 - . hydrostatics
 - . . magneto-hydrostatics
 - RT ∞ dynamics
 - elastostatics
 - ∞ equilibrium
 - fluid mechanics
 - mechanics (physics)
- stationary orbits**
 - DEF Orbits in which the satellite revolves about the primary at the angular rate at which the primary rotates on its axis. From the primary, the satellite thus appears to be stationary over a point on the primary.
 - GS orbits
 - . circular orbits
 - . . **stationary orbits**
 - . equatorial orbits
 - . . **stationary orbits**
 - . spacecraft orbits
 - . . satellite orbits

stationkeeping

- . . . **stationary orbits**
 - RT Earth orbits
 - geosynchronous orbits
 - synchronous satellites
 - twenty-four hour orbits
- stationkeeping**
- DEF The sequence of maneuvers that maintains a vehicle in predetermined orbit.
 - GS positioning
 - . **stationkeeping**
 - RT formation flying
 - guidance (motion)
 - navigation
 - orbital mechanics
 - orbits
 - payload retrieval (STS)
 - satellite constellations
 - spacecraft control

stations

- GS **stations**
 - . ground stations
 - . . Deep Space Instrumentation Facility
 - . . Earth terminals
 - . . integrated mission control center
 - . . polystation doppler tracking system
 - . hydroelectric power stations
 - . payload stations
 - . space stations
 - . . Automatic Universal Orbiting Stations
 - . . Columbus space station
 - . . Halo Orbit space station
 - . . International Space Station
 - . . man tended free flyers
 - . . Mir space station
 - . . orbiting lunar stations
 - . . Salyut space station
 - . . Skylab 1
 - . . Skylab 2
 - . . Skylab 3
 - . . Skylab 4
 - . . Space Operations Center (NASA)
 - . . Space Station Freedom
 - . . space station polar platforms
 - . tracking stations
 - . . Deep Space Instrumentation Facility
 - . . Global Tracking Network
 - . . polystation doppler tracking system
 - . weather stations
 - . . automatic weather stations
 - . workstations
 - . . crew workstations
 - . . . crew experiment stations
 - . . . crew observation stations
- RT ∞ bases
- ∞ facilities
 - lunar bases
 - military air facilities
 - planetary bases
 - position (location)
 - space bases
 - Space Flight Tracking and Data Network

statistical analysis

- GS **statistical analysis**
- . amplitude distribution analysis
- . correlation coefficients
- . discriminant analysis (statistics)
- . factor analysis
- . goodness of fit
- . likelihood ratio
- . Maxwell-Boltzmann density function
- . nonparametric statistics
- . Poisson density functions
- . probability density functions
- . . normal density functions
- . . Pearson distributions
- . . Rayleigh distribution
- . . Weibull density functions
- . probability distribution functions
- . quantiles
- . sequential analysis
- . standard deviation
- . statistical correlation
- . statistical decision theory

- . statistical tests
 - . . Kolmogorov-Smirnov test
 - . . Mann-Whitney-Wilcoxon U test
 - . . rank tests
 - . variance (statistics)
 - . . analysis of variance
 - . . multivariate statistical analysis
 - . . . bivariate analysis
 - . . . covariance
 - . . . orthogonality
 - . . . regression analysis
 - regression coefficients
- RT ∞ analyzing
- ∞ applications of mathematics
 - approximation
 - autoregressive processes
 - binomial theorem
 - biometrics
 - censored data (mathematics)
 - charts
 - Chebyshev approximation
 - cluster analysis
 - coefficients
 - confidence
 - confidence limits
 - continuity (mathematics)
 - correlation
- ∞ data
- data correlation
 - decision theory
 - discrete functions
- ∞ dispersion
- economics
 - estimates
 - estimating
 - events
 - expectancy hypothesis
 - experiment design
 - exponential functions
 - extrapolation
 - factorial design
 - failure analysis
 - forecasting
 - game theory
 - Gauss-Markov theorem
 - graphs (charts)
 - information theory
 - inspection
 - interpolation
 - linear prediction
 - management
- ∞ mathematics
- maximum entropy method
 - mean
 - median (statistics)
 - Mills ratio
 - minimum variance orbit determination
 - Monte Carlo method
 - MTBF
 - operations research
 - outliers (statistics)
 - parameter identification
 - probability theory
 - quality control
 - quartiles
 - queueing theory
 - random processes
 - reliability
 - root-mean-square errors
 - sampling
- ∞ statistics
- stochastic processes
 - system identification
 - systems analysis
 - systems engineering
 - tables (data)
 - Taguchi methods
 - teleconnections (meteorology)
 - traveling salesman problem
 - trend analysis
 - Wiener filtering
 - Yang-Mills theory

statistical communication theory
USE **communication theory**

statistical correlation

- GS correlation
- . **statistical correlation**

- statistical analysis
- . **statistical correlation**
- RT correlation coefficients
- data correlation
- econometrics
- evaluation
- quality control
- ∞ statistics
- teleconnections (meteorology)

statistical decision theory

- GS decision theory
- . **statistical decision theory**
- statistical analysis
- . **statistical decision theory**
- RT game theory
- ∞ theories

statistical distributions

- UF *random distributions*
- GS **statistical distributions**
- . brightness distribution
- . Pearson distributions
- . probability distribution functions
- . Rayleigh distribution
- RT binomial theorem
- censored data (mathematics)
- complexity
- curve fitting
- ∞ distribution
- distribution (property)
- distribution functions
- distribution moments
- error functions
- events
- expectancy hypothesis
- forecasting
- gamma function
- goodness of fit
- Kolmogorov-Smirnov test
- kurtosis
- mathematical models
- outliers (statistics)
- probability theory
- quality control
- quantiles
- quantum theory
- quartiles
- reliability
- scattering
- size distribution

statistical mechanics

- DEF Branch of physics concerned with predictions of the behavior of macroscopic systems based on the interactions of the microscopic constituents of the system, where the number of constituents is very large.
- RT Boltzmann distribution
- Boltzmann transport equation
- classical mechanics
- closure law
- cluster variation method
- continuum mechanics
- energy distribution
- fluctuation theory
- function space
- Ising model
- Liouville equations
- macroscopic equations
- Malkus theory
- many body problem
- Maxwell-Boltzmann density function
- mechanics (physics)
- molecular dynamics
- Onsager phenomenological coefficient
- quantum mechanics
- quantum theory
- renormalization group methods
- thermodynamic equilibrium
- virial theorem
- weighting functions

statistical moments
USE **distribution moments**

statistical probability
USE **probability theory**

statistical tests

- UF *Bruceton test*

GS statistical analysis
 . **statistical tests**
 . . Kolmogorov-Smirnov test
 . . Mann-Whitney-Wilcoxon U test
 . . rank tests

RT charts
 confidence limits
 curve fitting
 ∞ data
 estimates
 estimating
 factor analysis
 goodness of fit
 heterogeneity
 homogeneity
 likelihood ratio
 normality
 null hypothesis
 outliers (statistics)
 quality control
 range (extremes)
 regression analysis
 reliability
 significance
 ∞ tests
 validity

statistical weather forecasting

GS meteorology
 . weather forecasting
 . . **statistical weather forecasting**
 predictions
 . forecasting
 . . weather forecasting
 . . . **statistical weather forecasting**

RT long range weather forecasting
 numerical weather forecasting

∞ **statistics**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT arrays
 biometrics
 census
 ∞ data
 demography
 entropy (statistics)
 estimates
 estimating
 Fermi-Dirac statistics
 information theory
 nonparametric statistics
 populations
 probability theory
 quantiles
 quantum statistics
 random variables
 reliability
 sampling
 statistical analysis
 statistical correlation
 stochastic processes
 surveys
 systems engineering
 tables (data)
 time series analysis

stator blades

GS turbomachine blades
 . **stator blades**

RT ∞ blades
 compressor blades
 rotor blades (turbomachinery)
 rotor stator interactions
 stators
 turbine blades
 vanes

stators

DEF In machinery, parts or assemblies that remain stationary with respect to rotating or moving parts or assemblies such as the field frames of electric motors or generators, or the stationary casings and blades surrounding axial flow compressor rotors or turbine wheels.

RT compressors
 electric motors
 ∞ generators
 impellers

motors
 pumps
 ∞ rotating electrical machines
 rotors
 stator blades
 turbines

statutes

USE **law (jurisprudence)**

stays

USE **guy wires**

STDN (network)

DEF Spaceflight Tracking and Data Network. Name changed from Space Tracking and Data Acquisition Network (STDAN). Used for Satellite Tracking and Data Acq Network, Spacecraft Tracking and Data Network, and STADAN (satellite tracking network).

UF *Satellite Tracking and Data Acq Network*
Spacecraft Tracking and Data Network
STADAN (satellite tracking network)

GS networks
 . tracking networks
 . . **STDN (network)**

RT data acquisition
 Global Tracking Network
 minitrack system
 optical tracking
 range and range rate tracking
 satellite tracking
 space detection and tracking system
 Space Flight Tracking and Data Network
 tracking stations

steady flow

GS fluid flow
 . **steady flow**
 . . Couette flow
 . . Hartmann flow
 . . Ringleb flow

RT Beltrami flow
 continuity equation
 critical flow
 Crocco method
 equilibrium flow

∞ flow
 flow characteristics
 flow geometry
 flow stability
 gas flow
 heat transmission
 hydrodynamic coefficients
 laminar flow
 liquid flow
 low turbulence
 mass flow
 method of characteristics
 multiphase flow
 nonNewtonian flow
 orifice flow
 parallel flow
 pipe flow
 pressure gradients
 quasi-steady states
 single-phase flow
 solids flow
 steam flow
 Stokes flow
 subcritical flow
 supercritical flow
 turbulence
 turbulent flow
 two dimensional flow
 uniform flow
 unsteady flow

steady state

DEF The condition of a substance or system whose local physical and chemical properties do not vary with time.

RT ∞ equilibrium
 fluid dynamics
 metastable state
 stability
 state vectors

unsteady flow
 unsteady state

steady state creep

GS mechanical properties
 . creep properties
 . . **steady state creep**

RT plastic flow
 quasi-steady states

steady state flow

USE **equilibrium flow**

stealth bomber

USE **B-2 aircraft**

stealth technology
 (added November 2001)

DEF Methods, materials, and designs for reducing the detectability of vehicles and other systems by radar or any other electronic or optical means.

UF *antidetection technology*
 countermeasures
 . **stealth technology**

RT antiradar coatings
 B-2 aircraft
 camouflage
 electronic countermeasures
 electronic warfare
 optical countermeasures
 radar absorbers
 radar cross sections
 radar detection
 radar signatures
 spacecraft defense
 target masking
 target recognition
 X-45 aircraft

steam

RT boilers
 fog
 superheating
 thermodynamics
 water
 water vapor

steam flow

GS fluid flow
 . **steam flow**

RT critical flow
 gas flow
 laminar flow
 mass flow
 multiphase flow
 orifice flow
 pipe flow
 pipelines
 pressure gradients
 single-phase flow
 steady flow
 subcritical flow
 supercritical flow
 turbulent flow
 uniform flow
 unsteady flow

steam generators

USE **boilers**

steam turbines

GS turbomachinery
 . turbines
 . . **steam turbines**

RT axial flow turbines
 combined cycle power generation
 gas turbine engines
 gas turbines
 turbogenerators
 two stage turbines

stearates

GS esters
 . **stearates**

RT soaps

stearothermophilus

GS microorganisms
 . bacteria

steel structures

- . . Bacillus
- . . . **stearotherophilus**

steatite

USE **talc**

steel structures

- GS welded structures
- . **steel structures**
- RT composite structures
- construction
- rigid structures
- ∞ structures

steels

- GS alloys
- . iron alloys
- . . **steels**
- . . . bainitic steel
- . . . carbon steels
- . . . low carbon steels
- . . . chromium steels
- . . . Croloy
- . . . high strength steels
- . . . maraging steels
- . . . nickel steels
- . . . stainless steels
- austenitic stainless steels
- ferritic stainless steels
- martensitic stainless steels
- RT austenite
- bainite
- cementite
- ferrites
- hydrogen embrittlement
- martensite
- mischmetal
- pearlite

steep gradient aircraft

USE **V/STOL aircraft**

steepest ascent method

USE **steepest descent method**

steepest descent method

- UF *steepest ascent method*
- RT calculus of variations
- dynamic programming
- ∞ methodology
- minima
- optimization
- parameter identification
- system identification

steepness

USE **slopes**

steerable antennas

DEF Directional antennas whose major lobe can be readily shifted in direction.

- GS antennas
- . directional antennas
- . . **steerable antennas**
- . . . inertialess steerable antennas
- arrays
- . antenna arrays
- . . **steerable antennas**
- . . . inertialess steerable antennas
- RT beam steering
- phased arrays
- radar antennas

steering

- GS **steering**
- . beam steering
- RT ∞ control
- control rockets
- controllability
- electron optics
- ∞ flight
- focusing
- suspension systems (vehicles)

steering rockets

USE **control rockets**

Stefan-Boltzmann law

DEF One of the radiation laws which states that the amount of energy radiated per unit time from a unit surface area of an ideal black body is

proportional to the fourth power of the absolute temperature of the black body.

- GS laws
- . radiation laws
- . . **Stefan-Boltzmann law**
- RT electromagnetic radiation
- emissivity
- flux (rate)
- heat radiators
- Kirchhoff law of radiation
- radiative heat transfer

steganography

(added April 2002)

DEF The art and science of communicating in a hidden manner, usually involving a message embedded in a carrier medium such as print, images, or computer files.

- RT computer information security
- cryptography
- security

Stellar (star tracker)

USE **CCD star tracker**

stellar activity

DEF A general term encompassing stellar phenomena such as stellar flares, starspot activity, magnetic activity, nuclear fusion, etc.

- GS **stellar activity**
- . solar activity
- . . faculae
- . . solar flares
- . . solar prominences
- . . solar storms
- . . spicules
- . . sunspots
- . . starspots
- . . sunspots
- . . stellar flares
- . . solar flares
- RT flare stars
- ∞ flares
- magnetic disturbances
- magnetohydrodynamics
- photosphere
- starquakes
- stars
- stellar convection
- stellar interiors
- stellar luminosity
- stellar magnetic fields
- stellar mass ejection
- stellar oscillations
- stellar physics
- stellar radiation
- sunspot cycle

stellar atmospheres

- GS environments
- . extraterrestrial environments
- . . **stellar atmospheres**
- . . . chromosphere
- . . . solar atmosphere
- solar transition region
- RT ∞ atmospheres
- cool stars
- limb brightening
- limb darkening
- local thermodynamic equilibrium
- metallic stars
- pulsar magnetospheres
- radiative transfer
- satellite atmospheres
- starspots
- stellar convection
- stellar coronas
- stellar interiors
- stellar magnetospheres

stellar color

DEF The particular wavelengths of optical radiation emitted by a star.

- GS electromagnetic properties
- . optical properties
- . . color
- . . . **stellar color**
- RT color-color diagram
- color-magnitude diagram
- stellar luminosity

stellar magnitude
stellar spectra
stellar spectrophotometry

stellar composition

- GS composition (property)
- . chemical composition
- . . **stellar composition**
- RT abundance
- B stars
- carbon stars
- isotope ratios
- stars
- stellar models
- stellar physics
- stellar structure

stellar convection

(added June 1992)

- GS convection
- . **stellar convection**
- . . solar convection (astronomy)
- RT Benard cells
- convection currents
- convective flow
- dynamo theory
- fluid flow
- free convection
- Rayleigh-Benard convection
- stellar activity
- stellar atmospheres
- stellar interiors
- stellar magnetic fields
- stellar physics

stellar cores

DEF The central portion of the interior of stars.

- GS cores
- . **stellar cores**
- stellar interiors
- . **stellar cores**
- RT astrophysics
- degenerate matter
- gravitational collapse
- planetary cores
- solar interior
- stars
- stellar coronas
- stellar structure

stellar coronas

DEF Ionized regions about stars formed by x rays emitted during stellar flares. First discovery of a stellar corona was made aboard the Dutch ANS satellite (1975) when permanent x ray emission from the star SIRIUS was detected and measured.

- GS coronas
- . **stellar coronas**
- . . solar corona
- . . . coronal holes
- . . . chromospheres
- . . . coronal loops
- RT coronal mass ejection
- ionization
- Orion nebula
- stellar atmospheres
- stellar cores

stellar Doppler shift

USE **Doppler effect**

stellar envelopes

- UF *circumstellar matter*
- RT astrophysics
- cool stars
- ∞ envelopes
- interstellar matter
- protoplanetary disks
- R Coronae Borealis stars
- shell stars
- stellar mass accretion
- stellar mass ejection
- stellar structure
- symbiotic stars
- Wolf-Rayet stars

stellar evolution

- GS evolution (development)
- . **stellar evolution**

. . star formation
 . . stellar mass accretion
 RT asteroseismology
 astrophysics
 asymptotic giant branch stars
 brown dwarf stars
 color-magnitude diagram
 cosmology
 degenerate matter
 galactic evolution
 gravitational instability
 Hertzsprung-Russell diagram
 horizontal branch stars
 interstellar extinction
 late stars
 main sequence stars
 neutral currents
 planetary evolution
 Population III stars
 pre-main sequence stars
 protoplanetary disks
 protoplanets
 protostars
 red giant stars
 solar nebula
 solar system evolution
 star formation rate
 stellar interiors
 stellar physics
 subgiant stars

stellar fields

USE **star distribution**

stellar flares

DEF Ejections of material from stars in eruptions that last from a few minutes to an hour or more.

GS stellar activity
 . **stellar flares**
 . . solar flares
 RT cataclysmic variables
 flare stars
 ∞ flares
 stellar luminosity
 stellar physics
 stellar radiation

stellar gravitation

GS gravitation
 . **stellar gravitation**
 . . solar gravitation
 RT gravitational binding energy
 gravitational fields
 gravitational instability
 gravitational lenses
 stars
 stellar mass
 stellar systems

stellar interiors

DEF The subsurface portions of stars.

GS **stellar interiors**
 . solar interior
 . stellar cores
 RT asteroseismology
 astrophysics
 convection
 gravitational collapse
 nuclear fusion
 stars
 stellar activity
 stellar atmospheres
 stellar convection
 stellar evolution
 stellar models
 stellar physics
 stellar structure

stellar luminosity

GS electromagnetic properties
 . optical properties
 . . luminosity
 . . . **stellar luminosity**
 RT brightness
 brightness distribution
 Hertzsprung-Russell diagram
 horizontal branch stars
 limb brightening
 limb darkening

luminescence
 mass to light ratios
 red dwarf stars
 red giant stars
 starspots
 stellar activity
 stellar color
 stellar flares
 stellar parallax
 stellar physics
 Wolf-Rayet stars

stellar magnetic fields

GS magnetic fields
 . **stellar magnetic fields**
 . . solar magnetic field
 RT electromagnetic fields
 interstellar magnetic fields
 magnetic field configurations
 plasmas (physics)
 pulsar magnetospheres
 starspots
 stellar activity
 stellar convection
 stellar magnetospheres

stellar magnetospheres

(added July 1988)

GS **stellar magnetospheres**
 . pulsar magnetospheres
 RT magnetic fields
 ∞ magnetospheres
 stellar atmospheres
 stellar magnetic fields

stellar magnitude

DEF The measure of the relative brightness of a star. Stellar magnitudes are expressed in a variety of ways, according to the method or process of observation or determination.

GS magnitude
 . **stellar magnitude**
 RT astronomy
 color-magnitude diagram
 ∞ intensity
 luminance
 luminous intensity
 red dwarf stars
 stars
 stellar color
 stellar parallax

stellar mass

GS mass
 . **stellar mass**
 RT degenerate matter
 galactic mass
 main sequence stars
 mass to light ratios
 massive stars
 novae
 stellar gravitation
 stellar temperature
 supernovae
 variable stars

stellar mass accretion

DEF Process by which a star accumulates matter as it moves through dense clouds of interstellar gas.

GS evolution (development)
 . stellar evolution
 . . **stellar mass accretion**
 RT accretion disks
 cosmology
 dwarf novae
 galactic evolution
 gravitational effects
 interstellar gas
 interstellar matter
 protostars
 star formation
 stellar envelopes
 stellar physics
 symbiotic stars
 x ray binaries

stellar mass ejection

GS ejection
 . **stellar mass ejection**

. . coronal mass ejection
 RT asymptotic giant branch stars
 cataclysmic variables
 dwarf novae
 magnetic clouds
 novae
 R Coronae Borealis stars
 stellar activity
 stellar envelopes
 supernovae
 variable stars
 Wolf-Rayet stars

stellar models

GS models
 . astronomical models
 . . **stellar models**
 RT astronomy
 solar neutrinos
 solar oscillations
 stellar composition
 stellar interiors
 supermassive stars

stellar motions

GS **stellar motions**
 . stellar orbits
 . stellar oscillations
 . . solar oscillations
 . stellar rotation
 . . solar rotation
 RT companion stars
 corotation
 Doppler effect
 Doppler-Fizeau effect
 double stars
 galactic rotation
 Hipparcos satellite
 ∞ motion
 proper motion
 sidereal time
 stellar parallax
 stellar systems

stellar occultation

GS occultation
 . **stellar occultation**
 RT asteroid detection
 eclipsing binary stars
 lunar occultation

stellar orbits

SN (EXCLUDES PLANETARY ORBITS)
 GS orbits
 . **stellar orbits**
 stellar motions
 . **stellar orbits**
 RT celestial mechanics
 Nemesis (star)
 retrograde orbits

stellar oscillations

DEF Irregular fluctuations of the stellar atmospheres.

GS oscillations
 . **stellar oscillations**
 . . solar oscillations
 stellar motions
 . **stellar oscillations**
 . . solar oscillations
 RT asteroseismology
 astronomical models
 astronomy
 astrophysics
 atmospheric models
 cataclysmic variables
 Mira variables
 stars
 stellar activity
 symbiotic stars
 variable stars

stellar parallax

DEF The subtended angle at a star formed by the mean radius of the Earth's orbit; it indicates distance to a star.

GS parallax
 . **stellar parallax**
 RT astrometry
 binary stars

stellar physics

- Hipparcos satellite
- solar parallax
- stellar luminosity
- stellar magnitude
- stellar motions

stellar physics

DEF A term that encompasses the physical properties of stars, such as luminosity, size, mass, density, temperature, chemical composition, evolution, activity, etc.

GS astrophysics

- . stellar physics

- . . solar physics

RT

- astroseismology

- local thermodynamic equilibrium

- nuclear astrophysics

- nuclear fusion

∞ science

- starquakes

- stellar activity

- stellar composition

- stellar convection

- stellar evolution

- stellar flares

- stellar interiors

- stellar luminosity

- stellar mass accretion

- stellar radiation

- stellar rotation

- stellar structure

- supernovae

stellar radiation

GS extraterrestrial radiation

- . stellar radiation

- . . stellar winds

RT

- cosmic rays

- electromagnetic radiation

- galactic radiation

- gamma ray bursts

- Herbig-Haro objects

- interstellar extinction

- interstellar radiation

- light curve

- microwave emission

- polarized electromagnetic radiation

∞ radiation

- radiative transfer

- radio bursts

- radio stars

- solar radiation

- starspots

- stellar activity

- stellar flares

- stellar physics

- x ray stars

stellar rotation

GS

- gyration

- . rotation

- . . stellar rotation

- . . . solar rotation

- stellar motions

- . stellar rotation

- . . solar rotation

RT

- angular momentum

- corotation

- planetary rotation

- starquakes

- stellar physics

stellar seismology

(added March 2001)

USE **astroseismology**

stellar spectra

GS spectra

- . radiation spectra

- . . electromagnetic spectra

- . . . stellar spectra

- solar spectra

RT

- absorption spectra

- astronomical spectroscopy

- color-color diagram

- continuous spectra

- cool stars

- emission spectra

- F stars

- G stars

- Herbig-Haro objects
- Hertzsprung-Russell diagram
- horizontal branch stars
- infrared spectra
- K stars
- line spectra
- molecular spectra
- peculiar stars
- Seyfert galaxies
- stellar color
- symbiotic stars
- ultraviolet spectra
- visible spectrum
- x ray spectra

stellar spectrophotometry

GS optical measurement

- . photometry

- . . astronomical photometry

- . . . stellar spectrophotometry

- . . . spectrophotometry

- . . . stellar spectrophotometry

- spectroscopy

- . astronomical spectroscopy

- . . stellar spectrophotometry

- . spectrophotometry

- . . stellar spectrophotometry

RT

- color-color diagram

- horizontal branch stars

- infrared photometry

- peculiar stars

- spectroscopic telescopes

- stellar color

- superhumps (astronomy)

stellar structure

RT

- chromosphere

- coronal holes

- dense plasmas

- metallic stars

- peculiar stars

- solar atmosphere

- solar corona

- solar interior

- starquakes

- stellar composition

- stellar cores

- stellar envelopes

- stellar interiors

- stellar physics

∞ structures

- supermassive stars

stellar systems

SN (EXCLUDES PLANETARY SYSTEMS)

DEF Gravitationally bound groups of stars.

SN (Excludes planetary systems).

GS

- celestial bodies

- . stellar systems

RT

- binary stars

- galactic clusters

- galactic rotation

- galactic structure

- galaxies

- gravitational collapse

- gravitational effects

- interacting galaxies

- Nemesis (star)

- Sigma Orionis

- star clusters

- star distribution

- stellar gravitation

- stellar motions

- triple stars

stellar temperature

GS temperature

- . stellar temperature

RT

- cool stars

- stellar mass

- symbiotic stars

stellar winds

GS extraterrestrial radiation

- . stellar radiation

- . . stellar winds

- particles

- . charged particles

- . . energetic particles

- . . . plasmas (physics)

- space plasmas
- stellar winds
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- space plasmas
- stellar winds

RT

- chromosphere

- cosmic plasma

- galactic winds

- intergalactic media

- interstellar gas

- radiation pressure

- solar wind

- solar wind velocity

stellarators

DEF Experimental thermonuclear devices where containment in a magnetic field is achieved by closing the field upon itself and thus allowing the particles to perform endless spiral motion.

GS

- nuclear reactors

- . fusion reactors

- . . stellarators

RT

- helical windings

- heliotrons

- magnetohydrodynamics

- pinch effect

- plasma control

- thermal instability

- thermonuclear power generation

- thermonuclear reactions

- toroidal plasmas

Stellite (trademark)

UF

- Haynes Stellite*

RT

- chromium alloys

- cobalt alloys

- tungsten alloys

stem cells

(added August 2004)

DEF Relatively undifferentiated cells that retain the ability to divide and proliferate throughout postnatal life to provide progenitor cells that can differentiate into specialized cells

GS

- cells (biology)

- . stem cells

RT

- biotechnology

- cell division

- culture techniques

- cytology

stems

RT

- plants (botany)

stencil processes

RT

- printing

- reproduction (copying)

step faults

USE

- geological faults**

step functions

GS

- functions (mathematics)

- . step functions

RT

- dynamic response

- frequency response

- intervals

- ramp functions

- reaction time

∞ steps

step recovery diodes

DEF Varactors in which forward voltage injects carriers across the junction, but before the carriers can combine, the voltage reverses and carriers return to their origin in a group. The result is an abrupt cessation of reverse current and a harmonic rich waveform.

GS

- electronic equipment

- . diodes

- . . semiconductor diodes

- . . . junction diodes

- step recovery diodes

- . solid state devices

- . . semiconductor devices

- . . . junction diodes

- step recovery diodes

- RT switching
- stepped leaders**
(added August 1999)
GS electric current
. electric discharges
. lightning
. . . leaders (meteorology)
. . . . **stepped leaders**
- steppes**
GS landforms
. **steppes**
RT arid lands
desertification
grasslands
plains
- stepping motors**
DEF Motors whose rotations are in short and essentially uniform angular movements rather than a continuous motion.
GS electromechanical devices
. electric motors
. . **stepping motors**
motors
. electric motors
. . **stepping motors**
RT actuators
servocontrol
servomechanisms
- stepping switches**
GS switches
. electric switches
. . **stepping switches**
- ∞ **steps**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT backward facing steps
programming (scheduling)
stairs
step functions
- STEREO (observatory)**
(added July 2007)
DEF Two nearly identical space-based observatories traveling in offset orbits to provide 3-D stereoscopic images of the sun. Launched on October 26, 2006 as part of NASA's Solar Terrestrial Probes Program, the observatories will be used to characterize coronal mass ejections, energetic particle acceleration in the low corona and interplanetary medium, and improve the determination of the structure of the ambient solar wind.
UF *Solar Terrestrial Relations Observatory*
GS observatories
. astronomical observatories
. . solar observatories
. . . **STEREO (observatory)**
RT coronal mass ejection
solar activity
solar terrestrial interactions
space missions
stereoscopy
- stereochemistry**
DEF Chemistry dealing with the arrangement of atoms and molecules in three dimensions.
RT carbohydrates
∞ chemistry
enantiomers
isomers
optical activity
spatial distribution
x ray analysis
- stereography*
USE **stereophotography**
- stereolithography*
USE **lithography**
- stereophonics**
DEF The use of two sound channels to mimic normal hearing. Stereophonic satellite broadcasting has now been developed.
RT acoustics
hearing
- stereophotography**
UF *stereography*
stereoscopic photography
GS imagery
. photography
. . stereoscopy
. . . **stereophotography**
RT aerial photography
black and white photography
cinematography
color photography
Mapsat
photogrammetry
SPOT (French satellite)
- stereoscopic photography*
USE **stereophotography**
- stereoscopic vision**
GS vision
. **stereoscopic vision**
RT binocular vision
stereoscopy
- stereoscopy**
GS imagery
. photography
. . **stereoscopy**
. . . stereophotography
RT STEREO (observatory)
stereoscopic vision
- stereotelevision**
GS communication equipment
. **stereotelevision**
telecommunication
. **stereotelevision**
television systems
. **stereotelevision**
RT closed circuit television
color television
communicating
educational television
satellite television
spacecraft television
- sterilization**
GS cleaning
. **sterilization**
. . chemical sterilization
. . . spacecraft sterilization
RT air purification
antifouling
antiseptics
bactericides
baking
decontamination
fumigation
gnatobiotics
housekeeping (spacecraft)
ionizing radiation
mercury lamps
pasteurizing
purification
ultraviolet radiation
- sterilization effects**
RT chemical effects
corrosion
decontamination
degradation
∞ deoxidation
∞ effects
radiation effects
spacecraft sterilization
temperature effects
thermal degradation
- sterns*
USE **afterbodies**
- sternum**
GS anatomy
. musculoskeletal system
. . bones
. . . **sternum**
- RT thorax
- steroids**
GS organic compounds
. lipids
. . **steroids**
. . . cholesterol
. . . corticosteroids
. . . . aldosterone
. . . . hydroxycorticosteroid
. cortisone
. glucocorticoids
. estrogens
. . . prostaglandins
RT antibiotics
hormones
- stethoscopes**
GS medical equipment
. **stethoscopes**
RT physicians
- stiction**
(added May 2003)
DEF Adhesion between two bodies in contact due to surface forces.
GS surface properties
. adhesion
. . **stiction**
RT friction
interfacial energy
- Stieltjes integral**
GS analysis (mathematics)
. real variables
. . measure and integration
. . . **Stieltjes integral**
RT probability theory
- stiff structures*
USE **rigid structures**
- stiffening**
RT reinforcement (structures)
ribs (supports)
webs (supports)
- stiffness**
DEF The ratio of change of force (or torque) to the corresponding change in translational (or rotational) displacement of an elastic element.
GS mechanical properties
. **stiffness**
RT bending
deformation
flexibility
modulus of elasticity
∞ rigidity
softness
structural stability
- stiffness matrix**
GS algebra
. vector spaces
. . matrices (mathematics)
. . . **stiffness matrix**
RT structural analysis
structural members
- stigmatism**
GS electromagnetic properties
. optical properties
. . **stigmatism**
RT astigmatism
focusing
lens design
lenses
- stilbene**
GS organic compounds
. hydrocarbons
. . **stilbene**
RT dyes
hexanitrostilbene
- stills**
GS separators
. **stills**
RT concentrators

stimulants

distillation equipment

stimulants

- GS drugs
 - . **stimulants**
 - . . atropine
 - . . caffeine
 - . . central nervous system stimulants
 - . . norepinephrine
- RT aminophylline
 - epinephrine
 - strychnine

stimulated emission

- GS emission
 - . **stimulated emission**
- RT argon lasers
 - carbon dioxide lasers
 - carbon lasers
 - carbon monoxide lasers
 - coherent electromagnetic radiation
 - coherent light
 - electron emission
 - electron pumping
 - gallium arsenide lasers
 - gas lasers
 - gas masers
 - HCN lasers
 - interstellar masers
 - lasers
 - light emission
 - masers
 - nuclear pumping
 - optical pumping
 - particle emission
 - photoelectric emission
 - population inversion
 - rapid ballistics identification
 - rare gas-halide lasers
 - self sustained emission
 - surface emitting lasers
 - TEA lasers
 - two-wavelength lasers
 - ultrashort pulsed lasers
 - ultraviolet lasers

stimulated emission devices

- UF *quantum generators*
- GS **stimulated emission devices**
 - . lasers
 - . . airborne lasers
 - . . argon lasers
 - . . atmospheric lasers
 - . . carbon lasers
 - . . chemical lasers
 - . . . HCL lasers
 - . . . HCL argon lasers
 - . . . chemical oxygen-iodine lasers
 - . . continuous wave lasers
 - . . distributed feedback lasers
 - . . free electron lasers
 - . . gamma ray lasers
 - . . gas lasers
 - . . . carbon dioxide lasers
 - . . . carbon monoxide lasers
 - . . . DF lasers
 - . . . excimer lasers
 - . . . HCL lasers
 - . . . HCL argon lasers
 - . . . HCN lasers
 - . . . helium-neon lasers
 - . . . HF lasers
 - . . . nitrogen lasers
 - . . . rare gas-halide lasers
 - . . . krypton fluoride lasers
 - . . . xenon chloride lasers
 - . . . xenon fluoride lasers
 - . . . TEA lasers
 - . . . ultraviolet lasers
 - . . gasdynamic lasers
 - . . glass lasers
 - . . high power lasers
 - . . . Nova Laser System
 - . . . Shiva laser system
 - . . infrared lasers
 - . . injection lasers
 - . . quantum cascade lasers
 - . . iodine lasers
 - . . . chemical oxygen-iodine lasers
 - . . liquid lasers

- . . metal vapor lasers
- . . neodymium lasers
- . . nuclear pumped lasers
- . . organic lasers
 - . . . dye lasers
- . . plasmadynamic lasers
- . . pulsed lasers
 - . . . Q switched lasers
 - . . . ultrashort pulsed lasers
 - . . . ultraviolet lasers
- . . Raman lasers
- . . ring lasers
- . . semiconductor lasers
 - . . . aluminum gallium arsenide lasers
 - . . . gallium arsenide lasers
 - . . . quantum cascade lasers
 - . . . quantum well lasers
 - . . . YLF lasers
- . . solar-pumped lasers
- . . solid state lasers
 - . . . aluminum gallium arsenide lasers
 - . . . DBR lasers
 - . . . fiber lasers
 - . . . gallium arsenide lasers
 - . . . quantum cascade lasers
 - . . . quantum well lasers
 - . . . ruby lasers
 - . . . YAG lasers
 - . . . YLF lasers
- . . spaceborne lasers
- . . surface emitting lasers
- . . tunable lasers
- . . two-wavelength lasers
- . . waveguide lasers
 - . . . fiber lasers
 - . . . x ray lasers
- . . masers
 - . . . gas masers
 - . . . hydrogen masers
 - . . . interstellar masers
 - . . . proton masers
 - . . . traveling wave masers
 - . . . water masers

- RT amplifiers
 - coherent electromagnetic radiation
 - diffraction radiation
 - electron pumping
 - ∞ generators
 - laser arrays
 - laser cavities
 - laser pumping
 - laser weapons
 - lasing
 - light transmission
 - nuclear pumping
 - optical pumping
 - rapid ballistics identification
 - subharmonic generators
 - transient oscillations

stimulation

- GS **stimulation**
 - . auditory stimuli
 - . sensory stimulation
- RT activation
 - activation (biology)
 - actuation
 - cloud seeding
 - gas injection
 - initiation
 - pressurizing
 - starting

∞ **stimuli**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT arousal
 - auditory stimuli
 - caloric stimuli
 - electric stimuli
 - motivation
 - psychological factors
 - subliminal stimuli
 - visual stimuli
 - zeitgebers

Stirling cycle

DEF A theoretical heat engine cycle in which heat is added at constant volume, fol-

lowed by isothermal expansion with heat addition. The heat is then rejected at constant volume, followed by isothermal compression with heat rejection.

- GS cycles
 - . thermodynamic cycles
 - . . **Stirling cycle**
- RT Carnot cycle
 - solar dynamic power systems
 - Stirling engines

Stirling engines

- GS engines
 - . external combustion engines
 - . . **Stirling engines**
 - . . piston engines
 - . . **Stirling engines**
- RT automobile engines
 - engine design
 - engine tests
 - free-piston engines
 - linear alternators
 - Stirling cycle

stirring

- RT aeration
 - dispersing
 - friction stir welding
 - mixers
 - suspending (mixing)
 - swirling

stishovite

- DEF A mineral consisting essentially of silicon trioxide.
- GS chalcogenides
 - . oxides
 - . . dioxides
 - . . . silicon dioxide
 - quartz
 - **stishovite**
 - . . silicon oxides
 - . . . silicon dioxide
 - . . . quartz
 - **stishovite**
- minerals
 - . quartz
 - . . **stishovite**
- silicon compounds
 - . silicon oxides
 - . . silicon dioxide
 - . . . quartz
 - **stishovite**
- RT coesite
 - Earth crust
 - Earth mantle
 - rutile

stochastic processes

DEF Ordered sets of observations in one or more dimensions, each being considered as a sample of one item from a probability distribution. Used for Poisson process.

- UF *poisson process*
- GS **stochastic processes**
 - . Markov processes
 - . . Markov chains
 - . . random processes
 - . . random walk
- RT ∞ applications of mathematics
 - attractors (mathematics)
 - autoregressive moving average
 - chaos
 - coherence coefficient
 - decision theory
 - differential games
 - ergodic process
 - events
 - Fokker-Planck equation
 - game theory
 - information theory
 - Kakutani theorem
 - Kalman-Schmidt filtering
 - martingales
 - mathematical models
 - Monte Carlo method
 - operations research
 - probability theory
 - queueing theory
 - random errors

random noise
 random signals
 state estimation
 statistical analysis
 ∞ statistics
 time dependence
 time functions
 time series analysis

stockpiling

RT accumulations
 collection
 inventory management
 logistics
 reserves
 ∞ storage
 strategic materials

stoichiometry

RT chemical reactions
 ∞ chemistry
 ∞ composition
 composition (property)
 formulations
 material balance
 phase diagrams

Stokes flow

GS fluid flow
 . incompressible flow
 . . **Stokes flow**
 . viscous flow
 . . **Stokes flow**
 RT Oseen approximation
 steady flow

∞ **Stokes law**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT laws
 Maxwell equation
 Stokes law (fluid mechanics)
 Stokes theorem (vector calculus)

Stokes law (fluid mechanics)

RT settling
 ∞ Stokes law
 viscosity

Stokes law of radiation

GS laws
 . radiation laws
 . . **Stokes law of radiation**
 RT incident radiation
 luminescence
 ∞ radiation
 wavelengths

Stokes theorem (vector calculus)

GS algebra
 . vector spaces
 . . **Stokes theorem (vector calculus)**
 theorems
 . **Stokes theorem (vector calculus)**
 RT ∞ Stokes law

Stokes-Beltrami equation

RT ∞ equations
 Laplace equation
 stream functions (fluids)

STOL aircraft

USE **short takeoff aircraft**

stomach

GS anatomy
 . digestive system
 . . gastrointestinal system
 . . . **stomach**
 RT abdomen

stones (rocks)

USE **rocks**

stony meteorites

GS celestial bodies
 . meteorites
 . . **stony meteorites**
 . . . achondrites
 . . . Bondoc meteorite

. . . . chassignites
 Kapoeta achondrite
 nakhlites
 Norton County achondrite
 shergottites
 SNC meteorites
 ureilites
 . . . carbonaceous meteorites
 carbonaceous chondrites
 Alais meteorite
 Allende meteorite
 Cold Bokkeveld meteorite
 Ivuna meteorite
 Murchison meteorite
 Murray meteorite
 Orgueil meteorite
 Tonk meteorite
 ureilites
 . . chondrites
 . . . Bruderheim meteorite
 . . . carbonaceous chondrites
 Alais meteorite
 Allende meteorite
 Cold Bokkeveld meteorite
 Ivuna meteorite
 Murchison meteorite
 Murray meteorite
 Orgueil meteorite
 Tonk meteorite
 . . . Harleton meteorite
 . . . Hvittis chondrite
 . . . Okhansk meteorite
 . . . Pantar chondrites
 . . . Pribram meteorite
 . . . tektites
 . . . australites
 . . . bediasites
 . . . Tungusk meteorite

RT

coesite
 iron meteorites
 Lazarev meteorite
 meteoritic composition
 meteoritic microstructures
 schreibersite
 stony-iron meteorites

stony-iron meteorites

(added December 1988)

GS celestial bodies
 . meteorites
 . . **stony-iron meteorites**
 RT iron meteorites
 stony meteorites

stopcocks

USE **cocks**

stopping

UF *terminating*
 GS **stopping**
 . thrust termination
 RT blocking
 cancellation
 closing
 constrictions
 containment
 damping
 deceleration
 delay
 elimination
 ∞ holding
 ∞ inhibition
 optimization
 plugs
 prevention
 ∞ reduction
 retarding
 sealing

stopping power

RT absorbers (materials)
 absorption cross sections
 ∞ cross sections
 density (mass/volume)
 neutron cross sections
 radiation absorption
 radiation shielding

scattering cross sections

storage batteries

GS consumables (spacecraft)
 . **storage batteries**
 propellants
 . **storage batteries**
 RT cryogenic rocket propellants
 gaseous rocket propellants
 gelled rocket propellants
 ground support equipment
 high temperature propellants
 hydrocarbon fuels
 hypergolic rocket propellants
 liquid rocket propellants
 propellant additives
 propellant decomposition
 propellant evaporation
 propellant sensitivity
 propellant storability
 propellant storage
 rocket propellants
 solid propellants
 space storage

∞ **storage**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT buffer storage
 computer storage devices
 core storage
 cryogenic fluid storage
 data storage
 disposal
 document storage
 energy storage
 external store separation
 external stores
 fluid filled shells
 handling equipment
 inventories
 inventory controls
 inventory management
 ion storage
 liquid filled shells
 logistics
 logistics management
 magnetic storage
 materials handling
 missile silos
 missile storage
 packaging
 pipelines
 preserving
 propellant storage
 racks (frames)
 recording
 reserves
 retaining
 safety
 space storage
 stockpiling
 storage tanks
 stowage (onboard equipment)
 underground storage
 waste disposal
 wing-fuselage stores

storage batteries

SN (RECHARGEABLE BATTERIES)
 UF *secondary batteries*
 GS electrochemical cells
 . electric batteries
 . . **storage batteries**
 . . . lead acid batteries
 . . . nickel cadmium batteries
 . . . nickel hydrogen batteries
 . . . nickel zinc batteries
 . . . silver cadmium batteries
 . . . silver hydrogen batteries
 . . . silver zinc batteries
 . . . zinc-bromide batteries
 . . . zinc-chlorine batteries
 RT alkaline batteries
 battery chargers
 charge efficiency
 dry cells
 electrolytes
 lithium batteries

storage rings (particle accelerators)

metal air batteries
nickel iron batteries
nonaqueous electrolytes
primary batteries
pulse charging
regenerative fuel cells

storage rings (particle accelerators)

UF *electron ring accelerators*
GS particle accelerators
. cyclic accelerators
. . . synchrotrons

. . . storage rings (particle accelerators)

RT ∞ accelerators
Q values (nuclear physics)
∞ rings
superconducting super collider

storage stability

GS life (durability)
. **storage stability**
stability

. storage stability

RT decomposition
liquid sloshing
long term effects
static stability
surface stability
thermal stability

storage tanks

GS tanks (containers)
. **storage tanks**
RT cryogenic fluid storage
cryogenic tanks
cylindrical tanks
expulsion bladders
external tanks
fuel tanks
pipelines
pressure vessels
propellant tanks
space storage
spherical tanks
∞ storage
tank geometry
underground storage
wing-fuselage stores

store release

USE **external store separation**

storm damage

GS damage
. **storm damage**
RT cyclones
flood control
floods
gusts
hailstorms
hurricanes
landslides
precipitation (meteorology)
rainstorms
snow cover
storm surges
storms
thunderstorms
tornadoes
tropical storms
typhoons
wind (meteorology)

storm enhancement

GS weather modification
. **storm enhancement**
RT climatology
hailstorms
precipitation (meteorology)
rainstorms
snowstorms
storms
storms (meteorology)

storm suppression

GS weather modification
. **storm suppression**
RT climatology
hailstorms

ice prevention
precipitation (meteorology)
rainstorms
snowstorms
storms

storm surges

RT coasts
hurricanes
ocean surface
oceanography
storm damage
storms (meteorology)
surges

storms

GS **storms**
. ionospheric storms
. . . sudden ionospheric disturbances
. magnetic storms
. . . polar substorms
. noise storms
. solar storms
. storms (meteorology)
. . . cyclones
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
. . . downbursts
. . . microbursts (meteorology)
. . . dust storms
. . . hailstorms
. . . rainstorms
. . . thunderstorms
. . . snowstorms
. . . tornadoes
. . . tropical storms
. . . hurricanes
. . . . Anna hurricane
. . . typhoons

RT climatology
cold fronts
∞ disturbances
flood damage
floods
fronts (meteorology)
gusts
precipitation (meteorology)
snow cover
solar terrestrial interactions
storm damage
storm enhancement
storm suppression
sudden storm commencements
warm fronts
weather forecasting
wind (meteorology)

storms (meteorology)

GS storms
. **storms (meteorology)**
. . . cyclones
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
. . . downbursts
. . . microbursts (meteorology)
. . . dust storms
. . . hailstorms
. . . rainstorms
. . . thunderstorms
. . . snowstorms
. . . tornadoes
. . . tropical storms
. . . hurricanes
. . . . Anna hurricane
. . . typhoons
RT Alpine meteorology
climatology
cyclogenesis
flight conditions
flood control
flood damage
flood predictions
floods
GOES 13
ground wind
gusts
hail
ice

meteorological parameters
meteorology
precipitation (meteorology)
snow
snow cover
squalls
storm enhancement
storm surges
watersheds
weather forecasting
wind (meteorology)

StormSat satellite

DEF A synchronous Earth-pointing satellite for severe storms studies. Used for Severe Storms Observing Satellite.

UF *Severe Storms Observing Satellite*
GS artificial satellites
. synchronous satellites
. . . **StormSat satellite**
RT NASA programs

Stoss-and-Lee topography

USE **glacial drift**

STOVL aircraft

(added July 1991)
UF *short takeoff & vertical landing aircraft*
RT fighter aircraft
lift augmentation
powered lift aircraft
short takeoff aircraft
V/STOL aircraft
vertical landing

stowage (onboard equipment)

RT logistics
onboard equipment
portable equipment
provisioning
space logistics
space rations
∞ storage

straight wings

USE **rectangular wings**

strain aging

USE **precipitation hardening**

strain distribution

GS distribution (property)
. **strain distribution**
RT crack propagation
deformation
elastic deformation
fracture mechanics
plastic deformation
strain measurement
strain rate
stress concentration
stress distribution
stress-strain relationships

strain energy methods

GS structural analysis
. energy methods
. . . **strain energy methods**
RT ∞ energy
∞ methodology
seismic energy

strain energy release rate

GS rates (per time)
. **strain energy release rate**
RT elastic deformation
elastic properties
relaxation (mechanics)
strain rate
stress relaxation

strain fatigue

USE **fatigue (materials)**

strain gage accelerometers

GS measuring instruments
. accelerometers
. . . **strain gage accelerometers**

- RT pressure gages
- strain gage balances**
 GS measuring instruments
 . indicating instruments
 . . weight indicators
 . . . **strain gage balances**
 RT pressure gages
- strain gages**
 DEF Instruments used to measure the strain of distortion in a member or test specimen (such as a structural part) subjected to a force.
 GS measuring instruments
 . **strain gages**
 RT cable force recorders
 deformeters
 elastometers
 extensometers
 flight load recorders
 mechanical measurement
 piezoelectric gages
 pressure gages
 rosette shapes
 shock measuring instruments
 strain measurement
 stress measurement
 temperature inversions
 tensometers
 transducers
 weight indicators
- strain hardening**
 GS hardening (materials)
 . work hardening
 . . **strain hardening**
 RT aging (materials)
 aging (metallurgy)
 precipitation hardening
 residual stress
 shot peening
 stress relieving
 temperature inversions
- strain measurement**
 RT ∞ measurement
 shearography
 smart structures
 strain distribution
 strain gages
 strain rate
 stress-strain diagrams
 stress-strain relationships
 structural strain
- strain rate**
 GS rates (per time)
 . **strain rate**
 RT impact tests
 loading rate
 mechanical properties
 Portevin-le Chatelier effect
 strain distribution
 strain energy release rate
 strain measurement
 temperature inversions
- strain softening*
 USE **plastic deformation**
- straits**
 DEF Relatively narrow waterways connecting two larger bodies of water.
 GS passageways
 . **straits**
 . . Torres Strait
 RT canals
 Gibraltar
 lakes
 seas
 water
 waterways
- strakes**
 GS structural members
 . **strakes**
 RT aerodynamic configurations
 hulls (structures)
 longerons
 metal strips
- rectangular panels
 reinforcement (structures)
 water tunnel tests
- strands**
 RT cables (ropes)
 ceramic fibers
 cordage
 fibers
 ∞ filaments
 mesh
 yarns
- strange attractors**
 DEF Abstract geometrical objects in theoretical physics that represent motion which is bounded but not periodic. Their detailed behavior is sensitive to external perturbations, but their overall qualitative behavior is stable. They are of particular interest in the study of turbulence.
 GS attractors (mathematics)
 . **strange attractors**
 RT chaos
 fractals
 imbeddings (mathematics)
 iterative solution
 nonlinear systems
 numerical stability
 perturbation theory
 ∞ physics
 recursive functions
 state vectors
 theoretical physics
 turbulence
- strangeness**
 RT hyperons
 mesons
 parity
 quantum mechanics
- strapdown inertial guidance**
 GS guidance (motion)
 . inertial guidance
 . . **strapdown inertial guidance**
 RT inertial navigation
- straps**
 RT anchors (fasteners)
 ∞ bands
 clamps
 fasteners
 holders
- strata**
 UF *stratified layers*
 GS **strata**
 . substrates
 RT anticlines
 bedrock
 beds (geology)
 crossbedding (geology)
 flat layers
 folds (geology)
 geosynclines
 ∞ layers
 stratification
 synclines
 underground acoustics
- strategic materials**
 DEF Critical raw materials whose foreign source of supply is uncertain and subject to potential cutoff. Examples of such materials are chromium, cobalt, manganese, and platinum group metals.
 RT chromium
 cobalt
 manganese
 ∞ materials
 metals
 stockpiling
 technology assessment
- strategy**
 RT decision theory
 deployment
 electronic warfare
 game theory
 ∞ operations
- operations research
 risk
 warfare
- stratification**
 GS **stratification**
 . atmospheric stratification
 . intercalation
 RT anticlines
 bedrock
 crossbedding (geology)
 flat layers
 folds (geology)
 geosynclines
 ∞ layers
 static stability
 strata
 stratified flow
 stratigraphy
 synclines
 temperature gradients
 thermoclines
- stratified flow**
 GS fluid flow
 . laminar flow
 . . **stratified flow**
 RT baroclinic waves
 baroclinity
 coaxial flow
 flow geometry
 shear flow
 stratification
- stratified layers*
 USE **strata**
- stratigraphy**
 DEF That branch of geology which treats of the formation, composition, sequence, and correlation of the stratified rocks as part of the Earth's crust.
 GS **stratigraphy**
 . magnetostratigraphy
 RT anticlines
 bedrock
 beds (geology)
 crossbedding (geology)
 ∞ formation
 formations
 geochronology
 geology
 geophysics
 geosynclines
 hydrogeology
 mines (excavations)
 paleontology
 particle tracks
 petrology
 plateaus
 regolith
 rocks
 sedimentary rocks
 stratification
 synclines
 wells
- stratocumulus clouds**
 GS clouds (meteorology)
 . **stratocumulus clouds**
 RT cumulus clouds
 stratus clouds
- Stratofortress aircraft*
 USE **B-52 aircraft**
- Stratojet aircraft*
 USE **B-47 aircraft**
- stratopause**
 SN (ALTITUDE APPROXIMATELY 50 KM)
 GS Earth atmosphere
 . middle atmosphere
 . . stratosphere
 . . . **stratopause**
 RT mesopause

stratoscope telescopes

mesosphere

Stratoscope 1 telescope
USE **stratoscope telescopes**

Stratoscope 2 telescope
USE **stratoscope telescopes**

stratoscope telescopes
UF *Stratoscope 1 telescope*
Stratoscope 2 telescope
GS telescopes
. spectroscopic telescopes
. . **stratoscope telescopes**
RT balloons
reflecting telescopes
refracting telescopes

stratosphere

SN (ALTITUDE RANGE BETWEEN APPROXIMATELY 15 AND 50 KM)
DEF Region of the atmosphere between the troposphere and mesosphere, having a lower boundary about 8 km. at the poles to 15 km. at the equator and an upper boundary of about 50 km.

GS Earth atmosphere
. middle atmosphere
. . **stratosphere**
. . . ozonosphere
. . . stratopause
RT chemosphere
homosphere
ice clouds
isothermal layers
stratospheric warming

stratosphere radiation

DEF Any infrared radiation involved in the complex infrared exchange continually proceeding within the stratosphere.

GS atmospheric radiation
. **stratosphere radiation**
RT corpuscular radiation
electromagnetic radiation
∞ radiation
sky radiation
tropospheric radiation

Stratospheric Aerosol & Gas Experiment
USE **SAGE satellite**

Stratospheric Observatory for IR Astronomy
USE **SOFIA (airborne observatory)**

stratospheric warming

(added October 1988)
DEF A temperature rise in the global stratosphere.

GS heating
. atmospheric heating
. . **stratospheric warming**
RT anomalous temperature zones
atmospheric heat budget
atmospheric temperature
climate change
global warming
isothermal layers
stratosphere

Stratotanker aircraft
USE **C-135 aircraft**

stratus clouds

GS clouds (meteorology)
. **stratus clouds**
RT fog
nimbostratus clouds
stratocumulus clouds

streak cameras

DEF Cameras for measuring radiation pulses by deflection of an electron beam.

GS optical equipment
. cameras
. . **streak cameras**
photographic equipment
. cameras
. . **streak cameras**
RT camera shutters
cinematography

lenses

streak photography

DEF The process of taking a time exposure photograph of a tracer particle in a fluid; the photograph reveals the motion of each tracer particle in the form of a streak which may be interpreted as a velocity vector.

GS imagery
. photography
. . **streak photography**
RT cameras
electro-optical photography
high speed cameras
imaging techniques

stream functions (fluids)

RT incompressible flow
potential theory
Stokes-Beltrami equation
streams
two dimensional flow

streamline flow

USE **laminar flow**

streamlined bodies

GS symmetrical bodies
. **streamlined bodies**
. . fairings
RT aerodynamic configurations
airfoils
axisymmetric bodies
∞ bodies
bodies of revolution
missile bodies
ogives
slender bodies
streamlining
towed bodies

streamlining

RT acoustic streaming
air flow
aircraft design
aircraft structures
airfoil profiles
airfoils
fairings
fluid dynamics
friction reduction
helicopter design
hydrofoils
∞ profiles
skin friction
streamlined bodies

streams

DEF Bodies of flowing water, great or small, contained within channels as well as uncontained fluids such as air.

GS **streams**
. gas streams
RT air flow
alluvium
aquifers
Delaware River Basin (US)
fluid flow
gas flow
hydrology
hydrology models
International Hydrological Decade
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
limnology
meanders
rapids
reservoirs
rivers
stream functions (fluids)
surface water
Susquehanna River Basin
(MD-NY-PA)
wadis

streets

RT highways

intersections
pavements
roads
∞ tunnels
urban planning
urban research

∞ strength

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT cold strength
compressive strength
creep rupture strength
creep strength
dispersion strengthening
electric field strength
fiber strength
field strength
flexural strength
fracture strength
high strength
impact strength
load carrying capacity
mechanical properties
microyield strength
muscular strength
notch strength
residual strength
shear strength
tensile strength
weld strength
yield strength

strength of materials

USE **mechanical properties**

streptococcus

GS microorganisms
. bacteria
. . **streptococcus**

streptomycetes

GS microorganisms
. bacteria
. . **streptomycetes**

streptomycin

GS drugs
. antibiotics
. . **streptomycin**

stress (biology)

DEF The effect of a physiological, psychological, or mental load on a biological organism which causes fatigue and tends to degrade proficiency.

GS **stress (biology)**
. acceleration stresses (physiology)
. . centrifuging stress
. . flight stress (biology)
. . space flight stress
. plant stress
. stress (psychology)
RT acclimatization
anxiety
deprivation
exercise physiology
fatigue (biology)
pathological effects
psychological effects

stress (physiology)

GS **stress (physiology)**
. acceleration stresses (physiology)
. . centrifuging stress
RT acceleration (physics)
acclimatization
aeroembolism
angina pectoris
anoxia
biodynamics
deprivation
exercise physiology
fatigue (biology)
flight stress (biology)
gravitational physiology
homeostasis
hyperkinesia
hypoxia
lower body negative pressure

- muscular fatigue
Palmar sweat index
physiology
pressure breathing
space flight stress
stress (psychology)
underwater physiology
- stress (psychology)**
UF *mental stress*
GS stress (biology)
 . **stress (psychology)**
RT fatigue (biology)
flight stress (biology)
mental performance
Palmar sweat index
psychological effects
psychological factors
psychology
space flight stress
space psychology
stress (physiology)
workloads (psychophysiology)
- stress analysis**
UF *stress calculations*
GS **stress analysis**
 . Schwartz method
 . x ray stress analysis
RT Airy function
∞ analyzing
bending moments
bending theory
boundary element method
Castigliano variational theorem
combined stress
construction
creep analysis
Donnell equations
energy methods
Euler buckling
∞ flight stress
fringe multiplication
inelastic stress
influence coefficient
interference fit
isoparametric finite elements
mechanical engineering
Michell theorem
Moire fringes
moments of inertia
NASTRAN
photoelastic analysis
photoelasticity
Reissner theory
Saint Venant principle
shallow shell equations
S-N diagrams
stresses
structural analysis
structural design
structural engineering
temperature inversions
- stress calculations*
USE **stress analysis**
- stress concentration**
DEF In structures, a localized area of high stress.
GS distribution (property)
 . stress distribution
 . . **stress concentration**
RT combined stress
concentrating
crack initiation
cracking (fracturing)
Elber equation
fatigue (materials)
fatigue tests
force distribution
fringe multiplication
hole distribution (mechanics)
hole geometry (mechanics)
impact strength
impact tests
loads (forces)
mechanical properties
micromechanics
Moire fringes
- moment distribution
notch strength
notch tests
perforated plates
perforated shells
plane stress
Saint Venant principle
strain distribution
stresses
stress-strain relationships
structural strain
- stress corrosion**
GS corrosion
 . **stress corrosion**
 . . stress corrosion cracking
RT cracking (fracturing)
fretting corrosion
intergranular corrosion
metal fatigue
salt spray tests
transgranular corrosion
- stress corrosion cracking**
GS corrosion
 . stress corrosion
 . . **stress corrosion cracking**
 fracturing
 . cracking (fracturing)
 . . **stress corrosion cracking**
RT corrosion tests
crack closure
crack initiation
crack propagation
metal fatigue
- stress cycles**
DEF A variation of stress with time, repeated periodically and identically.
GS cycles
 . **stress cycles**
 mechanical properties
 . **stress cycles**
RT cyclic loads
Elber equation
fatigue (materials)
fatigue life
fatigue tests
S-N diagrams
stresses
variable amplitude loading
- stress distribution**
UF *stress fields*
GS distribution (property)
 . **stress distribution**
 . . stress concentration
RT crack propagation
force distribution
fracture mechanics
interlaminar stress
strain distribution
stress intensity factors
stress-strain relationships
transverse loads
- stress fields*
USE **stress distribution**
- stress functions**
UF *von Mises theory*
GS functions (mathematics)
 . **stress functions**
RT fracturing
- stress intensity factors**
DEF Load-induced variables in tension, compression, and/or shear which are conducive to crack initiation and propagation and fatigue fracture in materials.
RT bending theory
combined stress
crack initiation
crack propagation
cracking (fracturing)
edge cracks
force distribution
fracture mechanics
hole geometry (mechanics)
loads (forces)
- notch strength
plane strain
stress distribution
tensile stress
- stress measurement**
GS mechanical measurement
 . **stress measurement**
 . . x ray stress measurement
RT deformeters
extensometers
photoelastic analysis
shearography
S-N diagrams
strain gages
tensometers
vibration measurement
- stress propagation**
GS transmission
 . **stress propagation**
RT elastic waves
plastic deformation
∞ propagation
- stress ratio**
DEF The ratio of the minimum stress to the maximum stress occurring in one stress cycle.
GS mechanical properties
 . **stress ratio**
 ratios
 . **stress ratio**
RT fatigue (materials)
fatigue tests
modular ratios
pressure ratio
S-N diagrams
- stress relaxation**
DEF The decrease in stress after a given time at constant strain.
GS mechanical properties
 . **stress relaxation**
 relaxation (mechanics)
 . **stress relaxation**
RT anelasticity
Bordoni peaks
creep analysis
creep diagrams
creep properties
ductility
fatigue (materials)
plastic deformation
plastic flow
plastic memory
plastic properties
∞ recovery
residual stress
shear properties
strain energy release rate
stresses
temperature inversions
- stress relieving**
GS heat treatment
 . **stress relieving**
 relieving
 . **stress relieving**
RT alloys
annealing
fatigue (materials)
∞ recovery
residual stress
stabilization
strain hardening
tempering
- stress rupture strength*
USE **creep rupture strength**
- stress tensors**
DEF Complete sets of stress components in a solid or fluid medium.
GS algebra
 . tensors
 . . **stress tensors**
RT continuum mechanics
elastic properties
fracture mechanics
plastic properties

stress waves

structural design

stress waves

GS elastic waves
. **stress waves**
RT acoustic emission
shock layers
shock waves
stresses
temperature inversions
wave propagation
∞ waves

stressed-skin structures

RT monocoque structures
skin (structural member)
spherical shells
∞ structures
thin walled shells

stresses

DEF The forces per unit area of a body that tends to produce a deformation.

GS **stresses**
. axial stress
. combined stress
. critical loading
. interlaminar stress
. photostresses
. plane stress
. residual stress
. Reynolds stress
. shear stress
. . torsional stress
. tensile stress
. thermal stresses
. triaxial stresses
. vibrational stress

RT buckling
cracks
creep properties
destruction
fatigue (materials)
∞ flight stress
impact
loads (forces)
mechanical properties
microyield strength
prestressing
rolling contact loads
shear properties
stress analysis
stress concentration
stress cycles
stress relaxation
stress waves
structural strain
temperature inversions
transverse loads
triboluminescence
x ray stress analysis
yield strength

stress-strain diagrams

GS diagrams
. **stress-strain diagrams**
RT axial strain
Hookes law
inelastic stress
modulus of elasticity
Poisson ratio
Portevin-le Chatelier effect
proportional limit
shape memory alloys
shear properties
strain measurement
structural strain
yield strength

stress-strain relationships

DEF Relationship between the stress or load on a structure, structural member, or a specimen, and the strain or deformation that follows.

RT elastic deformation
interlaminar stress
plane strain
plastic deformation
Portevin-le Chatelier effect
∞ relationships

residual stress
strain distribution
strain measurement
stress concentration
stress distribution
structural strain
yield strength

stress-strain-time relations

RT creep diagrams
Newtonian fluids
thermoviscoelasticity

stretch forming

RT bulging
cold working
∞ drawing
metal working
metal working
stretching

stretchers

GS medical equipment
. **stretchers**
RT first aid

stretching

UF *dilatation*
RT cold working
deep drawing
dilatational waves
distortion
∞ drawing
ductility
elastic deformation
elongation
metal working
plastic deformation
stretch forming
tempering
∞ tension
winding

striated muscle

(added December 2004)
USE **skeletal muscle**

striation

DEF A fracture surface marking consisting of a separation of the advancing crack front into separate fracture planes.

RT grooving
musculoskeletal system
riblets
shatter cones
skeletal muscle

string theory

SN (DOES NOT INCLUDE CLASSICAL STRING THEORY)
UF *superstring theory*
RT bosons
cosmology
field theory (physics)
gauge theory
grand unified theory
gravitation theory
large-scale structure of the universe
particle theory
quantum chromodynamics
quantum theory
relativity
supersymmetry
theoretical physics
unified field theory

stringers

DEF Slender, lightweight, lengthwise fill-in structural members in a rocket body, or the like, serving to reinforce and give shape to the skin.

GS structural members
. **stringers**
RT longerons
reinforcement (structures)
structural stability

strings

RT assemblies

cordage

∞ strip

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT airports
circuits
display devices
metal strips
ribbons
runways

strip mining

GS mining
. **strip mining**
RT clays
coal
Earth resources
excavation
exploitation
lunar mining
mineral deposits
mines (excavations)
soils

strip transmission lines

GS transmission lines
. **strip transmission lines**
. . . microstrip transmission lines
RT antenna feeds
metal strips
transmission circuits

∞ stripping

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT anodic stripping
ion stripping
paint removal
peeling
stripping (distillation)

stripping (distillation)

GS distillation
. **stripping (distillation)**
RT ∞ separation
∞ stripping
vaporizing

stroboscopes

GS optical equipment
. **stroboscopes**
RT ballistic cameras
high speed cameras
optical measurement
synchronism
time measurement
velocity measurement

stroke volume

(added March 1991)
GS output
. cardiac output
. . . **stroke volume**
RT blood volume
cardiovascular system
heart function
heart rate
physiological tests

∞ strokes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT cerebral vascular accidents
thermodynamic cycles

stroking tests

GS vibration tests
. damping tests
. . . **stroking tests**
RT dynamic response
frequency response
modal response
shock spectra
structural vibration
∞ tests
transient response

wave excitation

strong interactions (field theory)

DEF One of the fundamental interactions of elementary particles, primarily responsible for nuclear forces and other interactions among hadrons.

GS particle interactions
 . elementary particle interactions
 . high energy interactions
 . . . **strong interactions (field theory)**

RT field theory (physics)
 grand unified theory
 ∞ interactions
 nuclear interactions
 nuclear reactions
 quantum chromodynamics
 standard model (particle physics)
 ∞ theories
 weak interactions (field theory)

strongly coupled plasmas

DEF Highly compressed and collisional plasmas with electron densities of order 10 to the 24th power per cubic centimeter or more. The mean kinetic and potential energies of particles in the plasma are typically of the same order of magnitude.

GS particles
 . charged particles
 . energetic particles
 . . . plasmas (physics)
 collisional plasmas
 **strongly coupled plasmas**
 dense plasmas
 **strongly coupled plasmas**
 . corpuscular radiation
 . energetic particles
 . . . plasmas (physics)
 collisional plasmas
 **strongly coupled plasmas**
 dense plasmas
 **strongly coupled plasmas**

RT controlled fusion
 cosmic plasma
 coupled modes
 dusty plasmas
 high temperature plasmas
 inertial confinement fusion
 magnetohydrodynamic stability
 plasma compression
 plasma conductivity
 plasma density
 plasma equilibrium
 plasma focus

strontium

GS chemical elements
 . **strontium**
 . . strontium isotopes
 . . . strontium 85
 . . . strontium 87
 . . . strontium 89
 . . . strontium 90
 metals
 . **strontium**
 . . strontium isotopes
 . . . strontium 85
 . . . strontium 87
 . . . strontium 89
 . . . strontium 90

strontium 85

GS chemical elements
 . nuclides
 . isotopes
 . . . radioactive isotopes
 **strontium 85**
 strontium isotopes
 **strontium 85**
 . strontium
 . . strontium isotopes
 . . . **strontium 85**
 metals
 . strontium
 . . strontium isotopes

. . . **strontium 85**

strontium 87

GS chemical elements
 . nuclides
 . isotopes
 . . . strontium isotopes
 **strontium 87**
 . strontium
 . . strontium isotopes
 . . . **strontium 87**
 metals
 . strontium
 . . strontium isotopes
 . . . **strontium 87**

strontium 88

GS chemical elements
 . nuclides
 . isotopes
 . . . radioactive isotopes
 **strontium 88**

strontium 89

GS chemical elements
 . nuclides
 . isotopes
 . . . radioactive isotopes
 **strontium 89**
 . . . strontium isotopes
 **strontium 89**
 . strontium
 . . strontium isotopes
 . . . **strontium 89**
 metals
 . strontium
 . . strontium isotopes
 . . . **strontium 89**

strontium 90

GS chemical elements
 . nuclides
 . isotopes
 . . . radioactive isotopes
 **strontium 90**
 . . . strontium isotopes
 **strontium 90**
 . strontium
 . . strontium isotopes
 . . . **strontium 90**
 metals
 . strontium
 . . strontium isotopes
 . . . **strontium 90**

strontium bromides

GS halogen compounds
 . bromine compounds
 . bromides
 . . . **strontium bromides**
 . halides
 . bromides
 . . . **strontium bromides**
 . . . metal halides
 . . . **strontium bromides**
 strontium compounds
 . **strontium bromides**

strontium compounds

GS **strontium compounds**
 . strontium bromides
 . strontium fluorides
 . strontium oxides
 . strontium sulfides
 . strontium titanates
 . strontium zirconates
 RT ∞ alkaline earth compounds
 ∞ chemical compounds
 ∞ metal compounds

strontium fluorides

GS halogen compounds
 . fluorine compounds
 . fluorides
 . . . metal fluorides
 **strontium fluorides**
 . halides
 . fluorides
 . . . metal fluorides
 **strontium fluorides**

. . metal halides
 . . . metal fluorides
 **strontium fluorides**
 strontium compounds
 . **strontium fluorides**

strontium isotopes

GS chemical elements
 . nuclides
 . isotopes
 . . . **strontium isotopes**
 strontium 85
 strontium 87
 strontium 89
 strontium 90
 . strontium
 . . **strontium isotopes**
 . . . strontium 85
 . . . strontium 87
 . . . strontium 89
 . . . strontium 90
 metals
 . strontium
 . . **strontium isotopes**
 . . . strontium 85
 . . . strontium 87
 . . . strontium 89
 . . . strontium 90

strontium oxides

(added June 1992)
 GS chalcogenides
 . oxides
 . metal oxides
 . . **strontium oxides**
 strontium compounds
 . **strontium oxides**
 RT ∞ alkaline earth compounds
 BSCCO superconductors
 ∞ chemical compounds
 high temperature superconductors
 ∞ metal compounds
 mixed oxides
 superconductors (materials)

strontium sulfides

GS chalcogenides
 . sulfides
 . inorganic sulfides
 . . . **strontium sulfides**
 strontium compounds
 . **strontium sulfides**
 sulfur compounds
 . sulfides
 . inorganic sulfides
 . . . **strontium sulfides**

strontium titanates

GS strontium compounds
 . **strontium titanates**
 titanium compounds
 . titanates
 . . **strontium titanates**

strontium zirconates

GS strontium compounds
 . **strontium zirconates**
 zirconium compounds
 . zirconates
 . . **strontium zirconates**

Strouhal number

DEF A nondimensional number occurring in the study of periodic or quasiperiodic variations in the wake of objects immersed in a fluid stream.

GS dimensionless numbers
 . **Strouhal number**
 ratios
 . **Strouhal number**

RT backwash
 buffeting
 flow characteristics
 flow distribution
 flow stability
 Froude number
 oscillating flow
 slipstreams
 turbulence
 unsteady flow

structural analysis

vortices
wakes

structural analysis

UF *membrane analogy*
membrane theory
GS **structural analysis**
. dynamic structural analysis
. . flutter analysis
. energy methods
. . Bernstein energy principle
. . strain energy methods
. equilibrium methods
. matrix methods
RT ∞ analyzing
Castigliano variational theorem
computational mechanics
construction
continuum modeling
creep analysis
design optimization
Euler-Bernoulli beams
hole geometry (mechanics)
influence coefficient
J integral
loading moments
megamechanics
Michell theorem
Mindlin plates
modular ratios
moment distribution
NASTRAN
orbital space tests
patch tests
plate theory
shape functions
shape optimization
solid mechanics
stiffness matrix
stress analysis
Trefftz method

structural basins

UF *basins*
closed basins
depressions (topography)
sinks (geology)
GS landforms
. **structural basins**
. . cirques (landforms)
. . Great Basin (US)
. . Kalahari Basin (Africa)
. . karst
. . . sinkholes
. . kettles (geology)
. . Lake Champlain Basin (NY-VT)
. . river basins
. . . Atchafalaya River Basin (LA)
. . . Chena River Basin (AK)
. . . Columbia River Basin (ID-OR-WA)
. . . Delaware River Basin (US)
. . . Feather River Basin (CA)
. . . Missouri River Basin (US)
. . . Susquehanna River Basin (MD-NY-PA)
. . . Wabash River Basin (IL-IN-OH)
. . . wadis
. . watersheds
. . Williston Basin (North America)
RT geology
seamounts
valleys

structural beams

USE **beams (supports)**

structural design

GS **structural design**
. pressure vessel design
RT aeroelastic research wings
aircraft design
airframe materials
architecture
breakwaters
computer aided design
construction
∞ design
design optimization
helicopter design

lofting
materials selection
missile design
plant design
product development
satellite design
shape optimization
ship hulls
shock spectra
space station structures
spacecraft design
spacecraft structures
stress analysis
stress tensors
substructures
tensegrity structures
underwater structures
weight reduction

structural design criteria

GS criteria
. **structural design criteria**
RT aerodynamic loads
axial compression loads
axial loads
bending moments
compression loads
cyclic loads
∞ design
design optimization
dynamic loads
geotechnical engineering
gust loads
impact loads
landing loads
loads (forces)
mass distribution
moment distribution
pressure distribution
random loads
rolling contact loads
shape optimization
shock loads
static loads
thrust loads
transient loads
vibratory loads

structural dynamics

USE **dynamic structural analysis**

structural engineering

RT aeronautical engineering
aerospace engineering
construction
∞ engineering
geotechnical engineering
megamechanics
modular ratios
smart structures
stress analysis
structural health monitoring

structural failure

GS failure
. **structural failure**
RT bending
buckling
collapse
cracking (fracturing)
creep properties
deformation
fatigue (materials)
fracturing
load carrying capacity
mechanical properties
structural health monitoring
system failures

structural fatigue

USE **fatigue (materials)**

structural foundations

USE **foundations**

structural health monitoring

(added February 2009)
DEF Strategy for the on-going assessment of structural integrity applied to aerospace, civil, and mechanical engineering structures; typically

implemented by periodically analyzing damage-sensitive features in dynamic response measurements.

RT damage assessment
fault detection
nondestructive tests
smart structures
structural engineering
structural failure
structural reliability
systems health monitoring

structural influence coefficients

UF *SIC (coefficient)*
GS coefficients
. influence coefficient
. . **structural influence coefficients**

structural materials

USE **construction materials**

structural members

GS **structural members**
. beams (supports)
. . box beams
. . cantilever beams
. . curved beams
. . Euler-Bernoulli beams
. . I beams
. . rectangular beams
. . Timoshenko beams
. columns (supports)
. . tapered columns
. girders
. longerons
. membrane structures
. . skin (structural member)
. plates (structural members)
. . anisotropic plates
. . annular plates
. . cantilever plates
. . circular plates
. . corrugated plates
. . elastic plates
. . end plates
. . flat plates
. . girder webs
. . metal plates
. . . boiler plate
. . Mindlin plates
. . orthotropic plates
. . perforated plates
. . plastic plates
. . porous plates
. . rectangular plates
. . reinforced plates
. . thick plates
. . thin plates
. saddles (supports)
. strakes
. stringers
. struts
. trusses
. wing panels
RT aircraft construction materials
airframe materials
bars
∞ channels
clamped structures
∞ components
concretes
construction
∞ construction materials
fasteners
foundations
guy wires
joints (junctions)
masonry
pylon mounting
pylons
rectangular panels
reinforcement (structures)
rods
slabs
smart structures
stiffness matrix
∞ structures
substructures

- thick walls
- structural properties (geology)**
 UF *lineament*
 GS geology
 . **structural properties (geology)**
 RT Earth core
 Earth crust
 Earth mantle
 Earth planetary structure
 Earth surface
 fissures (geology)
 geophysics
 Great Basin (US)
 hydrology
 inliers (landforms)
 landforms
 neotectonics
 planetary composition
 plates (tectonics)
 ∞ properties
 rock mechanics
 shatter cones
 sinkholes
 subduction (geology)
- structural reliability**
 GS reliability
 . **structural reliability**
 RT aircraft reliability
 component reliability
 cumulative damage
 quality control
 structural health monitoring
- structural rigidity*
 USE **structural stability**
- structural stability**
 UF *structural rigidity*
 GS mechanical properties
 . dimensional stability
 . . **structural stability**
 . . . shell stability
 stability
 . static stability
 . . dimensional stability
 . . . **structural stability**
 shell stability
 RT aircraft stability
 aspect ratio
 combustion vibration
 hybrid structures
 load carrying capacity
 longerons
 plastic properties
 reinforcement (structures)
 resonance testing
 ∞ rigidity
 rotor stator interactions
 stiffness
 stringers
 wave resistance
- structural strain**
 RT axial strain
 bending
 buckling
 cracking (fracturing)
 deflection
 deformation
 elastic deformation
 failure
 load carrying capacity
 moments of inertia
 plastic deformation
 prestressing
 reinforcement (structures)
 rupturing
 shear strain
 shearing
 strain measurement
 stress concentration
 stresses
 stress-strain diagrams
 stress-strain relationships
 system failures
 temperature inversions
 twisting
 volumetric strain
- warpage
- structural vibration**
 GS vibration
 . **structural vibration**
 . . bending vibration
 . . breathing vibration
 . . flutter
 . . . panel flutter
 . . . subsonic flutter
 . . . supersonic flutter
 . . . transonic flutter
 . . linear vibration
 . . missile vibration
 . . self induced vibration
 . . . panel flutter
 . . . subsonic flutter
 . . . supersonic flutter
 . . . transonic flutter
 . . torsional vibration
 RT airfoil oscillations
 clamped structures
 earthquake resistant structures
 flexible spacecraft
 flutter analysis
 gyrodampers
 Mindlin plates
 random vibration
 resonant vibration
 rotor dynamics
 shaking
 shock spectra
 stroking tests
 vibration tests
- structural weight**
 GS weight (mass)
 . **structural weight**
 RT mass ratios
 materials selection
 NEW MOONS project
 weight analysis
 weight reduction
- structured grids (mathematics)**
(added May 1995)
 DEF In computational fluid dynamics, grid systems where the flowfield is discretized into quadrilateral elements for two-dimensional fields, and hexahedral elements for three-dimensional fields. In this type of grid system the grid points can be associated with grid lines in an ordered manner.
 GS coordinates
 . computational grids
 . . **structured grids (mathematics)**
 . . . multiblock grids
 RT computational fluid dynamics
 grid generation (mathematics)
 ∞ nets
 smoothing
 unstructured grids (mathematics)
- structured programming**
(added December 1989)
 GS computer programming
 . **structured programming**
 RT computer aided design
 computer programs
 data structures
 ∞ programming
 programming languages
 software engineering
- ∞ **structures**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT aircraft structures
 architecture
 atomic structure
 breakwaters
 bridges (structures)
 clamped structures
 composite structures
 concrete structures
 configuration interaction
 crystal structure
 Earth planetary structure
 earthquake resistant structures
- expandable structures
 fine structure
 folding structures
 foundations
 frames
 galactic structure
 honeycomb structures
 hulls (structures)
 hybrid structures
 hyperfine structure
 inflatable structures
 intramolecular structures
 isotensoid structures
 large space structures
 membrane structures
 microstructure
 missile structures
 molecular structure
 monocoque structures
 planar structures
 redundant components
 rigid structures
 ring structures
 sandwich structures
 smart structures
 space erectable structures
 space station structures
 spacecraft structures
 steel structures
 stellar structure
 stressed-skin structures
 structural members
 substructures
 tanks (containers)
 tensegrity structures
 towers
 trusses
 unimolecular structures
 variable geometry structures
 welded structures
 wooden structures
- struts**
 GS structural members
 . **struts**
 RT chassis
 columns (supports)
 frames
 pylons
 supports
 trusses
- strychnine**
 GS bases (chemical)
 . alkaloids
 . . **strychnine**
 nitrogen compounds
 . alkaloids
 . . **strychnine**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **strychnine**
 poisons
 . **strychnine**
 stimulants
 RT
- STS
 USE **space transportation system**
- STS-1
 USE **Space Transportation System 1 flight**
- STS-2
 USE **Space Transportation System 2 flight**
- STS-3
 USE **Space Transportation System 3 flight**
- STS-4
 USE **Space Transportation System 4 flight**
- students**
 UF *trainees*
 RT education

studs (structural members)

instructors
learning
training evaluation
universities

studies

USE **investigation**

studs (structural members)

RT anchors (fasteners)
bolts
columns (supports)
fasteners
holders
lugs
pins
screws
walls

stunt flying

USE **aerobatics**

Sturm-Liouville operator

USE **Sturm-Liouville theory**

Sturm-Liouville theory

UF *Sturm-Liouville operator*
GS analysis (mathematics)
. real variables
. . **Sturm-Liouville theory**
RT differential equations
Lamb waves
Lame wave equations
∞ theories

styluses

USE **pens**

styphnates

GS explosives
. **styphnates**
RT ∞ chemical compounds
∞ initiators
initiators (explosives)

styrenes

GS **styrenes**
. polystyrene
. . styrofoam (trademark)
RT Buna (trademark)

styrofoam (trademark)

GS plastics
. polystyrene
. . **styrofoam (trademark)**
styrenes
. polystyrene
. . **styrofoam (trademark)**
vinyl polymers
. polystyrene
. . **styrofoam (trademark)**
RT foams
∞ polymers

subarctic regions

GS Northern Hemisphere
. Arctic regions
. . **subarctic regions**
regions
. polar regions
. . Arctic regions
. . . **subarctic regions**
. remote regions
. . Arctic regions
. . . **subarctic regions**

subassemblies

DEF Assemblies that are component parts of larger assemblies. Used for subcircuits.
GS assemblies
. **subassemblies**
RT accessories
∞ components

subaudible frequencies

GS frequencies
. **subaudible frequencies**
range (extremes)
. frequency ranges
. . **subaudible frequencies**
RT acoustic frequencies

frequency distribution
harmonics
zero sound

subcarrier waves

USE **carrier waves**

subcircuits

USE **circuits**

subcontracts

DEF Any contracts, other than prime contracts, entered into by a prime contractor or subcontractor calling for supplies or services required for the performance of any one or more prime contracts.

GS contracts
. **subcontracts**

RT agreements
contract management
contract negotiation
contractors
estimates
grants
options
procurement

subcritical flow

DEF Open channel flow having a low velocity and a Froude number less than unity (also described as tranquil or streaming flow).

GS fluid flow
. **subcritical flow**

RT critical flow
flow characteristics
gas flow
liquid flow
multiphase flow
orifice flow
pipe flow
pressure gradients
single-phase flow
steady flow
steam flow
supercritical flow
turbulent flow
uniform flow
unsteady flow

subcritical mass

GS mass
. **subcritical mass**
RT critical mass
nuclear fission
nuclear reactions

subdivisions

RT ∞ division
∞ groups
∞ sections
set theory
subgroups
subsidiaries

subduction (geology)

DEF Descent of one tectonic unit under another. Most commonly used for descent of a slab of lithosphere, but appropriate at any scale.

GS geology
. **subduction (geology)**

RT Earth mantle
earthquakes
lithosphere
neotectonics
plates (tectonics)
seismology
structural properties (geology)
tectonics

subdwarf stars

GS celestial bodies
. stars
. . **subdwarf stars**
RT dwarf stars
main sequence stars
red dwarf stars
white dwarf stars

subgiant stars

DEF Celestial bodies whose position on the

Hertzsprung-Russell (H-R) diagram is intermediate between that of the main-sequence stars and normal giants of the same spectral type.

GS celestial bodies
. stars
. . **subgiant stars**

RT carbon stars
dwarf stars
giant stars
late stars
M stars
main sequence stars
stellar evolution
supergiant stars

subgravity

USE **microgravity**

subgroups

UF *sublattices*
GS algebra
. group theory
. . homomorphisms
. . . **subgroups**
RT matrices (mathematics)
number theory
probability theory
set theory
subdivisions
subsidiaries

subharmonic generators

RT damping
∞ generators
harmonic generators
harmonic oscillators
harmonics
oscillators
signal generators
stimulated emission devices

SUBIC project

USE **Submarine Integrated Control project**

subjects

GS classifications
. **subjects**
RT handbooks
information retrieval
textbooks

sublattices

USE **lattices (mathematics) subgroups**

sublayers

USE **substrates**

sublethal dosage

GS dosage
. **sublethal dosage**
RT drugs

sublimation

DEF The transition of a substance directly from the solid state to the vapor state, or vice versa, without passing through the intermediate liquid state.

GS phase transformations
. vaporizing
. . **sublimation**
RT ablation
beneficiation
condensing
crystallization
desorption
diffusion
evaporation
gas-metal interactions
gas-solid interfaces
phase change materials
purification
pyrometallurgy
refining
∞ separation
vapor pressure

subliminal stimuli

RT psychology

sensory stimulation
 ∞ stimuli

submarine cables
 GS transmission lines
 . **submarine cables**
 RT ∞ cables
 coaxial cables
 communication cables
 power lines

submarine hydrothermal vents
(added March 2005)
 UF *black smokers (oceanography)*
deep-sea hydrothermal vents
seafloor hydrothermal vents
white smokers (oceanography)
 RT crystallization
 deep water
 geochemistry
 hydrothermal systems
 mid-ocean ridges
 mineralogy
 ocean bottom
 oceanography
 sea floor spreading
 volcanic eruptions

Submarine Integrated Control project
 UF *SUBIC project*
 GS programs
 . projects
 . . **Submarine Integrated Control project**
 RT ∞ control

submarine propulsion
 GS propulsion
 . marine propulsion
 . . underwater propulsion
 . . . **submarine propulsion**

submarines
 DEF Any self-powered underwater craft or towed underwater barges and arrays.
 GS water vehicles
 . ships
 . . **submarines**
 . . . ballistic missile submarines
 . . . guided missile submarines
 . . . trident submarine
 . underwater vehicles
 . . **submarines**
 . . . ballistic missile submarines
 . . . guided missile submarines
 . . . trident submarine
 RT antiship missiles
 antiship warfare
 antisubmarine warfare
 ∞ military vehicles
 navy
 nuclear powered ships
 Seafarer project
 ship hulls
 submerged bodies

submerged bodies
 GS **submerged bodies**
 . diving (underwater)
 . underwater research laboratories
 RT submarines
 torpedoes
 towed bodies
 underwater engineering
 underwater photography
 underwater structures
 underwater vehicles
 water immersion

submerging
 UF *immersion*
 RT baths
 dipping
 quenching (cooling)
 sinking
 ∞ soaking
 water immersion
 weightlessness simulation

wetting

submersible aircraft
 RT ∞ aircraft
 antisubmarine warfare aircraft
 light aircraft
 ∞ military aircraft
 reconnaissance aircraft
 research aircraft
 water takeoff and landing aircraft

Submillimeter Wave Astronomy Satellite
(added November 2000)
 DEF A NASA Small Explorer Project (SMEX) satellite designed to study the chemical composition, energy balance, and structure of interstellar gas clouds and the processes that lead to the formation of stars and planets. Its primary objective is to survey water, molecular oxygen, carbon, and isotopic carbon monoxide emission in a variety of galactic star forming regions.
 UF *Explorer 74 satellite*
SWAS (satellite)
 GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **Submillimeter Wave Astronomy Satellite**
 . . . Explorer satellites
 . . . **Submillimeter Wave Astronomy Satellite**
 . . small scientific satellites
 . . . **Submillimeter Wave Astronomy Satellite**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **Submillimeter Wave Astronomy Satellite**
 RT interstellar chemistry
 interstellar matter
 molecular clouds
 spaceborne astronomy
 star formation
 submillimeter waves

submillimeter waves
 SN (BELOW 1 MILLIMETER)
 GS electromagnetic radiation
 . radio waves
 . . short wave radiation
 . . . **submillimeter waves**
 RT beams (radiation)
 electromagnetic noise
 far infrared radiation
 frequencies
 Large Deployable Reflector
 microwaves
 millimeter waves
 Submillimeter Wave Astronomy Satellite
 wavelengths

subminiaturization
 GS miniaturization
 . **subminiaturization**
 RT electronic modules
 microminiaturization
 miniature electronic equipment
 printed circuits

suborbital flight
 RT ∞ flight
 manned space flight
 orbits
 parabolic flight
 rocket flight
 space flight
 weightlessness

subreflectors
 RT Cassegrain antennas
 conductors
 reflector antennas
 reflectors
 scanners

Subroc missile
 GS missiles

. ballistic missiles
 . . **Subroc missile**
 . surface to surface missiles
 . . fleet ballistic missiles
 . . . **Subroc missile**
 . underwater to surface missiles
 . . **Subroc missile**
 RT underwater trajectories

subroutine libraries (computers)
 GS computer programs
 . computer systems programs
 . . **subroutine libraries (computers)**
 RT subroutines

subroutines
 DEF A set of instructions necessary to direct a computer to carry out a well defined mathematical or logical operation; a subunit of a routine, usually coded in such a manner that it can be treated as a black box by the routine using it.
 GS computer programs
 . **subroutines**
 data conversion routines
 . **subroutines**
 RT compilers
 parsing algorithms
 subroutine libraries (computers)
 user manuals (computer programs)

subsets (mathematics)
 USE **set theory**

subsidence
 RT isostasy
 mines (excavations)
 settling

subsidiaries
 RT ∞ division
 ∞ sections
 subdivisions
 subgroups

∞ **subsonic aircraft**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT ∞ aircraft
 flying platforms
 general aviation aircraft
 GETOL aircraft
 gliders
 ground effect machines
 helicopters
 jet aircraft
 light aircraft
 paragliders
 passenger aircraft
 rotary wing aircraft
 short takeoff aircraft
 supersonic aircraft
 tandem wing aircraft
 training aircraft
 transport aircraft
 turboprop aircraft
 utility aircraft
 vertical takeoff aircraft
 water takeoff and landing aircraft

subsonic flow
 DEF Flow of a fluid, as air over an airfoil, at speeds less than acoustic velocity.
 GS fluid flow
 . **subsonic flow**
 RT aerodynamics
 compressible flow
 flow velocity
 gas flow
 incompressible flow
 Karman vortex street
 Ringleb flow
 transonic flow

subsonic flutter
 GS vibration
 . structural vibration
 . . flutter
 . . . **subsonic flutter**
 . . self induced vibration

subsonic speed

. . . **subsonic flutter**
RT transonic flutter

subsonic speed

SN (LESS THAN MACH 1)
GS rates (per time)
. **subsonic speed**
velocity
. **subsonic speed**
RT acoustic velocity
low speed
transonic speed

subsonic wind tunnels

GS test facilities
. wind tunnels
. . . low speed wind tunnels
. . . **subsonic wind tunnels**
RT blowdown wind tunnels
hypersonic wind tunnels
rectangular wind tunnels
supersonic wind tunnels
transonic wind tunnels

substances

USE **materials**

substitutes

UF *substitution*
RT alternatives
replacing
variations

substitution

USE **substitutes**

substrates

UF *sublayers*
GS strata
. **substrates**
RT coatings
laminates
∞ layers
metallizing
photomasks
plating
ply orientation
primers (coatings)

substructures

RT floors
foundations
structural design
structural members
∞ structures
supports
undercarriages
walls

subtraction

GS number theory
. **subtraction**
RT arithmetic
computation
Gaussian elimination

subtropical regions

USE **temperate regions**
tropical regions

suburban areas

RT cities
land use
megalopolises
regional planning
residential areas
rural areas

subzero temperature

GS temperature
. **subzero temperature**
RT absolute zero
atmospheric temperature
cold acclimatization
cold tolerance
cold weather

Success project

GS programs
. projects
. . . **Success project**

weapon systems
. **Success project**

succinimides

GS nitrogen compounds
. amides
. . . **succinimides**
. imides
. . . **succinimides**

succinonitrile

(added April 2004)

DEF A four-carbon straight chain dinitrile compound. A transparent, organic material with structure and growth characteristics similar to metals and alloys.

UF *butanedinitrile*
ethylene cyanide
GS cyanides
. **succinonitrile**
nitrogen compounds
. nitriles
. . . **succinonitrile**
organic compounds
. ethylene compounds
. . . **succinonitrile**
. nitriles
. . . **succinonitrile**

sucrose

GS organic compounds
. carbohydrates
. . . sugars
. . . **sucrose**

suction

RT evacuating (vacuum)
pressure effects
pressure gradients
vacuum
vacuum apparatus
vacuum pumps

Sud Aviation aircraft

GS **Sud Aviation aircraft**
. Alouette helicopters
. . . SA-330 helicopter
. . . SE-3160 helicopter
. Concorde aircraft
. SA-321 helicopter
. SE-210 aircraft
RT ∞ aircraft

Sud Aviation SA-321 helicopter

USE **SA-321 helicopter**

Sud Aviation SA-330 helicopter

USE **SA-330 helicopter**

Sud Aviation SE-210 aircraft

USE **SE-210 aircraft**

Sud Aviation SE-3160 helicopter

USE **SE-3160 helicopter**

Sudan

GS nations
. **Sudan**
RT Africa

sudden enhancement of atmospheric

GS electromagnetic interference
. radio frequency interference
. . . electromagnetic noise
. . . . atmospheric
. . . . **sudden enhancement of atmospheric**

sudden ionospheric disturbances

DEF Complex combinations of sudden changes in the conditions of the ionosphere and the effects of these changes. Used for geomagnetic crotchets and SID (ionospheric disturbances).

UF *geomagnetic crotchets*
SID (ionospheric disturbances)
GS ionospheric disturbances

. ionospheric storms
. . . **sudden ionospheric disturbances**
storms

. ionospheric storms
. . . **sudden ionospheric disturbances**

RT ∞ disturbances
magnetic disturbances
magnetic storms
solar activity effects
traveling ionospheric disturbances

sudden storm commencements

RT magnetic disturbances
magnetic storms
solar activity effects
solar corpuscular radiation
solar flares
storms

sugar beets

GS farm crops
. **sugar beets**
plants (botany)
. **sugar beets**
RT agriculture
botany
crop growth
crop vigor
Earth resources
farmlands
irrigation
seeds
sugars

sugar cane

GS farm crops
. **sugar cane**
plants (botany)
. **sugar cane**
RT agriculture
botany
crop growth
crop vigor
Earth resources
farmlands
∞ food
irrigation
seeds

sugars

GS organic compounds
. carbohydrates
. . . **sugars**
. . . . dextrans
. . . . inositols
. . . . lactose
. . . . mannitol
. . . . monosaccharides
. . . . sucrose
. hexoses
. galactose
. glucose
. pentose
. ribose
. xylose
RT ∞ food
sugar beets

suggestion

GS recommendations
. **suggestion**
RT hypnosis

Suhl effect

RT carrier injection
∞ effects
electrons
excitons
holes (electron deficiencies)
magnetic fields
n-type semiconductors
recombination reactions

suitability

RT acceptability
compatibility

suits

GS clothing
. **suits**
. . . pressure suits
. . . . space suits

... extravehicular mobility units
 RT garments

Sukhoi aircraft
 (added September 1995)
 RT ∞ aircraft

sulfates

GS sulfur compounds
 . **sulfates**
 . . alum
 . . ammonium sulfates
 . . barite
 . . hydroxylamine sulfate
 . . lithium sulfates
 . . magnesium sulfates
 . . hexahedrite
 . . sodium sulfates
 RT gypsum
 sulfuric acid

sulfation

DEF The introduction into an organic molecule of the sulfuric ester group (or its salts) -O-SO₃H, where the sulfur is linked through an oxygen atom to the parent molecule.
 GS chemical reactions
 . **sulfation**
 RT hydrometallurgy
 sulfidation

sulfidation

DEF The reaction of a metal or alloy with a sulfur-containing species to produce a sulfur compound that forms on or beneath the surface of the metal or alloy.
 GS chemical reactions
 . **sulfidation**
 RT corrosion resistance
 gas-metal interactions
 heat resistant alloys
 nickel alloys
 sulfation
 sulfides

sulfides

GS chalcogenides
 . **sulfides**
 . . disulfides
 . . . carbon disulfide
 . . inorganic sulfides
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zinctblende
 . . pyrites
 . . pyrrhotite
 . . troilite
 sulfur compounds
 . **sulfides**
 . . disulfides
 . . . carbon disulfide
 . . inorganic sulfides
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zinctblende
 . . pyrites

... pyrrhotite
 ... troilite
 RT sulfidation
 thioplastics

sulfites

GS sulfur compounds
 . **sulfites**
 . . hydrosulfites
 . . sodium sulfites

sulfonates

GS esters
 . **sulfonates**
 sulfur compounds
 . **sulfonates**
 RT ∞ salts

sulfones

GS sulfur compounds
 . **sulfones**
 RT sulfonic acid

sulfonic acid

GS acids
 . **sulfonic acid**
 RT sulfones
 sulfur compounds

sulfur

GS chemical elements
 . **sulfur**
 . . sulfur isotopes

sulfur chlorides

GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **sulfur chlorides**
 . . halides
 . . . chlorides
 **sulfur chlorides**
 sulfur compounds
 . **sulfur chlorides**

sulfur compounds

GS **sulfur compounds**
 . organic sulfur compounds
 . sulfates
 . . alum
 . . ammonium sulfates
 . . barite
 . . hydroxylamine sulfate
 . . lithium sulfates
 . . magnesium sulfates
 . . . hexahedrite
 . . sodium sulfates
 . sulfides
 . . disulfides
 . . . carbon disulfide
 . . inorganic sulfides
 . . . barium sulfides
 . . . bismuth sulfides
 . . . cadmium sulfides
 . . . calcium sulfides
 . . . copper sulfides
 . . . hydrogen sulfide
 . . . indium sulfides
 . . . lead sulfides
 . . . molybdenum sulfides
 molybdenum disulfides
 . . . polysulfides
 . . . strontium sulfides
 . . . zinc sulfides
 wurtzite
 zinctblende
 . . pyrites
 . . pyrrhotite
 . . troilite
 . sulfites
 . . hydrosulfites
 . . sodium sulfites
 . sulfonates
 . sulfones
 . sulfur chlorides
 . sulfur fluorides
 . sulfur hexafluoride
 . sulfur oxides
 . sulfur dioxides
 . sulfuric acid

. thiazine (trademark)
 . thiols
 . . cysteine
 . . dimercaprol
 RT bloodite
 ∞ chemical compounds
 ∞ Group 6A compounds
 sulfonic acid

sulfur dioxides

GS chalcogenides
 . oxides
 . . dioxides
 . . . **sulfur dioxides**
 . . sulfur oxides
 . . . **sulfur dioxides**
 sulfur compounds
 . sulfur oxides
 . . **sulfur dioxides**

sulfur fluorides

GS halogen compounds
 . fluorine compounds
 . . fluorides
 . . . **sulfur fluorides**
 sulfur hexafluoride
 . . halides
 . . . fluorides
 **sulfur fluorides**
 sulfur hexafluoride
 sulfur compounds
 . **sulfur fluorides**
 . . sulfur hexafluoride

sulfur hexafluoride

(added September 1993)
 GS gases
 . **sulfur hexafluoride**
 halogen compounds
 . fluorine compounds
 . . fluorides
 . . . sulfur fluorides
 **sulfur hexafluoride**
 . . halides
 . . . fluorides
 sulfur fluorides
 **sulfur hexafluoride**
 sulfur compounds
 . sulfur fluorides
 . . **sulfur hexafluoride**
 RT ∞ chemical compounds
 dielectrics
 infrared spectroscopy
 laser materials
 working fluids

sulfur isotopes

GS chemical elements
 . nuclides
 . . isotopes
 . . . **sulfur isotopes**
 . sulfur
 . . **sulfur isotopes**

sulfur oxides

GS chalcogenides
 . oxides
 . . **sulfur oxides**
 . . . sulfur dioxides
 sulfur compounds
 . **sulfur oxides**
 . . sulfur dioxides
 RT acid rain
 dioxides

sulfuric acid

GS acids
 . **sulfuric acid**
 sulfur compounds
 . **sulfuric acid**
 RT sulfates

sum rules

GS rules
 . **sum rules**
 RT sums

summaries

GS **summaries**
 . abstracts

summer

. prelaunch summaries
RT annotations
bibliographies
documentation
indexes (documentation)
information dissemination
postlaunch reports
reports

summer
GS seasons
. **summer**
RT autumn
hot weather
solstices
spring (season)
winter

sumps
RT drainage
pits (excavations)
waste disposal

sums
RT algebra
amount
arithmetic
computation
series (mathematics)
sum rules

sun
DEF The star at the center of the solar system, around which the planets, asteroids, and comets revolve. It is a G-type star. Used for solar disk.
UF *solar disk*
GS celestial bodies
. stars
. . . G stars
. . . **sun**
. . . main sequence stars
. . . **sun**
RT AOSO
ASTECSolar turboelectric generator
celestial mechanics
GRIST (telescope)
light sources
OSO
photosphere
planets
satellite solar energy conversion
satellite solar power stations
solar activity
solar activity effects
solar arrays
solar atmosphere
solar atriums
solar auxiliary power units
solar blankets
solar cells
solar collectors
solar compasses
solar constant
solar cooling
solar corona
solar corpuscular radiation
solar cosmic rays
solar cycles
solar eclipses
solar electric propulsion
solar electrons
solar energy
solar energy absorbers
solar energy conversion
solar flares
solar flux
solar flux density
solar furnaces
solar generators
solar granulation
solar gravitation
solar heating
solar houses
solar instruments
solar interior
solar limb
solar longitude
solar magnetic field
Solar Maximum Mission

Solar Maximum Mission-A
Solar Mesosphere Explorer
solar nebula
solar neighborhood
solar neutrinos
solar oblateness
solar observatories
solar orbits
solar oscillations
solar parallax
solar physics
solar ponds (heat storage)
solar position
solar power satellites
solar powered aircraft
solar probes
solar prominences
solar propulsion
solar protons
solar radar echoes
solar radiation
Solar Radiation 1 satellite
Solar Radiation 3 satellite
solar radiation shielding
solar radio bursts
solar reflectors
solar rotation
solar sails
solar sea power plants
solar sensors
solar simulation
solar simulators
solar spectra
solar spectrometers
solar storms
solar system
solar system evolution
solar temperature
solar terrestrial interactions
solar thermal propulsion
solar total energy systems
solar velocity
solar wind
solar wind velocity
solar x-rays
sunlight
Ulysses mission

sun sensors

USE **solar sensors**

Sunblazer space probe

GS unmanned spacecraft
. space probes
. . . solar probes
. . . **Sunblazer space probe**
RT multistage rocket vehicles
solid propellant rocket engines

sunflowers

DEF Any of a number of tall related plants having yellow, daisylike flowers with yellow, brown, purple, or almost black disks containing seeds from which an oil is extracted.

GS farm crops
. **sunflowers**
plants (botany)
. **sunflowers**
RT agriculture
crop identification
 ∞ crops
Earth resources

sunglasses

RT eye protection
eyepieces
goggles
optical filters
visors

sunlight

GS electromagnetic radiation
. light (visible radiation)
. . . **sunlight**
extraterrestrial radiation
. solar radiation
. . . **sunlight**
RT black body radiation
circumsolar radiation
climatology

cloud cover
infrared radiation
insolation
sky
sky brightness
sky radiation
solar energy
solar heating
sun
thermal radiation
ultraviolet radiation
Umkehr effect
zodiacal light

sunrise

DEF The crossing of the visible horizon by the upper limb of the ascending sun.

RT morning
 ∞ science
sunset
terminator lines

sunset

DEF The crossing of the visible horizon by the upper limb of the descending sun.

RT evening
 ∞ science
sunrise
terminator lines

sunspot cycle

DEF A cycle with an average length of 11. 1 years but varying between 7 and 17 years in the number and area of sunspots, as given by the relative sunspot number. This number rises from a minimum of 0 to 10 to a maximum of 50 to 140 about 4 years later, and then declines more slowly.

GS cycles
. solar cycles
. . . **sunspot cycle**
RT solar activity
starspots
stellar activity

sunspots

DEF Relatively dark areas on the surface of the sun consisting of dark central umbras surrounded by penumbras which are intermediate in brightness between the umbras and the surrounding photosphere.

GS stellar activity
. solar activity
. . . **sunspots**
. starspots
. . . **sunspots**
RT faculae
magnetic disturbances
photosphere
solar cycles
solar flares
solar terrestrial interactions
twenty-seven day variation

Sunyaev-Zeldovich effect

(added July 2000)

DEF Compton scattering of microwave radiation in the vicinity of galaxy clusters resulting in fluctuations in the cosmic microwave background radiation (CMBR).

UF *S-Z effect*
RT anisotropy
Compton effect
cosmic gases
cosmic microwave background radiation
 ∞ effects
galactic clusters
intergalactic media
microwave scattering
radio astronomy

relic radiation

Super Sabre aircraft
 USE **F-100 aircraft**

superalloys
 USE **heat resistant alloys**

supercapacitors
 (added September 2003)
 USE **electrochemical capacitors**

supercavitating flow
 UF *supercavitation*
 GS fluid flow
 . turbulent flow
 . . cavitation flow
 . . . **supercavitating flow**
 RT hydrofoil oscillations

supercavitation
 USE **supercavitating flow**

superchargers
 UF *supercharging*
turbochargers
 GS compressors
 . **superchargers**
 RT air intakes
 blowers
 centrifugal compressors
 compressing
 internal combustion engines
 turbocompressors
 turbomachinery

supercharging
 USE **superchargers**

SuperCobra
 (added April 1997)
 USE **AH-1W helicopter**

supercomputers
 DEF Computers with very large capacity and very high speed.
 GS data processing equipment
 . computers
 . . **supercomputers**
 . . . Connection Machine
 . . . Cray computers
 RT architecture (computers)
 grid computing (computer networks)
 hypercube multiprocessors
 multiprocessing (computers)
 parallel processing (computers)

superconducting cavity resonators
 (added December 1992)
 GS resonators
 . cavity resonators
 . . **superconducting cavity resonators**
 superconducting devices
 . **superconducting cavity resonators**
 RT microwave oscillators
 oscillators
 superconducting films
 superconducting magnets

superconducting devices
 (added December 1992)
 GS **superconducting devices**
 . SIS (superconductors)
 . squid (detectors)
 . superconducting cavity resonators
 . superconducting magnets
 RT Josephson effect
 superconducting films
 superconducting power transmission
 superconducting super collider
 tunnel junctions

superconducting films
 (added April 1989)
 RT BSCCO superconductors
 ∞ films
 laser deposition
 pulsed laser deposition
 semiconducting films

superconducting cavity resonators
 superconducting devices
 superconductors (materials)
 thick films
 thin films
 YBCO superconductors

superconducting magnets
 GS magnets
 . electromagnets
 . . **superconducting magnets**
 superconducting devices
 . **superconducting magnets**
 RT cryogenic magnets
 flux pumps
 high field magnets
 high temperature superconductors
 magnet coils
 magnetic energy storage
 superconducting cavity resonators
 superconducting super collider

superconducting power transmission
 RT ∞ conductivity
 cryogenics
 electric power transmission
 high temperature superconductors
 low temperature physics
 power lines
 superconducting devices
 transition temperature
 transmission lines

superconducting quantum interferometers
 USE **squid (detectors)**

superconducting super collider
 GS particle accelerators
 . **superconducting super collider**
 RT storage rings (particle accelerators)
 superconducting devices
 superconducting magnets

superconductivity
 DEF A property of many elements, alloys, and compounds by virtue of which their electrical resistivity vanishes and they become strongly diamagnetic under appropriate conditions. Used for Meissner effect.
 UF *Meissner effect*
 GS electrical properties
 . electrical resistivity
 . . **superconductivity**
 . . . Kondo effect
 transport properties
 . electrical resistivity
 . . **superconductivity**
 . . . Kondo effect
 RT Abrikosov theory
 BCS theory
 Bloch band
 ∞ conductivity
 critical current
 cryogenics
 cryotrons
 electron phonon interactions
 electron tunneling
 flux pinning
 flux pumps
 gallium alloys
 high temperature superconductors
 Josephson junctions
 Landau factor
 Landau-Ginzburg equations
 low temperature physics
 ∞ solid state physics
 spin glass
 transition temperature
 trapped magnetic fields
 vector currents
 vortices
 YBCO superconductors

superconductor insulator superconductors
 USE **SIS (superconductors)**

superconductors (materials)
 DEF Materials that exhibit superconductivity under appropriate conditions.
 GS conductors

. **superconductors (materials)**
 . . high temperature superconductors
 . . . BSCCO superconductors
 . . . YBCO superconductors
 . . heavy fermion superconductors
 . . organic superconductors
 RT Abrikosov theory
 carrier mobility
 critical current
 cryogenic computer storage
 cryotrons
 electron gas
 energy storage
 flux quantization
 fullerides
 heavy fermion systems
 Josephson effect
 pinning
 proximity effect (electricity)
 solid state devices
 squid (detectors)
 strontium oxides
 superconducting films
 thermodynamic coupling

supercooling
 UF *undercooling*
 GS cooling
 . **supercooling**
 RT aging (metallurgy)
 Aitken nuclei
 condensing
 convection clouds
 crystallization
 heat treatment
 mechanical properties
 nucleation
 quenching (cooling)
 supersaturation

supercritical airfoils
 GS airfoils
 . **supercritical airfoils**
 . . supercritical wings
 RT airfoil profiles

supercritical flow
 GS fluid flow
 . **supercritical flow**
 RT critical flow
 flow characteristics
 gas flow
 liquid flow
 multiphase flow
 orifice flow
 pipe flow
 pressure gradients
 single-phase flow
 steady flow
 steam flow
 subcritical flow
 turbulent flow
 unsteady flow

supercritical fluids
 RT fluid mechanics
 ∞ fluids
 solubility
 supercritical pressures

supercritical pressures
 GS pressure
 . **supercritical pressures**
 thermodynamic properties
 . thermophysical properties
 . . **supercritical pressures**
 RT critical pressure
 high pressure
 liquid phases
 supercritical fluids
 vapor phases
 vapor pressure

supercritical wings
 GS airfoils
 . supercritical airfoils
 . . **supercritical wings**
 . wings
 . . **supercritical wings**
 RT CL-600 challenger aircraft

superfluidity

spanloader aircraft
wing profiles
∞ winged vehicles

superfluid flow

USE **superfluidity**

superfluidity

UF *superfluid flow*
RT Bose-Einstein condensates
compressible fluids
∞ fluids
incompressible fluids
Kelvin-Helmholtz instability
liquid helium
liquid helium 2
many body problem
quantum statistics
two fluid models
viscosity
vortices

superfortress aircraft

USE **B-50 aircraft**

supergiant stars

GS celestial bodies
. stars
. . **supergiant stars**
. . . R Coronae Borealis stars
RT giant stars
K stars
M stars
massive stars
Mira variables
subgiant stars

supergravity

GS gravitation theory
. **supergravity**
RT broken symmetry
cosmology
field theory (physics)
gauge invariance
gauge theory
gravitinos
gravitons
group theory
lie groups
particle theory
quantum theory
relativity
supersymmetry
theoretical physics
unified field theory
Yang-Mills theory

superharmonics

GS harmonics
. **superharmonics**
RT cycles
frequencies
Mach number
supersonic wind tunnels
supersonics

superheating

GS heating
. **superheating**
RT steam

superheterodyne receivers

GS communication equipment
. radio receivers
. . **superheterodyne receivers**
radio equipment
. radio receivers
. . **superheterodyne receivers**
receivers
. radio receivers
. . **superheterodyne receivers**
RT beat frequencies
heterodyning

superhigh frequencies

SN (3 TO 30 GHz)
UF *KU band*
S band
X band
GS frequencies

. radio frequencies
. . microwave frequencies
. . . **superhigh frequencies**

RT

C band
centimeter waves
unified S band
VSAT (network)

superhumps (astronomy)

(added October 1998)

RT accretion disks
astronomical photometry
binary stars
cataclysmic variables
dwarf novae
eclipsing binary stars
stellar spectrophotometry

superhybrid materials

DEF Composites of polymers, boron-aluminum, and titanium.

GS composite materials

. **superhybrid materials**

. . graphite-epoxy composites

RT

boron-epoxy composites
carbon fiber reinforced plastics
fiber composites
hybrid composites
∞ materials
reinforcing fibers

superimposition (mathematics)

USE **superposition (mathematics)**

superlattices

DEF Crystals grown by depositing semiconductors in layers whose thickness is measured in atoms.

GS crystal lattices

. **superlattices**

semiconductors (materials)

. **superlattices**

RT

antiphase boundaries
crystal dislocations
crystal structure
gallium arsenides
lattice parameters
quantum Hall effect

supermagnets

USE **high field magnets**

supermassive stars

DEF Stars with masses exceeding about 50 times that of the sun.

GS celestial bodies

. stars

. . **supermassive stars**

RT

degenerate matter
massive stars
Population III stars
stellar models
stellar structure

supernova 1987A

GS celestial bodies

. stars

. . variable stars

. . . supernovae

. . . . **supernova 1987A**

RT

Magellanic clouds

supernova remnants

RT black holes (astronomy)
magnetars
neutron stars
North Polar Spur (astronomy)
pulsars
red dwarf stars
soft gamma repeaters
supernovae
white dwarf stars
white holes (astronomy)

supernovae

GS celestial bodies

. stars

. . variable stars

. . . **supernovae**

. . . . supernova 1987A

RT Crab nebula
gravitational collapse
nebulae
novae
Opik theory
Orion nebula
stellar mass
stellar mass ejection
stellar physics
supernova remnants

superoxides

USE **inorganic peroxides**

superplastic forming

(added July 1994)

UF *SPF (materials)*

RT

bonding
elastoplasticity
metal working
plastic deformation
superplasticity

superplasticity

GS mechanical properties

. plastic properties

. . **superplasticity**

RT

creep properties
crystal dislocations
elongation
eutectic alloys
heat resistant alloys
plastic deformation
plastic flow
superplastic forming

superposition (mathematics)

UF *superimposition (mathematics)*

RT equivalent circuits

linear circuits

∞ mathematics

∞ nets

network analysis

network synthesis

superpressure balloons

DEF Meteorological balloons consisting of nonextensible envelopes designed to withstand higher internal pressure differentials than external ones. Such balloons will maintain constant elevations until sufficient gas diffuses from them to cause a change in buoyancy. Used for constant volume balloons and tetroons.

UF *constant volume balloons*

tetroons

GS

expandable structures

. inflatable structures

. . balloons

. . . high altitude balloons

. . . . **superpressure balloons**

RT

balloon sounding
meteorological balloons

superrotation

DEF The generally more rapid relative motions found in the very tenuous regions of the atmosphere at heights around 300 km. The density of the atmosphere decreases rapidly with height and more than 95 percent of the mass of the atmosphere is contained within the troposphere and lower stratosphere. These regions of the atmosphere rotate faster on average than the underlying solid Earth.

GS gyration

. rotation

. . **superrotation**

RT

atmospheric circulation
Earth atmosphere
Earth rotation
rotating fluids

supersaturation

RT condensing
crystallization
heat treatment
Mayer problem
precipitation (chemistry)
precipitation hardening
quenching (cooling)
solid solutions

- supercooling
- supersonic aircraft**
 - SN (AIRCRAFT DESIGNED TO FLY AT SPEEDS ABOVE MACH 1 AND BELOW MACH 5)
 - UF *transonic aircraft*
 - GS **supersonic aircraft**
 - . A-5 aircraft
 - . B-58 aircraft
 - . B-70 aircraft
 - . Boeing 733 aircraft
 - . D-558 aircraft
 - . F-4 aircraft
 - . F-5 aircraft
 - . F-8 aircraft
 - . F-14 aircraft
 - . F-15 aircraft
 - . F-16 aircraft
 - . F-17 aircraft
 - . F-22 aircraft
 - . F-100 aircraft
 - . F-101 aircraft
 - . F-102 aircraft
 - . F-104 aircraft
 - . F-106 aircraft
 - . F-111 aircraft
 - . Firebee 2 target drone aircraft
 - . G-95/4 aircraft
 - . Jaguar aircraft
 - . MiG aircraft
 - . Mirage aircraft
 - . . . Mirage 3 aircraft
 - . . . Nord 1500 aircraft
 - . . . P-1154 aircraft
 - . . . Saab 37 aircraft
 - . . . SR-71 aircraft
 - . . . supersonic transports
 - . . . CL-823 aircraft
 - . . . Concorde aircraft
 - . . . L-2000 aircraft
 - . . . supersonic commercial air transport
 - Boeing 2707 aircraft
 - TU-144 aircraft
 - T-38 aircraft
 - TSR-2 aircraft
 - VJ-101 aircraft
 - X-1 aircraft
 - X-2 aircraft
 - X-3 aircraft
 - X-15 aircraft
 - X-32 aircraft
 - RT ∞ aircraft
 - attack aircraft
 - fighter aircraft
 - hypersonic aircraft
 - jet aircraft
 - passenger aircraft
 - reconnaissance aircraft
 - research aircraft
 - ∞ subsonic aircraft
 - supersonic cruise aircraft research
 - supersonics
 - sweptback wings
 - transport aircraft
 - trapezoidal tail surfaces
 - variable cycle engines
 - variable stream control engines
- supersonic airfoils**
 - GS airfoils
 - . **supersonic airfoils**
 - RT sweepback
 - sweptback tail surfaces
 - sweptback wings
- supersonic boundary layers**
 - GS boundary layers
 - . **supersonic boundary layers**
 - RT fluid flow
 - laminar boundary layer
 - supersonics
 - turbulent boundary layer
 - two dimensional boundary layer
- supersonic combustion**
 - GS combustion
 - . **supersonic combustion**
 - RT engines
- fuel combustion
- supersonic combustion ramjet engines**
 - UF *scramjet engines*
 - GS *scramjets* engines
 - . air breathing engines
 - . . . gas turbine engines
 - jet engines
 - ramjet engines
 - **supersonic combustion ramjet engines**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - ramjet engines
 - **supersonic combustion ramjet engines**
 - turbine engines
 - gas turbine engines
 - jet engines
 - ramjet engines
 - **supersonic combustion ramjet engines**
 - RT combustion
 - missiles
 - ramjet missiles
 - rocket-based combined-cycle engines
 - ∞ SCRAM
 - X-43 vehicle
- supersonic commercial air transport**
 - UF *SCAT*
 - GS commercial aircraft
 - . **supersonic commercial air transport**
 - . . . Boeing 2707 aircraft
 - . . . TU-144 aircraft
 - supersonic aircraft
 - . supersonic transports
 - . . **supersonic commercial air transport**
 - . . . Boeing 2707 aircraft
 - . . . TU-144 aircraft
- supersonic compressors**
 - DEF Compressors in which supersonic velocity is imparted to the fluid relative to the rotor blades, the stator blades, or to both the rotor and the stator blades, producing oblique shock waves over the blades to obtain a high pressure rise.
 - GS compressors
 - . **supersonic compressors**
 - RT oblique shock waves
 - transonic compressors
 - turbocompressors
- supersonic cruise aircraft research**
 - UF *SCAR program*
 - GS programs
 - . NASA programs
 - . . **supersonic cruise aircraft research**
 - RT ∞ aircraft
 - supersonic aircraft
 - supersonic transports
- supersonic diffusers**
 - DEF Diffusers designed to reduce the velocity and increase the pressure of fluid moving at supersonic velocities.
 - RT air intakes
 - ∞ diffusers
 - exhaust diffusers
 - flow stability
 - vaneless diffusers
- supersonic drag**
 - GS aerodynamic characteristics
 - . aerodynamic drag
 - . . **supersonic drag**
 - . . . aerodynamic forces
 - . . . aerodynamic drag
 - . . . **supersonic drag**
 - dynamic characteristics
 - drag
 - friction drag
 - aerodynamic drag
 - **supersonic drag**
- . . pressure drag
 - . . . **supersonic drag**
 - friction
 - . flow resistance
 - . . friction drag
 - . . . aerodynamic drag
 - **supersonic drag**
 - skin friction
 - friction drag
 - aerodynamic drag
 - **supersonic drag**
 - RT interference drag
 - wave drag
- supersonic flight**
 - RT caustic lines
 - ∞ flight
 - hypersonic flight
 - jet lag
 - Mach cones
 - missiles
 - rocket flight
 - sonic booms
 - supersonics
 - transonic flight
- supersonic flow**
 - DEF In aerodynamics, flow of a fluid over a body at speeds greater than the acoustic velocity and in which the shock waves start at the surface of the body.
 - GS fluid flow
 - . **supersonic flow**
 - . . supersonic jet flow
 - RT aerodynamics
 - compressibility effects
 - compressible flow
 - flow velocity
 - gas flow
 - Godunov method
 - hypersonic flow
 - hypervelocity flow
 - Mach cones
 - Prandtl-Meyer expansion
 - secondary injection
 - shock waves
 - transonic flow
 - wedge flow
 - wind tunnels
 - supersonic flow inlets*
 - USE **supersonic inlets**
- supersonic flutter**
 - GS vibration
 - . structural vibration
 - . . flutter
 - . . . **supersonic flutter**
 - . . . self induced vibration
 - . . . **supersonic flutter**
 - RT missile vibration
 - transonic flutter
- supersonic heat transfer**
 - GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . aerodynamic heat transfer
 - **supersonic heat transfer**
 - RT hypersonic heat transfer
 - supersonics
- supersonic inlets**
 - UF *supersonic flow inlets*
 - GS *transonic inlets*
 - intake systems
 - . air intakes
 - . . **supersonic inlets**
 - RT bypass ratio
 - hypersonic inlets
 - inlet airframe configurations
 - inlet flow
 - internal compression inlets
 - nose inlets
 - side inlets
- supersonic jet flow**
 - GS fluid flow
 - . jet flow
 - . . **supersonic jet flow**

supersonic low altitude missile

- . supersonic flow
- . . **supersonic jet flow**
- RT gas flow
- nozzle flow
- screech tones
- supersonic low altitude missile**
- UF *SLAM*
- GS missiles
 - . ramjet missiles
 - . . **supersonic low altitude missile**
 - . surface to surface missiles
 - . . **supersonic low altitude missile**
- RT nuclear ramjet engines
- Pluto reactors
- ramjet engines
- supersonic nozzles**
- DEF Converging diverging nozzles designed to accelerate a fluid to supersonic speed.
- RT coaxial nozzles
- conical nozzles
- convergent-divergent nozzles
- hypersonic nozzles
- ∞ nozzles
 - rocket nozzles
 - screech tones
 - sonic nozzles
 - transonic nozzles
 - variable stream control engines
 - wind tunnel nozzles
- supersonic speed**
- SN (BETWEEN MACH 1 AND 4. 9)
- GS rates (per time)
 - . **supersonic speed**
 - velocity
 - . **supersonic speed**
- RT acoustic velocity
- high speed
- hypersonic speed
- hypersonics
- supersonics
- transonic speed
- supersonic test apparatus**
- RT hypersonic test apparatus
- supersonics
- ∞ test equipment
- wind tunnel apparatus
- supersonic transports**
- GS supersonic aircraft
 - . **supersonic transports**
 - . . CL-823 aircraft
 - . . Concorde aircraft
 - . . L-2000 aircraft
 - . . supersonic commercial air transport
 - . . . Boeing 2707 aircraft
 - . . . TU-144 aircraft
- RT cargo aircraft
- commercial aircraft
- passenger aircraft
- supersonic cruise aircraft research
- supersonic turbines**
- UF *transonic turbines*
- GS turbomachinery
 - . turbines
 - . . **supersonic turbines**
- RT gas turbine engines
- gas turbines
- rotor stator interactions
- supersonic wakes**
- GS wakes
 - . **supersonic wakes**
- RT aircraft wakes
- hypersonic wakes
- supersonic wind tunnels**
- GS test facilities
 - . wind tunnels
 - . . **supersonic wind tunnels**
- RT blowdown wind tunnels
- hypersonic wind tunnels
- hypervelocity wind tunnels
- low density wind tunnels
- shock tunnels

- slotted wind tunnels
- subsonic wind tunnels
- superharmonics
- transonic wind tunnels
- supersonics**
- DEF Specifically, the study of aerodynamics of supersonic speeds.
- GS mechanics (physics)
 - . fluid mechanics
 - . . fluid dynamics
 - . . . gas dynamics
 - aerodynamics
 - **supersonics**
- RT aerothermodynamics
- hypersonics
- Mach cones
- superharmonics
- supersonic aircraft
- supersonic boundary layers
- supersonic flight
- supersonic heat transfer
- supersonic speed
- supersonic test apparatus
- superstring theory*
- USE **string theory**
- supersymmetry**
- GS symmetry
 - . **supersymmetry**
- RT bosons
- broken symmetry
- cosmology
- fermions
- field theory (physics)
- gauge theory
- grand unified theory
- gravitation theory
- group theory
- lie groups
- particle theory
- quantum theory
- string theory
- supergravity
- theoretical physics
- unified field theory
- supine position**
- RT acceleration protection
- head up tilt
- prone position
- rest
- sitting position
- tilt-table test
- supplements**
- GS documents
 - . **supplements**
- RT contracts
- extensions
- indexes (documentation)
- motion pictures
- records
- reports
- supplying**
- RT commerce
- consumption
- demand (economics)
- filling
- injection
- input
- marketing
- output
- support interference**
- RT antenna radiation patterns
- ∞ interference
- supports
- vibration effects
- support systems**
- GS **support systems**
 - . ground operational support system
 - . ground support systems
 - . life support systems
 - . . biopaks
 - . . closed ecological systems
 - . . emergency life sustaining systems

- . . . AEPS
- . . . portable life support systems
- . . . AEPS
- . . . IMLSS
- . decision support systems
- . pilot support systems
- RT self sealing
- services
- ∞ systems
- supports**
- UF *mounts*
- stands*
- GS **supports**
 - . pylons
 - . saddles (supports)
 - . tripods
- RT bearings
- carriages
- chassis
- foundations
- frames
- gimbals
- ∞ headers
- lugs
- pivots
- ∞ platforms
- pylon mounting
- racks (frames)
- reinforcement (structures)
- shafts (machine elements)
- struts
- substructures
- support interference
- ∞ sustaining
- trusses
- suppression*
- USE **retarding**
- suppressors**
- GS **suppressors**
 - . echo suppressors
- RT absorbers (materials)
- additives
- attenuators
- baffles
- circuit protection
- damping
- infrared suppression
- inhibitors
- insulation
- isolators
- mufflers
- neutralizers
- noise reduction
- retardants
- shielding
- silencers
- squelch circuits
- surface acoustic wave devices**
- UF *S-A-W devices*
- RT acoustic delay lines
- bulk acoustic wave devices
- ∞ devices
 - electroacoustic transducers
 - electroacoustics
 - interdigital transducers
 - microsonics
 - signal processing
 - sound waves
 - ultrasonic wave transducers
- surface cooling**
- GS cooling
 - . **surface cooling**
- RT convective heat transfer
- evaporative cooling
- film cooling
- radiant cooling
- radiative heat transfer
- ∞ surfaces
- sweat cooling
- temperature
- surface cracks**
- UF *crazing*
- GS fractures (materials)
 - . cracks

- . . **surface cracks**
- surface properties
- . **surface cracks**
- RT crack closure
- crack geometry
- crack initiation
- crack propagation
- edge cracks
- microcracks
- solid surfaces
- ∞ surfaces
- surface defects**
- GS defects
- . **surface defects**
- surface properties
- . **surface defects**
- RT caustics (optics)
- crack initiation
- crystal defects
- crystal dislocations
- fatigue (materials)
- mechanical properties
- point defects
- ∞ surfaces
- surface diffusion**
- GS diffusion
- . **surface diffusion**
- RT adatoms
- molecular diffusion
- ∞ surfaces
- thermal diffusion
- surface distortion**
- GS distortion
- . **surface distortion**
- RT ∞ surface geometry
- ∞ surfaces
- warpage
- surface effect ships**
- DEF Vessels using ground effect principle and having submerged rigid sidewalls (sealants). Used for SES.
- UF SES
- GS surface vehicles
- . **surface effect ships**
- water vehicles
- . ships
- . . **surface effect ships**
- RT captured air bubble vehicles
- ∞ effects
- research vehicles
- ∞ surfaces
- SWATH (ship)
- ∞ vehicles
- wing-in-ground effect vehicles
- surface emitting lasers**
- (added March 1992)
- GS stimulated emission devices
- . lasers
- . . **surface emitting lasers**
- RT laser arrays
- lasing
- light emitting diodes
- semiconductor lasers
- solid state lasers
- stimulated emission
- waveguide lasers
- surface energy**
- GS surface properties
- . **surface energy**
- thermodynamic properties
- . **surface energy**
- RT activation energy
- electron energy
- ∞ energy
- interfacial energy
- interfacial tension
- proton energy
- ∞ surfaces
- thermophysical properties
- surface finishing**
- GS surface treatment
- . **surface finishing**
- RT cleaning
- coating
- coatings
- corrosion prevention
- corrosion resistance
- electroplating
- electropolishing
- finishes
- machining
- metal finishing
- metal grinding
- metal polishing
- metal spraying
- metal surfaces
- micromachining
- polishing
- protective coatings
- shot peening
- solid surfaces
- sputtering
- ∞ surfaces
- wear
- ∞ **surface geometry**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT concavity
- convexity
- Cosserat surfaces
- flat surfaces
- flatness
- geometry
- Lambert surface
- lofting
- platforms
- shapes
- surface distortion
- surface layers
- surface properties
- surface reactions
- surface roughness
- surface stability
- ∞ surfaces
- surface interactions*
- USE **surface reactions**
- surface ionization**
- GS ionization
- . **surface ionization**
- RT ionizers
- ∞ surfaces
- surface layers**
- RT atmospheric stratification
- barrier layers
- boundary layer thickness
- boundary layers
- crystal surfaces
- ∞ layers
- lunar surface
- monomolecular films
- oxide films
- solar granulation
- ∞ surface geometry
- surface treatment
- ∞ surfaces
- thermoclines
- ∞ transition layers
- Surface Meteorology and Solar Energy project**
- (added October 2007)
- DEF A 10-year project to produce and archive a global data set of the Earth's radiation budget (shortwave and longwave) using International Satellite Cloud Climatology Project (IS-CCP) data and radiative transfer models. The SSE data sets contain insolation and meteorology data intended to aid in the development of renewable energy systems.
- UF SSE project
- GS programs
- . projects
- . . **Surface Meteorology and Solar Energy project**
- RT data products
- Earth radiation budget
- insolation
- long wave radiation
- radiative transfer
- remote sensing
- renewable energy
- satellite observation
- short wave radiation
- solar energy
- surface navigation**
- UF *marine navigation*
- GS navigation
- . **surface navigation**
- RT celestial navigation
- dead reckoning
- Decca navigation
- digital navigation
- hyperbolic navigation
- inertial navigation
- LORAC navigation system
- loran
- nautical charts
- navigation aids
- radar navigation
- radio navigation
- ships
- ∞ surfaces
- unmanned ground vehicles
- surface noise interactions**
- RT acoustic excitation
- acoustic scattering
- aeroacoustics
- aerodynamic noise
- Ffowcs Williams-Hawkings equation
- rotor stator interactions
- turbulence
- surface plasmon resonance**
- (added April 2004)
- DEF A condition of resonance in which the propagation of surface plasmon waves occurs at the interface of a dielectric with a highly reflective metal.
- RT plasmons
- surface pressure*
- USE **pressure**
- surface properties**
- UF *Bardeen approximation*
- GS **surface properties**
- . adhesion
- . . stiction
- . adsorptivity
- . coefficient of friction
- . interfacial tension
- . spectral reflectance
- . surface cracks
- . surface defects
- . surface energy
- . surface roughness
- . surface stability
- . surface temperature
- . . land surface temperature
- . . sea surface temperature
- . . skin temperature (non-biological)
- . . wall temperature
- RT absorptance
- albedo
- atomic force microscopy
- bidirectional reflectance
- coarseness
- coating
- coatings
- color
- contact potentials
- contact resistance
- corrosion
- Cosserat surfaces
- diffusion
- effervescence
- emissivity
- evanescence
- finishes
- flat surfaces
- foaming
- friction
- hardness
- hot corrosion
- hydrophobicity
- interfaces

Surface Radiation Budget project

- Jupiter red spot
- lunar albedo
- lunar surface
- lunar topography
- mechanical properties
- metal surfaces
- optical properties
- permeability
- ∞ physical properties
- planar structures
- planetary surfaces
- profilometers
- ∞ properties
- reflectance
- roughness
- selenography
- solid surfaces
- solid-solid interfaces
- sorption
- ∞ surface geometry
- surface tension driven convection
- surface treatment
- ∞ surfaces
- textures
- viscosity
- void ratio
- wettability

Surface Radiation Budget project

(added October 2007)

DEF A 12-year project to produce and archive a global data set of shortwave and long-wave Earth surface and top of the atmosphere parameters using International Satellite Cloud Climatology Project (ISCCP) and Earth Radiation Budget Experiment (ERBE) data. The SRB data sets contain three hourly, daily, and monthly averages of surface longwave and shortwave radiative properties, cloud amount, and meteorological properties computed using models.

UF *SRB project*

GS programs

. projects

. . **Surface Radiation Budget project**

RT

data products
Earth radiation budget
long wave radiation
radiative transfer
remote sensing
satellite observation
short wave radiation

surface reactions

UF *surface interactions*

RT chemical reactions

erosion
fluid-solid interactions
gas-liquid interactions
interfaces
metal surfaces
metal-water reactions
spacecraft glow
∞ surface geometry
∞ surfaces
surfactants
vaporizing

surface roughness

DEF The deviation of the topography of an actual surface from an ideal atomically smooth and planar surface.

GS roughness

. **surface roughness**
surface properties

RT

. **surface roughness**
coarseness
friction
lunar topography
machining
mechanical properties
profilometers
runway conditions
∞ surface geometry
∞ surfaces
topography

surface roughness effects

RT ∞ effects

friction drag
reflectance
separated flow
speckle patterns
∞ surfaces

surface stability

GS stability

. **surface stability**
surface properties

RT

. **surface stability**
coarseness
dynamic stability
interfacial tension
motion stability
static stability
storage stability
∞ surface geometry
∞ surfaces
thermal stability

surface temperature

GS surface properties

. **surface temperature**
. . land surface temperature
. . sea surface temperature
. . skin temperature (non-biological)
. . wall temperature
temperature

. **surface temperature**
. . land surface temperature
. . sea surface temperature
. . skin temperature (non-biological)
. . wall temperature

RT

coarseness
geothermal anomalies
ocean temperature
∞ surfaces
temperature sensitive paints
thermoclines
water temperature

surface tension

USE **interfacial tension**

surface tension driven convection

(added December 1995)

GS convection

. **surface tension driven convection**

RT

. . Marangoni convection
capillary flow
convective flow
interfacial tension
∞ microgravity applications
oscillating flow
surface properties

surface to air missiles

UF *ground-to-air missiles*

GS missiles

. **surface to air missiles**
. . Blue Goose missile
. . BOMARC missiles
. . . BOMARC A missile
. . . BOMARC B missile
. . Chaparral missile
. . Hawk missile
. . Mauler missile
. . Nike missiles
. . Nike-Ajax missile
. . Nike-Hercules missile
. . Nike-Zeus missile
. . Patriot missile
. . Redeye missile
. . Sprint missile
. . Talos missile
. . tartar missile
. . terrier missile

RT

air to air missiles
air to surface missiles
antiaircraft missiles
antimissile missiles
Nike X systems
ramjet missiles
∞ rockets
Sentinel system
space weapons
Spartan missile

∞ surfaces

surface to surface missiles

GS missiles

. **surface to surface missiles**

. . antitank missiles
. . . Shillelagh missiles
. . . tow missiles
. . Corporal missile
. . cruise missiles
. . . Navaho missile
. . . Tomahawk missiles
. . fleet ballistic missiles
. . . Polaris A1 missile
. . . Polaris A2 missile
. . . Polaris A3 missile
. . Poseidon missiles
. . Subroc missile
. . Intercontinental ballistic missiles
. . . Atlas ICBM
. . . . Atlas D ICBM
. . . . Atlas E ICBM
. . . . Atlas F ICBM
. . Minuteman ICBM
. . MX missile
. . Titan ICBM
. . . Titan 1 ICBM
. . . Titan 2 ICBM
. . intermediate range ballistic missiles
. . Blue Streak missile
. . Jupiter missile
. . polaris missiles
. . . Polaris A1 missile
. . . Polaris A2 missile
. . . Polaris A3 missile
. . Lance missile
. . Mace missiles
. . Pershing missile
. . Regulus missile
. . sergeant missiles
. . short range ballistic missiles
. . supersonic low altitude missile
. . V-1 missile

RT

air to surface missiles
ballistic missiles
Harpoon missile
ramjet missiles

∞ rockets
∞ surfaces

surface to surface rockets

GS rocket vehicles

. **surface to surface rockets**

. . Honest John rocket vehicle
. . Little John rocket vehicle

RT

∞ rockets
∞ surfaces

surface treatment

(added April 1990)

GS **surface treatment**

. surface finishing
RT anodizing
coating
corrosion prevention
paint removal
surface layers
surface properties
∞ treatment

surface vehicles

GS **surface vehicles**

. aircraft carriers
. automated transit vehicles
. . automated guideway transit vehicles
. . boats
. . lifeboats
. captured air bubble vehicles
. cargo ships
. . Savannah nuclear ship
. . tanker ships
. . dollies
. electric hybrid vehicles
. lunar surface vehicles
. . lunar mobile laboratories
. . lunar roving vehicles
. . Lunokhod lunar roving vehicles
. . manned lunar surface vehicles
. magnetic levitation vehicles

. motor vehicles
 . . . automated mixed traffic vehicles
 . . . automobiles
 . . . electric automobiles
 . . . electric motor vehicles
 . . . electric automobiles
 . . tractors
 . . . crawler tractors
 . . . tracked vehicles
 . . trucks
 . . . tank trucks
 . nuclear powered ships
 . . Savannah nuclear ship
 . roadway powered vehicles
 . roving vehicles
 . . lunar roving vehicles
 . . . Lunokhod lunar roving vehicles
 . . . manned lunar surface vehicles
 . . Mars roving vehicles
 . . . Marsokhod Mars roving vehicles
 . satellite communications ships
 . sleds
 . . rocket propelled sleds
 . surface effect ships
 . SWATH (ship)
 . tanks (combat vehicles)
 . transporter
 . unmanned ground vehicles
 . walking machines
 RT amphibious vehicles
 ∞ bicycle
 ground effect machines
 rail transportation
 rails
 ships
 ∞ surfaces
 underwater vehicles
 urban transportation
 ∞ vehicles
 vehicular tracks
 water vehicles

surface water

DEF All the waters on the surface of the Earth including fresh and salt water, ice and snow.

GS water
 . **surface water**
 RT Earth resources
 ground water
 lakes
 polynyas
 ponds
 rivers
 streams
 ∞ surfaces
 water sampling

surface waves

SN (EXCLUDES SURFACE RADIO WAVES)
 GS **surface waves**
 . capillary waves
 . . gravity waves
 . . . baroclinic waves
 . . ripples
 . electromagnetic surface waves
 . evanescent waves
 . Sommerfeld waves
 RT bow waves
 cnoidal waves
 crustal fractures
 elastic waves
 internal waves
 lee waves
 liquid surfaces
 Love waves
 microsonics
 P waves
 S waves
 sea roughness
 seismic waves
 splashing
 ∞ surfaces
 tropospheric waves
 tsunami waves
 water currents
 water waves

∞ waves

surface-active agentsUSE **surfactants**∞ **surfaces**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *curved surfaces*
lifting surfaces
 RT air to surface missiles
 airfield surface movements
 airport surface detection equipment
 Apollo Lunar Surface Experiments Package
 area
 cold surfaces
 control surfaces
 Cosserat surfaces
 crystal surfaces
 Earth surface
 EASEP
 electromagnetic surface waves
 elevators (control surfaces)
 external surface currents
 Fermi surfaces
 flaps (control surfaces)
 flat surfaces
 horizontal tail surfaces
 hot surfaces
 interfaces
 interfacial tension
 Lambert surface
 liquid surfaces
 LSSM
 lunar surface
 lunar surface vehicles
 manned lunar surface vehicles
 Mars surface
 Mars surface samples
 menisci
 metal surfaces
 minimal surfaces
 ocean surface
 planetary surfaces
 satellite surfaces
 sizing (surface treatment)
 solid surfaces
 surface cooling
 surface cracks
 surface defects
 surface diffusion
 surface distortion
 surface effect ships
 surface energy
 surface finishing
 ∞ surface geometry
 surface ionization
 surface layers
 surface navigation
 surface properties
 surface reactions
 surface roughness
 surface roughness effects
 surface stability
 surface temperature
 surface to air missiles
 surface to surface missiles
 surface to surface rockets
 surface vehicles
 surface water
 surface waves
 sweptback tail surfaces
 T tail surfaces
 tabs (control surfaces)
 tail surfaces
 Townsend avalanche
 trapezoidal tail surfaces
 two dimensional bodies
 under surface blowing
 underwater to surface missiles
 upper surface blowing
 upper surface blown flaps
 Venus surface
 wear

surfactants

DEF A material that improves the emulsifying, dispersing, wetting, or other surface-

modifying properties of liquids. Used for surface-active agents.

UF *surface-active agents*
 RT admixtures
 ∞ agents
 detergents
 hydrophobicity
 monomolecular films
 plasticizers
 retardants
 soaps
 surface reactions
 zwitterions

surgeons

GS personnel
 . medical personnel
 . . **surgeons**
 . . . flight surgeons

surgery

GS medical science
 . **surgery**
 . . labyrinthectomy
 RT clinical medicine
 heart implantation
 ∞ operations
 skin grafts
 transplantation
 veterinary medicine

surges

DEF Transient rises in power or pressure such as a brief rise in the discharge pressure of a rotary compressor. Used for transients (surges).

UF *transients (surges)*
 RT circuit protection
 fluid flow
 overvoltage
 storm surges
 variations
 water hammer
 ∞ waves

surgical instruments

GS medical equipment
 . **surgical instruments**
 RT ∞ instruments
 needles

Surinam

GS nations
 . **Surinam**
 RT Caribbean region
 Netherlands
 South America

surveillance

GS **surveillance**
 . space surveillance (ground based)
 . space surveillance (spaceborne)
 RT command and control
 conical scanning
 crime
 detection
 Earth resources
 forest fire detection
 ice mapping
 ice reporting
 inspection
 observation
 panoramic scanning
 radar scanning
 reconnaissance
 scanning
 situational awareness
 target acquisition
 target recognition
 targets
 visual observation

surveillance radar

GS radar
 . **surveillance radar**
 . . airborne surveillance radar
 . . Cobra Dane (radar)
 . . multistatic radar
 RT air traffic control
 airport surface detection equipment

Surveyor 1 lunar probe

- coherent radar
- continuous wave radar
- digital radar systems
- Doppler radar
- meteorological radar
- pulse radar
- radar approach control
- radar tracking
- radarscopes
- satellite-borne radar
- search radar
- space-time adaptive processing
- synthetic aperture radar
- tracking radar

surveying

USE **surveys**

Surveyor 1 lunar probe

GS lunar spacecraft

- . lunar probes
- . . Surveyor lunar probes
- . . . **Surveyor 1 lunar probe**
- soft landing spacecraft
- . Surveyor lunar probes
- . . **Surveyor 1 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes
- **Surveyor 1 lunar probe**

RT Atlas Centaur launch vehicle

Surveyor 2 lunar probe

GS lunar spacecraft

- . lunar probes
- . . Surveyor lunar probes
- . . . **Surveyor 2 lunar probe**
- soft landing spacecraft
- . Surveyor lunar probes
- . . **Surveyor 2 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes
- **Surveyor 2 lunar probe**

RT Atlas Centaur launch vehicle

Surveyor 3 lunar probe

GS lunar spacecraft

- . lunar probes
- . . Surveyor lunar probes
- . . . **Surveyor 3 lunar probe**
- soft landing spacecraft
- . Surveyor lunar probes
- . . **Surveyor 3 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes
- **Surveyor 3 lunar probe**

RT Atlas Centaur launch vehicle

Surveyor 4 lunar probe

GS lunar spacecraft

- . lunar probes
- . . Surveyor lunar probes
- . . . **Surveyor 4 lunar probe**
- soft landing spacecraft
- . Surveyor lunar probes
- . . **Surveyor 4 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes
- **Surveyor 4 lunar probe**

RT Atlas Centaur launch vehicle

Surveyor 5 lunar probe

GS lunar spacecraft

- . lunar probes
- . . Surveyor lunar probes
- . . . **Surveyor 5 lunar probe**
- soft landing spacecraft
- . Surveyor lunar probes
- . . **Surveyor 5 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes

. . . . **Surveyor 5 lunar probe**

RT Atlas Centaur launch vehicle

Surveyor 6 lunar probe

GS lunar spacecraft

- . lunar probes
- . . Surveyor lunar probes
- . . . **Surveyor 6 lunar probe**
- soft landing spacecraft
- . Surveyor lunar probes
- . . **Surveyor 6 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes
- **Surveyor 6 lunar probe**

RT Atlas Centaur launch vehicle

Surveyor 7 lunar probe

GS lunar spacecraft

- . lunar probes
- . . Surveyor lunar probes
- . . . **Surveyor 7 lunar probe**
- soft landing spacecraft
- . Surveyor lunar probes
- . . **Surveyor 7 lunar probe**
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . Surveyor lunar probes
- **Surveyor 7 lunar probe**

RT Atlas Centaur launch vehicle

Surveyor lunar probes

GS lunar spacecraft

- . lunar probes
- . . **Surveyor lunar probes**
- . . . Surveyor 1 lunar probe
- . . . Surveyor 2 lunar probe
- . . . Surveyor 3 lunar probe
- . . . Surveyor 4 lunar probe
- . . . Surveyor 5 lunar probe
- . . . Surveyor 6 lunar probe
- . . . Surveyor 7 lunar probe
- soft landing spacecraft
- . **Surveyor lunar probes**
- . . Surveyor 1 lunar probe
- . . Surveyor 2 lunar probe
- . . Surveyor 3 lunar probe
- . . Surveyor 4 lunar probe
- . . Surveyor 5 lunar probe
- . . Surveyor 6 lunar probe
- . . Surveyor 7 lunar probe
- unmanned spacecraft
- . space probes
- . . lunar probes
- . . . **Surveyor lunar probes**
- Surveyor 1 lunar probe
- Surveyor 2 lunar probe
- Surveyor 3 lunar probe
- Surveyor 4 lunar probe
- Surveyor 5 lunar probe
- Surveyor 6 lunar probe
- Surveyor 7 lunar probe

Surveyor project

GS programs

- . lunar programs
- . . **Surveyor project**
- . . NASA programs
- . . NASA space programs
- . . . **Surveyor project**
- . . projects
- . . **Surveyor project**
- . . space programs
- . . NASA space programs
- . . . **Surveyor project**

RT Atlas Centaur launch vehicle

Centaur project

lunar landing

lunar probes

lunar spacecraft

soft landing

soft landing spacecraft

surveys

UF *surveying*

GS **surveys**

- . geodetic surveys
- . geological surveys

- . sky surveys (astronomy)
- . wage surveys

RT accuracy

- construction
- ∞ cross sections
- data acquisition
- data management
- datum (elevation)
- exploration
- general overviews
- geometry
- layouts
- loran
- mapping
- maps
- photogrammetry
- position (location)
- reconnaissance
- soil mapping
- ∞ statistics

survival

RT aircraft survivability

- civil defense
- closed ecological systems
- desert adaptation
- kits
- life support systems
- lunar shelters
- shelters
- spacecraft survivability

survival equipment

RT AEPS

- aircraft survivability
- Assured Crew Return Vehicle
- consumables (spacecrew supplies)
- emergency life sustaining systems

∞ equipment

- lifeboats
- onboard equipment
- oxygen supply equipment
- rafts

susceptibility (magnetism)

USE **magnetic permeability**

suspending (hanging)

GS **suspending (hanging)**

- . hindlimb suspension
- . magnetic suspension

RT gyroscope fluids

- mounting
- suspension systems (vehicles)

∞ suspensions

suspending (mixing)

GS mixing

- . **suspending (mixing)**

RT aeration

- agitation
- colloiding
- dispersing
- dispersions
- entrainment
- ferrofluids
- homogenizing
- shaking
- stirring

∞ suspensions

suspension systems (vehicles)

RT bearings

- flotation
- levitation
- magnetic levitation vehicles
- riding quality
- shock absorbers
- springs (elastic)
- steering
- suspending (hanging)

∞ suspensions

∞ systems

- toroidal wheels
- undercarriages
- vehicle wheels
- vehicular tracks

- vibration isolators
- ∞ **suspensions**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 DEF A two-phase system consisting of a finely divided solid dispersed in a solid, liquid, or gas.
 RT Brownian movements
 dispersions
 ferrofluids
 solid suspensions
 suspending (hanging)
 suspending (mixing)
 suspension systems (vehicles)
- Susquehanna River Basin (MD-NY-PA)**
 GS landforms
 . structural basins
 . . river basins
 . . . **Susquehanna River Basin (MD-NY-PA)**
 RT Maryland
 New York
 Pennsylvania
 rivers
 streams
 valleys
- sustainer rocket engines**
 DEF Rocket engines that maintain the velocity of the rocket once it has achieved its programmed velocity by use of boosters or other engines.
 GS engines
 . rocket engines
 . . **sustainer rocket engines**
 RT booster rocket engines
 ducted rocket engines
 electric rocket engines
 electrostatic engines
 electrothermal engines
 hybrid propellant rocket engines
 internal combustion engines
 ion engines
 launch vehicles
 liquid air cycle engines
 liquid propellant rocket engines
 nuclear engine for rocket vehicles
 nuclear rocket engines
 restartable rocket engines
 solid propellant rocket engines
 stage separation
 ∞ sustaining
 turborocket engines
 TX-354 engine
- ∞ **sustaining**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT life support systems
 supports
 sustainer rocket engines
- swaging**
 RT cold working
 metal working
 stamping
- swallowing**
 RT drinking
 eating
 ingestion (biology)
- swamps*
 USE **marshlands**
- Swan bands**
 GS spectra
 . spectral bands
 . . **Swan bands**
 RT ∞ bands
 carbon compounds
 chemical bonds
 emission spectra
 molecular spectra
- swarming**
 RT bees
- ∞ motion
- SWAS (satellite)*
 (added November 2000)
 USE **Submillimeter Wave Astronomy Satellite**
- swash*
 USE **splashing**
- SWATH (ship)**
 DEF Small waterplane area twin hull concept extension of hydrofoils for improving seaworthiness and speed. Used for Small Waterplane Area Twin Hull.
 UF *Small Water Plane Area Twin Hull*
 GS surface vehicles
 . **SWATH (ship)**
 water vehicles
 . ships
 . . **SWATH (ship)**
 RT captured air bubble vehicles
 hulls (structures)
 surface effect ships
 ∞ vehicles
- swath width**
 DEF The width of the area covered by an imaging sensor determined by the geometry of the instrument.
 RT agricultural aircraft
 flight paths
 remote sensing
 satellite observation
- Swaziland**
 GS nations
 . **Swaziland**
 RT Africa
 Republic of South Africa
- sweat**
 GS body fluids
 . **sweat**
 secretions
 . **sweat**
 RT perspiration
- sweat cooling**
 DEF A process by which a body having a porous surface is cooled by forced flow of coolant through the surface from the interior. Used for transpiration cooling.
 UF *transpiration cooling*
 GS cooling
 . evaporative cooling
 . . **sweat cooling**
 RT film cooling
 liquid cooling
 surface cooling
- sweating*
 USE **perspiration**
- Sweden**
 GS nations
 . **Sweden**
 RT Europe
 JAS-39 aircraft
 Scandinavia
 Swedish space program
- Swedish space program**
 GS programs
 . space programs
 . . European space programs
 . . . **Swedish space program**
 RT Sweden
- sweep angle**
 GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . **sweep angle**
 sweepback
 leading edge sweep
 RT aerodynamic stalling
 angle of attack
 boundary layer separation
- Mach number
- sweep circuits**
 GS circuits
 . **sweep circuits**
 RT frequency scanning
 oscilloscopes
 sampling
- sweep effect**
 RT ∞ effects
 force distribution
 lift
 ∞ loading
 wing loading
- sweep frequency**
 UF *electron sweeping*
 GS frequencies
 . **sweep frequency**
 RT carrier frequencies
 frequency analyzers
 frequency scanning
 frequency synchronization
 oscilloscopes
 television transmission
- sweepback**
 UF *sweepback angles*
 GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . sweep angle
 **sweepback**
 leading edge sweep
 RT supersonic airfoils
- sweepback angles*
 USE **sweepback**
- swelling**
 RT distortion
 expansion
 growth
 increasing
 inflating
 spreading
- swept forward wings**
 GS airfoils
 . wings
 . . swept wings
 . . . **swept forward wings**
 trapezoidal wings
 planforms
 . wing planforms
 . . **swept forward wings**
 . . . trapezoidal wings
 RT sweptback wings
 variable sweep wings
 X-29 aircraft
- swept wings**
 UF *cranked wings*
diamond wings
tapered wings
 GS airfoils
 . wings
 . . **swept wings**
 . . . swept forward wings
 trapezoidal wings
 . . . sweptback wings
 arrow wings
 delta wings
 trapezoidal wings
 RT fixed wings
 spanloader aircraft
 unswept wings
 wing planforms
- sweptback tail surfaces**
 GS assemblies
 . tail assemblies
 . . **sweptback tail surfaces**
 planforms
 . **sweptback tail surfaces**
 tail surfaces
 . **sweptback tail surfaces**
 RT control surfaces
 hypersonic aircraft

sweptback wings

- rudders
- stabilizers (fluid dynamics)
- supersonic airfoils
- ∞ surfaces
- T tail surfaces
- trapezoidal tail surfaces

sweptback wings

- GS airfoils
 - . wings
 - . . swept wings
 - . . . **sweptback wings**
 - arrow wings
 - delta wings
 - trapezoidal wings
- planforms
- . wing planforms
- . . **sweptback wings**
- . . . arrow wings
- delta wings
- trapezoidal wings

RT hypersonic aircraft
supersonic aircraft
supersonic airfoils
swept forward wings
variable sweep wings

Swift observatory

(added August 2005)

DEF A MIDEX (Medium-class Explorer) program satellite launched on November 20, 2004 for rapid observation of gamma ray bursts and their afterglows in gamma ray, x ray, ultraviolet, and optical wavelengths.

- GS artificial satellites
 - . scientific satellites
 - . . astronomical satellites
 - . . . **Swift observatory**
 - observatories
 - . astronomical observatories
 - . . astronomical satellites
 - . . . **Swift observatory**
- RT afterglows
- gamma ray astronomy
- gamma ray bursts
- gamma ray sources (astronomy)
- gamma ray telescopes
- spaceborne astronomy
- spaceborne telescopes
- spectral counterparts (astronomy)
- ultraviolet telescopes
- x ray telescopes

swimming

RT physical exercise
physical fitness

swimming pool reactors

- GS nuclear reactors
 - . liquid cooled reactors
 - . . water cooled reactors
 - . . . **swimming pool reactors**
- RT ∞ reactors

swine

- SN (EXCLUDES GUINEA PIGS)
- UF *pigs (swine)*
- GS animals
 - . vertebrates
 - . . mammals
 - . . . **swine**
- RT grazing
- livestock

swing tail assemblies

- GS assemblies
 - . tail assemblies
 - . . **swing tail assemblies**
- RT afterbodies
- aircraft parts
- aircraft structures

swing wings

- GS airfoils
 - . wings
 - . . **swing wings**
- RT aircraft parts
- aircraft structures
- wing planforms

wing profiles

swingby technique

- UF *gravity assist trajectories*
- RT Comet Nucleus Tour
- flyby missions
- gravitational effects
- interplanetary transfer orbits
- orbital mechanics
- planetary orbits
- round trip trajectories
- spacecraft trajectories

swirling

- RT agitation
- centrifuging
- dispersing
- foaming
- mixing
- ∞ separation
- shaking
- stirring

swirling wakes

USE **turbulent wakes**

Swiss space program

- GS programs
 - . space programs
 - . . European space programs
 - . . . **Swiss space program**
- RT Switzerland

switches

- GS **switches**
 - . capacitance switches
 - . electric relays
 - . electric switches
 - . . cryotrons
 - . . stepping switches
 - . . thermostats
 - . . vacuum arc switches
 - . pressure switches
 - . switching circuits
 - . . fluid switching elements
 - . . . trigatrons
- RT circuit breakers
- dropouts
- echo suppressors
- electric connectors
- electric contacts
- interruption
- selectors
- switching

switching

- GS **switching**
 - . beam switching
 - . magnetic switching
 - . microwave switching
 - . optical switching
 - . packet switching
- RT code division multiple access
- interruption
- sequencing
- step recovery diodes
- switches
- time division multiple access

switching circuits

- UF *electronic switches*
- switching elements*
- GS circuits
 - . **switching circuits**
 - . . fluid switching elements
 - switches
 - . **switching circuits**
 - . . fluid switching elements
- RT ARPA computer network
- capacitance switches
- cascode devices
- circuit breakers
- current regulators
- duplex operation
- duplexers
- electric relays
- electric switches
- gates (circuits)
- latch-up
- logic circuits

- matrices (circuits)
- microwave switching
- multivibrators
- optical bistability
- optical switching
- packet switching
- selectors
- squelch circuits
- vacuum arc switches
- voltage regulators

switching elements

USE **switching circuits**

switching theory

- RT Boolean algebra
- branching (mathematics)
- communication theory
- commutation
- logic design
- network synthesis
- packet switching
- sequencing
- ∞ theories
- topology

Switzerland

- GS nations
- . **Switzerland**
- RT Alps Mountains (Europe)
- Europe
- Swiss space program

swivels

- RT bearings
- gimbals
- hinges
- hooks
- joints (junctions)
- pivots

syenite

- GS rocks
 - . igneous rocks
 - . . **syenite**
- RT soils
- trachyte

syllables

- RT messages
- psycholinguistics
- semantics
- signal transmission

symbiosis

DEF The intimate living together of two organisms of different species, for mutual benefit.

RT ecology

lichens

sybiotic stars

- GS celestial bodies
 - . stars
 - . . double stars
 - . . . binary stars
 - **sybiotic stars**
 - peculiar stars
 - **sybiotic stars**
 - **sybiotic stars**
 - **sybiotic stars**
 - **sybiotic stars**
- RT absorption spectra
- eclipsing binary stars
- emission spectra
- flare stars
- M stars
- novae
- stellar envelopes
- stellar mass accretion
- stellar oscillations
- stellar spectra
- stellar temperature

symbolic programming

- GS computer programming
 - . **symbolic programming**
- RT coding
- computer assisted instruction
- context free languages
- language programming

- mnemonics . . . autonomic nervous system
 . . . **sympathetic nervous system**
 RT ∞ systems
- symbols**
 UF *characters*
letters (symbols)
signs (symbols)
- GS **symbols**
 . alphanumeric characters
 . . digits
 . . . binary digits
- RT abbreviations
 alphabets
 character recognition
- ∞ codes
 coding
 color
 data processing
 high level languages
 languages
 legibility
- ∞ mathematics
 message processing
 messages
 mnemonics
 nomenclatures
 perception
 reading
 semantics
- ∞ signals
 units of measurement
 visibility
- symmetrical bodies**
 GS **symmetrical bodies**
 . axisymmetric bodies
 . . power law bodies
 . bodies of revolution
 . . conical bodies
 . . . slender cones
 . . cylindrical bodies
 . . . rotating cylinders
 . . parabolic bodies
 . . power law bodies
 . . spheres
 . . . celestial sphere
 . . . concentric spheres
 . . . falling spheres
 . . . Poincare spheres
 . . . rotating spheres
 . . toruses
 . ellipsoids
 . lenticular bodies
 . streamlined bodies
 . . fairings
- RT axes of rotation
 blunt bodies
- ∞ bodies
 cones
 finned bodies
 flared bodies
 geoids
 ogives
 slender bodies
 spinning unguided rocket trajectory
- symmetry**
 UF *axisymmetry*
 GS **symmetry**
 . broken symmetry
 . . CP violation
 . chirality
 . supersymmetry
- RT antisymmetry
 asymmetry
 congruences
 continuity (mathematics)
 eccentricity
 enantiomers
 geometry
 grand unified theory
 isotropism
 quantiles
 shapes
- symmetry breaking*
 USE **broken symmetry**
- sympathetic nervous system**
 GS anatomy
 . nervous system
- sympathomimetics*
 USE **adrenergics**
- Symphonie satellites**
 GS artificial satellites
 . communication satellites
 . . **Symphonie satellites**
- RT Arcomsat
 broadcasting
 European space programs
 French satellites
 international cooperation
 radio transmission
 satellite television
 synchronous satellites
 telephony
- symposia*
 USE **conferences**
- symptomology**
 GS medical science
 . **symptomology**
- RT diseases
 signs and symptoms
- symptoms*
 USE **signs and symptoms**
- synapses**
 RT acetylcholine
 nerves
 nervous system
 neuromuscular transmission
 neurons
 neurotransmitters
 syncoders
- synchrocyclotrons**
 GS particle accelerators
 . cyclic accelerators
 . . **synchrocyclotrons**
 . cyclotrons
 . . **synchrocyclotrons**
- RT bevatron
 synchrotrons
- synchronism**
 DEF The relationship between two or more periodic quantities of the same frequency when the phase difference between them is zero or constant at a predetermined value. Used for beat and synchronization.
 UF *beat*
synchronization
- GS **synchronism**
 . bit synchronization
 . frequency synchronization
 . time synchronization
- RT coincidence circuits
 Dining Philosophers Problem
 phase detectors
 stroboscopes
 synchronizers
 synchrophasing
 time
 time measurement
- synchronization*
 USE **synchronism**
- synchronized oscillators**
 GS oscillators
 . **synchronized oscillators**
- RT frequency synchronization
 phase locked systems
 synchrosopes
- synchronizers**
 RT heliostats
 pulse radar
 servomotors
- synchronism
Synchronous Communication Satellites
 USE **SYNCOM satellites**
- Synchronous Communications Satellite Proj**
 SN (SYNCHRONOUS COMMUNICATIONS SATELLITE PROJECT)
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Synchronous Communications Satellite Proj**
 . projects
 . . **Synchronous Communications Satellite Proj**
 . space programs
 . . NASA space programs
 . . . **Synchronous Communications Satellite Proj**
- RT communication satellites
 twenty-four hour orbits
- synchronous detectors*
 USE **correlators**
- Synchronous Earth Observatory satellite**
 UF *SEOS*
 GS artificial satellites
 . meteorological satellites
 . . **Synchronous Earth Observatory satellite**
 . . . SMS 1
 . . . SMS 2
 . synchronous satellites
 . . **Synchronous Earth Observatory satellite**
 . . . SMS 1
 . . . SMS 2
- RT early warning systems
 Landsat satellites
 NASA programs
 programs
 satellite observation
 SEASAT satellites
 Synchronous Meteorological Satellite
 technology utilization
- Synchronous Meteorological Satellite**
 UF *SMS*
 GS artificial satellites
 . meteorological satellites
 . . **Synchronous Meteorological Satellite**
 . . . SMS 1
 . . . SMS 2
 . synchronous satellites
 . . **Synchronous Meteorological Satellite**
 . . . SMS 1
 . . . SMS 2
- RT communication satellites
 Synchronous Earth Observatory satellite
- synchronous motors**
 GS electromechanical devices
 . electric motors
 . . **synchronous motors**
 motors
 . electric motors
 . . **synchronous motors**
- RT asynchronous motors
 induction motors
- synchronous platforms**
 DEF Space platforms whose rotation is synchronized with that of Earth. Used for geostationary platforms.
 UF *geostationary platforms*
 GS space platforms
 . **synchronous platforms**
- RT communication satellites
 geosynchronous orbits
 ∞ platforms
 synchronous satellites
- synchronous satellites**
 DEF Equatorial west-to-east satellites orbiting the Earth at an altitude of approximately

synchrophasing

35,900 kilometers, at which they make one revolution in 24 hours, synchronous with the Earth's rotation. Used for geostationary satellites.

- UF *geostationary satellites*
- GS artificial satellites
 - . **synchronous satellites**
 - . . . AEROS satellite
 - . . . Aerosat satellites
 - . . . Anik satellites
 - . . . Anik 1
 - . . . Anik 2
 - . . . Anik 3
 - . . . GOES satellites
 - . . . GOES 1
 - . . . GOES 2
 - . . . GOES 3
 - . . . GOES 4
 - . . . GOES 5
 - . . . GOES 6
 - . . . GOES 7
 - . . . GOES 8
 - . . . GOES 9
 - . . . GOES 10
 - . . . GOES 13
 - . . . Miranda satellite
 - . . . SIRIO satellite
 - . . . StormSat satellite
 - . . . Synchronous Earth Observatory satellite
 - . . . SMS 1
 - . . . SMS 2
 - . . . Synchronous Meteorological Satellite
 - . . . SMS 1
 - . . . SMS 2
 - . . . SYNCOM satellites
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . . . TD satellites
 - . . . TD-1 satellite
- RT active satellites
 - Arcomsat
 - Canadian space program communication satellites
 - Communications Technology Satellite
 - military spacecraft
 - navigation satellites
 - passive satellites
 - Refsat
 - stationary orbits
 - Symphonie satellites
 - synchronous platforms
 - twenty-four hour orbits

synchrophasing

- RT aircraft noise
- noise reduction
- propeller blades
- synchronism

synchrophasotrons

- GS particle accelerators
 - . **synchrophasotrons**
- RT ∞ accelerators
- synchrotrons

synchrosopes

- GS circuits
 - . phase detectors
 - . . **synchrosopes**
- RT correlators
- measuring instruments
- oscilloscopes
- synchronized oscillators

synchrotron radiation

- GS electromagnetic radiation
 - . nonthermal radiation
 - . . **synchrotron radiation**
 - . polarized electromagnetic radiation
 - . . **synchrotron radiation**
 - . polarized radiation
 - . polarized electromagnetic radiation
 - . . **synchrotron radiation**
- RT bremsstrahlung
- extraterrestrial radiation

- ∞ radiation
- radiation protection
- synchrotrons
- x rays

synchrotrons

DEF Devices for accelerating particles, ordinarily electrons, in a circular orbit in an increasing magnetic field by means of an alternating field applied in a synchronism with the orbital motion.

- GS particle accelerators
 - . cyclic accelerators
 - . . **synchrotrons**
 - . . . bevatron
 - . . . storage rings (particle accelerators)
- RT betatrons
- cyclotrons
- electron accelerators
- ion accelerators
- microtrons
- synchrocyclotrons
- synchrophasotrons
- synchrotron radiation

synclines

- UF *synclinoria*
- RT anticlines
- domes (geology)
- geological faults
- geosynclines
- ∞ layers
- strata
- stratification
- stratigraphy

synclinoria

- USE **synclines**

syncoders

- RT bionics
- neurons
- synapses

SYNCOM 1 satellite

- GS artificial satellites
 - . active satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 1 satellite**
 - . communication satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 1 satellite**
 - . synchronous satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 1 satellite**
- RT Delta launch vehicle

SYNCOM 2 satellite

- GS artificial satellites
 - . active satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 2 satellite**
 - . communication satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 2 satellite**
 - . synchronous satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 2 satellite**
- RT Delta launch vehicle

SYNCOM 3 satellite

- GS artificial satellites
 - . active satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 3 satellite**
 - . communication satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 3 satellite**
 - . synchronous satellites
 - . . SYNCOM satellites
 - . . . **SYNCOM 3 satellite**
- RT Delta launch vehicle

SYNCOM 4 satellite

- DEF A geosynchronous communications satellite that was deployed on Space Shuttle STS 51A in November 1984.
- GS artificial satellites
 - . active satellites

- . . SYNCOM satellites
- . . . **SYNCOM 4 satellite**
- . communication satellites
- . . SYNCOM satellites
- . . . **SYNCOM 4 satellite**
- . synchronous satellites
- . . SYNCOM satellites
- . . . **SYNCOM 4 satellite**

SYNCOM apogee engines

- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **SYNCOM apogee engines**
 - . . Vernier engines
 - . . . **SYNCOM apogee engines**
 - . torpedo engines
 - . Vernier engines
 - . . . **SYNCOM apogee engines**

SYNCOM satellites

- UF *Synchronous Communication Satellites*
- GS artificial satellites
 - . active satellites
 - . . **SYNCOM satellites**
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . communication satellites
 - . . **SYNCOM satellites**
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . synchronous satellites
 - . . **SYNCOM satellites**
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
 - . synchronous satellites
 - . . **SYNCOM satellites**
 - . . . Early Bird satellites
 - . . . SYNCOM 1 satellite
 - . . . SYNCOM 2 satellite
 - . . . SYNCOM 3 satellite
 - . . . SYNCOM 4 satellite
- RT Thor Delta launch vehicle

syncope

- UF *fainting*
- GS **syncope**
 - . blackout (physiology)
 - . . blackout prevention
- RT unconsciousness

syndromes

- USE **signs and symptoms**

syngas

- (added January 2002)
- USE **synthesis gas**

synoptic measurement

- RT ∞ measurement
- nephanalysis

synoptic meteorology

DEF The study and analysis of weather information gathered at the same time.

- GS meteorology
 - . **synoptic meteorology**
- RT air masses
- anticyclones
- cold fronts
- cyclones
- fronts (meteorology)
- meteorological charts
- nephanalysis
- teleconnections (meteorology)
- warm fronts
- weather forecasting

syntax

- GS linguistics
 - . **syntax**
- RT format
- grammars
- ∞ interpretation
- languages
- natural language processing
- orthography

parsing algorithms
 psycholinguistics
 semantics
 sentences
 speech

syntectic alloys

DEF Metallic composite materials characterized by a reversible convertibility of their solid phases into two liquid phases by the application of heat.

GS alloys
 . **syntectic alloys**
 RT eutectics
 liquid phases
 metals
 phase transformations
 solid phases

synthane

UF *synthetic methane*
 GS fuels
 . chemical fuels
 . . hydrocarbon fuels
 . . . **synthane**
 . . synthetic fuels
 . . . **synthane**
 RT automobile fuels
 carbon dioxide
 carbon monoxide
 coal
 coal gasification
 gasification
 hydrogen
 lignite
 methane

∞ synthesis

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT biosynthesis
 chemical reactions
 decision theory
 ∞ design
 network synthesis
 nuclear fusion
 operations research
 plasma jet synthesis
 synthesis (chemistry)
 synthetic fuels
 systems engineering

synthesis (chemistry)

DEF The application of chemical reactions to obtain desired chemical products.

GS **synthesis (chemistry)**
 . polymerization
 . . copolymerization
 . . dimerization
 . electrochemical synthesis
 RT addition resins
 chemical reactions
 ∞ chemistry
 cycloaddition
 Fischer-Tropsch process
 operations research
 reaction intermediates
 self assembly
 ∞ synthesis
 synthesis gas
 synthetic fibers
 synthetic fuels
 synthetic resins
 synthetic rubbers
 systems engineering

synthesis gas

(added January 2002)

DEF A mixture of gases produced as feedstock for the synthesis of chemical compounds, for example, hydrogen and carbon monoxide used as the starting material for the production of ammonia derivatives, methanol, and hydrocarbons.

UF *syngas*
 GS gases
 . **synthesis gas**
 RT catalysts
 coal derived gases

coal gasification
 fuel production
 synthesis (chemistry)
 synthetic fuels

synthesizers

RT chemical reactors
 frequency synthesizers

synthetic aperture radar

DEF Active microwave sensors providing all-weather, high resolution imagery. Used for imaging radar.

GS radar
 . **synthetic aperture radar**
 . . Shuttle Imaging Radar
 . . side-looking radar
 RT airborne radar
 Earthnet
 Envisat-1 satellite
 ground penetrating radar
 imaging radar
 Magellan spacecraft (NASA)
 microwave imagery
 microwave sensors
 radar equipment
 Radarsat
 satellite-borne radar
 surveillance radar
 synthetic apertures
 Venus orbiting imaging radar
 (spacecraft)

synthetic apertures

DEF In radar technology, the simulations of large antennas by correcting the phase and magnitude of the return signals from smaller antennas, permitting the use of lower frequencies for airborne radars.

GS openings
 . apertures
 . . **synthetic apertures**
 RT imaging techniques
 synthetic aperture radar

synthetic arrays

GS arrays
 . **synthetic arrays**
 RT antenna radiation patterns
 apertures
 distribution (property)
 ∞ patterns
 Shuttle Imaging Radar

synthetic fibers

GS fibers
 . **synthetic fibers**
 . . aramid fibers
 . . . Kevlar (trademark)
 . . ceramic fibers
 . . Dacron (trademark)
 . . Fortisan (trademark)
 . . glass fibers
 . . Nylon (trademark)
 . . rayon
 . . Vycor
 RT addition resins
 flame retardants
 Kevlar (trademark)
 polyacrylonitrile
 polybenzimidazole
 polyesters
 reinforcing fibers
 synthesis (chemistry)
 wet spinning

synthetic food

DEF Mixture of roughage, vitamins, minerals, etc., closely approximating natural foods in appearance, taste, and nutrition.

RT amino acids
 biosynthesis
 carbohydrates
 cellulose
 eating
 fats
 ∞ food
 food intake
 nutritional requirements
 protein metabolism

proteins
 taste

synthetic fuels

GS fuels
 . chemical fuels
 . . **synthetic fuels**
 . . . gasohol (fuel)
 . . . synthane
 RT chemical reactions
 clean fuels
 Fischer-Tropsch process
 hydrocarbon fuels
 liquid fuels
 ∞ synthesis
 synthesis (chemistry)
 synthesis gas

synthetic metals

DEF Materials which do not occur in nature but have the appearance and physical properties of true metals.

RT crystal lattices
 dendrimers
 graphite
 organometallic compounds

synthetic methane

USE **synthane**

synthetic resins

GS plastics
 . **synthetic resins**
 . . addition resins
 . . . acrylic resins
 . . . vinyl copolymers
 . . polyester resins
 . . polyether resins
 . . . PEEK
 . . . polymethyl methacrylate
 . . thermoplastic resins
 . . . PEEK
 . . . quinoxalines
 . . . thermoplastic films
 . . thermosetting resins
 . . . epoxy resins
 . . . phenolic epoxy resins
 . . . furan resins
 polyamide resins
 Kevlar (trademark)
 Nylon (trademark)
 . . . phenolic resins
 micarta
 phenolic epoxy resins
 resins
 . **synthetic resins**
 . . addition resins
 . . . acrylic resins
 . . . vinyl copolymers
 . . polyester resins
 . . polyether resins
 . . . PEEK
 . . . polymethyl methacrylate
 . . thermoplastic resins
 . . . PEEK
 . . . quinoxalines
 . . . thermoplastic films
 . . thermosetting resins
 . . . epoxy resins
 . . . phenolic epoxy resins
 . . . furan resins
 polyamide resins
 Kevlar (trademark)
 Nylon (trademark)
 . . . phenolic resins
 micarta
 phenolic epoxy resins
 RT polyethylenes
 ∞ polymers
 polypropylene
 polystyrene
 polytetrafluoroethylene
 polyvinyl alcohol
 polyvinyl chloride
 synthesis (chemistry)
 teflon (trademark)

synthetic rubbers

GS elastomers
 . rubber

.. **synthetic rubbers**
 ... Adiprene (trademark)
 ... Buna (trademark)
 ... silicone rubber
 ... RTV-40 rubber (trademark)
 ... RTV-60 rubber (trademark)
 ... Viton rubber (trademark)
 ... vulcanized elastomers
 ... RTV-40 rubber (trademark)
 ... RTV-60 rubber (trademark)
 ... chloroprene resins

RT latex
 polybutadiene
 polyisobutylene
 polyisoprenes
 solithanes
 synthesis (chemistry)

synthetic vision
 USE **enhanced vision**

syntony
 DEF The situation of two or more oscillating circuits having the same resonant frequency.
 RT frequency synchronization
 oscillations
 resonance

syphilis
 GS diseases
 . infectious diseases
 .. bacterial diseases
 ... **syphilis**

Syria
 GS nations
 . **Syria**
 RT Asia

syringes
 GS laboratory equipment
 . **syringes**
 medical equipment
 . **syringes**
 RT bulbs
 ∞ equipment
 fluid flow
 pipes (tubes)
 transfusion

System 10 computer
 USE **PDP 10 computer**

system effectiveness
 GS effectiveness
 . **system effectiveness**
 RT modulation transfer function
 optical transfer function
 reliability
 reliability engineering
 ∞ systems
 systems engineering
 systems health monitoring
 systems integration

system failures
 GS failure
 . **system failures**
 RT ∞ breakdown
 deterioration
 downtime
 fatigue (materials)
 fault detection
 malfunctions
 short circuits
 structural failure
 structural strain
 ∞ systems
 wear

system generated electromagnetic pulses
 DEF Electromagnetic fields generated by the emission of a large electronic current from a metallic body in space caused by the incidence on its surface of strong ionizing radiation pulses (usually x ray) from space. Used for SGEMP.
 UF **SGEMP**
 GS electromagnetic fields
 . **system generated electromagnetic pulses**

electromagnetic radiation
 . electromagnetic pulses
 .. **system generated electromagnetic pulses**
 pulsed radiation
 . electromagnetic pulses
 .. **system generated electromagnetic pulses**
 pulses
 . electromagnetic pulses
 .. **system generated electromagnetic pulses**

RT electric current
 electric pulses
 electromagnetic interference
 electronic equipment
 external surface currents
 extraterrestrial radiation
 ionizing radiation
 plasma sheaths
 satellite communication
 spacecraft charging
 spacecraft communication
 x rays

system identification
 DEF The technology of modeling plants and processes from their dynamic response.
 GS estimating
 . **system identification**
 identifying
 . **system identification**
 systems analysis
 . **system identification**
 RT complex systems
 control systems design
 dynamic response
 estimates
 fuzzy systems
 mathematical models
 maximum likelihood estimates
 observability (systems)
 optimization
 parameter identification
 parameterization
 prediction analysis techniques
 probability theory
 reliability engineering
 statistical analysis
 steepest descent method
 ∞ systems
 systems engineering

systematic errors
(added April 1997)
 DEF Non-random and often predictable errors due to some physical law or caused by flaws in a measurement process.
 GS errors
 . **systematic errors**
 RT error analysis
 instrument compensation
 instrument errors
 random errors

∞ **systems**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT Advanced Vidicon Camera System (AVCS)
 aerospace systems
 afferent nervous systems
 African rift system
 air cushion landing systems
 Airborne Integrated Reconnaissance System
 aircraft fuel systems
 aircraft hydraulic systems
 all-weather landing systems
 Aloha system
 annular suspension and pointing system
 Apollo extension system
 ascent propulsion systems
 Astroguide Navigation System
 Atmospheric & Oceanographic Inform Sys
 automated pilot advisory system
 automated radar terminal system

automatic traffic advisory and resolution
 autonomic nervous system
 Ballistic Missile Early Warning System
 Beacon Collision Avoidance System
 binary systems (materials)
 Bioastronautical Orbital Space System
 biocontrol systems
 cardiovascular system
 celestial reference systems
 Central Electronic Management System
 central nervous system
 central nervous system depressants
 central nervous system stimulants
 chokes (fuel systems)
 closed ecological systems
 complex systems
 computer systems design
 computer systems performance
 computer systems programs
 computer systems simulation
 cooling systems
 cybernetics
 data base management systems
 data systems
 Defense Communications Satellite System
 defense communications system (DCS)
 descent propulsion systems
 digestive system
 digital command systems
 digital systems
 discrete address beacon system
 disk operating system (DOS)
 display devices
 distributed parameter systems
 domestic satellite communications systems
 early warning systems
 Earth Resources Information System
 Earth terminal measurement system
 Earth-Moon system
 ecosystems
 efferent nervous systems
 EISCAT radar system (Europe)
 ∞ elastic systems
 electronic recording systems
 emergency life sustaining systems
 endocrine systems
 end-to-end data systems
 escape systems
 exhaust systems
 fail-safe systems
 feed systems
 feedback
 Fleet Satellite Communication System
 fuel systems
 fuzzy systems
 gastrointestinal system
 genitourinary system
 Global Positioning System
 Goddard Trajectory Determination System
 ground operational support system
 ground support systems
 guidance (motion)
 hardening (systems)
 hematopoietic system
 hybrid navigation systems
 hydraulic equipment
 hydroplanes (surfaces)
 hydrothermal systems
 ∞ hyperbolic systems
 IFF systems (identification)
 ignition systems
 IMLSS
 inertial reference systems
 information adaptive system
 information systems
 instrument landing systems
 intake systems
 integrated energy systems
 integrated global ocean station systems
 International System of Units
 intravascular system

jettison systems
 launch escape systems
 life support systems
 Light Airborne Multipurpose System
 linear systems
 LOCATES system
 LORAC navigation system
 lubrication systems
 lumped parameter systems
 Lunar Exploration System for Apollo
 man machine systems
 man operated propulsion systems
 management information systems
 management systems
 metal-gas systems
 methoxy systems
 microwave landing systems
 microwave scanning beam landing system
 MIMO (control systems)
 minitrack system
 Miros system
 missile systems
 Modular Integrated Utility System
 musculoskeletal system
 NASA Interactive Planning System
 National Airspace Utilization System
 National Aviation System
 National Oceanic Satellite System
 navigation
 needs (data system)
 nervous system
 Nike X systems
 NOESS
 nonlinear systems
 Nova Laser System
 observability (systems)
 Omega Navigation System
 on-line systems
 operating systems (computers)
 optical relay systems
 payload deployment & retrieval system
 peripheral nervous system
 phase locked systems
 piggyback systems
 planetary systems
 PLAT system
 pneumatic equipment
 pointing control systems
 polystation doppler tracking system
 portable life support systems
 post boost propulsion system
 propulsion system configurations
 propulsion system performance
 public address systems
 quality control
 radio relay systems
 Ranger block 3 television system
 rapid transit systems
 ∞ reference systems
 remote manipulator system
 reproductive systems
 respiratory system
 rotor systems research aircraft
 Safeguard system
 SAGE air defense system
 satellite navigation systems
 self adaptive control systems
 self organizing systems
 Sentinel system
 Shiva laser system
 SISO (control systems)
 SNAP
 solar system
 solar total energy systems
 space detection and tracking system
 space transportation system
 Space Transportation System flights
 support systems
 suspension systems (vehicles)
 sympathetic nervous system
 system effectiveness
 system failures
 system identification
 systems analysis
 systems engineering
 systems integration
 systems management

systems simulation
 systems stability
 telecommunication
 telegraph systems
 teletypewriter systems
 television systems
 TERCOM
 ternary systems
 TIROS operational satellite system
 total energy systems
 TRADEX radar system
 transcontinental systems
 transfer functions
 transoceanic systems
 Typhon weapon system
 uncertain systems
 unmanned aircraft systems
 vacuum systems
 variable mass systems
 vortex advisory system
 warning systems
 weapon system management
 weapon systems

systems analysis

GS **systems analysis**
 . system identification
 RT ∞ analyzing
 block diagrams
 bond graphs
 complex systems
 computer programming
 computer systems programs
 computer systems simulation
 control systems design
 feasibility analysis
 fuzzy systems
 man machine systems
 mathematical models
 modulation transfer function
 observability (systems)
 operating costs
 operations research
 optical transfer function
 parameter identification
 preflight analysis
 procedures
 program verification (computers)
 sensitivity analysis
 simulation
 sociology
 statistical analysis
 ∞ systems
 trajectory analysis
 weight analysis
 weight reduction

systems compatibility

GS compatibility
 . **systems compatibility**
 RT interoperability
 reliability
 reliability engineering

systems design

USE **systems engineering**

systems engineering

DEF The process of applying science and technology to the study and planning of a system so that the relationships of various parts of the system and the use of various subsystems are fully established before designs are committed.

UF *systems design*
 GS **systems engineering**
 . computer systems design
 . control systems design
 RT aerospace systems
 aircraft design
 ∞ automation
 bionics
 bond graphs
 communicating
 concurrent engineering
 contract management
 ∞ control
 critical path method
 cybernetics
 data processing

decision making
 decision theory
 ∞ design
 design optimization
 electrical engineering
 ∞ engineering
 experiment design
 flight management systems
 forecasting
 functional design specifications
 human factors engineering
 information theory
 life cycle costs
 man machine systems
 management
 management planning
 mathematical models
 mechanization
 missile design
 modularity
 multidisciplinary design optimization
 observability (systems)
 operational problems
 ∞ operations
 operations research
 optical transfer function
 orbit spectrum utilization
 parameter identification
 reliability
 reliability engineering
 research and development
 reverse engineering
 satellite design
 software engineering
 spacecraft design
 statistical analysis
 ∞ statistics
 ∞ synthesis
 synthesis (chemistry)
 system effectiveness
 system identification
 ∞ systems
 systems integration

Systems for Nuclear Auxiliary Power
 USE **SNAP**

systems health monitoring

(added July 1995)
 SN ((NOT USED FOR PHYSIOLOGICAL, PSYCHOLOGICAL, OR BIOLOGICAL SYSTEMS))
 UF *health and usage monitoring systems*
 RT component reliability
 engine monitoring instruments
 expert systems
 fault detection
 life (durability)
 propulsion system performance
 service life
 smart structures
 software reliability
 structural health monitoring
 system effectiveness

systems integration

DEF The combining of subsystems each with numerous interfaces for the input and output of data and each with specified functions vital to the planned success of the main system.
 RT airborne/spaceborne computers
 avionics
 control systems design
 digital systems
 interoperability
 system effectiveness
 ∞ systems
 systems engineering
 systems simulation
 systems-on-a-chip

systems management

GS management
 . **systems management**
 RT industrial management
 information systems
 man machine systems
 management methods
 operations research

systems simulation

∞ systems

systems simulation

DEF The simulation of any dynamic system.

GS simulation

. **systems simulation**

. . computer systems simulation

RT

analog simulation

computerized simulation

dynamic models

dynamical systems

flight simulation

hardware-in-the-loop simulation

mathematical models

model reference adaptive control

operations research

∞ systems

systems integration

systems stability

GS stability

. **systems stability**

RT

control stability

dynamic stability

equations of motion

∞ equilibrium

flow stability

loop transfer recovery

MIMO (control systems)

SISO (control systems)

∞ systems

unsteady state

systems-on-a-chip

(added May 2001)

DEF Single electronic chips that incorporate the multiple functional elements comprising a complete system; usually include processor core, I/O subsystems, and memory elements, and may include mixed-signal and mixed-technology subsystems.

UF *SOAC (electronics)*

SoC (microelectronics)

GS chips (electronics)

. **systems-on-a-chip**

RT application specific integrated circuits

lab-on-a-chip devices

large scale integration

microelectronics

microminiaturized electronic devices

microoptoelectromechanical systems

RISC processors

systems integration

systole

GS heart function

. **systole**

rates (per time)

. **systole**

RT blood flow

blood pressure

cardiac ventricles

cardiovascular system

diastole

heart rate

systolic pressure

systolic arrays

GS arrays

. **systolic arrays**

RT algorithms

architecture (computers)

chips (electronics)

computation

parallel processing (computers)

very large scale integration

systolic pressure

GS pressure

. blood pressure

. . **systolic pressure**

RT systole

S-Z effect

(added July 2000)

USE **Sunyaev-Zeldovich effect**

T

T shape

- UF *tee*
- GS shapes
 - . **T shape**
- RT beams (supports)

T tail surfaces

- GS assemblies
 - . tail assemblies
 - . . **T tail surfaces**
 - tail surfaces
 - . **T tail surfaces**
- RT control surfaces
 - stabilizers (fluid dynamics)
- ∞ surfaces
 - sweptback tail surfaces

T Tauri stars

- GS celestial bodies
 - . stars
 - . . protostars
 - . . . pre-main sequence stars
 - **T Tauri stars**
 - variable stars
 - **T Tauri stars**
- RT Herbig-Haro objects
 - star formation
 - Taurus constellation

T-2 aircraft

- UF *buckeye aircraft*
 - T2J aircraft*
 - YT-2 aircraft*
- GS attack aircraft
 - . **T-2 aircraft**
 - jet aircraft
 - . **T-2 aircraft**
 - monoplanes
 - . **T-2 aircraft**
 - North American aircraft
 - . **T-2 aircraft**
 - single engine aircraft
 - . **T-2 aircraft**
 - training aircraft
 - . **T-2 aircraft**
- RT ∞ aircraft

T2J aircraft

- USE **T-2 aircraft**

T3J aircraft

- USE **T-39 aircraft**

T-28 aircraft

- UF *Trojan aircraft*
- GS monoplanes
 - . **T-28 aircraft**
 - North American aircraft
 - . **T-28 aircraft**
 - single engine aircraft
 - . **T-28 aircraft**
 - training aircraft
 - . **T-28 aircraft**
- RT ∞ aircraft

T-33 aircraft

- UF *F-80 aircraft*
 - Shooting Star aircraft*
- GS jet aircraft
 - . **T-33 aircraft**
 - Lockheed aircraft
 - . **T-33 aircraft**
 - monoplanes
 - . **T-33 aircraft**
 - single engine aircraft
 - . **T-33 aircraft**
 - training aircraft
 - . **T-33 aircraft**
- RT ∞ aircraft

T-34 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-34 engine**
 - aircraft engines

- . . **T-34 engine**
- . . . internal combustion engines
- gas turbine engines
- jet engines
- turbojet engines
- turboprop engines
- **T-34 engine**
- turbine engines
- gas turbine engines
- jet engines
- turbojet engines
- turboprop engines
- **T-34 engine**
- RT C-133 aircraft

T-37 aircraft

- GS Cessna aircraft
 - . **T-37 aircraft**
 - jet aircraft
 - . **T-37 aircraft**
 - monoplanes
 - . **T-37 aircraft**
 - training aircraft
 - . **T-37 aircraft**
- RT A-37 aircraft
 - ∞ aircraft

T-38 aircraft

- UF *Talon aircraft*
- GS jet aircraft
 - . **T-38 aircraft**
 - monoplanes
 - . **T-38 aircraft**
 - Northrop aircraft
 - . **T-38 aircraft**
 - supersonic aircraft
 - . **T-38 aircraft**
 - training aircraft
 - . **T-38 aircraft**
- RT ∞ aircraft

T-38 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**
 - aircraft engines
 - **T-38 engine**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-38 engine**

T-39 aircraft

- UF *Sabreliner aircraft*
 - T3J aircraft*
- GS jet aircraft
 - . **T-39 aircraft**
 - monoplanes
 - . **T-39 aircraft**
 - North American aircraft
 - . **T-39 aircraft**
 - passenger aircraft
 - . **T-39 aircraft**
 - training aircraft
 - . **T-39 aircraft**
 - utility aircraft
 - . **T-39 aircraft**
- RT ∞ aircraft
 - cargo aircraft

T-53 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines

- **T-53 engine**
- internal combustion engines
- gas turbine engines
- jet engines
- turbojet engines
- turboprop engines
- **T-53 engine**
- turbine engines
- gas turbine engines
- jet engines
- turbojet engines
- turboprop engines
- **T-53 engine**
- RT helicopter engines

T-55 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
 - aircraft engines
 - **T-55 engine**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-55 engine**
- RT helicopter engines

T-56 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines
 - turboprop engines
 - **T-56 engine**
- RT C-130 aircraft

T-58 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . **T-58 engine**
 - internal combustion engines
 - gas turbine engines
 - turbine engines
 - gas turbine engines
 - **T-58 engine**
- RT aircraft engines
 - helicopter engines
 - vertical takeoff aircraft

T-63 engine

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - turboprop engines
 - **T-63 engine**
 - aircraft engines
 - **T-63 engine**
 - internal combustion engines
 - gas turbine engines

T-64 engine

- . . . jet engines
- turbojet engines
- turboprop engines
- **T-63 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-63 engine**

RT helicopter engines

T-64 engine

GS engines

- . air breathing engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-64 engine**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-64 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-64 engine**

RT helicopter engines

T-74 engine

GS engines

- . air breathing engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-74 engine**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-74 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-74 engine**

RT helicopter engines

T-76 engine

GS engines

- . air breathing engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-76 engine**
- . aircraft engines
- . . **T-76 engine**
- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-76 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-76 engine**

RT helicopter engines

T-78 engine

GS engines

- . air breathing engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-78 engine**
- . aircraft engines
- . . **T-78 engine**

- . internal combustion engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-78 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turboprop engines
- **T-78 engine**

tables (data)

DEF (1) An array of data, each item of which may be unambiguously identified by means of one or more arguments. (2) A collection of data in which each item is uniquely identified by a label, by its position relative to the other items, or by some other means.

GS **tables (data)**

- . conversion tables
- . interference factor table
- . mathematical tables

RT air data systems
astronomical catalogs

∞ data
data acquisition
data management
data processing
data recording
data reduction
data retrieval
printouts
spreadsheets
statistical analysis

∞ statistics
∞ tabulation
tabulation processes

tablets

RT briquets

∞ capsules
molds

tabs (control surfaces)

GS airfoils

- . **tabs (control surfaces)**
control surfaces
- . **tabs (control surfaces)**

RT aerial rudders
ailerons

∞ control
elevators (control surfaces)
elevons
rudders
stabilizers (fluid dynamics)

∞ surfaces

tabulating

USE **tabulation processes**

∞ tabulation

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT tables (data)
tabulation processes

tabulation processes

UF *tabulating*

RT data processing
data recording
tables (data)

∞ tabulation

Tacan

DEF A two dimensional navigation system which provides azimuth and distance to a fixed ground station for navigation in piloted aircraft. Used for tactical air navigation.

UF *tactical air navigation*

GS navigation

- . radio navigation
- . . **Tacan**

RT air navigation
all-weather air navigation
flight paths
navigation aids
radar navigation

solar compasses

tachistoscopes

RT visual perception

tachometers

GS display devices

- . speed indicators
- . . **tachometers**
measuring instruments
- . indicating instruments
- . . speed indicators
- . . . **tachometers**

RT aircraft instruments
angular velocity
timing devices
velocity measurement

tachycardia

GS diseases

- . **tachycardia**
rates (per time)
- . heart rate
- . . **tachycardia**

tachyons

GS particles

- . elementary particles
- . . hypothetical particles
- . . . **tachyons**

tachypnea

GS rates (per time)

- . respiratory rate
- . . **tachypnea**

tackiness

RT adhesion

TACT program

UF *Transonic Aircraft Technology Program*

GS programs

- . NASA programs
- . . **TACT program**

RT ∞ aeronautics
∞ aircraft

tactical air navigation

USE **Tacan**

tactics

RT attacking (assaulting)
deployment
evasive actions
military operations
military technology
obstacle avoidance

tactile discrimination

GS discrimination

- . sensory discrimination
- . . **tactile discrimination**
perception
- . sensory perception
- . . touch
- . . . **tactile discrimination**

RT tactile sensors (robotics)

tactile sensation

USE **touch**

tactile sensors (robotics)

(added January 1991)

GS robot sensors

- . **tactile sensors (robotics)**

RT end effectors
manipulators
robots

∞ sensors
servomechanisms
tactile discrimination
teleoperators
touch

Tafel law

GS laws

- . **Tafel law**

RT electrodes
electrolysis
Ficks equation

polarization (charge separation)

tagging

USE **marking**

TAGN

UF *triaminoguanidinenitrate*
 GS oxidizers
 . rocket oxidizers
 . . **TAGN**
 propellants
 . rocket propellants
 . . **TAGN**
 RT explosives

Taguchi methods

(*added September 2000*)
 DEF Quality engineering methodology, developed by Genichi Taguchi, for minimizing a product's sensitivity to uncontrollable system disturbances by simultaneously varying both design and disturbance parameters. The method incorporates a special set of arrays called orthogonal arrays that define the minimal number of experiments that would provide the full information for all factors that affect the performance parameter.

GS quality control
 . **Taguchi methods**
 RT design analysis
 experiment design
 multidisciplinary design optimization
 optimization
 parameter identification
 reliability engineering
 statistical analysis
 total quality management

tail assemblies

DEF The rear part of a body, as of an aircraft or a rocket. The tail surfaces of an aircraft or rocket. Used for empennage, tail mountings, tails (assemblies), and vertical tails.

UF *empennage*
tail mountings
tails (assemblies)
vertical tails
 GS assemblies
 . **tail assemblies**
 . . horizontal tail surfaces
 . . sweptback tail surfaces
 . . swing tail assemblies
 . . T tail surfaces
 . . trapezoidal tail surfaces
 RT aerial rudders
 afterbodies
 aircraft parts
 aircraft structures
 airfoils
 airframes
 boattails
 body-wing and tail configurations
 ∞ boom
 control surfaces
 elevators (control surfaces)
 fins
 hydrofoils
 marine rudders
 missile structures
 rudders
 sails
 stabilizers (fluid dynamics)
 vanes

tail mountings

USE **tail assemblies**

tail planes

USE **horizontal tail surfaces**

tail rotors

GS rotating bodies
 . rotors
 . . **tail rotors**
 . . . helicopter tail rotors
 RT helicopter control
 rotary wings

∞ rotor blades

tail surfaces

GS **tail surfaces**
 . horizontal tail surfaces
 . sweptback tail surfaces
 . T tail surfaces
 . trapezoidal tail surfaces
 RT control surfaces
 elevators (control surfaces)
 rudders
 stabilizers (fluid dynamics)
 ∞ surfaces

tailless aircraft

UF *flying wing aircraft*
 GS **tailless aircraft**
 . AVRO 707 aircraft
 . B-58 aircraft
 . F-102 aircraft
 . F-106 aircraft
 . FD 2 aircraft
 . HP-115 aircraft
 . Mirage 3 aircraft
 . SC-1 aircraft
 . Vulcan aircraft
 . X-36 aircraft
 . X-45 aircraft
 RT ∞ aircraft
 blended-wing-body configurations
 jet aircraft
 ∞ low wing aircraft
 ∞ military aircraft
 monoplanes
 research aircraft

tailoring

USE **design**

tails (assemblies)

USE **tail assemblies**

Taiwan

UF *Republic of China*
 GS nations
 . **Taiwan**
 RT Asia
 China
 Chinese space program
 Chinese spacecraft
 Hong Kong

Tajikistan

(*added August 1993*)
 GS nations
 . **Tajikistan**
 RT Asia

takeoff

DEF The action of a rocket vehicle departing from its launch pad. The action of an aircraft as it becomes airborne.

GS **takeoff**
 . vertical takeoff
 RT air traffic control
 ascent
 climbing flight
 JATO engines
 landing
 maneuvers
 runways

takeoff runs

RT aircraft performance
 distance
 runway alignment
 short takeoff aircraft

takeoff systems

USE **aircraft launching devices**

talc

UF *steatite*
 GS magnesium compounds
 . **talc**
 minerals
 . **talc**
 silicon compounds
 . silicates
 . . sodium silicates

. . . **talc**
 sodium compounds
 . sodium silicates
 . . **talc**

talking

GS speech
 . **talking**
 RT sentences
 signal transmission

Talon aircraft

USE **T-38 aircraft**

Talos missile

GS missiles
 . surface to air missiles
 . . **Talos missile**
 RT Bumblebee project
 liquid propellant rocket engines
 multistage rocket vehicles
 solid propellant rocket engines

tandem mirrors

GS mirrors
 . magnetic mirrors
 . . **tandem mirrors**
 RT fusion reactors
 mirror fusion
 plasma control
 thermal barriers (plasma control)

tandem rotor helicopters

GS V/STOL aircraft
 . rotary wing aircraft
 . . helicopters
 . . . **tandem rotor helicopters**
 CH-46 helicopter
 CH-47 helicopter
 H-25 helicopter
 RT ∞ aircraft

tandem wing aircraft

DEF An aircraft configuration having two wings of similar span, mounted in tandem.

GS **tandem wing aircraft**
 . X-19 aircraft
 . X-22A aircraft
 RT ∞ aircraft
 biplanes
 canard configurations
 dual wing configurations
 jet aircraft
 joined wings
 research aircraft
 ∞ subsonic aircraft
 X-22 aircraft

tangential blowing

(*added October 1996*)
 GS blowing
 . **tangential blowing**
 RT boundary layer control
 chords (geometry)
 circulation control airfoils
 jet flaps
 lift augmentation
 spanwise blowing
 wing slots

tangents

GS analysis (mathematics)
 . real variables
 . . periodic functions
 . . . trigonometric functions
 **tangents**
 functions (mathematics)
 . transcendental functions
 . . periodic functions
 . . . trigonometric functions
 **tangents**
 geometry
 . Euclidean geometry
 . . analytic geometry
 . . . **tangents**
 RT chords (geometry)

tangling

RT confusion
 entrapment

tank geometry

mixing

tank geometry
GS geometry
 . **tank geometry**
RT liquid sloshing
 propellant tanks
 storage tanks
 tanks (containers)
 ullage

tank trucks
GS surface vehicles
 . motor vehicles
 . . trucks
 . . . **tank trucks**
RT ∞ tankers
 trailers

tanker aircraft
GS transport aircraft
 . **tanker aircraft**
RT air to air refueling
 ∞ aircraft
 aircraft fuels
 bomber aircraft
 fuel tanks
 ∞ military aircraft
 ∞ tankers
 Valiant aircraft

tanker ships
GS surface vehicles
 . cargo ships
 . . **tanker ships**
 water vehicles
 . ships
 . . cargo ships
 . . . **tanker ships**
RT artificial harbors
 deepwater terminals
 harbors
 marine transportation
 offshore docking
 offshore platforms
 shipyards
 ∞ tankers
 wharves

tanker terminals
RT artificial harbors
 cargo ships
 deepwater terminals
 marine technology
 oceanography
 offshore docking
 offshore platforms
 ship terminals
 ∞ tankers
 terminal facilities
 transportation

∞ **tankers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT artificial harbors
 deepwater terminals
 offshore docking
 offshore platforms
 tank trucks
 tanker aircraft
 tanker ships
 tanker terminals
 transportation energy

tanks (combat vehicles)
GS surface vehicles
 . **tanks (combat vehicles)**
RT armed forces
 military operations
 ∞ military vehicles
 ordnance
 ∞ vehicles
 weapons

tanks (containers)
GS **tanks (containers)**
 . bunkers (fuel)
 . cylindrical tanks
 . external tanks

. fuel tanks
 . wing tanks
 . cryogenic tanks
 . propellant tanks
 . spherical tanks
 . storage tanks
RT basins (containers)
 bottles
 chemical reactors
 ∞ containers
 drums (containers)
 fluid filled shells
 liquid filled shells
 materials handling
 pipe nozzles
 pressure vessels
 receivers
 ∞ structures
 tank geometry
 towers
 wing-fuselage stores

tantalum
GS chemical elements
 . **tantalum**
 . . tantalum isotopes
 metals
 . refractory metals
 . . **tantalum**
 . . . tantalum isotopes
 transition metals
 . . **tantalum**
 . . . tantalum isotopes
 refractory materials
 . refractory metals
 . . **tantalum**
 . . . tantalum isotopes

tantalum alloys
GS alloys
 . heat resistant alloys
 . . refractory metal alloys
 . . . **tantalum alloys**
 refractory materials
 . refractory metal alloys
 . . **tantalum alloys**
RT hafnium alloys

tantalum carbides
GS carbon compounds
 . carbides
 . . **tantalum carbides**
 tantalum compounds
 . **tantalum carbides**

tantalum compounds
GS **tantalum compounds**
 . tantalum carbides
 . tantalum nitrides
 . tantalum oxides
RT ∞ chemical compounds
 ∞ Group 5B compounds
 ∞ metal compounds

tantalum isotopes
GS chemical elements
 . nuclides
 . . isotopes
 . . . **tantalum isotopes**
 . tantalum
 . . **tantalum isotopes**
 metals
 . refractory metals
 . . tantalum
 . . . **tantalum isotopes**
 transition metals
 . . tantalum
 . . . **tantalum isotopes**
 refractory materials
 . refractory metals
 . . tantalum
 . . . **tantalum isotopes**

tantalum nitrides
GS nitrogen compounds
 . nitrides
 . . metal nitrides
 . . . **tantalum nitrides**
 tantalum compounds

. **tantalum nitrides**

tantalum oxides
GS chalcogenides
 . oxides
 . . metal oxides
 . . . **tantalum oxides**
 tantalum compounds
 . **tantalum oxides**

Tanzania
GS nations
 . **Tanzania**
RT Africa

tape recorders
UF *magnetic tape recorders*
GS recording instruments
 . **tape recorders**
 . . video tape recorders
RT data recorders
 electronic recording systems
 magnetic tape transports
 magnetic tapes
 ∞ recorders
 recording heads

taper
USE **tapering**

tapered columns
GS structural members
 . columns (supports)
 . . **tapered columns**

tapered wings
USE **swept wings**

tapering
UF *taper*
RT convergence
 deceleration
 ∞ reduction

∞ **tapes**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT adhesives
 audio tapes
 computer compatible tapes
 fasteners
 heat tapes
 magnetic tapes
 plastic tapes
 playbacks
 punched tapes
 ribbons
 seals (stoppers)
 splicing
 video tapes

taps
RT cutters
 drills
 machine tools
 tools

tar sands
GS resources
 . Earth resources
 . . **tar sands**
 sediments
 . sands
 . . **tar sands**
 soils
 . sands
 . . **tar sands**
RT distillation
 oil exploration
 oil fields
 oils
 tars

TARE (data reduction)
USE **data reduction**

target acquisition
DEF The process of optically, manually, mechanically, or electronically orienting tracking

systems in the direction and range to lock on a target.

- GS acquisition
 - . **target acquisition**
- RT detection
 - high alt target and background measurement
 - MATTS (systems)
 - missile detection
 - moving target indicators
 - multiple target tracking
 - sound ranging
 - surveillance
 - targets

target drone aircraft

- GS drone vehicles
 - . drone aircraft
 - . . **target drone aircraft**
 - . . . Firebee 2 target drone aircraft
 - . . . Jindivik target aircraft
 - pilotless aircraft
 - drone aircraft
 - . . **target drone aircraft**
 - . . . Firebee 2 target drone aircraft
 - . . . Jindivik target aircraft
- RT ∞ aircraft
 - ∞ military aircraft
 - remotely piloted vehicles
 - targets

target masking

DEF Technique used in vision contrast discrimination testing involving the ratio of the luminance of a target (object) to the luminance of the background, especially when light and dark adaptation are factors.

- GS masking
 - . **target masking**
- RT countermeasures
 - stealth technology
 - targets

target penetration

USE **terminal ballistics**

target recognition

- GS detection
 - . **target recognition**
 - recognition
 - . **target recognition**
- RT discrimination
 - laser target designators
 - missile detection
 - missile signatures
 - multiple target tracking
 - multistatic radar
 - nap-of-the-earth navigation
 - radar homing missiles
 - radar signatures
 - signature analysis
 - signatures
 - stealth technology
 - surveillance
 - targets
 - TRADEX radar system

target simulators

- GS simulators
 - . **target simulators**
- RT computerized simulation
 - display devices
 - scene generation

target thickness

- GS dimensions
 - . **target thickness**
- RT particle accelerator targets
 - targets
 - thickness

target tracking

USE **tracking (position)**

targets

DEF Objects or points toward which something is directed. Objects which reflect a sufficient amount of a radiated signal to produce an echo signal on detection equipment. Used for towed targets.

- UF *towed targets*
- GS **targets**
 - . Jindivik target aircraft
 - . laser targets
 - . particle accelerator targets
 - . radar targets
 - . . radar target scatter site program
- RT Airborne Integrated Reconnaissance System
 - command and control
 - detection
 - Firebee 2 target drone aircraft
 - irradiation
 - laser target designators
 - laser target interactions
 - line of sight
 - microballoons
 - ∞ missions
 - multiple target tracking
 - radar echoes
 - Sandpiper target missile
 - surveillance
 - target acquisition
 - target drone aircraft
 - target masking
 - target recognition
 - target thickness

tars

- GS products
 - . petroleum products
 - . . **tars**
- RT asphalt
 - gums (substances)
 - pitch (material)
 - tar sands

tartar missile

- GS missiles
 - . anti-aircraft missiles
 - . . **tartar missile**
 - . surface to air missiles
 - . . **tartar missile**
- RT AJ-10 engine
 - Bumblebee project
 - solid propellant rocket engines

task complexity

- GS complexity
 - . **task complexity**
- RT costs
 - ∞ performance
 - quality control
 - scheduling

task planning (robotics)

- (added December 1990)
- GS planning
 - . **task planning (robotics)**
 - RT robotics
 - robots
 - scheduling
 - tasks
 - teleoperators
 - telerobotics

tasks

- UF *jobs*
- GS **tasks**
 - . auditory tasks
 - . visual tasks
- RT costs
 - crew procedures (inflight)
 - crew procedures (preflight)
 - ∞ elements
 - matrix management
 - physical work
 - projects
 - quality control
 - retraining
 - scheduling
 - task planning (robotics)
 - ∞ tests

Tasmania

- GS landforms
 - . islands
 - . . **Tasmania**

RT Australia

taste

- UF *gustatory perception*
- GS perception
 - . sensory perception
 - . . **taste**
- RT chemoreceptors
 - synthetic food

TATB

- UF *triaminotrinetrobenzene*
- GS explosives
 - . **TATB**
 - propellants
 - . rocket propellants
 - . . **TATB**
- RT rocket oxidizers

Taurid meteoroids

- GS celestial bodies
 - . meteoroid showers
 - . . **Taurid meteoroids**
 - . meteoroids
 - . . **Taurid meteoroids**

Taurus constellation

- GS constellations
 - . **Taurus constellation**
- RT Crab nebula
- Pleiades cluster
- T Tauri stars

tautomers

- RT congeners
 - isomers

taxiing

- RT air traffic control
 - airfield surface movements
 - runways

taxonomy

- RT classifications
 - ∞ classifying
 - ∞ science
 - ∞ zoology

Taylor instability

- GS dynamic characteristics
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **Taylor instability**
 - . flow characteristics
 - . . flow stability
 - . . . **Taylor instability**
 - stability
 - . dynamic stability
 - . . motion stability
 - . . . flow stability
 - **Taylor instability**
- RT density distribution
 - Goertler instability
 - interface stability
 - perturbation theory
 - rotating fluids
 - two dimensional flow

Taylor manifest anxiety scale

- RT anxiety
 - physiological tests
 - psychological effects
 - psychological tests

Taylor series

- UF *Taylor theorem*
- GS analysis (mathematics)
 - . calculus
 - . . series (mathematics)
 - . . . power series
 - **Taylor series**
 - MacLaurin series
 - real variables
 - . . . series (mathematics)
 - . . . power series
 - **Taylor series**
 - MacLaurin series

TD satellites

RT theorems

Taylor theorem
USE **Taylor series**

Taylor-Goertler instability
USE **Goertler instability**

TCG (tracking)
USE **transponder control group**

TCV program
USE **Terminal Configured Vehicle Program**

TD satellites
GS artificial satellites
. ESA satellites
. . . **TD satellites**
. . . TD-1 satellite
. synchronous satellites
. . . **TD satellites**
. . . TD-1 satellite
ESA spacecraft
. ESA satellites
. . . **TD satellites**
. . . TD-1 satellite

TD-1 satellite
GS artificial satellites
. ESA satellites
. . . TD satellites
. . . **TD-1 satellite**
. synchronous satellites
. . . TD satellites
. . . **TD-1 satellite**
ESA spacecraft
. ESA satellites
. . . TD satellites
. . . **TD-1 satellite**

TDMA
USE **time division multiple access**

TDR satellites
DEF Orbiting communications satellites, developed by NASA to relay data from satellite sensors to groundstations and to track the satellites in orbit.
UF *Tracking and Data Relay Satellites*
GS artificial satellites
. communication satellites
. . . **TDR satellites**
RT autonomous spacecraft clocks
communicating
data transmission
radio relay systems
satellite networks
satellite transmission
telecommunication
telemetry

TEA lasers
UF *transversely excited atmospheric lasers*
GS stimulated emission devices
. lasers
. . . gas lasers
. . . **TEA lasers**
RT atmospheric lasers
carbon dioxide lasers
carbon monoxide lasers
chemical lasers
gas masers
HF lasers
laser modes
pulsed lasers
stimulated emission

teachers
USE **instructors**

teaching
USE **education**

teaching machines
GS training devices
. **teaching machines**
RT learning
machine learning

∞ machinery

teams
RT bureaus (organizations)
federations
institutions
organizations
projects
university program

tearing
RT mechanical properties
rupturing
shredding

tearing modes (plasmas)
DEF Explosive reconnections of energetic particle accelerations at high voltages in the magnetosphere during substorms.
RT ballooning modes
modes
plasmas (physics)

technetium
GS chemical elements
. **technetium**
metals
. transition metals
. . . **technetium**

technetium compounds
GS **technetium compounds**
. technetium fluorides
RT ∞ chemical compounds
∞ Group 7B compounds
∞ metal compounds

technetium fluorides
GS halogen compounds
. fluorine compounds
. . . fluorides
. . . **technetium fluorides**
. halides
. . . fluorides
. . . **technetium fluorides**
. metal halides
. . . **technetium fluorides**
technetium compounds
. **technetium fluorides**

technetium isotopes
GS chemical elements
. nuclides
. . . isotopes
. . . **technetium isotopes**
metals
. transition metals
. . . **technetium isotopes**

technical writing
RT abstracts
documentation
editing
records
specifications
translating

techniques
USE **methodology**

technological forecasting
GS predictions
. forecasting
. . . **technological forecasting**
. . . Delphi method (forecasting)
. . . pattern method (forecasting)
. . . probe method (forecasting)
. . . profile method (forecasting)
RT aerospace technology transfer
estimating
technology transfer

technologies
GS **technologies**
. biotechnology
. . . tissue engineering
. bubble technique
. energy technology
. . . geothermal technology
. marine technology
. military technology

. nanotechnology
. reactor technology
. small satellite technology

RT industries
low gravity manufacturing
manufacturing
nucleonics
space manufacturing
technology assessment
technology utilization
urban development

technology assessment
GS assessments
. **technology assessment**
RT Canadian space program
Communications Technology Satellite
Delphi method (forecasting)
evaluation
feasibility analysis
industries
manufacturing
pattern method (forecasting)
probe method (forecasting)
profile method (forecasting)
strategic materials
technologies
value

technology feasibility spacecraft
GS unmanned spacecraft
. **technology feasibility spacecraft**
RT scientific satellites
∞ spacecraft

technology transfer
DEF The process of converting scientific findings from research laboratories and governmental activities into commercially viable products.
GS **technology transfer**
. aerospace technology transfer
commercialization
RT communicating
communication
documentation
documents
information flow
information management
information transfer
reports
selective dissemination of information
space commercialization
Starsite program
technological forecasting
technology utilization
transferring

technology utilization
GS utilization
. **technology utilization**
RT aerospace technology transfer
Canadian space program
Communications Technology Satellite
control configured vehicles
data products
general overviews
Indian space program
industries
information transfer
laser applications
manufacturing
NASA programs
patent applications
research and development
Synchronous Earth Observatory
satellite
technologies
technology transfer

tectonic movement
USE **tectonics**

tectonics
DEF A branch of geology dealing with the broad architecture of the upper part of the Earth's crust, that is, the regional assembling of structural or deformational features, a study of their mutual relations, their origin, and their

historical evolution. Used for tectonic movement.

UF *tectonic movement*
GS geology

. tectonics

RT . . neotectonics
asthenosphere
core-mantle boundary
∞ depression
Earth movements
Earth planetary structure
fissures (geology)
geophysics
plates (tectonics)
sea floor spreading
subduction (geology)

TED

USE **transferred electron devices**

Tedlar (trademark)

USE **polyvinyl fluoride**

tee

USE **T shape**

teetering

RT ∞ motion

teeth

SN (EXCLUDES GEAR TEETH AND OTHER MECHANICAL DEVICES)

GS anatomy
. digestive system

. . teeth

RT dental calculi
dentistry
mastication
mouth
oral hygiene
tooth diseases

teflon (trademark)

GS halogen compounds
. fluorine compounds
. . fluoro compounds
. . . difluoro compounds
. . . . polytetrafluoroethylene
. **teflon (trademark)**
. . . fluorine organic compounds
. . . . fluorohydrocarbons
. polytetrafluoroethylene
. **teflon (trademark)**
. . . . fluoropolymers
. polytetrafluoroethylene
. **teflon (trademark)**
organic compounds
. fluorine organic compounds
. . fluorohydrocarbons
. . . polytetrafluoroethylene
. . . . **teflon (trademark)**
. . . fluoropolymers
. . . . polytetrafluoroethylene
. **teflon (trademark)**
. hydrocarbons
. . fluorohydrocarbons
. . . polytetrafluoroethylene
. . . . **teflon (trademark)**
plastics
. polytetrafluoroethylene
. . **teflon (trademark)**

RT ∞ polymers

resins
synthetic resins

Tektite project

GS programs
. NASA programs
. . NASA space programs
. . . **Tektite project**
. space programs
. . NASA space programs
. . . **Tektite project**

tektites

DEF Small glassy bodies containing no crystals, composed of at least 65 percent silicon dioxide, bearing no relation to the geological formations in which they occur, and believed to be of extraterrestrial origin.

GS celestial bodies

. meteorites
. . stony meteorites
. . . **tektites**
. . . . australites
. bediasites
RT chondrites
coesite
Cyrillid meteoroids
meteoritic composition
meteoritic microstructures
micrometeorites
natural satellites

telechirics

USE **remote handling**

telecommunication

DEF Any transmission, emission, or reception of signs, signals, writings, images, sounds, or information of any nature by wire, radio, visual, or electromagnetic systems.

UF *communication systems*

GS **telecommunication**

. aircraft communication
. broadcasting
. closed circuit television
. color television
. communication
. . facsimile communication
. . . automatic picture transmission
. . line of sight communication
. . optical communication
. . . free-space optical communication
. . ship to shore communication
. . underwater communication
. . voice communication
. . . telephony
. . quantum communication
. data links
. Defense Communications Satellite System
. Fleet Satellite Communication System
. defense communications system (DCS)
. educational television
. electronic mail
. ground-air-ground communication
. multichannel communication
. multiple access
. Aloha system
. carrier sense multiple access
. code division multiple access
. demand assignment multiple access
. . frequency division multiple access
. . time division multiple access
. packet transmission
. Aloha system
. PLAT system
. pulse communication
. . digital spacecraft television
. radio communication
. . radio relay systems
. . . code division multiple access
. . . time division multiple access
. . radio telegraphy
. . radio telemetry
. . . pulse frequency modulation
telemetry
. telephony
. radiotelephones
. single channel per carrier transmission
. space communication
. . extraterrestrial communication
. . interplanetary communication
. . lunar communication
. . . circumlunar communication
. . spacecraft communication
. . . reentry communication
. . . satellite communication
. . spacecraft antennas
. . spacecraft television
. . . digital spacecraft television
. . Ranger block 3 television system
. . satellite television
. stereotelevision
. telemetry

. . biotelemetry
. . P.A.C.M. telemetry
. . PCM telemetry
. . radio telemetry
. . . pulse frequency modulation
telemetry

. transoceanic communication
. video communication
. . video conferencing
. teleconferencing
. telemedicine
. wideband communication
. wireless communication
. . computer conferencing
. . HET experiment
. . video conferencing

RT

access control
antennas
ARPA computer network
automatic repeat request
∞ channels
code division multiplexing
communicating
communication networks
communication satellites
computers
data compression
data processing
data sampling
data transmission
demodulation
∞ detectors
digital systems
direct broadcast satellites
electromagnetic radiation
frequency division multiplexing
information theory
INMARSAT satellites
interfaces
interphones
modulation
Molniya satellites
Morse code
NASCOM network
networks
onboard equipment
packet switching
point to point communication
satellite antennas
Seafarer project
signal detection
signal detectors
signal encoding
signal transmission
∞ signals
∞ systems
TDR satellites
telegraph systems
teletypewriter systems
television systems
transcontinental systems
transmission
transmission circuits
transmission lines
transmission rate (communications)
transmitters
transoceanic systems
video data
VSAT (network)
Westar satellites
wide area networks

teleconferencing

GS telecommunication
. **teleconferencing**
. . computer conferencing
. . HET experiment
. . video conferencing

RT

communication satellites
conferences
multichannel communication
multimedia
satellite networks
telemedicine

teleconnections (meteorology)

DEF Statistically significant temporal correlations between meteorological parameters at widely separated points.

telegraph systems

RT climatology
correlation
data correlation
Earth atmosphere
meteorological parameters
meteorology
secular variations
significance
spatial distribution
statistical analysis
statistical correlation
synoptic meteorology
temporal distribution

telegraph systems

UF *telegraphy*
RT pulse communication
radio communication
single channel per carrier
transmission
∞ systems
telecommunication
teleprinters
teletypewriters
Westar satellites

telegraphy

USE **telegraph systems**

telemedicine

(added May 1997)

DEF The use of telecommunication technologies as a medium for providing medical services (diagnostic, therapeutic, education, and research) by health care professionals to sites that are remote from the provider.

GS telecommunication
. **telemedicine**
RT aerospace medicine
biotelemetry
diagnosis
medical electronics
medical equipment
medical science
medical services
teleconferencing

telemeters

USE **telemetry**

telemetry

DEF The science of measuring a quantity or quantities, transmitting the results to a distant station, and there interpreting, indicating, and/or recording the quantities measured. Used for telemeters.

UF *telemeters*
GS telecommunication
. **telemetry**
.. biotelemetry
.. P.A.C.M. telemetry
.. PCM telemetry
.. radio telemetry
... pulse frequency modulation
telemetry
transmission
. signal transmission
.. **telemetry**
... biotelemetry
... P.A.C.M. telemetry
... PCM telemetry
... radio telemetry
... pulse frequency modulation
telemetry
RT Advanced Range Instrumentation
Aircraft
communication equipment
data compression
data links
data retrieval
data transmission
decommutators
differential pulse code modulation
in-flight monitoring
measuring instruments
pulse communication
radio communication
ship to shore communication
signal processing

single channel per carrier
transmission
spiral antennas
TDR satellites
time division multiplexing
trajectory measurement
transponder control group
weather data recorders
wireless communication

teleoperator maneuvering system

USE **teleoperators**

teleoperators

DEF Remotely controlled mobility modules which incorporate sensory and manipulative subsystems for the purpose of extending the human operators skills and cognitive capabilities into hostile or remote environments.

UF *teleoperator maneuvering system*
GS control equipment
. **teleoperators**
RT human factors engineering
man machine systems
manipulators
remote control
remote handling
robotics
tactile sensors (robotics)
task planning (robotics)
telerobotics
torque sensors (robotics)

telephones

GS **telephones**
. radiotelephones
RT earphones
telephony
utilities

telephony

GS telecommunication
. communication
.. voice communication
... **telephony**
.. radio communication
.. **telephony**
transmission
. **telephony**
RT communication equipment
crosstalk
echo suppressors
Iridium network
radiotelephones
single channel per carrier
transmission
sound transmission
Symphonie satellites
telephones
verbal communication

telephotometers

USE **telephotometry**

telephotometry

DEF The body of principles and techniques concerned with measuring atmospheric extinction using various types of telephotometers. Used for telephotometers.

UF *telephotometers*
GS optical measurement
. photometry
.. **telephotometry**
RT astronomical photometry
optical measuring instruments
photometers
transmissometers

teleprinters

GS printers
. **teleprinters**
typewriters
. teletypewriters
.. **teleprinters**
RT keying
printers (data processing)
receivers

telegraph systems

telerobotics

(added December 1990)

GS robotics
. **telerobotics**
RT manipulators
orbital servicing
remote control
robot dynamics
robots
space tools
task planning (robotics)
teleoperators

Telesat Canada 3

USE **Anik 3**

Telesat Canada A

USE **Anik 1**

Telesat Canada B

USE **Anik 2**

Telesat Canada C

USE **Anik 3**

telescopes

UF *astronomical telescopes*
GS **telescopes**
. celescopes
. circumsolar telescopes
. gamma ray telescopes
.. Fermi Gamma-ray Space
Telescope
. grazing incidence telescopes
.. GRIST (telescope)
. heliometers
.. pyroheliometers
. infrared telescopes
.. Large Deployable Reflector
.. Space Infrared Telescope Facility
. manned orbital telescopes
.. Apollo telescope mount
. particle telescopes
. radio telescopes
.. kilometer wave orbiting telescope
.. Very Large Array (VLA)
.. Very Long Baseline Array (VLBA)
. reflecting telescopes
.. Large Deployable Reflector
.. Starsat telescope
. refracting telescopes
. Schmidt telescopes
. spaceborne telescopes
.. Constellation-X
.. Fermi Gamma-ray Space
Telescope
.. German Infrared Laboratory
.. Hubble Space Telescope
.. Infrared Space Observatory (ISO)
.. James Webb Space Telescope
.. Large Deployable Reflector
.. LIRTS (telescope)
.. solar optical telescope
.. Space Infrared Telescope Facility
.. Starlab
.. Starsat telescope
.. Wide-field Infrared Survey Explorer
.. X Ray Astrophysics Facility
.. XMM-Newton telescope
. spectroscopic telescopes
.. multispectral tracking telescopes
.. stratoscope telescopes
. ultraviolet telescopes
.. Starlab
. x ray telescopes
.. Constellation-X
.. X Ray Astrophysics Facility
.. XMM-Newton telescope
RT anisoplanatism
antennas
astronomical observatories
astronomy
balloon-borne instruments
binoculars
Cassegrain optics
coronagraphs
etalons
eyepieces

- lenses
 - mirrors
 - multi-anode microchannel arrays
 - optical coatings
 - optical equipment
 - optical measuring instruments
 - optical transfer function
 - periscopes
 - reflectors
 - Schmidt cameras
 - seeing (astronomy)
 - solar instruments
 - spaceborne astronomy
 - ultraviolet astronomy
- telescoping structures*
USE **folding structures**
- Telesio**
(added January 1996)
DEF A natural satellite of Saturn orbiting at a mean distance of 294,660 kilometers.
- GS celestial bodies
 - . natural satellites
 - . . Saturn satellites
 - . . . **Telesio**
 - RT Saturn (planet)
- teletypewriter systems**
- RT facsimile communication
 - microwave transmission
 - ∞ systems
 - telecommunication
 - teletypewriters
- teletypewriters**
- GS typewriters
 - . **teletypewriters**
 - . . teleprinters
 - RT keying
 - receivers
 - telegraph systems
 - teletypewriter systems
- television cameras**
- GS optical equipment
 - . cameras
 - . . **television cameras**
 - photographic equipment
 - . cameras
 - . . **television cameras**
 - television equipment
 - . **television cameras**
 - RT camera tubes
 - closed circuit television
 - digital cameras
 - Lallemand cameras
 - optical scanners
 - orthicons
 - raster scanning
 - return beam vidicons
 - satellite television
- television equipment**
- GS **television equipment**
 - . image dissector tubes
 - . monoscopes
 - . television cameras
 - . television receivers
 - RT cathode ray tubes
 - diplexers
 - ∞ equipment
 - flying spot scanners
 - orthicons
 - picture tubes
 - video equipment
- television receivers**
- GS receivers
 - . **television receivers**
 - television equipment
 - . **television receivers**
 - RT closed circuit television
 - tuners
- television reception**
- GS signal reception
 - . **television reception**
 - RT color television
 - radio receivers
- radio reception
 - ∞ receiving
- television systems**
- GS **television systems**
 - . Advanced Vidicon Camera System (AVCS)
 - . cable television
 - . closed circuit television
 - . color television
 - . digital television
 - . . digital spacecraft television
 - . educational television
 - . high definition television
 - . PLAT system
 - . spacecraft television
 - . . digital spacecraft television
 - . . Ranger block 3 television system
 - . . satellite television
 - . stereotelevision
 - RT communication equipment
 - Earth terminals
 - facsimile communication
 - imaging techniques
 - orbit spectrum utilization
 - radio communication
 - space communication
 - ∞ systems
 - telecommunication
 - video communication
 - video conferencing
 - video data
- television transmission**
- GS transmission
 - . electromagnetic wave transmission
 - . . **television transmission**
 - . signal transmission
 - . . **television transmission**
 - RT automatic picture transmission
 - cable television
 - closed circuit television
 - color television
 - digital television
 - direct broadcast satellites
 - double sideband transmission
 - high definition television
 - line of sight communication
 - Molniya satellites
 - radio transmitters
 - satellite television
 - satellite transmission
 - single sideband transmission
 - smear
 - spacecraft television
 - sweep frequency
 - time division multiplexing
 - transmitters
 - wave propagation
- Tellegen theory*
USE **gyrators**
- network analysis**
network synthesis
- telluric currents**
- DEF Large scale surges of electric charges within the Earth's crust, associated with disturbances of the ionosphere. Used for earth currents.
 - UF *Earth currents*
 - GS electric current
 - . **telluric currents**
 - electricity
 - . geoelectricity
 - . . **telluric currents**
 - RT atmospheric electricity
 - auroral electrojets
 - dynamo theory
 - field aligned currents
 - geomagnetic micropulsations
- telluric lines**
- DEF Absorption lines in a solar spectrum produced by constituents of the atmosphere of the Earth itself rather than by gases in the outer solar atmosphere such as those responsible for the Fraunhofer lines.
 - GS spectra
 - . radiation spectra
 - . . absorption spectra
 - . . . **telluric lines**
 - . . electromagnetic spectra
 - . . . line spectra
 - **telluric lines**
 - . spectral bands
 - . . absorption spectra
 - . . . **telluric lines**
 - RT H lines
- tellurides**
- GS chalcogenides
 - . **tellurides**
 - . . bismuth tellurides
 - . . cadmium tellurides
 - . . indium tellurides
 - . . lanthanum tellurides
 - . . lead tellurides
 - . . mercury tellurides
 - . . . mercury cadmium tellurides
 - . . tin tellurides
 - . . zinc tellurides
 - tellurium compounds
 - . **tellurides**
 - . . bismuth tellurides
 - . . cadmium tellurides
 - . . indium tellurides
 - . . lanthanum tellurides
 - . . lead tellurides
 - . . mercury tellurides
 - . . . mercury cadmium tellurides
 - . . tin tellurides
 - . . zinc tellurides
 - RT intermetallics
- tellurium**
- GS chemical elements
 - . metalloids
 - . . **tellurium**
 - . . . tellurium isotopes
 - . nuclides
 - . . isotopes
 - . . . **tellurium**
 - tellurium isotopes
- tellurium 119*
USE **tellurium isotopes**
- tellurium alloys**
- GS alloys
 - . **tellurium alloys**
- tellurium compounds**
- GS **tellurium compounds**
 - . tellurides
 - . . bismuth tellurides
 - . . cadmium tellurides
 - . . indium tellurides
 - . . lanthanum tellurides
 - . . lead tellurides
 - . . mercury tellurides
 - . . . mercury cadmium tellurides
 - . . tin tellurides
 - . . zinc tellurides
 - RT ∞ chemical compounds
 - ∞ Group 6A compounds
- tellurium isotopes**
- UF *tellurium 119*
 - GS chemical elements
 - . metalloids
 - . . tellurium
 - . . . **tellurium isotopes**
 - . nuclides
 - . . isotopes
 - . . . tellurium
 - **tellurium isotopes**
- tellurometers**
- GS measuring instruments
 - . distance measuring equipment
 - . . **tellurometers**
 - RT geodimeters
 - range finders
- telomeres**
(added October 2004)
DEF Terminal section of a chromosome involved in chromosomal replication and stability.
- RT chromosome aberrations

Telstar 1 satellite

chromosomes
genes

Telstar 1 satellite

GS artificial satellites
. Telstar satellites
. . **Telstar 1 satellite**

Telstar 2 satellite

GS artificial satellites
. Telstar satellites
. . **Telstar 2 satellite**

Telstar project

GS programs
. projects
. . **Telstar project**
RT artificial satellites
communication satellites
Comsat program

Telstar satellites

GS artificial satellites
. **Telstar satellites**
. . Telstar 1 satellite
. . Telstar 2 satellite
RT Comsat program
Thor Delta launch vehicle

TEM (microscopy)

USE **transmission electron microscopy**

Tempel 1 comet

(added July 2005)

GS celestial bodies
. comets
. . **Tempel 1 comet**
RT Deep Impact Mission
hypervelocity impact
hypervelocity projectiles
impact damage
projectile cratering
Tempel 2 comet

Tempel 2 comet

DEF A comet for which a spacecraft rendezvous had been planned for 1988 because of its accessible orbit. It has been replaced by a planned spacecraft rendezvous with the Wild 2 comet in 1994.

GS celestial bodies
. comets
. . **Tempel 2 comet**
RT ∞ coma
meteoroids
solar system
Tempel 1 comet

temper (metallurgy)

RT cold working
ductility
hardness
heat treatment
tempering

temperate regions

UF *midlatitudes*
subtropical regions
GS regions
. **temperate regions**
RT climatology
geography
polar regions
tropical regions

temperature

DEF In general, the intensity of heat as measured on some definite temperature scale by means of any of various types of thermometers. In statistical mechanics, a measure of translational molecular kinetic energy (with three degrees of freedom). In thermodynamics, the integrating factor of the differential equation referred to as the first law of thermodynamics. Used for body temperature (non-biological).

UF *body temperature (non-biological)*
GS **temperature**
. absolute zero
. ambient temperature
. atmospheric temperature

. . auroral temperature
. . ionospheric temperature
. body temperature
. brightness temperature
. combustion temperature
. critical temperature
. Curie temperature
. flame temperature
. gas temperature
. glass transition temperature
. high temperature
. ignition temperature
. . flash point
. inlet temperature
. ion temperature
. low temperature
. . cryogenic temperature
. lunar temperature
. neel temperature
. noise temperature
. operating temperature
. planetary temperature
. plasma temperature
. room temperature
. satellite temperature
. skin temperature (biology)
. solar temperature
. space temperature
. spin temperature
. stagnation temperature
. stellar temperature
. subzero temperature
. surface temperature
. . land surface temperature
. . sea surface temperature
. . skin temperature (non-biological)
. . wall temperature
. transition temperature
. water temperature
. . ocean temperature
. . . sea surface temperature
RT ablative materials
adiabatic conditions
air conditioning
biological effects
climatology
comfort
convective flow
electron energy
emissivity
environments
free convection
geotemperature
Gibbs-Helmholtz equations
heat
heat shielding
heat storage
heating
humidity
isotherms
lapse rate
melting points
meteorology
ocean thermal energy conversion
refrigerating
Saha equations
surface cooling
temperature compensation
temperature control
temperature dependence
temperature distribution
temperature effects
temperature gradients
temperature inversions
temperature measurement
temperature measuring instruments
temperature probes
temperature profiles
temperature ratio
temperature scales
temperature sensors
tephigrams
thermal absorption
thermal analysis
thermal blooming
thermal boundary layer
thermal buckling
thermal comfort
thermal conductivity

thermal conductivity gages
thermal conductors
thermal control coatings
thermal cycling tests
thermal decomposition
thermal degradation
thermal diffusion
thermal diffusivity
thermal dissociation
thermal emission
thermal energy
thermal environments
thermal expansion
thermal fatigue
thermal instability
thermal insulation
thermal mapping
thermal neutrons
thermal noise
thermal plasmas
thermal pollution
thermal protection
thermal radiation
thermal reactors
thermal resistance
thermal resources
thermal shock
thermal simulation
thermal stability
thermal stresses
thermal vacuum tests
thermodynamic efficiency
thermodynamic properties
ventilation

temperature compensation

GS instrument compensation
. **temperature compensation**
RT ∞ compensation
temperature

temperature control

UF *heat regulation*
RT air conditioning
automatic control
automatic control valves
capillary pumped loops
chemical reaction control
combustion control
 ∞ control
controllers
cooling
cooling systems
cryostats
engine control
environmental control
environmental engineering
exhaust systems
heat shielding
heating
heating equipment
high temperature tests
infrared suppression
low temperature tests
manual control
plasma cooling
refrigerating
refrigerating machinery
remote control
reusable heat shielding
space cooling (buildings)
space heating (buildings)
spacecraft temperature
temperature
thermal control coatings
thermal cycling tests
thermal insulation
thermochromic coatings
thermometers
thermoregulation
thermostats
transpiration
ventilation
water heating

temperature dependence

DEF The characteristic of a material which is dependent on changes in the ambient temperature.
GS dependence

- . **temperature dependence**
- RT heat affected zone
hot corrosion
miscibility gap
temperature
temperature effects
thermal degradation
thermal stability
- temperature differences*
- USE **temperature gradients**
- temperature distribution**
- UF *temperature fields*
- GS distribution (property)
- . **temperature distribution**
- RT air conditioning
cooling
cooling systems
environmental engineering
field theory (physics)
heat treatment
heating
isothermal flow
isothermal layers
isotherms
ocean temperature
refrigerating
satellite temperature
temperature
thermal mapping
thermal resources
thermal shock
thermal stresses
thermography
ventilation
vertical distribution
water temperature
- temperature effects**
- UF *heat effects*
photothermotropism
Richardson-Dushman equation
thermal effects
thermotropism
- RT ablation
absolute zero
chemical effects
- ∞ effects
Ettingshausen effect
glass transition temperature
heat affected zone
jet blast effects
magnetic effects
Nernst-Ettingshausen effect
Peltier effects
pressure effects
- ∞ radiation
reentry effects
Seebeck effect
shape memory alloys
solar granulation
sterilization effects
temperature
temperature dependence
thermal buckling
thermal degradation
thermal dissociation
thermal resistance
thermal stresses
thermogravimetry
thermoluminescence
thermophoresis
thermoplasticity
time temperature parameter
- temperature fields*
- USE **temperature distribution**
- temperature gradients**
- UF *temperature differences*
- GS gradients
- . **temperature gradients**
- . . . thermoclines
- RT atmospheric temperature
bathythermographs
Chapman-Enskog theory
convective heat transfer
isothermal layers
isotherms
- nonisothermal processes
ocean temperature
potential gradients
stratification
temperature
temperature
thermal analysis
thermal mapping
thermocapillary migration
thermomigration
thermophoresis
- temperature indicators*
- USE **indicating instruments**
temperature measuring instruments
- temperature instruments*
- USE **temperature measuring instruments**
- temperature inversions**
- GS inversions
- . **temperature inversions**
- RT air pollution
atmospheric temperature
bending
birefringence
buckling
cracking (fracturing)
cracks
creep properties
deflection
deformation
displacement
distortion
failure
fatigue (materials)
internal pressure
lapse rate
mechanical properties
meteorological parameters
meteorology
photoelastic analysis
plastic deformation
pressure
pressure effects
residual stress
Saint Venant principle
shear properties
shrinkage
strain gages
strain hardening
strain rate
stress analysis
stress relaxation
stress waves
stresses
structural strain
temperature
tensile deformation
- ∞ tension
tephigrams
torsion
volumetric strain
x ray stress analysis
yield strength
- temperature measurement**
- UF *pyrometry*
thermometry
- RT anomalous temperature zones
bolometers
brightness temperature
crayons
gas temperature
high temperature
in situ measurement
∞ measurement
noise temperature
nonintrusive measurement
pyrometers
radiation pyrometers
resistance thermometers
satellite temperature
sound detecting and ranging
temperature
temperature sensitive paints
thermocouple pyrometers
thermocouples
thermography
- thermometers
wind tunnel calibration
- temperature measuring instruments**
- UF *temperature indicators*
temperature instruments
thermograms
- GS measuring instruments
- . **temperature measuring instruments**
- . . . bathythermographs
. . . optical pyrometers
. . . pneumatic probes
. . . pyrometers
. . . . radiation pyrometers
. . . . thermocouple pyrometers
. . . temperature probes
. . . thermometers
. . . . resistance thermometers
- RT anomalous temperature zones
bolometers
bomb calorimeters
calorimeters
drop calorimeters
flame calorimeters
flame probes
temperature
thermistors
thermocouples
thermopiles
thermostats
transducers
- temperature probes**
- GS measuring instruments
. temperature measuring instruments
- . . **temperature probes**
- RT temperature
thermocouples
- temperature profiles**
- RT heat transfer
temperature
thermal analysis
- temperature ratio**
- GS ratios
- . **temperature ratio**
- RT data correlation
heat transfer
temperature
- temperature scales**
- UF *fahrenheit temperature scale*
international practical temperature
- RT absolute zero
anomalous temperature zones
calibrating
- ∞ scale
standards
temperature
thermometers
- temperature sensitive paints**
(added January 2003)
- DEF Luminescent paints which react differentially to temperature by emitting varying amounts of visible light.
- GS coatings
. paints
. . **temperature sensitive paints**
- RT aerodynamic heating
fluorescence
heat transfer
luminescence
nonintrusive measurement
surface temperature
temperature measurement
thermal analysis
thermochromic coatings
- temperature sensors**
- GS **temperature sensors**
- . thermistors
- RT anomalous temperature zones
temperature
- tempering**
- GS heat treatment
. **tempering**

templates

RT annealing
∞ drawing
hardening (materials)
laser annealing
metal working
normalizing (heat treatment)
stress relieving
stretching
temper (metallurgy)

templates
RT lofting
molds
∞ patterns

temporal distribution
DEF The statistical distribution based on time of phenomena, occurrences or events.
RT annual variations
spatial distribution
teleconnections (meteorology)
time dependence
∞ time response

temporal logic
(added October 1994)
DEF A logic that can express properties involving the sequencing of events in time.
RT discriminant analysis (statistics)
∞ logic
logic programming
mathematical logic
sequential analysis
temporal resolution

temporal resolution
DEF The precision with which an optical instrument or a system differentiates between time intervals. Used for multitemporal analysis.
UF *multitemporal analysis*
GS resolution
. **temporal resolution**
RT spatial resolution
temporal logic

tendencies
RT ∞ inclination

tendons
GS anatomy
. musculoskeletal system
. . . muscles
. . . **tendons**
RT connective tissue
fibroblasts

tenite
RT cellulose
molding materials

Tenma satellite
(added June 1992)
GS artificial satellites
. scientific satellites
. . . astronomical satellites
. . . **Tenma satellite**
Japanese spacecraft
. **Tenma satellite**
observatories
. astronomical observatories
. . . astronomical satellites
. . . **Tenma satellite**
RT Japanese space program
x ray astronomy
x ray spectra
x ray stars

Tennessee
GS nations
. United States
. . . **Tennessee**
RT Great Smoky Mountains (NC-TN)
Tennessee Valley (AL-KY-TN)

Tennessee Valley (AL-KY-TN)
GS valleys
. **Tennessee Valley (AL-KY-TN)**
RT Alabama
Kentucky

Tennessee

tensegric structures
(added January 2001)
USE **tensegrity structures**

tensegrity structures
(added January 2001)
DEF A class of prestressed structures whose shape is guaranteed by the interaction between a continuous network of members in tension and a discontinuous network of members in compression. These members can serve simultaneously as sensors, actuators, and load carrying elements. The word tensegrity is a contraction of "tensional integrity".
UF *tensegric structures*
tensile-integrity structures
RT isotensoid structures
prestressing
smart structures
structural design
∞ structures

tensile creep
GS mechanical properties
. creep properties
. . . **tensile creep**
RT plastic deformation
shear creep

tensile deformation
GS deformation
. **tensile deformation**
RT elastic deformation
elongation
plastic deformation
temperature inversions

tensile properties
GS mechanical properties
. **tensile properties**
. . . tensile strength
RT elastic properties
high strength alloys
∞ properties

tensile strength
DEF The property of solid material that indicates its ability to withstand a uniaxial tensile load.
GS mechanical properties
. tensile properties
. . . **tensile strength**
RT ductility
elastic properties
elongation
fiber strength
high strength
hysteresis
load carrying capacity
Poisson ratio
residual strength
resilience
shear strength
∞ strength
toughness

tensile stress
DEF Normal stress tending to lengthen the body in the direction in which it acts.
GS stresses
. **tensile stress**
RT axial stress
high strength
hoops
interfacial tension
stress intensity factors
∞ tension
triaxial stresses

tensile tests
RT destructive tests
fatigue tests
load tests
specimen geometry
static tests

∞ tests

tensile-integrity structures
(added January 2001)
USE **tensegrity structures**

tensiometers
GS measuring instruments
. **tensiometers**
RT cable force recorders
mechanical measurement

∞ **tension**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT blood pressure
interfacial tension
partial pressure
stretching
temperature inversions
tensile stress

tensometers
GS measuring instruments
. **tensometers**
RT deformeters
extensometers
strain gages
stress measurement
weight indicators

tensor analysis
GS geometry
. differential geometry
. . . **tensor analysis**
RT relativity
scalars
scalars
tensors

tensor fields
USE **tensors**

tensors
DEF Arrays of functions which obey certain laws of transformation. A one row or one column tensor array is a vector. Used for tensor fields and transformation tensors.
UF *tensor fields*
transformation tensors
GS algebra
. **tensors**
. . . stress tensors
RT field theory (physics)
Jordan form
scalars
tensor analysis

tephigrams
GS diagrams
. **tephigrams**
RT atmospheric turbulence
entropy
lapse rate
temperature
temperature inversions
thermodynamic properties

terbium
GS chemical elements
. rare earth elements
. . . **terbium**
. . . terbium isotopes
metals
. rare earth elements
. . . **terbium**
. . . terbium isotopes
RT terbium compounds

terbium 155
USE **terbium isotopes**

terbium 161
USE **terbium isotopes**

terbium compounds
GS rare earth compounds
. **terbium compounds**

- RT terbium
- terbium isotopes**
 UF *terbium 155*
terbium 161
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **terbium isotopes**
 . rare earth elements
 . . terbium
 . . . **terbium isotopes**
 metals
 . rare earth elements
 . . terbium
 . . . **terbium isotopes**
- TERCOM**
 UF *Terrain Contour Matching Navigation System*
 GS navigation aids
 . **TERCOM**
 onboard equipment
 . airborne equipment
 . . **TERCOM**
 . aircraft equipment
 . . **TERCOM**
 RT display devices
 flight instruments
 map matching guidance
 navigation instruments
 ∞ systems
 video landmark acquisition and tracking
- terephthalate**
 GS **terephthalate**
 . polyethylene terephthalate
 RT carboxylic acids
 dicarboxylic acids
- terminal area energy management**
 DEF Automated guidance and landing system for the Space Shuttle orbiter.
 GS management
 . **terminal area energy management**
 RT digital techniques
 Space Shuttle orbiters
 space transportation
 spacecraft landing
- terminal ballistics**
 DEF That branch of ballistics dealing with the motion and behavior of projectiles at the termination of their flight, or in striking and penetrating a target. Used for penetration ballistics, projectile penetration, and target penetration.
 UF *penetration ballistics*
projectile penetration
target penetration
 GS ballistics
 . **terminal ballistics**
 RT energy transfer
 fragmentation
 impact velocity
 missiles
 penetration
 precision guided projectiles
 projectiles
- Terminal Configured Vehicle Program**
 DEF NASA Program for determining configurations for short haul transport aircraft, including V/STOL and VTOL aircraft. Used for TCV program.
 UF *TCV program*
 GS programs
 . NASA programs
 . . **Terminal Configured Vehicle Program**
 RT aircraft design
 automatic control
 automatic flight control
 automatic landing control
 electronic control
 feedback control
- ∞ vehicles
- terminal facilities**
 GS **terminal facilities**
 . ship terminals
 RT artificial harbors
 deepwater terminals
 ∞ facilities
 harbors
 offshore docking
 offshore platforms
 site selection
 tanker terminals
 ∞ terminals
 transportation
 wharves
- terminal guidance**
 GS guidance (motion)
 . **terminal guidance**
 . . laser guidance
 RT autonomous docking
 command guidance
 descent trajectories
 entry guidance (STS)
 glide paths
 homing
 inertial guidance
 midcourse guidance
 proportional navigation
 reentry
 reentry guidance
 reentry trajectories
 reentry vehicles
 rendezvous guidance
 spacecraft guidance
- terminal velocity**
 DEF The maximum velocity attainable, especially by a free falling body, under given conditions.
 GS rates (per time)
 . **terminal velocity**
 velocity
 . **terminal velocity**
 RT gravitation
 impact velocity
- ∞ **terminals**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT connectors
 data processing terminals
 electric terminals
 ∞ headers
 jumpers
 outlets
 ship terminals
 terminal facilities
- terminating*
 USE **stopping**
- terminator lines**
 RT ∞ lines
 lunar phases
 ∞ phases
 sunrise
 sunset
- terminology**
 RT abbreviations
 dictionaries
 indexing (information science)
 nomenclatures
 thesauri
 words (language)
- terms**
 RT indexing (information science)
 information theory
 thesauri
 words (language)
- ternary alloys**
 GS alloys
 . **ternary alloys**
 . . Astroloy (trademark)
 RT alloying
 antiphase boundaries
- cluster variation method
- ternary systems**
 RT alloys
 binary systems (materials)
 solid solutions
 ∞ systems
- ternary systems (digital)*
 USE **digital systems**
- terpenes**
 DEF A class of unsaturated organic compounds having the empirical formula C₁₀H₁₆ occurring in most essential oils and oleoresinous plants. Structurally the important terpenes and their derivatives are classified as monocyclic (dipentene), bicyclic (pinene), and acyclic (myrcene).
 GS **terpenes**
 . abscisic acid
 . azulene
 . camphor
 . mecamlamine
 . menthol
 . turpentine
 RT aliphatic hydrocarbons
 alkenes
 carotenoids
- terphenyls**
 GS phenyls
 . **terphenyls**
- Terra spacecraft**
(added June 1999)
 DEF First in a series of EOS (Earth Observing System) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. The spacecraft carries five high-resolution instruments: the Advanced Spaceborne Thermal Emission Radiometer (ASTER), the Clouds and the Earth Radiant Energy System (CERES), the Multi-Angle Imaging Spectroradiometer (MISR), the Moderate Resolution Imaging Spectroradiometer (MODIS), and the Measurements of Pollution in the Troposphere (MOPITT) instrument.
 UF *AM-1 (EOS) spacecraft*
EOS AM-1 spacecraft
 GS artificial satellites
 . **Terra spacecraft**
 Earth Observing System (EOS)
 . **Terra spacecraft**
 RT Aqua spacecraft
 Aura spacecraft
 CERES (experiment)
 data products
 Earth observations (from space)
 MISR (radiometry)
 MODIS (radiometry)
 remote sensing
- terraces (landforms)**
 GS landforms
 . **terraces (landforms)**
 . . plateaus
 . . . Allegheny Plateau (US)
 . . . Colorado Plateau (US)
 . . . Great Basin (US)
 . . . mesas
 buttes
 piedmonts
 Central Piedmont (US)
 RT formations
 mountains
- terradynamics**
 RT ∞ dynamics
 Earth surface
 geodynamics
 projectiles
 sea floor spreading
- terraforming**
(added September 1993)
 RT environmental engineering
 exobiology
 lunar bases

terrain

lunar environment
manned Mars missions
Mars (planet)
Mars environment
Mars surface
moon
planetary atmospheres
planetary environments
space colonies
space habitats
Venus surface

terrain

UF *landscape*
GS *topography*
. **terrain**
RT digital elevation models
geomorphology
landforms
landmarks

terrain analysis

UF *SATAN (sensor)*
RT ∞ analyzing
change detection
digital elevation models
Earth analogs
Earth resources
EROS (satellites)
geographic applications program
hologrammetry
mapping
multisensor fusion
nap-of-the-earth navigation
photogrammetry
reconnaissance
satellite surfaces
soil mapping
soil sampling
video landmark acquisition and tracking

Terrain Contour Matching Navigation System
USE **TERCOM**

terrain following

(added February 1995)
DEF The flight path of an aircraft, helicopter, or missile at a constant altitude above the terrain or highest obstacle. The altitude constantly changes to conform to the varying height of the terrain and/or obstacles.
GS maneuvers
. **terrain following**
navigation
. air navigation
. . . nap-of-the-earth navigation
. . . **terrain following**
RT attack aircraft
cruise missiles
evasive actions
flight envelopes
hovering
low altitude
map matching guidance
military helicopters
obstacle avoidance
penetration

terrestrial dust belt

GS particles
. dust
. . . **terrestrial dust belt**
RT ∞ belts
cosmic dust
gegenschlein
meteoroid dust clouds
micrometeoroids
zodiacal dust

terrestrial magnetism

USE **geomagnetism**

terrestrial planets

DEF The four small planets nearest the sun (Earth, Mercury, Venus, and Mars).
GS celestial bodies
. planets
. . . **terrestrial planets**
. . . Earth (planet)

. . . Mars (planet)
. . . Mercury (planet)
. . . Venus (planet)
RT celestial mechanics
Mercury surface
planetary environments
planetology
solar system

terrestrial radiation

SN (EXCLUDES ATMOSPHERIC RADIATION AND REFLECTED VISIBLE LIGHT)
UF *Earth radiation*
GS electromagnetic radiation
. **terrestrial radiation**
RT atmospheric radiation
CERES (experiment)
Earth (planet)
Earth albedo
Earth radiation budget
Earth radiation budget experiment
extraterrestrial radiation
far infrared radiation
greenhouse effect
infrared radiation
MISR (radiometry)
near infrared radiation
planetary radiation
∞ radiation
tropospheric radiation

terrier missile

GS missiles
. antiaircraft missiles
. . **terrier missile**
. surface to air missiles
. . **terrier missile**
RT Bumblebee project
multistage rocket vehicles
solid propellant rocket engines

terrorism

(added December 2001)
DEF The use of violence, or threat of violence directed at civilian populations with the intention of intimidating or coercing a particular group, organization, or government, often for ideological or political reasons.
GS crime
. **terrorism**
RT air piracy
aircraft safety
airport security
biological weapons
computer information security
explosives detection
flight safety
sabotage
security
violence

Tertiary Period

(added June 1989)
GS Cenozoic Era
. **Tertiary Period**
RT Cretaceous Period
Cretaceous-Tertiary boundary
geochronology
paleontology
Quaternary period

tesseral harmonics

GS analysis (mathematics)
. functional analysis
. . harmonic analysis
. . . **tesseral harmonics**
harmonics
. **tesseral harmonics**
RT satellite perturbation

test beds

USE **test stands**

test chambers

DEF Places, sections, or rooms having special characteristics where a person or object is subjected to experiment, as an altitude chamber. Used for environmental chambers.
UF *environmental chambers*
GS compartments

. test chambers

. . anechoic chambers
. . pressure chambers
. . . hyperbaric chambers
. . . vacuum chambers
. . reverberation chambers
RT ∞ capsules
∞ chambers
cryogenic wind tunnels
environment models
environment simulators
environmental control
environmental laboratories
environmental tests
thermal vacuum tests
vacuum tests
wind tunnels

∞ test equipment

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *checkout equipment*
testers
testing machines
RT analyzers
astrionics
automatic test equipment
avionics
∞ capsules
CEFOAM checkout equipment
centrifuges
checkout
dynamometers
Earth terminal measurement system
electronic equipment tests
∞ equipment
fatigue testing machines
free flight test apparatus
frequency analyzers
geophysical fluid flow cells
ground support equipment
Hartmann-Sprenger tubes
hypersonic test apparatus
impact testing machines
load testing machines
measuring instruments
monoscopes
onboard equipment
rocket propelled sleds
samplers
simulators
supersonic test apparatus
test facilities
test pattern generators
test stands
wind tunnel models
wind tunnels

test facilities

GS **test facilities**
. anechoic chambers
. Central Atlantic Regional Ecol Test Site
. engine testing laboratories
. environmental laboratories
. hydraulic test tunnels
. reverberation chambers
. rocket test facilities
. test ranges
. . ballistic ranges
. . missile ranges
. test stands
. Transient Reactor Test Facility
. wind tunnels
. . blowdown wind tunnels
. . combustion wind tunnels
. . cryogenic wind tunnels
. . hypersonic wind tunnels
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
. . hypervelocity wind tunnels
. . . cascade wind tunnels
. . . hotshot wind tunnels
. . . plasma jet wind tunnels
. . . shock tunnels
. . low density wind tunnels
. . low speed wind tunnels

. . . subsonic wind tunnels
 . . rectangular wind tunnels
 . . slotted wind tunnels
 . . supersonic wind tunnels
 . . transonic wind tunnels
 . . trisonic wind tunnels
 RT ∞ facilities
 flight simulators
 laboratories
 models
 motion simulators
 research facilities
 shock tubes
 simulators
 solar simulators
 spacecraft cabin simulators
 ∞ test equipment
 ∞ tests

test firing
 DEF The firing of a rocket engine, either live or static, with the purpose of making controlled observations of the engine or of an engine component.
 GS firing (igniting)
 . **test firing**
 . . static firing
 RT engine tests
 fuel tests
 ground tests
 missile tests
 prefiring tests
 prelaunch tests
 rocket firing
 rocket test facilities
 static tests
 ∞ tests

test pattern generators
 DEF Image-processing software.
 RT ∞ faults
 ∞ generators
 ∞ patterns
 ∞ test equipment

test pilots
 GS personnel
 . flying personnel
 . . pilots (personnel)
 . . . aircraft pilots
 **test pilots**
 . operators (personnel)
 . . pilots (personnel)
 . . . aircraft pilots
 **test pilots**
 RT ∞ pilots

test ranges
 GS ranges (facilities)
 . **test ranges**
 . . ballistic ranges
 . . missile ranges
 test facilities
 . **test ranges**
 . . ballistic ranges
 . . missile ranges
 RT downrange
 downrange measurement
 range safety
 rocket test facilities

test stands
 DEF Stationary platforms or tables, together with any testing apparatus attached thereto, for testing or proving engines or instruments.
 UF *test beds*
 GS test facilities
 . **test stands**
 RT engine tests
 flame deflectors
 prefiring tests
 prelaunch tests
 rocket test facilities
 ∞ test equipment

test vehicles
 GS **test vehicles**
 . flight test vehicles
 RT ∞ aircraft
 altitude tests

∞ ballistic vehicles
 ∞ capsules
 electric motor vehicles
 high altitude tests
 hypersonic vehicles
 launch vehicles
 missile tests
 missiles
 reentry vehicles
 research aircraft
 rocket vehicles
 ∞ spacecraft
 ∞ tests
 towed bodies
 ∞ vehicles

testers
 USE **test equipment**

testes
 GS anatomy
 . genitourinary system
 . . reproductive systems
 . . . sex glands
 gonads
 **testes**
 . glands (anatomy)
 . . endocrine glands
 . . . gonads
 **testes**
 . . sex glands
 . . . gonads
 **testes**

testing
 USE **tests**

testing machines
 USE **test equipment**

testing time
 GS time
 . **testing time**
 RT burning time
 engine tests
 fatigue tests
 flight time
 ∞ tests
 turnaround (STS)
 windows (intervals)

∞ **tests**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 UF *pretests*
testing
 RT accelerated life tests
 acceptability
 accuracy
 adhesion tests
 altitude tests
 approach and landing tests (STS)
 bend tests
 captive tests
 checkout
 chemical analysis
 chemical tests
 cold flow tests
 cold weather tests
 compression tests
 computational chemistry
 confidence limits
 corrosion test loops
 corrosion tests
 creep tests
 crew procedures (inflight)
 crew procedures (preflight)
 damping tests
 destructive tests
 drop tests
 dynamic tests
 education
 electric equipment tests
 electronic equipment tests
 employment
 engine tests
 environmental tests
 errors
 evaluation
 examination

extrapolation
 fatigue tests
 field tests
 flight stability tests
 flight tests
 fuel tests
 full scale tests
 ground tests
 hardness tests
 high altitude tests
 high temperature tests
 impact tests
 in vitro methods and tests
 in vivo methods and tests
 intelligence tests
 laboratories
 load tests
 low temperature tests
 lubricant tests
 ∞ materials tests
 median (statistics)
 missile tests
 nondestructive tests
 notch tests
 orbital space tests
 patch tests
 performance tests
 personality tests
 physiological tests
 prefiring tests
 preflight analysis
 prelaunch tests
 program verification (computers)
 propellant tests
 proving
 psychological tests
 qualifications
 quality
 quality control
 railroad humping tests
 rank tests
 reactor startup tests
 records
 reliability
 resonance testing
 Rorschach tests
 salt spray tests
 sampling
 selection
 self tests
 shock tests
 Snellen tests
 space electric rocket tests
 Space Transportation System flights
 space vehicle checkout program
 spin tests
 stability tests
 static tests
 statistical tests
 stroking tests
 tasks
 tensile tests
 test facilities
 test firing
 test vehicles
 testing time
 thermal cycling tests
 thermal vacuum tests
 ultrasonic tests
 vacuum tests
 vibration tests
 water tunnel tests
 wear tests
 weld tests
 wind tunnel stability tests
 wind tunnel tests
 wing flow method tests
 x ray inspection

tethered balloons
 UF *kite balloons*
 GS expandable structures
 . inflatable structures
 . . balloons
 . . . **tethered balloons**
 RT meteorological balloons
 reels

tethered satellites
 DEF Concept for scientific payloads sus-

tethering

pended at altitudes of 120 km from Space Shuttle orbiters flying at 200-km altitude; control system would permit deployment and retrieval of the tethered satellites.

GS artificial satellites
. **tethered satellites**

RT reels

tethering

RT orbital rendezvous
reels
tetherlines

tetherlines

RT anchors (fasteners)
∞ cables
∞ lines
tethering
towed bodies
umbilical connectors

Tethys

DEF One of the natural satellites of Saturn orbiting at a mean distance of 295,000 kilometers.

GS celestial bodies
. natural satellites
. . . icy satellites
. . . **Tethys**
. . . Saturn satellites
. . . **Tethys**

RT Saturn (planet)

tetrabutyls

GS alkyl compounds
. **tetrabutyls**

RT dibutyl compounds
organometallic compounds

tetrachlorides

GS halogen compounds
. chlorine compounds
. . . chlorides
. . . **tetrachlorides**
. halides
. . . chlorides
. . . **tetrachlorides**

tetrachloromethane

USE **carbon tetrachloride**

tetracyclines

GS drugs
. antibiotics
. . . **tetracyclines**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . **tetracyclines**

tetrad theory

RT chromosomes
meiosis
spores
∞ theories

tetraethyl orthocarbonates

GS carbon compounds
. carbonates
. . . **tetraethyl orthocarbonates**

tetraethyl orthosilicate

DEF An oxidation inhibiting coating used on the wing leading edges and nose cap of the Space Shuttle.

GS adhesives
. **tetraethyl orthosilicate**

RT ethyl compounds
glues
silicates

tetrafluorohydrazine

GS halogen compounds
. fluorine compounds
. . . fluoro compounds
. . . **tetrafluorohydrazine**
hydrazines
. **tetrafluorohydrazine**
organic compounds
. amines
. . . **tetrafluorohydrazine**

RT rocket oxidizers

tetragons

GS geometry
. Euclidean geometry
. . . polygons
. . . . **tetragons**
. . . . parallelograms
. . . . rhomboids
. . . . rectangles
. . . . squares (mathematics)
. . . . trapezoids

tetrahedrons

GS geometry
. Euclidean geometry
. . . polyhedrons
. . . . **tetrahedrons**

RT triangles

tetrahydrofuran

DEF In organic chemistry, an intermediate and a solvent for polyvinyl chloride. Used for butylene oxides.

UF *butylene oxides*

GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . furans
. . . . **tetrahydrofuran**
solvents
. **tetrahydrofuran**

RT additives
∞ chemical compounds
plastics
polyvinyl chloride

tetranitrotetrazacyclooctane

USE **HMX**

tetraphenyls

GS phenyls
. polyphenyls
. . . **tetraphenyls**

tetrazoles

GS organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . **tetrazoles**

tetrodes

RT electron tubes
pentodes
semiconductor devices
transistors
triodes

tetroons

USE **superpressure balloons**

tetryl

GS explosives
. **tetryl**
nitrogen compounds
. nitro compounds
. . . **tetryl**
organic compounds
. amines
. . . **tetryl**
propellants
. **tetryl**

texas

GS nations
. United States
. . . **texas**

RT Gulf of Mexico
Houston (TX)
Lake Texoma (OK-TX)
Rio Grande (North America)

textbooks

GS documents
. **textbooks**
educational resources
. **textbooks**

RT education
handbooks
knowledge
learning

libraries
manuals
subjects

textiles

GS **textiles**
. cotton fibers
. linen
. rayon

RT clothing
cotton
fabrics
fibers
vapor barrier clothing
wet spinning

texts

GS documents
. **texts**

RT format
records

textures

DEF The structural qualities of surfaces determined by the interrelation of their elements.

RT curl (materials)
fineness
Gabor filters
mechanical properties
porosity
surface properties

TF-30 engine

GS engines
. air breathing engines
. . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . turbofan engines
. **TF-30 engine**
aircraft engines
. . . **TF-30 engine**
. internal combustion engines
. . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . turbofan engines
. **TF-30 engine**
turbine engines
. . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . turbofan engines
. **TF-30 engine**

TF-34 engine

GS engines
. air breathing engines
. . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . turbofan engines
. **TF-34 engine**
aircraft engines
. . . **TF-34 engine**
. internal combustion engines
. . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . turbofan engines
. **TF-34 engine**
turbine engines
. . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . turbofan engines
. **TF-34 engine**

RT convertible fan-shaft engines

TF-41 engine

GS engines
. air breathing engines
. . . gas turbine engines
. . . jet engines
. . . . turbojet engines
. . . . turbofan engines
. **TF-41 engine**
aircraft engines
. . . **TF-41 engine**
. internal combustion engines

- . . . gas turbine engines
- jet engines
- turbojet engines
- turbofan engines
- **TF-41 engine**
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- turbofan engines
- **TF-41 engine**

TFX aircraft

USE **F-111 aircraft**

TH-55 helicopter

- GS Hughes aircraft
- . **TH-55 helicopter**
- V/STOL aircraft
- . rotary wing aircraft
- . . helicopters
- . . . **TH-55 helicopter**

Thailand

- GS nations
- . **Thailand**
- RT Asia

thalamus

- GS anatomy
- . nervous system
- . . central nervous system
- . . . brain
- diencephalon
- **thalamus**

thallium

- GS chemical elements
- . **thallium**
- . . thallium isotopes
- metals
- . **thallium**
- . . thallium isotopes
- RT thallium compounds

thallium alloys

- GS alloys
- . **thallium alloys**

thallium compounds

- RT ∞ metal compounds
- thallium

thallium isotopes

- GS chemical elements
- . nuclides
- . . isotopes
- . . . **thallium isotopes**
- . thallium
- . . **thallium isotopes**
- metals
- . thallium
- . . **thallium isotopes**

thawing

USE **melting**

THC (oceanography)

(added February 2002)

USE **thermohaline circulation**

Thebe

(added January 1996)

DEF A natural satellite of Jupiter orbiting at a mean distance of 221,900 kilometers.

- GS celestial bodies
- . natural satellites
- . . Jupiter satellites
- . . . **Thebe**
- RT Jupiter (planet)

thematic mappers (LANDSAT)

DEF Landsat multispectral scanners designed to acquire data to categorize the Earth's surface. Particular emphasis was placed on agricultural applications and land use.

- GS optical equipment
- . optical scanners
- . . multispectral band scanners
- . . . **thematic mappers (LANDSAT)**
- remote sensors

. thematic mappers (LANDSAT)

- scanners
- . optical scanners
- . . multispectral band scanners
- . . . **thematic mappers (LANDSAT)**
- RT Landsat 4
- Landsat 5
- remote sensing
- thematic mapping

thematic mapping

- GS mapping
- . **thematic mapping**
- RT cadastral mapping
- data products
- maps
- photogeology
- photomapping
- photomaps
- thematic mappers (LANDSAT)

Themis project

- GS programs
- . projects
- . . **Themis project**

theodolites

DEF Optical instruments which consist of a sighting telescope, mounted so that it is free to rotate around horizontal and vertical axes, and graduated scales so that the angle of rotation may be measured. The telescope is usually fitted with a right angle prism so that the observer continues to look horizontally into the eyepiece, whatever the variation of the elevation angle.

- GS measuring instruments
- . optical measuring instruments
- . . transits
- . . . **theodolites**
- cinetheodolites
- optical equipment
- . optical measuring instruments
- . . transits
- . . . **theodolites**
- cinetheodolites
- RT sextants

Theodorsen transformation

- RT airfoil profiles
- complex variables
- conformal mapping
- coordinate transformations
- Joukowski transformation
- pressure distribution

theorem proving

- GS problem solving
- . **theorem proving**
- proving
- . **theorem proving**
- RT artificial intelligence
- computer programming
- predicate calculus
- theorems

theorems

- UF *lemmas*
- GS **theorems**
- . addition theorem
- . Bayes theorem
- . Bernoulli theorem
- . binomial theorem
- . Castiglione variational theorem
- . duality theorem
- . equipartition theorem
- . existence theorems
- . Floquet theorem
- . Gauss-Markov theorem
- . Hellmann-Feynman theorem
- . Kakutani theorem
- . Lebesgue theorem
- . Liouville theorem
- . Michell theorem
- . Pomeranchuk theorem
- . Poynting theorem
- . reciprocal theorems
- . reciprocity theorem
- . Richards theorem
- . Riesz theorem

- . Schauder fixpoint theorem
- . similarity theorem
- . . Lagrange similarity hypothesis
- . Stokes theorem (vector calculus)
- . uniqueness theorem
- . virial theorem
- RT hypotheses
- mathematical logic
- ∞ mathematics
- Taylor series
- theorem proving

theoretical physics

- GS **theoretical physics**
- . Newton Theory
- . quantum theory
- . . Bohr theory
- RT astrophysics
- broken symmetry
- charm (particle physics)
- electrophysics
- flavor (particle physics)
- geophysics
- grand unified theory
- naked singularities
- nuclear physics
- ∞ physics
- plasma physics
- radio physics
- ∞ science
- ∞ solid state physics
- strange attractors
- string theory
- supergravity
- supersymmetry
- unified field theory
- Yang-Mills theory

∞ **theories**

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT Abrikosov theory
- assumptions
- atomic theory
- automata theory
- BCS theory
- Bellman theory
- bending theory
- Bessel-Bredichin theory
- bimetric theories
- Bogoliubov theory
- Bohr theory
- Born-Infeld theory
- catastrophe theory
- Chapman-Enskog theory
- communication theory
- control theory
- Crocco-Lee theory
- Debye-Huckel theory
- decision theory
- density functional theory
- diffusion theory
- dynamo theory
- Dyson theory
- Eyring theory
- field mode theory
- field theory (algebra)
- field theory (physics)
- finite difference theory
- flow theory
- fluctuation theory
- Foster theory
- game theory
- gauge theory
- geometrical theory of diffraction
- Gestalt theory
- Glauber theory
- goal theory
- graph theory
- gravitation theory
- Griffith crack
- group theory
- Hansen lunar theory
- Heisenberg theory
- Hill lunar theory
- homotopy theory
- Hueckel theory
- hypotheses
- information theory

therapy

Jeans theory
kinetic theory
Kolmogorov theory
learning theory
Malkus theory
Manning theory
matrix theory
Michaelis theory
mixing length flow theory
molecular theory
momentum theory
Newton Theory
nonadiabatic theory
number theory
numerical differentiation
Opik theory
orthogonal multiplexing theory
particle theory
perturbation theory
physical optics
piston theory
plate theory
population theory
potential theory
probability theory
quantum chromodynamics
quantum theory
queueing theory
Reissner theory
relativistic theory
S matrix theory
saddle points (game theory)
set theory
shell theory
spectral theory
statistical decision theory
strong interactions (field theory)
Sturm-Liouville theory
switching theory
tetrad theory
transport theory
vinti theory
weak interactions (field theory)
Yang-Mills theory
Young-Helmholtz theory

therapy

GS **therapy**
. chemotherapy
. gene therapy
. massaging
. psychotherapy
. radiation therapy
RT
cures
diseases
healing
medical equipment
patients
respirators
skin grafts

thermal absorption

GS energy absorption
. **thermal absorption**
. . . polar cap absorption
RT
∞ absorption
atmospheric attenuation
charring
gray gas
heat sinks
pyrolysis
temperature

thermal accommodation coefficients
USE **accommodation coefficient**

thermal agitation
USE **thermal energy**

thermal analysis

DEF A general term covering a group of related techniques whereby the dependence of the parameters of any physical property of a substance or temperature is measured. Used for differential thermal analysis and DTA (analysis).
UF *differential thermal analysis*
DTA (analysis)
RT ∞ analyzing
heat transmission

temperature
temperature gradients
temperature profiles
temperature sensitive paints

thermal barriers (plasma control)

RT ∞ barriers
fusion reactors
mirror fusion
plasma control
tandem mirrors

thermal batteries

GS electric generators
. direct power generators
. . . primary batteries
. . . **thermal batteries**
electrochemical cells
. electric batteries
. . . primary batteries
. . . **thermal batteries**
RT alkaline batteries
dry cells

thermal blooming

UF *laser beam defocusing*
thermal defocusing
GS thermal lensing
. **thermal blooming**
RT laser cutting
laser heating
laser outputs
lasers
photon beams
temperature

thermal boundary layer

GS boundary layers
. **thermal boundary layer**
RT hypersonic boundary layer
laminar boundary layer
Rayleigh-Benard convection
temperature
turbulent boundary layer

thermal buckling

GS buckling
. **thermal buckling**
RT expansion
temperature
temperature effects
thermal expansion

thermal comfort

DEF That condition which expresses satisfaction with the thermal environment and which is measured by such factors as air temperature, relative humidity, air velocity, etc.
RT heat stroke
temperature
thermal environments

thermal conductivity

DEF Time rate of unidirectional heat transfer per unit area, in the steady-state, between parallel planes separated by unit distance, per unit difference of temperature of the planes.
GS thermodynamic properties
. thermophysical properties
. . **thermal conductivity**
transport properties
. **thermal conductivity**
RT air conductivity
atmospheric conductivity
conductive heat transfer
∞ conductivity
Fourier law
hot-wire flowmeters
Lewis numbers
specific heat
temperature
thermohydraulics

thermal conductivity gages

SN (GAGES FOR MEASURING THERMAL CONDUCTIVITY--EXCLUDES GAGES USING THERMAL CONDUCTIVITY TO MEASURE OTHER PROPERTIES OR VARIABLES)
GS measuring instruments
. **thermal conductivity gages**

RT temperature

thermal conductors

GS conductors
. **thermal conductors**
RT ∞ conduction
conductive heat transfer
electric conductors
temperature

thermal control coatings

GS coatings
. **thermal control coatings**
RT ablative materials
∞ control
heat shielding
reentry shielding
reusable heat shielding
temperature
temperature control
thermochromic coatings

thermal convection

USE **free convection**

thermal currents

USE **convective flow**

thermal cycling tests

RT closed cycles
cooling
environmental tests
fatigue tests
heating
temperature
temperature control
∞ tests
thermodynamic properties

thermal decomposition

DEF The breaking apart of complex molecules into simpler units by the application of heat.
GS chemical reactions
. **thermal decomposition**
. . . pyrolysis
decomposition
. **thermal decomposition**
. . . pyrolysis
RT ablation
endothermic reactions
exothermic reactions
temperature
thermochemistry
thermogravimetry

thermal defocusing

USE **thermal blooming**

thermal degradation

DEF Impairment of properties caused by exposure to heat.
GS degradation
. **thermal degradation**
RT pyrolysis
sterilization effects
temperature
temperature dependence
temperature effects

thermal diffusion

GS diffusion
. **thermal diffusion**
thermodynamic properties
. thermophysical properties
. . **thermal diffusion**
RT Chapman-Enskog theory
∞ conduction
convective flow
electron diffusion
gas heating
gaseous diffusion
heat transfer
Kirkendall effect
Peclet number
∞ separation
Soret coefficient
surface diffusion
temperature
thermochemistry

thermohydraulics
viscosity

thermal diffusivity

DEF The ratio of thermal conductivity of a substance to the product of its density and specific heat. Common units for this property are sq cm/s or sq ft/h.

GS thermodynamic properties
. thermophysical properties
. . . **thermal diffusivity**
transport properties

. **thermal diffusivity**
RT photothermal deflection spectroscopy
temperature
viscosity

thermal dissociation

GS chemical reactions
. **thermal dissociation**
dissociation

. **thermal dissociation**
RT cracking (chemical engineering)
decomposition
degradation
gas dissociation
heat of dissociation
hydrogen production
ionization
plasmas (physics)
temperature
temperature effects

thermal effects

USE **temperature effects**

thermal efficiency

USE **thermodynamic efficiency**

thermal emission

DEF The process by which a body emits electromagnetic radiation as a consequence of its temperature only.

GS emission
. **thermal emission**
. . thermionic emission

RT electron emission
emissivity
exhaust emission
incandescence
infrared absorption
temperature

thermal energy

UF *thermal agitation*

RT cogeneration

∞ energy
free energy
geothermal energy conversion
geothermal resources
heat
heat of fusion
heat of solution
internal energy
kinetic energy
lattice vibrations
photothermal conversion
solar thermal electric power plants
temperature
thermophotovoltaic conversion

thermal energy storage

USE **heat storage**

thermal environments

GS environments
. **thermal environments**

RT adiabatic conditions
aerospace environments
heat stroke
high temperature environments
life support systems
low temperature environments
lunar environment
planetary environments
satellite temperature
spacecraft environments
temperature

thermal comfort

thermal expansion

DEF The increase in the dimensions or the volume of a body due to change in temperature.

GS expansion
. **thermal expansion**
thermodynamic properties

. **thermal expansion**
RT Boussinesq approximation
dilatometry
extensometers
Grüneisen constant
heat transfer
high temperature tests
low temperature tests
neel temperature
∞ physical properties
temperature
thermal buckling
thermophysical properties
warpage

thermal fatigue

DEF In metals, fracture resulting from the presence of temperature gradients which vary with time in such a manner as to produce cyclic stresses in a structure.

UF *high temperature fatigue*
GS fatigue (materials)

. **thermal fatigue**
RT high temperature environments
metal fatigue
temperature

thermal gravimetry

USE **thermogravimetry**

thermal instability

DEF The conditions of temperature gradient, thermal conductivity, and viscosity which lead to the onset of convection in a fluid.

GS thermodynamic properties
. **thermal instability**

RT clear air turbulence
combustion stability
magnetohydrodynamic stability
pyrolysis
sputtering
stellarators
temperature

thermal insulation

DEF A material applied to reduce the flow of heat.

GS insulation
. **thermal insulation**

RT air conditioning
Amberlite (trademark)
asbestos
cork (materials)
cryogenic fluid storage
heat
heat shielding
heat sinks
heat transfer
heat transmission
heating equipment
reentry shielding
refractories
refractory coatings
temperature
temperature control
Trombe walls

thermal lenses

(added November 1998)

USE **thermal lensing**

thermal lensing

(added November 1998)

UF *thermal lenses*

GS **thermal lensing**
. thermal blooming

RT atmospheric optics
focusing
laser beams
photothermal deflection spectroscopy

wave front deformation

thermal mapping

GS mapping

. **thermal mapping**
RT aerial reconnaissance
Earth resources
geothermal anomalies
geothermal resources
Heat Capacity Mapping Mission
infrared radiometers
infrared scanners
isothermal layers
isotherms
photomapping
planetary mapping
quantum well infrared photodetectors
temperature
temperature distribution
temperature gradients
thermography

thermal neutrons

DEF Neutrons in thermal equilibrium with the medium in which they exist. Used for slow neutrons.

UF *slow neutrons*

GS nuclear radiation

. **thermal neutrons**
particles
. elementary particles
. . fermions
. . . neutrons
. . . . **thermal neutrons**
. neutral particles
. . neutrons
. . . **thermal neutrons**

RT baryons
fast neutrons
nuclear reactors
temperature
thermalization (energy absorption)

thermal noise

DEF The noise at radiofrequency caused by thermal agitation in a dissipative body. Also called Johnson noise.

GS elastic waves
. sound waves
. . noise (sound)
. . . **thermal noise**
electromagnetic interference
. radio frequency interference
. . electromagnetic noise
. . . white noise
. . . . **thermal noise**

RT channel noise
electromagnetic noise measurement
noise temperature
shot noise
temperature

thermal plasmas

GS particles
. charged particles
. . energetic particles
. . . plasmas (physics)
. . . . **thermal plasmas**
. corpuscular radiation
. energetic particles
. . plasmas (physics)
. . . . **thermal plasmas**
RT electron plasma
high temperature plasmas
plasma generators
plasma temperature
temperature

thermal pollution

DEF Environmental temperature rise due to waste heat disposal.

GS pollution

. **thermal pollution**

RT biological effects
coastal ecology
environment effects
environment pollution
environmental quality
environmental surveys
environments

thermal protection

heat transfer
lakes
liquid cooling
marine biology
nuclear reactors
ocean temperature
oceans
plankton
pollution transport
seas
temperature
water pollution
water temperature

thermal power

USE **turbogenerators**

thermal properties

USE **thermodynamic properties**

thermal protection

GS protection
. **thermal protection**
RT ablative materials
carbon-carbon composites
heat shielding
Ludox (trademark)
radiation protection
reentry shielding
reusable heat shielding
temperature

thermal radiation

SN (EMITTED AS THE RESULT OF THERMAL EXCITATION OF MOLECULES)
DEF The electromagnetic radiation emitted by any substance as the result of the thermal excitation of its molecules. Thermal radiation ranges in wavelength from the longest infrared radiation to the shortest ultraviolet radiation.
GS electromagnetic radiation
. **thermal radiation**
. . black body radiation
. . phonon beams
RT concentrators
greenhouse effect
heat
infrared radiation
light (visible radiation)
near infrared radiation
nongray gas
nonthermal radiation
Plancks constant
planetary radiation
 ∞ radiation
radio waves
sky radiation
solar radiation
sunlight
temperature
thermodynamic properties
ultraviolet radiation

thermal reactors

GS nuclear reactors
. **thermal reactors**
RT ∞ reactors
temperature

thermal resistance

DEF The extent to which a material retains useful properties as measured during exposure of the material to a specified temperature and environment for a specified time. Used for heat resistance.
UF *heat resistance*
GS mechanical properties
. **thermal resistance**
RT carbon-carbon composites
 ∞ high resistance
high temperature lubricants
high temperature tests
 ∞ low resistance
oxidation
oxidation resistance
 ∞ resistance
specific heat
temperature
temperature effects

thermodynamic properties

thermal resources

GS heat sources
. **thermal resources**
. . geothermal resources
. . . geysers
resources
. Earth resources
. . **thermal resources**
. . . geothermal resources
. . . . geysers
RT agrometeorology
atmospheric temperature
crop growth
crop vigor
geothermal technology
resources management
temperature
temperature distribution

thermal shielding

USE **heat shielding**

thermal shock

DEF The development of a steep temperature gradient and accompanying high stresses within a structure.
RT cooling
heating
high temperature tests
 ∞ shock
shock resistance
temperature
temperature distribution
thermodynamic properties

thermal simulation

GS simulation
. environment simulation
. . **thermal simulation**
RT altitude simulation
solar simulation
space environment simulation
temperature

thermal sinks

USE **heat sinks**

thermal stability

DEF Resistance to permanent changes in property caused solely by heat.
UF *thermostability*
GS stability
. **thermal stability**
thermodynamic properties
. thermophysical properties
. . **thermal stability**
RT dimensional stability
high temperature tests
low temperature tests
storage stability
surface stability
temperature
temperature dependence

thermal stresses

SN (EXCLUDES BIOLOGICAL STRESSES)
DEF Stresses in metal, resulting from non-uniform temperature distribution.
GS stresses
. **thermal stresses**
RT cooling
fatigue (materials)
heating
temperature
temperature distribution
temperature effects

thermal vacuum tests

GS vacuum tests
. **thermal vacuum tests**
RT environmental tests
high altitude environments
temperature
test chambers
 ∞ tests

vacuum chambers

thermalization (energy absorption)

GS energy absorption
. moderation (energy absorption)
. . **thermalization (energy absorption)**
. . . neutron thermalization
RT thermal neutrons

thermicons

GS electron tubes
. camera tubes
. . vidicons
. . . return beam vidicons
. . . . **thermicons**
. image tubes
. . **thermicons**
optical equipment
. image converters
. . image tubes
. . . **thermicons**

thermionic cathodes

GS electrodes
. cathodes
. . tube cathodes
. . . **thermionic cathodes**
emitters
. **thermionic cathodes**
RT hot cathodes

thermionic conversion systems

USE **thermionic power generation**

thermionic converters

GS electric generators
. direct power generators
. . **thermionic converters**
. . . SNAP 13
. . . solar blankets
RT cesium diodes
cesium plasma
 ∞ converters
fuel cells
ion production rates
magnetohydrodynamic generators
plasma power sources
radioisotope batteries
SNAP
solar cells
thermoelectric generators

thermionic diodes

GS electron tubes
. **thermionic diodes**
. . cesium diodes
electronic equipment
. diodes
. . **thermionic diodes**
. . . cesium diodes
RT Child-Langmuir law
perveance
semiconductor diodes

thermionic emission

DEF Direct ejection of electrons as the result of heating the material, which raises electron energy beyond the binding energy that holds the electron to the material. Used for Richardson-Dushman equation.
UF *Richardson-Dushman equation*
GS emission
. particle emission
. . **thermionic emission**
. thermal emission
. . **thermionic emission**
RT electron emission
ion emission
thermoelectricity
work functions

thermionic emitters

GS emitters
. **thermionic emitters**

thermionic power generation

UF *thermionic conversion systems*
RT ∞ conversion
SNAP

SNAP 13

*thermionic reactors*USE **ion engines**
nuclear rocket engines**thermionics**

DEF The study of the emission of electrons by heat.

RT cathodes
electron emission
∞ electronics
ion emission**thermistors**

DEF Electron devices employing the temperature dependent change of resistivity of a semiconductor.

GS attenuators
. resistors
. . . **thermistors**
electronic equipment
. solid state devices
. . . semiconductor devices
. . . **thermistors**
temperature sensors
. **thermistors**
RT radiometers
temperature measuring instruments
varistors**thermites**

DEF Fire-hazardous mixtures of ferric oxide and powdered aluminum; upon ignition with a magnesium ribbon, the mixtures reach temperatures up to 4000 degrees F (sufficient to soften steel).

RT aluminum oxides
Auger spectroscopy
barium ion clouds
copper oxides
ignition temperature
pyrotechnics**thermoacoustic effects***(added May 2000)*

DEF Phenomena associated with the combination of temperature, pressure and displacement oscillations caused by acoustic waves interacting with solid boundaries, such as the walls of a tube or a "stack".

RT acoustic excitation
acoustic instability
acoustics
acousto-optics
combustion stability
∞ effects
heat transfer
sound waves
thermoacoustic refrigerators
thermophysical properties**thermoacoustic refrigerators***(added May 2000)*

DEF Cooling devices in which intense sound waves in pressurized resonant cavities are used to generate temperature gradients in an array of parallel plates in the interior of a tube that serves as a heat exchanger and in which heat is drawn away by a heat sink.

GS refrigerating machinery
. refrigerators
. . . **thermoacoustic refrigerators**
RT cooling systems
refrigerating
thermoacoustic effects**thermobalances**GS measuring instruments
. indicating instruments
. . . weight indicators
. . . **thermobalances**

RT thermogravimetry

thermocapillary migration*(added September 1999)*

DEF Phenomenon where droplets (or bubbles) in a host fluid with a uniform temperature gradient migrate to the hot end of the host fluid because of the temperature dependence of

the interfacial energy of the droplets.

RT bubbles
capillary flow
drops (liquids)
electromigration
interfacial tension
Marangoni convection
microgravity
space processing
temperature gradients
thermomigration**thermochemical properties**GS chemical properties
. **thermochemical properties**
. . . heat of combustion
. . . heat of dissociation
. . . heat of formation
. . . heat of solution
. . . latent heat
. . . . heat of fusion
. . . . heat of vaporization
thermodynamic properties
. **thermochemical properties**
. . . heat of combustion
. . . heat of dissociation
. . . heat of formation
. . . heat of solution
. . . latent heat
. . . . heat of fusion
. . . . heat of vaporization
RT heat balance
∞ properties**thermochemistry**

DEF A branch of chemistry that treats the relations of heat and chemical changes.

GS **thermochemistry**
. aerothermochemistry
. combustion chemistry
RT chemical engineering
chemical reactions
∞ chemistry
combustion physics
enthalpy
entropy
heat
heat balance
heat of dissociation
heat of fusion
heat of solution
heat treatment
physical chemistry
propellant chemistry
pyrometallurgy
thermal decomposition
thermal diffusion
thermodynamic properties
thermodynamics
thermogravimetry
thermophysical properties
water splitting**thermochromatic materials**GS **thermochromatic materials**
. thermochromic coatings
RT color
colorimetry
∞ inorganic materials
∞ materials
optical properties
organic materials
solids**thermochromic coatings***(added March 2005)*

DEF Spectrally selective coatings that change their transmission and reflection properties with temperature.

UF *thermochromic films*
GS coatings
. **thermochromic coatings**
smart materials
. **thermochromic coatings**
thermochromatic materials
. **thermochromic coatings**
RT energy absorption films
energy conservation
light transmission
reflectanceselective surfaces
temperature control
temperature sensitive paints
thermal control coatings
thin films
transmittance
vanadium oxides*thermochromic films**(added March 2005)*USE **thermochromic coatings****thermoclines**GS gradients
. temperature gradients
. . . **thermoclines**
RT oceanography
sea water
sound transmission
stratification
surface layers
surface temperature
thermohaline circulation
underwater acoustics**thermocouple pyrometers**GS measuring instruments
. temperature measuring instruments
. . . pyrometers
. . . **thermocouple pyrometers**
RT galvanometers
potentiometers (instruments)
radiation pyrometers
resistance thermometers
temperature measurement
thermocouples
thermoelement ammeters**thermocouples**

DEF Devices which convert thermal energy directly into electrical energy. In its basic form it consists of two dissimilar metallic electrical conductors connected in a closed loop. Each junction forms a thermocouple.

GS **thermocouples**
. thermopiles
RT constantan
indicating instruments
Manganin (trademark)
Peltier effects
potentiometers (instruments)
Seebeck effect
temperature measurement
temperature measuring instruments
temperature probes
thermocouple pyrometers
thermoelectric generators
thermoelectricity**thermodynamic coupling**GS coupling
. **thermodynamic coupling**
RT BCS theory
electron phonon interactions
superconductors (materials)**thermodynamic cycles**GS cycles
. **thermodynamic cycles**
. . . Brayton cycle
. . . Carnot cycle
. . . Otto cycle
. . . Rankine cycle
. . . Stirling cycle
RT adiabatic conditions
closed cycles
heat engines
internal combustion engines
laser propulsion
∞ strokes
thermodynamics**thermodynamic efficiency**

DEF In thermodynamics, the ratio of the work done by a heat engine to the total heat supplied by the heat source. Used for thermal efficiency.

UF *thermal efficiency*
GS efficiency
. **thermodynamic efficiency**

thermodynamic equilibrium

RT combustion efficiency
compressor efficiency
engines
exergy
heat sources
internal combustion engines
nozzle efficiency
power efficiency
propulsion system performance
propulsive efficiency
specific impulse
temperature
thermodynamics

thermodynamic equilibrium

DEF A very general result from statistical mechanics which states that if a system is in equilibrium, all processes which can exchange energy must be exactly balanced by the reverse process so that there is no net exchange of energy.

RT acid base equilibrium
adiabatic conditions
chemical equilibrium
∞ equilibrium
heat of dissociation
isentropic processes
isochoric processes
isoenergetic processes
isothermal processes
liquid-vapor equilibrium
local thermodynamic equilibrium
statistical mechanics

thermodynamic properties

UF *thermal properties*
GS **thermodynamic properties**
. enthalpy
. . Gibbs free energy
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. entropy
. free energy
. . Gibbs free energy
. surface energy
. thermal expansion
. thermal instability
. thermochemical properties
. . heat of combustion
. . heat of dissociation
. . heat of formation
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. thermophysical properties
. . critical point
. . critical pressure
. . critical temperature
. . emissivity
. . fusibility
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. . melting points
. . pyroelectricity
. . specific heat
. . supercritical pressures
. . thermal conductivity
. . thermal diffusion
. . thermal diffusivity
. . thermal stability
. . vapor pressure
. . volatility

RT chemical properties
diffusivity
emittance
∞ equilibrium
exergy
heat
heat balance
high temperature tests
Joule-Thomson effect
optical properties

∞ physical properties
Prandtl number
propellant properties
∞ properties
∞ Seebeck effect
solubility
temperature
tephigrams
thermal cycling tests
thermal radiation
thermal resistance
thermal shock
thermochemistry
thermodynamics
thermoluminescence
zero point energy

thermodynamics

DEF Study and application of principles describing the relation of heat transfer to various forms of energy, and the behaviors of physical systems where temperature is a significant feature. Used for heat equations, thermomechanics, and thermophysics.

UF *heat equations*
thermomechanics
thermophysics

GS thermodynamics

. aerothermodynamics
. combustion physics
. nonequilibrium thermodynamics

RT aerodynamics

∞ dynamics
engines
enthalpy
entropy
∞ equations
equations of state
∞ equilibrium
ergodic process
exergy
fluid mechanics
free energy
gas dynamics
heat
heat of fusion
heat of solution
heat transfer
internal energy
irreversible processes
isotherms
Joule-Thomson effect
Kirchhoff law of radiation
mechanical engineering
molecular relaxation
Mollier diagram
nonadiabatic conditions
nongray gas
nonisothermal processes
Onsager relationship
∞ paths
Pfaff equation
photothermal conversion
physical chemistry
plasma physics
plasmas (physics)
polytropic processes
Rankine cycle
Rayleigh equations
steam
thermochemistry
thermodynamic cycles
thermodynamic efficiency
thermodynamic properties
thermoelectric cooling
unsteady state

thermoelasticity

DEF Dependence of the stress distribution of an elastic solid on its thermal state, or of its thermal conductivity on the stress distribution.

GS mechanical properties

. elastic properties
. . **thermoelasticity**
. . . aerothermoelasticity

RT aeroelasticity
aerothermodynamics
hydroelasticity
thermoelectric generators

thermoelectric materials

thermoelectric conversion systems

USE **thermoelectric power generation**

thermoelectric cooling

UF *Ettingshausen coolers*

GS cooling

. **thermoelectric cooling**

RT cryogenics
Ettingshausen effect
heat pumps
Peltier effects
refrigerating
refrigerating machinery
thermodynamics
thermoelectricity
thermomagnetic cooling

thermoelectric generators

GS electric generators

. direct power generators

. . **thermoelectric generators**

. . . SNAP 3

. . . SNAP 7

. . . SNAP 9A

. . . SNAP 10A

. . . SNAP 11

. . . SNAP 15

. . . SNAP 17

. . . SNAP 19

. . . SNAP 21

. . . SNAP 23

. . . SNAP 27

. . . SNAP 29

RT ASTEC solar turboelectric generator

fuel cells

∞ generators

magneto hydrodynamic generators

nuclear auxiliary power units

photoelectric generators

radioisotope batteries

SNAP

solar cells

solar generators

space station power supplies

thermionic converters

thermocouples

thermoelasticity

thermoelectricity

thermoelectric materials

RT ∞ materials

semiconductors (materials)

thermoelasticity

thermoelectricity

Thermoelectric Outer Planet Spacecraft

USE **TOPS (spacecraft)**

thermoelectric power generation

UF *thermoelectric conversion systems*

RT ∞ conversion

nuclear auxiliary power units

radioisotope heat sources

SNAP

thermoelectricity

thermoelectric spacecraft

USE **TOPS (spacecraft)**

thermoelectricity

UF *Thomson effect*

RT Ettingshausen effect

Peltier effects

Seebeck effect

thermionic emission

thermocouples

thermoelectric cooling

thermoelectric generators

thermoelectric materials

thermoelectric power generation

thermopiles

transport properties

thermoelement ammeters

GS measuring instruments

. ammeters

. . **thermoelement ammeters**

- RT thermocouple pyrometers
- thermograms*
- USE **recording instruments**
temperature measuring instruments
- thermography**
- DEF Technique employing heat transfer transients.
- RT infrared imagery
nondestructive tests
quantum well infrared photodetectors
temperature distribution
temperature measurement
thermal mapping
- thermogravimetry**
- UF *thermal gravimetry*
- RT chemical analysis
dehydration
pyrolysis
temperature effects
thermal decomposition
thermobalances
thermochemistry
- thermohaline circulation**
(added February 2002)
- DEF Any water movements, including convection and large-scale currents, due to the joint action of temperature and salinity.
- UF *THC (oceanography)*
- GS circulation
. water circulation
. . . **thermohaline circulation**
- RT ocean currents
ocean dynamics
ocean temperature
salinity
sea water
thermoclines
upwelling water
- thermo hydraulics**
- RT convective heat transfer
fluid dynamics
fluid flow
heat transmission
- ∞ hydraulics
hydrodynamics
laminar heat transfer
radiative heat transfer
thermal conductivity
thermal diffusion
turbulent heat transfer
- thermoluminescence**
- GS emission
. light emission
. . luminescence
. . . **thermoluminescence**
- RT temperature effects
thermodynamic properties
- thermomagnadynamics*
- USE **thermomagnetic effects**
- thermomagnetic cooling**
- UF *Nernst generators*
- GS cooling
. **thermomagnetic cooling**
- RT cryogenics
Ettingshausen effect
thermoelectric cooling
- thermomagnetic effects**
- UF *thermomagnadynamics*
thermomagnetism
- GS magnetic properties
. **thermomagnetic effects**
- RT ∞ effects
Ettingshausen effect
Nernst-Ettingshausen effect
- thermomagnetism*
- USE **thermomagnetic effects**
- thermomechanical treatment**
- DEF Combination of material-forming processes with heat treatments in order to obtain specific material properties.
- GS **thermomechanical treatment**
. hot pressing
. . hot isostatic pressing
- RT heat affected zone
heat treatment
- ∞ metallurgy
microstructure
plastic deformation
quenching (cooling)
- ∞ treatment
- thermomechanics*
- USE **thermodynamics**
- thermometers**
- DEF Devices for measuring temperature.
- GS measuring instruments
. temperature measuring instruments
. . **thermometers**
. . . resistance thermometers
- RT temperature control
temperature measurement
temperature scales
- thermometry*
- USE **temperature measurement**
- thermomigration**
- DEF A technique for doping semiconductors in which exact amounts of known impurities are made to migrate from the cool side of a wafer of pure semiconductor material to the hotter side when the wafer is heated in an oven.
- RT electromigration
heat transfer
temperature gradients
thermocapillary migration
- thermonuclear energy*
- USE **thermonuclear power generation**
- thermonuclear explosions**
- GS explosions
. nuclear explosions
. . **thermonuclear explosions**
- RT aerial explosions
Argus project
fission weapons
nuclear devices
nuclear vulnerability
underground explosions
underwater explosions
- thermonuclear power generation**
- UF *thermonuclear energy*
- GS nuclear electric power generation
. **thermonuclear power generation**
- RT Astron thermonuclear reactor
controlled fusion
electric generators
- ∞ energy
pinch effect
plasma generators
stellarators
zeta thermonuclear reactor
- thermonuclear propulsion*
- USE **nuclear propulsion**
- thermonuclear reactions**
- GS nuclear reactions
. **thermonuclear reactions**
. . nuclear fusion
. . . controlled fusion
- RT Astron thermonuclear reactor
high energy interactions
magnetohydrodynamics
pinch effect
plasmas (physics)
proton-proton reactions
Q values (nuclear physics)
radioactive decay
Scylla
stellarators
zeta thermonuclear reactor
- thermophiles**
- RT algae
fungi
- mesophiles
psychrophiles
- thermophilic plants**
- GS plants (botany)
. **thermophilic plants**
. . blue green algae
. . . anabaena
. . . Microcystis
. . . Nostoc
- RT algae
- thermophoresis**
- DEF A process in which particles migrate in a gas under the influence of forces created by a temperature gradient.
- RT aerosols
deposition
diffusion
particle diffusion
particle motion
particle size distribution
- ∞ separation
temperature effects
temperature gradients
- thermophotovoltaic conversion**
(added May 1995)
- DEF A technique for efficiently converting heat or solar energy to electrical energy using heated surfaces coated with a selective emitter material whose photon emission peaks sharply in a narrow wavelength.
- GS energy conversion
. solar energy conversion
. . photothermal conversion
. . . **thermophotovoltaic conversion**
. . photovoltaic conversion
. . . **thermophotovoltaic conversion**
- RT emitters
energy conversion efficiency
solar cells
spacecraft power supplies
thermal energy
- thermophysical properties**
- GS thermodynamic properties
. **thermophysical properties**
. . critical point
. . critical pressure
. . critical temperature
. . emissivity
. . fusibility
. . heat of solution
. . latent heat
. . . heat of fusion
. . . heat of vaporization
. . melting points
. . pyroelectricity
. . specific heat
. . supercritical pressures
. . thermal conductivity
. . thermal diffusion
. . thermal diffusivity
. . thermal stability
. . vapor pressure
. . volatility
- RT Peltier effects
- ∞ properties
Seebeck effect
surface energy
thermal expansion
thermoacoustic effects
thermochemistry
- thermophysics*
- USE **thermodynamics**
- thermopiles**
- DEF Transducers for converting thermal energy directly into electrical energy, composed of pairs of thermocouples which are connected either in series or in parallel. Batteries of thermocouples connected in series to form single compact units.
- GS thermocouples
. **thermopiles**
transducers
. **thermopiles**
- RT Dicke radiometers

thermoplastic films

indicating instruments
temperature measuring instruments
thermoelectricity

thermoplastic films

DEF Materials with a linear macromolecular structure that will repeatedly soften when heated and harden when cooled.

GS plastics
. synthetic resins
. . . thermoplastic resins
. . . **thermoplastic films**
resins
. synthetic resins
. . . thermoplastic resins
. . . **thermoplastic films**
RT ∞ films

thermoplastic resins

GS plastics
. synthetic resins
. . . **thermoplastic resins**
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
resins
. synthetic resins
. . . **thermoplastic resins**
. . . PEEK
. . . quinoxalines
. . . thermoplastic films
RT acrylic resins
glass fiber reinforced plastics
polyethylenes
polymer blends
polystyrene
thermoplasticity
thermosetting resins
vulcanized elastomers

thermoplasticity

GS mechanical properties
. plastic properties
. . . **thermoplasticity**
RT Bouguer law
temperature effects
thermoplastic resins

thermoreceptors

GS anatomy
. sense organs
. . . **thermoreceptors**
receptors (physiology)
. **thermoreceptors**
RT body temperature
sensitometry
skin (anatomy)
thermoregulation

thermoregulation

DEF A mechanism by which mammals and birds balance heat gain and loss in order to maintain a constant body temperature. Used for body temperature regulation.

UF *body temperature regulation*
RT body temperature
cold tolerance
hibernation
homeostasis
hyperthermia
hypothermia
metabolism
physiology
regulatory mechanisms (biology)
temperature control
thermoreceptors

thermosetting resins

GS plastics
. synthetic resins
. . . **thermosetting resins**
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. Kevlar (trademark)
. Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins

resins
. synthetic resins
. . . **thermosetting resins**
. . . epoxy resins
. . . . phenolic epoxy resins
. . . furan resins
. . . . polyamide resins
. Kevlar (trademark)
. Nylon (trademark)
. . . phenolic resins
. . . . micarta
. . . . phenolic epoxy resins
RT Bakelite (trademark)
composite materials
formica
glass fiber reinforced plastics
laminates
polyester resins
reinforced plastics
silicone resins
thermoplastic resins

thermosiphons

GS regenerators
. **thermosiphons**
RT convective heat transfer
free convection
∞ radiators
siphoning

thermosphere

SN (ALTITUDES ABOVE APPROXIMATELY 80 KM)
GS Earth atmosphere
. upper atmosphere
. . . **thermosphere**
. . . turbopause
RT chemosphere
Earth ionosphere
Earth magnetosphere
exosphere
heterosphere
homosphere

thermostability

USE **thermal stability**

thermostats

GS control equipment
. regulators
. . . **thermostats**
switches
. electric switches
. . . **thermostats**
RT automatic control
controllers
cryostats
temperature control
temperature measuring instruments

thermotropism

USE **anisotropy**
temperature effects

thermoviscoelasticity

GS mechanical properties
. elastic properties
. . . viscoelasticity
. . . . **thermoviscoelasticity**
RT irreversible processes
stress-strain-time relations

thesauri

RT indexes (documentation)
indexing (information science)
information retrieval
KWIC indexes
nomenclatures
space glossaries
terminology
terms
words (language)

theses

GS documents
. **theses**
RT hypotheses

theta pinch

GS pinch effect
. plasma pinch

. . . **theta pinch**
RT laser plasma interactions
plasma compression
rotating plasmas
screw pinch
zeta pinch

thiamine

UF *vitamin B*
GS organic compounds
. coenzymes
. . . **thiamine**
. cyclic compounds
. . . heterocyclic compounds
. . . **thiamine**
vitamins
. **thiamine**

thiazine (trademark)

GS dyes
. **thiazine (trademark)**
nitrogen compounds
. **thiazine (trademark)**
organic compounds
. cyclic compounds
. . . heterocyclic compounds
. . . **thiazine (trademark)**
sulfur compounds
. **thiazine (trademark)**

thick films

RT electronic packaging
∞ films
integrated circuits
microminiaturization
printed circuits
semiconducting films
superconducting films
thin films

thick plates

DEF Plates of steel or other material that are over two inches thick. The exact definition of dimensions that constitute thickness varies.

GS structural members
. plates (structural members)
. . . **thick plates**
RT flat plates
metal plates
Mindlin plates
∞ plates
∞ sheets
thickness
thin plates

thick walls

GS walls
. **thick walls**
RT boiler plate
bulkheads
reinforcement (structures)
structural members
thin walls
wall pressure
wall temperature

∞ thickeners

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT thickeners (equipment)
thickeners (materials)

thickeners (equipment)

GS separators
. classifiers
. . . **thickeners (equipment)**
RT coalescing
precipitators
∞ thickeners

thickeners (materials)

RT additives
gels
greases
∞ materials
∞ thickeners

thickness

GS **thickness**
. boundary layer thickness

RT airfoil profiles
depth
diameters
dimensions
film thickness
length
optical thickness
spacing
target thickness
thick plates
thickness ratio
volume

thickness ratio
GS ratios
. aspect ratio
. . . **thickness ratio**

RT airfoil profiles
airfoils
dimensional analysis
fineness ratio
thickness
thin airfoils
thin wings

thigh
GS anatomy
. limbs (anatomy)
. . leg (anatomy)
. . . **thigh**
appendages
. leg (anatomy)
. . **thigh**

thin airfoils
GS airfoils
. **thin airfoils**
. . thin wings
. . . infinite span wings

RT airfoil profiles
thickness ratio

∞ **thin bodies**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT slender bodies
thin plates
thin walls
thin wings

thin films
SN (SOLID STATE PHYSICS AND ELECTRONICS)
DEF Films having a thickness much smaller than any lateral dimension, formed by deposition of a material or by a thinning process.

GS **thin films**
. diamond films
. energy absorption films
. ferromagnetic films
. monomolecular films
. . Langmuir-Blodgett films

RT amorphous silicon
atomic force microscopy
atomic layer epitaxy
carbon nitrides
coatings
computer storage devices
copper indium selenides
electrochromism
electrode film barriers
ferroelectric materials

∞ films
heterojunctions
indium selenides
integrated circuits
integrated optics
ion plating
Langmuir turbulence
metal films
microchannel plates
microminiaturization
miniature electronic equipment
molecular electronics
nanoparticles
oxide films
parametrons
pellicle
plating
praeter-sonic devices

rectifiers
semiconducting films
silicon films
solid state devices

∞ solid state physics
sputtering gages
squeeze films
superconducting films
thermochromic coatings
thick films
wafers
YBCO superconductors
yttria-stabilized zirconia

thin layer chromatography
GS chemical tests
. chemical analysis
. . chromatography
. . . **thin layer chromatography**

RT gas chromatography
monomolecular films

thin plates
SN (EXCLUDES THIN SURFACE COATINGS AND FILMS)

GS structural members
. plates (structural members)
. . **thin plates**

RT diaphragms (mechanics)
flat plates
foils (materials)
metal plates
panels
parallel plates
∞ plates
∞ sheets
thick plates
∞ thin bodies

thin walled shells
GS shells (structural forms)
. **thin walled shells**

RT cylindrical shells
membrane structures
metal shells
orthotropic shells
reinforced shells
skin (structural member)
spherical shells
stressed-skin structures
toroidal shells

thin walls
GS walls
. **thin walls**

RT bulkheads
diaphragms (mechanics)
partitions (structures)
skin (structural member)
thick walls
∞ thin bodies

thin wings
GS airfoils
. thin airfoils
. . **thin wings**
. . . infinite span wings
. wings
. . **thin wings**
. . . infinite span wings

RT airfoil profiles
fixed wings
flexible wings
thickness ratio
∞ thin bodies
uncambered wings

thinners
USE **solvents**

thiols
UF *dithiols*
mercaptan
mercapto compounds

GS sulfur compounds
. **thiols**
. . cysteine
. . dimercaprol

RT alcohols
∞ chemical compounds

phenols

thiophenes
(added January 1995)
GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **thiophenes**

RT benzene
drugs
furans
pyrroles

thioplastics
RT elastomers
plastics
sulfides

thioureas
GS nitrogen compounds
. amides
. . ureas
. . . **thioureas**

thiurionium
GS nitrogen compounds
. amides
. . ureas
. . . **thiurionium**
organic compounds
. amines
. . **thiurionium**

thixotropic propellants
USE **gelled rocket propellants**

thixotropy
DEF The property of material that enables it to stiffen in a relatively short time on standing, but upon agitation or manipulation to change to a very soft consistency or to a fluid of high viscosity, the process being completely reversible.

RT gelation
gels
liquefaction
nonNewtonian flow

∞ physical properties
semisolids
solubility
viscosity

Thomas-Fermi model
UF *Thomas-Fermi theory*
GS models
. mathematical models
. . **Thomas-Fermi model**

RT atomic structure
electron distribution
plasma composition
quantum statistics

Thomas-Fermi theory
USE **Thomas-Fermi model**

Thomson effect
USE **thermoelectricity**

Thomson scattering
GS scattering
. wave scattering
. . electromagnetic scattering
. . . **Thomson scattering**

RT electromagnetic radiation

Thor Able rocket vehicle
GS launch vehicles
. Thor launch vehicles
. . **Thor Able rocket vehicle**
. Thorad launch vehicles
. . **Thor Able rocket vehicle**
rocket vehicles
. multistage rocket vehicles
. . Thor launch vehicles
. . . **Thor Able rocket vehicle**
. Thorad launch vehicles
. . **Thor Able rocket vehicle**

RT Explorer 6 satellite
liquid propellant rocket engines
Pioneer 1 space probe
Pioneer 5 space probe

Thor Agena launch vehicle

solid propellant rocket engines
TIROS 1 satellite

Thor Agena launch vehicle

GS launch vehicles
. Thor launch vehicles
. . **Thor Agena launch vehicle**
. Thorad launch vehicles
. . **Thor Agena launch vehicle**
rocket vehicles
. multistage rocket vehicles
. Thor launch vehicles
. . **Thor Agena launch vehicle**
. Thorad launch vehicles
. . **Thor Agena launch vehicle**
RT Agena A rocket vehicle
Agena B Ranger Program
Agena rocket vehicles
Discoverer satellites
Explorer 31 satellite
Explorer 34 satellite
Explorer 35 satellite
Explorer 36 satellite
liquid propellant rocket engines
Nimbus 1 satellite
Nimbus 2 satellite
Nimbus satellites
OGO-3

Thor Delta launch vehicle

UF *Echo 1 carrier rocket*
GS launch vehicles
. Thor launch vehicles
. . **Thor Delta launch vehicle**
. Thorad launch vehicles
. . **Thor Delta launch vehicle**
rocket vehicles
. multistage rocket vehicles
. Thor launch vehicles
. . **Thor Delta launch vehicle**
. Thorad launch vehicles
. . **Thor Delta launch vehicle**
RT Ariel satellites
Echo 1 satellite
Explorer satellites
liquid propellant rocket engines
OSO
Relay satellites
solid propellant rocket engines
SYNCOM satellites
Telstar satellites

Thor launch vehicles

GS launch vehicles
. **Thor launch vehicles**
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
rocket vehicles
. multistage rocket vehicles
. . **Thor launch vehicles**
. . . Thor Able rocket vehicle
. . . Thor Agena launch vehicle
. . . Thor Delta launch vehicle
RT liquid propellant rocket engines
solid propellant rocket engines
Thorad launch vehicles
 ∞ vehicles

Thorad launch vehicles

GS launch vehicles
. **Thorad launch vehicles**
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
rocket vehicles
. **Thorad launch vehicles**
. . Thor Able rocket vehicle
. . Thor Agena launch vehicle
. . Thor Delta launch vehicle
RT liquid propellant rocket engines
Thor launch vehicles
 ∞ vehicles

thorax

GS anatomy
. **thorax**
RT breast
chest
diaphragm (anatomy)

sternum
viscera

thorium

GS chemical elements
. actinide series
. . **thorium**
. . . thorium isotopes
metals
. actinide series
. . **thorium**
. . . thorium isotopes
RT nuclear fuels

thorium 228

USE **thorium isotopes**

thorium 230

USE **thorium isotopes**

thorium 234

USE **thorium isotopes**

thorium alloys

GS alloys
. **thorium alloys**
RT nuclear fuels

thorium compounds

GS actinide series compounds
. **thorium compounds**
. . thorium fluorides
. . thorium oxides
RT ceramic nuclear fuels
 ∞ chemical compounds
 ∞ metal compounds
nuclear fuels

thorium fluorides

GS actinide series compounds
. thorium compounds
. . **thorium fluorides**
halogen compounds
. fluorine compounds
. . fluorides
. . . metal fluorides
. . . . **thorium fluorides**
. . halides
. . fluorides
. . . metal fluorides
. . . . **thorium fluorides**
. . metal halides
. . . metal fluorides
. . . . **thorium fluorides**

thorium isotopes

UF *thorium 228*
thorium 230
thorium 234
GS chemical elements
. actinide series
. . thorium
. . . **thorium isotopes**
. . nuclides
. . isotopes
. . . **thorium isotopes**
metals
. actinide series
. . thorium
. . . **thorium isotopes**

thorium oxides

GS actinide series compounds
. thorium compounds
. . **thorium oxides**
chalcogenides
. oxides
. . metal oxides
. . . **thorium oxides**
RT dioxides

thoron

USE **radon isotopes**

threads

SN (EXCLUDES TEXTILES AND
FILAMENTARY FORMS)
RT bolts
nuts (fasteners)

screws

threat evaluation

DEF The evaluation of the potential harm of an approaching aircraft or other objects.
RT aircraft hazards
aircraft safety
collision avoidance
midair collisions
radar tracking
situational awareness
warning systems

three axis stabilization

DEF Maintenance of a stable platform in a desired 3-axis orientation in inertial space by utilizing gyros and accelerometers and which is independent of vehicle motion.

GS stabilization
. **three axis stabilization**
RT inertial platforms
satellite attitude control
satellite orientation
stabilized platforms

three body problem

DEF That problem in classical celestial mechanics which treats the motion of a small body, usually with negligible mass, relative to and under the gravitational influence of two other finite point masses.

RT celestial mechanics
four body problem
many body problem
orbits
perturbation
 ∞ problems
retrograde orbits
triple stars
Trojan asteroids
Trojan orbits
two body problem

three dimensional bodies

RT aerodynamic configurations
 ∞ bodies
boundary value problems
flow distribution

three dimensional boundary layer

GS boundary layers
. **three dimensional boundary layer**
RT axisymmetric flow
boundary layer transition
compressible boundary layer
laminar boundary layer
 ∞ layers
secondary flow
turbulent boundary layer
velocity distribution

three dimensional composites

GS composite materials
. **three dimensional composites**
RT braided composites
fiber composites
 ∞ materials
woven composites

three dimensional flow

GS fluid flow
. parallel flow
. . **three dimensional flow**
. . . Karman-Bodewadt flow
. . . secondary flow
translational motion
. three dimensional motion
. . **three dimensional flow**
. . . Karman-Bodewadt flow
. . . secondary flow
RT axial flow
conical flow
flow geometry
helical flow
one dimensional flow
Roshko prediction
spherical waves
two dimensional flow

wedge flow

three dimensional models

(added August 1988)

GS models
 . **three dimensional models**
 RT computational grids
 computer aided design
 computerized simulation
 mathematical models
 rapid prototyping
 two dimensional models

three dimensional motion

GS translational motion
 . **three dimensional motion**
 . . three dimensional flow
 . . . Karman-Bodewadt flow
 . . . secondary flow
 RT degrees of freedom
 optical flow (image analysis)

threshold currents

GS electric current
 . **threshold currents**
 RT lasers
 threshold voltage
 ∞ thresholds

threshold detectors (dosimeters)

GS measuring instruments
 . radiation measuring instruments
 . . radiation detectors
 . . . dosimeters
 **threshold detectors (dosimeters)**
 RT ionization chambers
 ∞ thresholds

threshold gates

GS circuits
 . gates (circuits)
 . . **threshold gates**
 . logic circuits
 . . **threshold gates**
 RT ∞ thresholds
 trigger circuits

threshold logic

GS mathematical logic
 . set theory
 . . **threshold logic**
 RT gates (circuits)
 ∞ logic
 logic circuits
 ∞ thresholds
 transistor logic
 trigger circuits

*threshold shift*USE **thresholds****threshold voltage**

DEF The threshold energy necessary to remove an electron from the bound position to the conduction band in solid state devices.

GS potential energy
 . electric potential
 . . **threshold voltage**
 RT photovoltages
 photovoltaic effect
 semiconductor junctions
 silicon junctions
 solid state devices
 threshold currents
 ∞ thresholds
 volt-ampere characteristics

∞ **thresholds**

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

DEF Generally, the minimum values of signals that can be detected by the systems or sensors under consideration. Used for threshold shift.

UF *threshold shift*
 RT doors
 entrances
 noise threshold
 resolution

responses
 sensitivity
 threshold currents
 threshold detectors (dosimeters)
 threshold gates
 threshold logic
 threshold voltage
 thresholds (perception)

thresholds (perception)

UF *sensory thresholds*
 RT acuity
 adaptation
 audiometry
 auditory perception
 auditory sensation areas
 auditory stimuli
 chronaxy
 frequency response
 hearing
 light adaptation
 limen
 neurology
 perception
 photosensitivity
 sensitivity
 ∞ thresholds
 vision
 visual perception

throats

SN (NON BIOLOGICAL)
 DEF The narrowest portion of a constricted duct, as in a diffuser, or a venturi tube. SN (non biological).
 RT carburetors
 ∞ channels
 chokes (restrictions)
 ducts
 nozzle geometry
 nozzle inserts
 nozzle walls
 orifices

thrombin

GS biopolymers
 . proteins
 . . enzymes
 . . . **thrombin**
 body fluids
 . blood
 . . **thrombin**
 organic compounds
 . proteins
 . . enzymes
 . . . **thrombin**
 RT blood coagulation
 fibrin
 fibrinogen
 hemostatics
 prothrombin
 thromboplastin

thrombocytes

RT blood coagulation
 clotting

thrombopenia

GS diseases
 . **thrombopenia**
 RT coagulation

thromboplastin

GS body fluids
 . blood
 . . **thromboplastin**
 RT blood coagulation
 clotting
 hemostatics
 homeostasis
 platelets
 thrombin

thrombosis

GS diseases
 . **thrombosis**
 RT blood coagulation
 infarction

myocardial infarction

throttling

RT Joule-Thomson effect
 variable thrust

throwing

RT ejection
 spreading

thrustDEF The pushing or pulling force developed by an aircraft engine or a rocket engine. The force exerted in any direction by a fluid jet or by a powered screw, as, the thrust of an antitorque rotor. Specifically in rocketry, $F(\text{thrust}) = mv$ where m is propellant mass flow and v is exhaust velocity relative to the vehicle. Used for thrust power.UF *thrust power*GS **thrust**

. high thrust
 . jet thrust
 . leading edge thrust
 . low thrust
 . . microthrust
 . rocket thrust
 . . retrothrust
 . static thrust
 . variable thrust
 RT acceleration (physics)
 auxiliary propulsion
 burning time
 dual thrust nozzles
 ∞ force
 jet engines
 nozzle thrust coefficients
 ∞ power
 propulsion
 ∞ reaction
 rocket engines
 rocket propellants
 specific impulse
 total impulse

thrust augmentation

DEF The increasing of the thrust of an engine or power plant, especially of a jet engine and usually for a short period of time, over the thrust normally developed.

GS augmentation
 . **thrust augmentation**

RT afterburning
 Coanda effect
 high thrust
 secondary injection
 shrouded propellers
 variable thrust
 water injection

thrust bearings

GS bearings
 . **thrust bearings**
 RT antifriction bearings
 ball bearings
 gas bearings
 roller bearings

thrust chamber pressure

GS pressure
 . **thrust chamber pressure**

thrust chambers

UF *rocket chambers*
 RT arc chambers
 ∞ chambers
 combustion chambers
 divergent nozzles
 rocket engine cases

thrust control

GS **thrust control**
 . thrust vector control
 RT attitude control
 ∞ control
 control rockets
 engine control
 jet control
 ∞ reaction control
 rocket engine control

thrust distribution

satellite control
turbojet engine control
variable thrust

thrust distribution

DEF The location of areas of upward thrust (lift) on wings, airfoils, etc.

RT aerodynamic forces
∞ distribution
force distribution
leading edges
pressure distribution
vortices
wing planforms

thrust faults

USE **geological faults**

thrust loads

GS loads (forces)
. dynamic loads
. . **thrust loads**
RT aerodynamic loads
axial compression loads
axial loads
compression loads
jet thrust
rocket thrust
structural design criteria

thrust measurement

GS mechanical measurement
. **thrust measurement**
RT accelerometers
dynamometers
∞ force
∞ measurement

thrust power

USE **thrust**

thrust programming

UF *optimum thrust programming*
GS scheduling
. programming (scheduling)
. . **thrust programming**
RT flight mechanics
flight optimization
flight plans
orbital mechanics
parking orbits
propulsive efficiency
trajectory control

thrust reversal

RT aircraft brakes
brakes (for arresting motion)
braking
deceleration

thrust termination

GS stopping
. **thrust termination**
RT burnout
rocket thrust
stage separation
variable thrust

thrust vector control

UF *TVC (control)*
GS attitude control
. directional control
. . **thrust vector control**
flight control
. **thrust vector control**
thrust control
. **thrust vector control**
RT air slew missiles
automatic control
automatic flight control
∞ control
guide vanes
gyrostabilizers
jet vanes
liquid injection
maneuverable spacecraft
missile control
nozzle thrust coefficients
rocket engines
secondary injection

spacecraft control
variable thrust
Vernier engines
X-31 aircraft

∞ thrusters

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ion engines
magnetoplasmadynamic thrusters
pulsed inductive thrusters
pulsed plasma thrusters
rocket engines

thrust-weight ratio

GS ratios
. **thrust-weight ratio**
RT acceleration (physics)
mass ratios
pressure ratio
rocket engines

thulium

GS chemical elements
. rare earth elements
. . **thulium**
. . . thulium isotopes
metals
. rare earth elements
. . **thulium**
. . . thulium isotopes

thulium 171

USE **thulium isotopes**

thulium compounds

GS rare earth compounds
. **thulium compounds**
RT ∞ chemical compounds
∞ metal compounds

thulium isotopes

UF *thulium 171*
GS chemical elements
. nuclides
. . isotopes
. . . **thulium isotopes**
. rare earth elements
. . thulium
. . . **thulium isotopes**
metals
. rare earth elements
. . thulium
. . . **thulium isotopes**

Thunderchief aircraft

USE **F-105 aircraft**

thunderstorms

DEF Local storms resulting from warm humid air rising in an unstable environment.

GS storms
. storms (meteorology)
. . rainstorms
. . . **thunderstorms**
RT anvil clouds
arc clouds
atmospherics
cirrocumulus clouds
cirrostratus clouds
clouds (meteorology)
cold fronts
cumulonimbus clouds
downbursts
elves
fronts (meteorology)
hail
hailstorms
lightning
lightning suppression
microbursts (meteorology)
rain
sprites (atmospheric physics)
storm damage
warm fronts
wind (meteorology)

thymidine

GS acids
. **thymidine**

bases (chemical)
. **thymidine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . **thymidine**
RT alloxan
deoxyribonucleic acid
nucleosides

thymine

GS acids
. **thymine**
nitrogen compounds
. **thymine**
organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . pyrimidines
. . . . **thymine**
RT alloxan
deoxyribonucleic acid

thymol

GS hydroxyl compounds
. alcohols
. . phenols
. . . **thymol**

thymus gland

GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **thymus gland**
. immune systems
. . lymphatic system
. . . **thymus gland**

thyatron

GS electron tubes
. gas discharge tubes
. . **thyatron**
microwave equipment
. **thyatron**
rectifiers
. **thyatron**
RT current converters (AC to DC)
silicon controlled rectifiers
thyristors

thyristors

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **thyristors**
. . . . silicon controlled rectifiers
rectifiers
. **thyristors**
. . silicon controlled rectifiers
RT junction transistors
p-n-p-n junctions
thyatron
trigger circuits
triodes

thyroid gland

GS anatomy
. glands (anatomy)
. . endocrine glands
. . . **thyroid gland**
RT calcium metabolism
hypometabolism
thyroxine

thyroxine

GS acids
. amino acids
. . **thyroxine**
organic compounds
. amino acids
. . **thyroxine**
secretions
. endocrine secretions
. . hormones
. . . **thyroxine**
RT thyroid gland

Tibet

GS nations

. **Tibet**
 RT Asia
 Bhutan
 Himalayas

tibia
 GS anatomy
 . musculoskeletal system
 . . bones
 . . . **tibia**
 RT leg (anatomy)

TID
 USE **traveling ionospheric disturbances**

tidal flats
 GS landforms
 . flats (landforms)
 . . **tidal flats**
 RT aquaculture
 coasts
 estuaries
 fisheries
 marshlands
 mud
 oceans
 shorelines
 tides

tidal oscillation
 USE **tides**

tidal waves
 GS water waves
 . **tidal waves**
 RT ocean currents
 ocean surface
 oceanography
 sea breeze
 sea roughness
 seismology
 tsunami waves
 ∞ waves
 wind (meteorology)

tide powered generators
 RT electric generators
 energy conversion efficiency
 ∞ generators
 ocean currents
 ocean surface
 oceanography
 oceans
 sea roughness
 tidepower
 tides
 waterwave energy conversion
 waterwave powered machines

tide powered machines
 RT ∞ machinery
 ocean currents
 ocean surface
 sea roughness
 tidepower
 tides
 waterwave energy conversion
 waterwave powered machines

tidepower
 GS renewable energy
 . **tidepower**
 RT clean energy
 Earth resources
 ∞ energy sources
 ocean currents
 ocean surface
 oceanography
 sea roughness
 tide powered generators
 tide powered machines
 tides
 waterwave energy
 waterwave energy conversion
 waterwave powered machines

tides
 DEF The periodic rising and falling of the Earth's oceans and atmosphere. It results from the gravitational forces of the moon and sun

acting upon the rotating Earth. The disturbance actually propagates as a wave through the atmosphere and along the surface of the waters of the Earth. Atmospheric tides are always so designated, whereas the term tide alone commonly implies the oceanic variety. Used for tidal oscillation.

UF *tidal oscillation*
 GS **tides**
 . atmospheric tides
 . Earth tides
 . lunar tides
 RT coastal currents
 estuaries
 flood damage
 floods
 ocean currents
 ocean surface
 oceanography
 pressure ice
 sea roughness
 tidal flats
 tide powered generators
 tide powered machines
 tidepower
 water currents
 waterwave energy conversion
 waterwave powered machines
 wetlands

tiebolts
 GS fasteners
 . bolts
 . . **tiebolts**

TIG welding
 USE **gas tungsten arc welding**

tightness
 RT clearances
 closures
 proximity

tiles
 DEF Ceramic surfacing units, usually relatively thin in relation to facial area, made from clay or a mixture of clay and other ceramic materials, called the body of the tile having either a "glazed" or "unglazed" face and fired above red heat in the course of manufacture to a temperature sufficiently high to produce specific physical properties and characteristics.
 RT ceramics
 floors
 grout
 Ludox (trademark)
 masonry
 walls

tilt
 USE **attitude (inclination)**

tilt rotor aircraft
 DEF A type of convertible aircraft which takes off, hovers, and lands as a helicopter but is converted into a fixed wing aircraft by the 90-degree tilting of its rotor or rotors for use as a propeller for forward flight.
 GS V/STOL aircraft
 . rotary wing aircraft
 . . **tilt rotor aircraft**
 . . . V-22 aircraft
 . . . XV-15 aircraft
 RT ∞ aircraft
 helicopters
 rotor stator interactions
 tilting rotors

Tilt Rotor Research Aircraft Program
 GS programs
 . NASA programs
 . . **Tilt Rotor Research Aircraft Program**

RT ∞ aircraft
 helicopters
 rotary wings
 V-22 aircraft

XV-15 aircraft

tilt wing aircraft
 UF *pivoted wing aircraft*
 GS **tilt wing aircraft**
 . CL-84 aircraft
 . L-29 jet trainer
 . VZ-2 aircraft
 . XC-142 aircraft
 RT ∞ aircraft
 fan in wing aircraft
 research aircraft
 short takeoff aircraft
 V-22 aircraft
 V/STOL aircraft
 vertical takeoff aircraft
 X-22 aircraft

tilted propellers
 GS propellers
 . **tilted propellers**
 RT helicopter propeller drive

tilting
 USE **attitude (inclination)**

tilting rotors
 GS airfoils
 . wings
 . . rotary wings
 . . . **tilting rotors**
 rotating bodies
 . rotors
 . . rotary wings
 . . . **tilting rotors**
 RT tilt rotor aircraft
 V-22 aircraft
 XV-3 aircraft

tiltmeters
 DEF Instruments used to measure small changes in the tilt of the Earth's surface usually in relation to a liquid-level surface or to the rest position of a pendulum.
 GS measuring instruments
 . **tiltmeters**
 RT attitude (inclination)
 geophysics
 seismographs

tilt-table test
(added August 2004)
 DEF A test to evaluate homodynamic or cardiovascular response that uses a tilt-adjustable table to maintain a head-down or head-up body posture.
 GS physiological tests
 . **tilt-table test**
 RT aerospace medicine
 bioastronautics
 cardiovascular system
 gravitational physiology
 head down tilt
 head up tilt
 hemodynamic responses
 hindlimb suspension
 lower body negative pressure
 orthostatic tolerance
 physiological responses
 supine position
 weightlessness simulation

timber identification
 GS identifying
 . **timber identification**
 recognition
 . **timber identification**
 RT conifers
 crop identification
 deciduous trees
 Earth resources
 evaluation
 forests
 trees (plants)

timber inventory
 GS inventories
 . **timber inventory**
 RT aerial photography
 Earth resources

timber vigor

forest management
forests
infrared photography
photography
reforestation
satellite-borne photography
trees (plants)

timber vigor

RT foliage
forests
growth
timberline
trees (plants)

timberline

RT dendrochronology
forests
growth
high altitude environments
polar regions
timber vigor
trees (plants)

time

DEF The hour of the day reckoned by the position of a celestial reference point relative to a reference celestial median. Used for duration.

UF *duration*

GS **time**

. access time
. burning time
. downtime
. ephemeris time
. flight time
. MTBF
. reaction time
. . chronaxy
. relaxation time
. response time (computers)
. sidereal time
. testing time
. transit time
. universal time

RT

calendars
celestial geodesy
chronology
exposure
intervals
launch dates
month
prolongation
relativistic effects
schedules
synchronism
time measurement
units of measurement

time constant

DEF Generally, the time required for an instrument to indicate a given percentage of the final reading resulting from an input signal; the relaxation time of an instrument.

GS constants

. **time constant**
. . perceptual time constant

RT

access time
 ∞ constant
damping
dynamic characteristics
dynamic response
impedance
LC circuits
RC circuits
reaction time
relaxation time
RL circuits
RLC circuits
 ∞ time response
transfer functions
transient response

time delay

USE **time lag**

time dependence

GS dependence
. **time dependence**
RT ∞ Helmholtz equations
spatial dependencies

stochastic processes
temporal distribution
 ∞ time response

time discrimination

RT comparator circuits
sensory discrimination

time division multiple access

DEF Radio transmission method in which each station of a satellite communication network is assigned a time schedule for transmission (in lieu of frequency division); a multi-element antenna with an adaptive null steering array eliminates interference. Used for TDMA.

UF *TDMA*

GS telecommunication
. multiple access
. . **time division multiple access**
. . radio communication
. . . radio relay systems
. . . . **time division multiple access**
transmission
. signal transmission
. . data transmission
. . . multiple access
. . . . **time division multiple access**
RT Aloha system
channel noise
frequency division multiple access
multichannel communication
packet switching
pulse communication
satellite networks
switching
wideband communication

time division multiplexing

DEF A system for the transmission of information about two or more quantities (measurands) over a common channel by dividing available time intervals among the measurands to form a composite pulse train.

GS transmission

. multiplexing
. . **time division multiplexing**
RT demultiplexing
frequency division multiplexing
pulse modulation
telemetry
television transmission
wavelength division multiplexing

time domain analysis

(added April 1999)

GS analysis (mathematics)
. **time domain analysis**
. . finite difference time domain
method

RT control systems design
dynamic response
parameter identification
signal processing
 ∞ time response

time functions

GS functions (mathematics)
. **time functions**
RT rates (per time)
square waves
stochastic processes
wave functions
waveforms
wavelet analysis

time lag

DEF The total time between the application of a signal to a measuring instrument and the full indication of that signal within the uncertainty of the instrument. Used for chronotrons, lag (delay), and time delay.

UF *chronotrons*

lag (delay)

time delay

RT cepstral analysis
delay
delay lines
electric relays
hysteresis
inventory controls

reaction time
refractory period
responses
schedules
 ∞ time response
transmission rate (communications)

time lapse photography

USE **chronophotography**

time marching

DEF Techniques for solving a problem with partial differential equations that have a time derivation.

RT finite difference theory
numerical analysis
spatial marching

time measurement

UF *dating*
epochs
timing
GS **time measurement**
. clock paradox
RT atomic clocks
chronometers
clocks
consecutive events
frequency measurement
 ∞ measurement
oscillographs
radioactive age determination
rates (per time)
sidereal time
stroboscopes
synchronism
time
 ∞ time response
time synchronization
timing devices
velocity
velocity measurement
windows (intervals)

time measuring instruments

GS measuring instruments
. **time measuring instruments**
. . clocks
. . . atomic clocks
. . . . autonomous spacecraft clocks
. . . chronometers
. . timing devices

time of flight spectrometers

GS measuring instruments
. spectrometers
. . **time of flight spectrometers**
RT spectroscopy

time optimal control

GS automatic control
. optimal control
. . **time optimal control**
optimization
. optimal control
. . **time optimal control**
RT ∞ control

∞ time response

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT access time
delay
response bias
responses
temporal distribution
time constant
time dependence
time domain analysis
time lag
time measurement

time series analysis

RT ∞ applications of mathematics
autocorrelation
autoregressive moving average
correlation
curve fitting
data sampling
extrapolation

forecasting
 Fourier analysis
 Kalman-Schmidt filtering
 maximum entropy method
 scheduling
 ∞ statistics
 stochastic processes
 trend analysis
 trends

time sharing
 DEF A mode of operation that permits two or more users to execute computer programs concurrently on the same computer system by interleaving the execution of the program. Time sharing may be implemented by time slicing, priority-based interrupts, or other scheduling methods.
 RT computer programming
 coordination
 multiple output programs
 multiprocessing (computers)
 multiprogramming
 pipelining (computers)
 run time (computers)

time signals
 DEF Accurate signals marking specified times or time intervals. They are used primarily for determining errors of timepieces. Such signals are usually sent from an observatory by radio or telegraph.
 RT clock paradox
 frequency standards
 picosecond pulses
 pulse duration
 ∞ signals
 time synchronization
 timing devices

time synchronization
 (added December 1998)
 GS synchronism
 . **time synchronization**
 RT clocks
 frequency standards
 frequency synchronization
 Global Positioning System
 time measurement
 time signals
 universal time

time temperature parameter
 RT aging (metallurgy)
 austenitic stainless steels
 embrittlement
 fracture mechanics
 long term effects
 metallography
 precipitation hardening
 temperature effects

timers
 USE **timing devices**

timing
 USE **time measurement**

timing devices
 UF *timers*
 GS measuring instruments
 . time measuring instruments
 . . **timing devices**
 RT chronometers
 clock paradox
 clocks
 dwell
 pendulums
 tachometers
 time measurement
 time signals

Timoshenko beams
 DEF Simple structural units used by Stephen Timoshenko as models in developing analysis equations for deflections and deformations of beams and columns under load.
 GS structural members
 . beams (supports)
 . . **Timoshenko beams**

RT columns (supports)
 Euler-Bernoulli beams
 trusses

tin
 GS chemical elements
 . **tin**
 . . tin isotopes
 metals
 . **tin**
 . . tin isotopes

tin alloys
 GS alloys
 . **tin alloys**
 . . babbitt metal
 RT bearing alloys
 bismuth alloys
 indium alloys
 solders
 stannides
 Zircalloys (trademark)

tin compounds
 GS **tin compounds**
 . organic tin compounds
 . stannates
 . stannides
 . . niobium stannides
 . tin oxides
 . tin tellurides
 RT ∞ chemical compounds
 ∞ Group 4A compounds
 ∞ metal compounds

tin isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **tin isotopes**
 . tin
 . . **tin isotopes**
 metals
 . tin
 . . **tin isotopes**

tin oxides
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **tin oxides**
 tin compounds
 . **tin oxides**
 RT SIS (semiconductors)

tin tellurides
 GS chalcogenides
 . tellurides
 . . **tin tellurides**
 tellurium compounds
 . tellurides
 . . **tin tellurides**
 tin compounds
 . **tin tellurides**

tip driven rotors
 UF *hot cycle propulsion system*
 GS airfoils
 . wings
 . . rotary wings
 . . . **tip driven rotors**
 rotating bodies
 . rotors
 . . rotary wings
 . . . **tip driven rotors**
 RT XV-9A aircraft

tip speed
 GS rates (per time)
 . **tip speed**
 velocity
 . **tip speed**
 RT angular velocity
 critical velocity
 rotor speed

tip vanes
 DEF Wing mounted rotor tips with their spans oriented approximately parallel to the local free stream to increase the capture area

and power output of the rotor.
 GS rotating bodies
 . rotors
 . . **tip vanes**
 turbomachinery
 . turbines
 . . wind turbines
 . . . **tip vanes**

tips
 GS **tips**
 . blade tips
 . crack tips
 . nose tips
 . wing tips
 RT airfoil profiles
 edges

tires
 GS **tires**
 . aircraft tires
 RT blowouts
 inflatable structures
 landing gear
 rollers
 toroidal wheels
 treads
 vehicle wheels
 wheel brakes
 wheels

TIROS 1 satellite
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 1 satellite**
 RT Thor Able rocket vehicle

TIROS 2 satellite
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 2 satellite**
 RT Delta launch vehicle

TIROS 3 satellite
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 3 satellite**
 RT Delta launch vehicle

TIROS 4 satellite
 UF *TIROS D satellite*
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 4 satellite**
 RT Delta launch vehicle

TIROS 5 satellite
 UF *TIROS E satellite*
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 5 satellite**
 RT Delta launch vehicle

TIROS 6 satellite
 UF *TIROS F satellite*
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 6 satellite**
 RT Delta launch vehicle

TIROS 7 satellite
 UF *TIROS G satellite*
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 7 satellite**
 RT Delta launch vehicle

TIROS 8 satellite
 UF *TIROS H satellite*
 GS artificial satellites
 . meteorological satellites
 . . TIROS satellites
 . . . **TIROS 8 satellite**

TIROS 9 satellite

RT Delta launch vehicle

TIROS 9 satellite

UF *TIROS wheel satellite*

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 9 satellite**

RT Delta launch vehicle

TIROS 10 satellite

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS 10 satellite**

RT Delta launch vehicle

TIROS D satellite

USE **TIROS 4 satellite**

TIROS E satellite

USE **TIROS 5 satellite**

TIROS F satellite

USE **TIROS 6 satellite**

TIROS G satellite

USE **TIROS 7 satellite**

TIROS H satellite

USE **TIROS 8 satellite**

TIROS M

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS M**

RT ITOS 1
ITOS 2
ITOS 3
ITOS 4
ITOS satellites

TIROS N series satellites

DEF A new term for the family of satellites designed to prototype Tiros N.

GS artificial satellites
. meteorological satellites
. . TIROS satellites
. . . **TIROS N series satellites**
. . . . NOAA 6 satellite

RT Advanced Microwave Sounding Unit
Advanced Very High Resolution
Radiometer

ITOS 1
ITOS 2
ITOS 3
ITOS 4
ITOS satellites
NOAA 7 satellite
TIROS operational satellite system

TIROS operational satellite system

RT cloud photography
ITOS 1
ITOS 2
ITOS 3
ITOS 4
satellite observation

∞ systems
TIROS N series satellites

TIROS project

GS programs
. NASA programs
. . NASA space programs
. . . **TIROS project**
. projects
. . **TIROS project**
. space programs
. . NASA space programs
. . . **TIROS project**

RT cloud photographs
cloud photography
meteorological satellites

TIROS satellites

DEF A series of NASA and NOAA satellites launched to monitor the Earth's weather. Those funded by NASA are called TIROS, and those funded by NOAA are called ESSA.

GS artificial satellites
. meteorological satellites

. . **TIROS satellites**
. . . ITOS satellites
. . . . ITOS 1
. . . . ITOS 2
. . . . ITOS 3
. . . . ITOS 4
. . . TIROS 1 satellite
. . . TIROS 2 satellite
. . . TIROS 3 satellite
. . . TIROS 4 satellite
. . . TIROS 5 satellite
. . . TIROS 6 satellite
. . . TIROS 7 satellite
. . . TIROS 8 satellite
. . . TIROS 9 satellite
. . . TIROS 10 satellite
. . . TIROS M
. . . TIROS N series satellites
. . . . NOAA 6 satellite

RT cloud photography
ESSA satellites
polar orbits
satellite observation

TIROS wheel satellite

USE **TIROS 9 satellite**

tissue culturing

(added August 2004)

DEF Maintaining or growing of tissue, organ primordia, or the whole or part of an organ in vitro so as to preserve its architecture and/or function. Tissue culturing includes both organ culturing and cell culturing.

GS culture techniques
. **tissue culturing**

RT cell culturing
clone cells
culture media
cultured cells
microbiology
organ culturing
tissue engineering

tissue engineering

(added October 2000)

DEF Discipline for the in vitro growth and maintenance of tissue, organ primordia, or the whole or part of an organ so as to preserve its architecture and/or function. In terms of application, the primary goal of this technology is the replacement of deficient organs.

GS bioengineering
. **tissue engineering**
technologies
. biotechnology
. . **tissue engineering**

RT bioreactors
cell culturing
cells (biology)
clinostats
culture media
culture techniques
cytology
growth
histology
in vitro methods and tests

∞ microgravity applications
organ culturing
organs
tissue culturing
tissues (biology)

tissues (biology)

GS **tissues (biology)**
. connective tissue
. endothelium
. epicardium
. epithelium
. hypodermis
. neuroglia
. plantar tissues
. scars
. . adipose tissues
. . bone marrow
. . cartilage

RT anatomy
atrophy

∞ biology
cancer

∞ cells
cells (biology)
cultivation
cystic fibrosis
cysts
fibroblasts
fibrosis
histochemical analysis
histology
infarction
macrophages
mediastinum
necrosis
organs
osteogenesis
peritoneum
tissue engineering

Titan

DEF A satellite of Saturn orbiting at a mean distance of 1,222,000 kilometers.

GS celestial bodies
. natural satellites
. . Saturn satellites
. . . **Titan**

RT atmospheric composition
Cassini mission
Charon
Huygens probe
satellite atmospheres
Saturn (planet)
Titan atmosphere
Triton

Titan 1 ICBM

UF *SM-68 missile*

GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . **Titan 1 ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . **Titan 1 ICBM**

RT LR-87-AJ-5 engine

Titan 2 ICBM

UF *SM-68B missile*

GS missiles
. ballistic missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . **Titan 2 ICBM**
. surface to surface missiles
. . intercontinental ballistic missiles
. . . Titan ICBM
. . . . **Titan 2 ICBM**

RT Hyla-Star rocket vehicle

Titan 3 launch vehicle

GS launch vehicles
. Titan launch vehicles
. . **Titan 3 launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . Titan launch vehicles
. . . **Titan 3 launch vehicle**

RT manned orbital laboratories

Titan 4 launch vehicle

(added February 1993)

GS launch vehicles
. Titan launch vehicles
. . **Titan 4 launch vehicle**
. . . Titan 4B launch vehicle
rocket vehicles
. multistage rocket vehicles
. . Titan launch vehicles
. . . **Titan 4 launch vehicle**
. . . . Titan 4B launch vehicle

RT Titan Centaur launch vehicle

∞ vehicles

Titan 4B launch vehicle

(added October 1998)

GS launch vehicles
. Titan launch vehicles

. . Titan 4 launch vehicle
 . . . **Titan 4B launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . Titan launch vehicles
 . . . Titan 4 launch vehicle
 **Titan 4B launch vehicle**
 RT Cassini mission
 laser gyroscopes

Titan atmosphere
(added May 2005)
 DEF The atmosphere surrounding the Saturnian satellite Titan.
 GS environments
 . extraterrestrial environments
 . . satellite atmospheres
 . . . **Titan atmosphere**
 RT Cassini mission
 Huygens probe
 Saturn (planet)
 Titan

Titan Centaur launch vehicle
 DEF A Titan III rocket augmented with a Centaur rocket for launching spacecraft requiring high-velocity escape trajectories.
 GS launch vehicles
 . **Titan Centaur launch vehicle**
 rocket vehicles
 . **Titan Centaur launch vehicle**
 RT Centaur launch vehicle
 Titan 4 launch vehicle

Titan ICBM
 GS missiles
 . ballistic missiles
 . . intercontinental ballistic missiles
 . . . **Titan ICBM**
 Titan 1 ICBM
 Titan 2 ICBM
 . surface to surface missiles
 . . intercontinental ballistic missiles
 . . . **Titan ICBM**
 Titan 1 ICBM
 Titan 2 ICBM
 RT liquid propellant rocket engines
 LR-91-AJ-5 engine
 multistage rocket vehicles
 YLR-91-AJ-1 engine

Titan launch vehicles
 GS launch vehicles
 . **Titan launch vehicles**
 . . Titan 3 launch vehicle
 . . Titan 4 launch vehicle
 . . . Titan 4B launch vehicle
 rocket vehicles
 . multistage rocket vehicles
 . . **Titan launch vehicles**
 . . . Titan 3 launch vehicle
 . . . Titan 4 launch vehicle
 Titan 4B launch vehicle
 RT Gemini 3 flight
 Gemini 7 flight
 Gemini 8 flight
 Gemini 9 flight
 Gemini 10 flight
 Gemini 11 flight
 Gemini 12 flight
 liquid propellant rocket engines
 solid propellant rocket engines
 ∞ vehicles

Titan project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Titan project**
 . projects
 . . **Titan project**
 . space programs
 . . NASA space programs
 . . . **Titan project**
 RT ∞ boosters
 Gemini project
 Gemini spacecraft
 launch vehicles
 launchers

launching

titanates
 GS titanium compounds
 . **titanates**
 . . barium titanates
 . . ilmenite
 . . lead titanates
 . . . lead zirconate titanates
 . . magnesium titanates
 . . perovskites
 . . strontium titanates
 . . zirconium titanates
 . . . lead zirconate titanates
 RT euxenite

Titania
 DEF A satellite of Uranus orbiting at a mean distance of 438,000 kilometers.
 GS celestial bodies
 . natural satellites
 . . icy satellites
 . . . **Titania**
 . . Uranus satellites
 . . . **Titania**
 RT Uranus (planet)

titanium
 GS chemical elements
 . **titanium**
 . . titanium isotopes
 metals
 . transition metals
 . . **titanium**
 . . . titanium isotopes

titanium alloys
 GS alloys
 . **titanium alloys**
 . . nitinol alloys
 RT aluminides
 shape memory alloys
 titanium aluminides
 vanadium alloys

titanium aluminides
(added June 1997)
 GS aluminum compounds
 . aluminides
 . . **titanium aluminides**
 titanium compounds
 . **titanium aluminides**
 RT intermetallics
 titanium alloys

titanium borides
 GS boron compounds
 . borides
 . . **titanium borides**
 titanium compounds
 . **titanium borides**

titanium carbides
 GS carbon compounds
 . carbides
 . . **titanium carbides**
 titanium compounds
 . **titanium carbides**
 RT ceramic fibers
 ceramic matrix composites

titanium chlorides
 GS halogen compounds
 . chlorine compounds
 . . chlorides
 . . . **titanium chlorides**
 . halides
 . . chlorides
 . . . **titanium chlorides**
 . metal halides
 . . . **titanium chlorides**
 titanium compounds
 . **titanium chlorides**

titanium compounds
 GS **titanium compounds**
 . titanates
 . . barium titanates
 . . ilmenite
 . . lead titanates

. . . lead zirconate titanates
 . . magnesium titanates
 . . perovskites
 . . strontium titanates
 . . zirconium titanates
 . . . lead zirconate titanates
 . titanium borides
 . titanium carbides
 . titanium chlorides
 . titanium nitrides
 . titanium oxides
 . . anatase
 . . ilmenite
 . . rutile
 . titanium aluminides
 RT ∞ chemical compounds
 ∞ Group 4B compounds
 ∞ metal compounds

titanium dioxide
 USE **titanium oxides**

titanium isotopes
 GS chemical elements
 . nuclides
 . . isotopes
 . . . **titanium isotopes**
 . titanium
 . . **titanium isotopes**
 metals
 . transition metals
 . . titanium
 . . . **titanium isotopes**

titanium nitrides
 GS nitrogen compounds
 . nitrides
 . . metal nitrides
 . . . **titanium nitrides**
 titanium compounds
 . **titanium nitrides**
 RT ceramic matrix composites

titanium oxides
 UF *titanium dioxide*
 GS chalcogenides
 . oxides
 . . metal oxides
 . . . **titanium oxides**
 anatase
 ilmenite
 rutile
 titanium compounds
 . **titanium oxides**
 . . anatase
 . . ilmenite
 . . rutile
 RT dioxides

titration
 DEF The determination of the reactive capacity, usually of a solution, especially, the analytical process of successively adding measured amounts of a reagent (as a standard solution) to a known volume or weight of a sample or sample solution until a desired end point is reached.
 GS chemical reactions
 . **titration**
 RT acidity
 coulometers
 iodimetry
 ion concentration
 Kjeldahl method
 solutions

titrimeters
 GS measuring instruments
 . **titrimeters**
 RT chemical analysis

TNO (astronomy)
(added June 2006)
 USE **trans-Neptunian objects**

TNT (trinitrotoluene)
 USE **trinitrotoluene**

tobacco
 GS plants (botany)
 . **tobacco**

tocopherol

RT nicotine

tocopherol

UF *vitamin E*

GS organic compounds
. cyclic compounds
. . heterocyclic compounds
. . . **tocopherol**
. lipids
. . **tocopherol**
vitamins
. **tocopherol**

Togo

GS nations
. **Togo**
RT Africa

toilets

RT human wastes
sanitation
spacecrews
waste disposal

tokamak devices

DEF Experimental toroidal magnetic confinement devices where toroidal current runs through the plasma in order to produce fusion reactor like plasma conditions. The name is a Russian acronym for toroidal magnetic current.

GS nuclear reactors
. **tokamak devices**
. . Joint European Torus
plasma generators
. **tokamak devices**
. . Joint European Torus

RT beam injection
beta factor
bumpy toruses
divertors (fusion reactors)
∞ electric power
limiters (fusion reactors)
nuclear fusion
plasma compression
plasma control
plasma physics
poloidal flux
Q values (nuclear physics)
∞ reactors
spheromaks

tolerances (mechanics)

DEF A group of prescribed limits for specific properties of a particular material.

GS **tolerances (mechanics)**

. impact tolerances
RT acceptability
accuracy
allowances
clearances
consistency
dimensional stability
drift (instrumentation)
errors
hysteresis
inspection
linearity
mechanical properties
nondestructive tests
precision
quality control
radiation tolerance
range (extremes)
reliability
resolution
sensitivity
specifications
stability
standards

tolerances (physiology)

GS **tolerances (physiology)**

. acceleration tolerance
. altitude tolerance
. cold tolerance
. heat tolerance
. human tolerances
. radiation tolerance

RT acclimatization
Barany chair

biocontrol systems
impact resistance
noise tolerance
orthostatic tolerance
physiology
range (extremes)
∞ resistance

Tollmien-Schlichting waves

(added May 1988)

GS elastic waves
. **Tollmien-Schlichting waves**
RT Blasius flow
boundary layer flow
boundary layer transition
laminar flow
turbulent flow

toluene

GS organic compounds
. hydrocarbons
. . **toluene**
RT solvents
xylene

Tomahawk missiles

GS missiles
. surface to surface missiles
. . cruise missiles
. . . **Tomahawk missiles**
RT weapons

tomatoes

(added June 1990)

GS farm crops
. **tomatoes**
RT agriculture
botany
∞ crops
∞ food
seeds

tombolos

USE **bars (landforms)**

tomography

DEF Technique of making radiographs of plane sections of a body or an object; its purpose is to show detail in a predetermined plane of the body, while blurring the images of structures in other planes. Used for planigraphy.

UF *planigraphy*
GS imagery
. radiography
. . **tomography**
. . . computer aided tomography

RT computer graphics
ground penetrating radar
image enhancement
optical data processing
x ray analysis

TOMS

USE **Total Ozone Mapping Spectrometer**

tone

USE **pitch**

tongue

GS anatomy
. digestive system
. . **tongue**
RT mouth
voice

Tonk meteorite

GS celestial bodies
. meteorites
. . stony meteorites
. . . carbonaceous meteorites
. . . . carbonaceous chondrites
. **Tonk meteorite**
. . . chondrites
. . . . carbonaceous chondrites

. **Tonk meteorite**

tonometry

USE **intraocular pressure**
pressure measurement

tonus

USE **muscular tonus**

tooling

RT ∞ automation
machining
mechanization
setups
tools

tools

GS **tools**
. drill bits
. drills
. files (tools)
. hammers
. . electromagnetic hammers
. machine tools
. . boring machines
. . grinding machines
. . lathes
. . . turret lathes
. . milling machines
. . shapers
. saws
. shears
. software development tools
. space tools
. wrenches
RT antiquities
anvils
cutters
fixtures
∞ hardware
jigs
kits
∞ machinery
mechanical devices
mechanization
platens
presses
∞ production
taps
tooling
ultrasonic cleaning

tooth diseases

UF *aerodontalgia*

GS diseases

. **tooth diseases**

RT cavities
dental calculi
dentistry
oral hygiene
teeth

TOPEX

DEF The NASA Ocean Surface Topography Experiment, a proposed mission to utilize satellite altimetry to map the surface topography of the ocean from which the ocean currents are derived.

RT Gulf Stream
maritime satellites
ocean currents
ocean surface
oceanography
Poseidon satellite
satellite observation
sea states
topography

topography

UF *landscape*
GS **topography**
. lunar topography
. terrain
RT altimetry
badlands
barren land
beaches
cliffs
contour sensors
contours

- cusps (landforms)
- ∞ depression
- desertline
- deserts
- digital elevation models
- dunes
- Earth surface
- elevation
- elevation angle
- escarpments
- geodesy
- geodetic surveys
- geomorphology
- geophysics
- gulfs
- highlands
- hypsography
- isthmuses
- Jupiter red spot
- lagoons
- land
- landforms
- landmarks
- ledges
- mapping
- maria
- Mars surface
- meanders
- muskegs
- oceanography
- peaks (landforms)
- photomapping
- plains
- planetary surfaces
- ∞ profiles
- ravines
- relief maps
- satellite altimetry
- shallow water
- slopes
- stairsteps
- surface roughness
- TOPEX
- valleys
- Venus surface
- wadis
- topology**
- GS geometry
- . **topology**
- . . fixed points (mathematics)
- . . homotopy theory
- . . imbeddings (mathematics)
- . . invariant imbeddings
- . . links (mathematics)
- . . metric space
- . . . Hilbert space
- Sobolev space
- RT catastrophe theory
- ∞ cells
- continuity
- continuity (mathematics)
- continuums
- deformation
- dimensions
- fault trees
- fibers (mathematics)
- graph theory
- homology
- homotropy
- intervals
- isoperimetric problem
- manifolds (mathematics)
- mapping
- ∞ nets
- network synthesis
- shapes
- switching theory
- toruses
- trees (mathematics)
- Voronoi diagrams
- topping cycle engines**
- RT aircraft engines
- liquid hydrogen
- propulsion system configurations
- wave rotors
- TOPS (spacecraft)**
- UF *Thermoelectric Outer Planet Spacecraft*
- thermoelectric spacecraft*
- GS interplanetary spacecraft
- . **TOPS (spacecraft)**
- RT flyby missions
- interplanetary flight
- outer planets explorers
- space exploration
- space missions
- ∞ spacecraft
- torches**
- GS **torches**
- . plasma torches
- RT cutting
- pyrogen
- welding
- welding machines
- Tornado aircraft*
- USE **MRCA aircraft**
- tornadoes**
- GS storms
- . storms (meteorology)
- . . **tornadoes**
- RT atmospheric circulation
- cold fronts
- cumulonimbus clouds
- cyclones
- fronts (meteorology)
- Fujita method
- ground wind
- hurricanes
- National Severe Storms Project
- rainstorms
- storm damage
- tropical storms
- typhoons
- warm fronts
- wind (meteorology)
- Toro asteroid**
- GS celestial bodies
- . asteroid belts
- . . **Toro asteroid**
- . asteroids
- . . **Toro asteroid**
- RT meteoroids
- solar system
- space debris
- toroidal discharge**
- GS electric current
- . electric discharges
- . . Townsend discharge
- . . . gas discharges
- **toroidal discharge**
- ring discharge
- RT electrodeless discharges
- high frequencies
- plasma jets
- spectrum analysis
- toroidal plasmas**
- UF *plasma rings*
- GS particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- **toroidal plasmas**
- corpuscular radiation
- energetic particles
- plasmas (physics)
- **toroidal plasmas**
- RT beam injection
- beta factor
- bumpy toruses
- elliptical plasmas
- limiters (fusion reactors)
- plasma control
- plasma currents
- poloidal flux
- reverse field pinch
- ∞ rings
- rotating plasmas
- solenoids
- spheromaks
- stellarators
- toroidal shells**
- GS shells (structural forms)
- . **toroidal shells**
- RT metal shells
- reinforced shells
- skin (structural member)
- thin walled shells
- toroids
- toroidal wheels**
- DEF Doughnut-shaped wheels designed particularly for vehicles used in soft, granular soil (planetary surfaces). Used for doughnut shape wheels.
- UF *doughnut shape wheels*
- GS wheels
- . **toroidal wheels**
- RT roving vehicles
- suspension systems (vehicles)
- tires
- vehicle wheels
- toroids**
- RT ∞ coils
- ∞ curves
- geometry
- inductors
- ion impact
- magnet coils
- magnetic cores
- toroidal shells
- transformers
- torpedo engines**
- GS engines
- . **torpedo engines**
- . . turborocket engines
- . . ullage rocket engines
- . . Vernier engines
- . . . control rockets
- SYNCOM apogee engines
- RT internal combustion engines
- rocket propellants
- turbine engines
- underwater propulsion
- torpedoes**
- UF *RETORC (torpedoes)*
- GS explosive devices
- . **torpedoes**
- RT ammunition
- antisubmarine warfare
- ASROC engine
- bombs (ordnance)
- ∞ configurations
- countermeasures
- explosives
- hydroballistics
- missiles
- nuclear weapons
- propellants
- ∞ rockets
- sea launching
- shaped charges
- submerged bodies
- underwater trajectories
- warheads
- weapons
- torque**
- DEF About an axis, the product of a force and the distance of its line of action from the axis. Used for hinge moments.
- UF *hinge moments*
- GS moments
- . **torque**
- RT bending moments
- ∞ force
- loading moments
- moments of inertia
- pitching moments
- rolling moments
- rotation
- shafts (machine elements)
- torque sensors (robotics)
- torquemeters
- torsion
- torsional stress

torque converters

torsional vibration
twisting
yawing moments

torque converters

DEF Devices for changing the torque speed or mechanical advantage between an input shaft and an output shaft.

RT ∞ converters
power converters
transmissions (machine elements)

torque measuring apparatus

USE **torquemeters**

torque motors

GS electromechanical devices
. electric motors
. . . **torque motors**
motors
. electric motors
. . . **torque motors**
RT actuators
servomotors
transmissions (machine elements)

torque sensors (nonrobotics)

USE **torquemeters**

torque sensors (robotics)

(added January 1991)

GS robot sensors
. **torque sensors (robotics)**
RT end effectors
manipulators
robots
 ∞ sensors
servomechanisms
teleoperators
torque
torquemeters

torquemeters

UF *torque measuring apparatus*
torque sensors (nonrobotics)
GS measuring instruments
. **torquemeters**
RT dynamometers
mechanical measurement
torque
torque sensors (robotics)

torquers

GS transducers
. **torquers**
RT degrees of freedom
gyroscopes
sea keeping

Torres Strait

GS passageways
. straits
. . . **Torres Strait**
RT Australia
New Guinea (island)

torsion

RT buckling
deflection
deformation
 ∞ force
moments
temperature inversions
torque
torsional stress
torsional vibration
twisting

torsional stress

GS stresses
. shear stress
. . . **torsional stress**
RT torque
torsion

torsional vibration

GS vibration
. structural vibration
. . . **torsional vibration**
RT missile vibration
random vibration

self induced vibration
shear strain
torque
torsion
twisting

torso

GS anatomy
. **torso**
RT chest

toruses

GS geometry
. Euclidean geometry
. . . analytic geometry
. . . . **toruses**
symmetrical bodies
. bodies of revolution
. . . **toruses**
RT descriptive geometry
loops
 ∞ rings
topology

Tory 2 reactor

GS nuclear electric power generation
. nuclear power reactors
. . . **Tory 2 reactor**
nuclear reactors
. gas cooled reactors
. . . **Tory 2 reactor**
. nuclear power reactors
. . . **Tory 2 reactor**
. nuclear research and test reactors
. . . **Tory 2 reactor**

Tory 2-A reactor

GS nuclear electric power generation
. nuclear power reactors
. . . **Tory 2-A reactor**
nuclear reactors
. gas cooled reactors
. . . **Tory 2-A reactor**
. nuclear power reactors
. . . **Tory 2-A reactor**
. nuclear research and test reactors
. . . **Tory 2-A reactor**

Tory 2-C reactor

GS nuclear electric power generation
. nuclear power reactors
. . . **Tory 2-C reactor**
nuclear reactors
. gas cooled reactors
. . . **Tory 2-C reactor**
. nuclear power reactors
. . . **Tory 2-C reactor**
. nuclear research and test reactors
. . . **Tory 2-C reactor**

TOS-A

USE **ESSA 3 satellite**

total energy systems

DEF Energy systems which supply both electrical and heat requirements.

GS **total energy systems**
. solar total energy systems
RT integrated energy systems
phosphoric acid fuel cells
 ∞ systems

total impulse

(added March 2000)

DEF The integral of thrust over a given interval of time; the product of thrust and duration expressed in force-seconds; the total thrust produced by a rocket engine or motor over the entire time that its fuel is burning.

GS impulses
. **total impulse**
RT propulsion system performance
propulsive efficiency
spacecraft propulsion
specific impulse
thrust

Total Ozone Mapping Spectrometer

(added July 1988)

UF **TOMS**

GS measuring instruments
. optical measuring instruments
. . . photometers
. . . . ultraviolet spectrometers
. **Total Ozone Mapping Spectrometer**
. radiation measuring instruments
. . . actinometers
. . . . ultraviolet detectors
. ultraviolet spectrometers
. **Total Ozone Mapping Spectrometer**
. . . photometers
. . . . ultraviolet spectrometers
. **Total Ozone Mapping Spectrometer**
. satellite-borne instruments
. . **Total Ozone Mapping Spectrometer**
. spectrometers
. . . ultraviolet spectrometers
. . . . **Total Ozone Mapping Spectrometer**
optical equipment
. optical measuring instruments
. . . photometers
. . . . ultraviolet spectrometers
. **Total Ozone Mapping Spectrometer**
RT Antarctic regions
Nimbus 7 satellite
ozone depletion
ozonometry

total quality management

(added February 1992)

UF **TQM (quality control)**
GS management
. **total quality management**
quality control
. **total quality management**
RT acceptability
aircraft reliability
concurrent engineering
industrial management
management methods
production management
quality
reliability
reliability engineering
Taguchi methods
value engineering

total variation diminishing schemes

USE **TVD schemes**

touch

UF *cutaneous perception*
tactile sensation
GS perception
. sensory perception
. . . **touch**
. . . tactile discrimination
RT electrocutaneous communication
skin (anatomy)
tactile sensors (robotics)

touchdown

GS landing
. **touchdown**
RT aircraft landing
approach
approach and landing tests (STS)
downrange
spacecraft landing
vertical landing
vertical motion
water landing

toughness

DEF That property of a material by virtue of which it can absorb work.
GS mechanical properties
. **toughness**
. . . notch sensitivity
RT abrasion resistance
brittleness
compressive strength
crack initiation
ductility

- fracture strength
hardness
impact tests
J integral
shear properties
tensile strength
wear resistance
- tourism**
(added April 1999)
GS **tourism**
. space tourism
RT industries
recreation
transportation
∞ travel
- tourmaline**
GS aluminum compounds
. **tourmaline**
boron compounds
. **tourmaline**
minerals
. **tourmaline**
silicon compounds
. silicates
. . . sodium silicates
. . . **tourmaline**
sodium compounds
. sodium silicates
. . **tourmaline**
RT igneous rocks
- Tourmesole satellite*
USE **D-2 satellites**
- tourniquets**
GS medical equipment
. **tourniquets**
RT blood circulation
blood flow
first aid
- Toutatis asteroid**
(added July 1995)
GS celestial bodies
. asteroids
. . **Toutatis asteroid**
RT asteroid belts
meteoroids
- tow missiles**
GS missiles
. surface to surface missiles
. . antitank missiles
. . . **tow missiles**
- towed bodies**
UF *drogues*
towed targets
RT aircraft brakes
∞ bodies
brakes (for arresting motion)
drag chutes
gliders
lifting bodies
parachutes
sleds
streamlined bodies
submerged bodies
test vehicles
tetherlines
towing
trailers
- towed targets*
USE **targets**
towed bodies
- Tower Shielding Reactor 2**
GS nuclear reactors
. nuclear research and test reactors
. . **Tower Shielding Reactor 2**
RT radiation shielding
- towers**
GS **towers**
. airport towers
. umbilical towers
RT air traffic control
- antennas
bridges (structures)
columns (supports)
concrete structures
construction industry
cranes
pylons
∞ structures
tanks (containers)
- towing**
RT cables (ropes)
towed bodies
tractors
trailers
- Townsend avalanche**
UF *townsend surfaces*
GS avalanches
. **Townsend avalanche**
RT electromagnetic absorption
electron avalanche
ion impact
secondary emission
∞ surfaces
- Townsend discharge**
DEF A type of direct current discharge between two electrodes immersed in a gas and requiring electron emission from the cathode.
GS electric current
. electric discharges
. . **Townsend discharge**
. . . gas discharges
. . . . toroidal discharge
. . . . ring discharge
RT electrodeless discharges
ion impact
- townsend surfaces*
USE **Townsend avalanche**
- toxic diseases**
UF *poisoning (toxicology)*
GS diseases
. **toxic diseases**
. . benzene poisoning
. . beryllium poisoning
. . carbon monoxide poisoning
. . carbon tetrachloride poisoning
. . hydrocarbon poisoning
. . lead poisoning
RT Clostridium botulinum
diphtheria
hyperoxia
∞ poisoning
toxicity
toxicology
- toxic hazards**
GS hazards
. **toxic hazards**
RT aircraft hazards
biological hazards
flight hazards
hazardous materials
hazardous wastes
heavy metals
occupational diseases
∞ poisoning
toxicity
- toxicity**
GS **toxicity**
. benzene poisoning
. beryllium poisoning
. carbon monoxide poisoning
. carbon tetrachloride poisoning
. hydrocarbon poisoning
. lead poisoning
RT acidosis
alkalosis
bioavailability
chemical properties
endangered species
herbicides
hyperoxia
poisons
toxic diseases
toxic hazards
- toxicology
toxins and antitoxins
virulence
- toxicity and safety hazard**
GS irritation
. **toxicity and safety hazard**
RT acroleins
benzene poisoning
beryllium poisoning
carbon tetrachloride poisoning
chemical properties
hazardous material disposal (in space)
hydrocarbon poisoning
intoxication
soil pollution
- toxicology**
RT benzene poisoning
beryllium poisoning
bioavailability
biomarkers
carbon tetrachloride poisoning
curare
endotoxins
fungicides
hazards
hemoperfusion
hydrocarbon poisoning
insecticides
intoxication
nonpoint sources
pesticides
pollution
red tide
toxic diseases
toxicity
vaccines
- toxins and antitoxins**
GS **toxins and antitoxins**
. endotoxins
. polybrominated biphenyls
RT biological weapons
hazardous materials
immunity
toxicity
vaccines
- TQM (quality control)*
USE **total quality management**
- TRAAC satellite*
USE **Transit Attitude Control satellite**
- trace contaminants**
GS contaminants
. **trace contaminants**
RT chemical elements
impurities
pollution transport
purity
∞ tracing
- trace elements**
RT isotopic labeling
∞ nutrients
particle tracks
siderophile elements
∞ tracers
∞ tracing
- TRACE satellite*
(added May 1998)
USE **Transition Region and Coronal Explorer**
- ∞ **tracers**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT ammunition
isotopic labeling
marking
trace elements
- trachea**
GS anatomy
. respiratory system
. . **trachea**

trachyte

RT bronchi
∞ tubes

trachyte

GS rocks
. igneous rocks
. . **trachyte**
RT soils
syenite

∞ tracing

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT drawings
trace contaminants
trace elements

tracked vehicles

DEF Land vehicles equipped with continuous roller belts over cogged wheels for moving over rough terrain.

GS surface vehicles
. motor vehicles
. . tractors
. . . **tracked vehicles**
RT crawler tractors
∞ vehicles
vehicular tracks

tracking (position)

UF *target tracking*
tracking studies
GS **tracking (position)**
. compensatory tracking
. infrared tracking
. missile tracking
. multiple target tracking
. optical tracking
. photographic tracking
. polystation doppler tracking system
. pursuit tracking
. radar tracking
. radio tracking
. . wildlife radiolocation
. range and range rate tracking
. space detection and tracking system
. spacecraft tracking
. . satellite tracking
. . . satellite-to-satellite tracking
. star trackers
. . CCD star tracker
. video landmark acquisition and tracking

RT air traffic control
aircraft detection
approach control
detection
identifying
instrument landing systems
laser ranger/tracker
multispectral tracking telescopes
position (location)
rangefinding
ray tracing
satellite doppler positioning
solar sensors
sound localization
sound ranging
tracking problem
∞ tracks

Tracking and Data Relay Satellites
USE **TDR satellites**

tracking antennas

USE **directional antennas**

tracking filters

DEF Electron devices for attenuating unwanted signals while passing desired signals, by means of phase lock techniques which reduce the effective bandwidth of the circuit and eliminate amplitude variations.

GS electromagnetic wave filters
. bandpass filters
. . **tracking filters**
. electric filters
. . **tracking filters**
RT adaptive filters
bandstop filters

bandwidth
multiple target tracking
phase locked systems
video landmark acquisition and tracking

tracking networks

GS networks
. **tracking networks**
. . Deep Space Network
. . Global Tracking Network
. . manned space flight network
. . MATTS (systems)
. . polystation doppler tracking system
. . radar networks
. . space detection and tracking system
. . Space Flight Tracking and Data Network
. . STDN (network)
RT Advanced Range Instrumentation Ship
data acquisition
ground support equipment
minitrack system
missile tracking
Orion (radio interferometry network)
satellite tracking
satellite-to-satellite tracking
spacecraft tracking

tracking problem

DEF The problem of controlling a system so that the output follows a given path.

RT automatic control
control theory
feedback control
linear systems
multiple target tracking
nonlinear systems
optimal control
output
∞ problems
tracking (position)
trajectory control
trajectory optimization

tracking radar

DEF A radar used for following a target.

GS radar
. **tracking radar**
. . Cobra Dane (radar)
RT coherent radar
continuous wave radar
digital radar systems
monopulse radar
pulse radar
radar tracking
satellite-borne radar
search radar
surveillance radar
TRADEX radar system
trajectory measurement

tracking stations

DEF Stations set up to track objects moving through the atmosphere or space, usually by means of radio or radar.

GS stations
. **tracking stations**
. . Deep Space Instrumentation Facility
. . Global Tracking Network
. . polystation doppler tracking system
RT ∞ fences
ground stations
ground support equipment
Jodrell Bank Observatory
∞ mars
minitrack system
missile tracking
radar networks
satellite tracking
space detection and tracking system
Space Flight Tracking and Data Network
spacecraft tracking

STDN (network)

tracking studies

USE **tracking (position)**

∞ tracks

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *trails*
RT conveyors
ground tracks
meteor trails
minitrack system
particle tracks
particle trajectories
smoke trails
tracking (position)
vehicular tracks

traction

RT adhesion
friction
pulling

tractors

GS surface vehicles
. motor vehicles
. . **tractors**
. . . crawler tractors
. . . tracked vehicles
RT agriculture
electric motor vehicles
ground handling
handling equipment
lunar excavation equipment
materials handling
planting
plowing
sleds
towing
transportation
trucks
∞ vehicles

tracts

USE **sites**

tradeoffs

RT decision making
management analysis
management planning

Trader aircraft

USE **C-1A aircraft**

tradescantia

GS plants (botany)
. **tradescantia**

TRADEX radar system

GS radar
. **TRADEX radar system**
RT search radar
∞ systems
target recognition
tracking radar

traffic

GS **traffic**
. air traffic
RT accidents
avoidance
harbors
transportation

traffic control

DEF Control of vehicular traffic such as priority highway lanes, stoplight control, rapid-transit train control, or air traffic control.

GS **traffic control**
. air traffic control
. . automated en route ATC
. . radar approach control
RT air traffic controllers (personnel)
airport towers
approach control
avoidance
collision avoidance
∞ control
ground based control

National Aviation System

tragacanth

- GS plants (botany)
- . **tragacanth**

Trailblazer 1 reentry vehicle

- UF *Trailblazer 1 rocket vehicle*
- GS reentry vehicles
- . **Trailblazer 1 reentry vehicle**
- RT Honest John rocket vehicle
- Lance missile
- multistage rocket vehicles
- Nike-Ajax missile
- rocket vehicles
- solid propellant rocket engines

Trailblazer 1 rocket vehicle

USE **Trailblazer 1 reentry vehicle**

Trailblazer 2 reentry vehicle

- UF *Trailblazer 2 rocket vehicle*
- GS reentry vehicles
- . **Trailblazer 2 reentry vehicle**
- RT multistage rocket vehicles
- rocket vehicles
- solid propellant rocket engines
- TX-354 engine

Trailblazer 2 rocket vehicle

USE **Trailblazer 2 reentry vehicle**

trailers

- RT automobiles
- couplings
- sleds
- tank trucks
- towed bodies
- towing
- trucks

trailing edge flaps

- UF *variable area wings*
- GS airfoils
- . flaps (control surfaces)
- . . wing flaps
- . . . **trailing edge flaps**
- brakes (for arresting motion)
- . aerodynamic brakes
- . . wing flaps
- . . . **trailing edge flaps**
- . aircraft brakes
- . . wing flaps
- . . . **trailing edge flaps**
- control surfaces
- . flaps (control surfaces)
- . . wing flaps
- . . . **trailing edge flaps**
- drag devices
- . aerodynamic brakes
- . . wing flaps
- . . . **trailing edge flaps**
- RT jet flaps
- leading edge slats
- split flaps
- vortex flaps

trailing edges

- GS edges
- . **trailing edges**
- . . blunt trailing edges
- RT airfoils
- blunt leading edges
- leading edges
- sharp leading edges
- vortex flaps

trails

USE **tracks**

trainees

USE **students**

trainers

USE **training devices**

training

USE **education**

training aircraft

- GS **training aircraft**

- . Alpha jet aircraft
- . jet provost aircraft
- . L-29 jet trainer
- . T-2 aircraft
- . T-28 aircraft
- . T-33 aircraft
- . T-37 aircraft
- . T-38 aircraft
- . T-39 aircraft
- . TS-11 aircraft

- RT ∞ aircraft
- bomber aircraft
- fighter aircraft
- general aviation aircraft
- jet aircraft
- light aircraft
- ∞ military aircraft
- ∞ subsonic aircraft

training analysis

DEF Evaluation of all facets of instruction -- presentation methods, instructors, effectiveness of training, and testing.

- RT ∞ analyzing
- ∞ development
- education
- handbooks
- learning
- personnel development
- planning
- retraining

training devices

- UF *trainers*
- GS **training devices**
- . teaching machines
- . training simulators
- . . flight simulators
- . . . cockpit simulators
- . . spacecraft cabin simulators
- RT altitude simulation
- audio visual equipment
- child device
- cockpit simulators
- ∞ devices
- education
- educational television
- flight simulators
- multimedia
- onboard equipment
- simulators
- visual aids

training evaluation

DEF Procedures for determining the effectiveness of instruction.

- GS evaluation
- . **training evaluation**
- RT certification
- examination
- instructors
- knowledge
- learning
- ∞ performance
- reviewing
- schools
- students

training simulators

- UF *simulator training*
- GS simulators
- . **training simulators**
- . . flight simulators
- . . . cockpit simulators
- . . spacecraft cabin simulators
- training devices
- . **training simulators**
- . . flight simulators
- . . . cockpit simulators
- . . spacecraft cabin simulators
- RT astronaut training
- centrifuges
- control simulation
- flight simulation
- flight training
- in-flight simulation
- landing simulation
- lunar orbit and landing simulators
- ∞ missile simulators
- pilot training

- space flight training
- virtual reality

trajectories

DEF In general, paths traced by bodies moving as a result of an externally applied force, considered in three dimensions.

- GS **trajectories**
- . abort trajectories
- . ascent trajectories
- . ballistic trajectories
- . descent trajectories
- . . reentry trajectories
- . hyperbolic trajectories
- . interorbital trajectories
- . midcourse trajectories
- . missile trajectories
- . molecular trajectories
- . particle trajectories
- . . electron trajectories
- . rendezvous trajectories
- . round trip trajectories
- . . circumlunar trajectories
- . spacecraft trajectories
- . . interplanetary trajectories
- . . . Earth-Mars trajectories
- . . . Earth-Mercury trajectories
- . . . Earth-Venus trajectories
- . . lunar trajectories
- . . . circumlunar trajectories
- . . . Earth-Moon trajectories
- . . . moon-Earth trajectories
- . spinning unguided rocket trajectory
- . underwater trajectories

- RT apexes
- attractors (mathematics)
- ballistics
- ∞ curves
- downrange
- equations of motion
- ∞ flight
- flight mechanics
- flight optimization
- flight paths
- flight time
- great circles
- missiles
- orbits
- ordnance
- parabolic flight
- ∞ paths
- rocket flight
- space flight
- transfer orbits

trajectory analysis

- RT ∞ analyzing
- astrodynamics
- ballistics
- capture effect
- celestial mechanics
- equations of motion
- Goddard Trajectory Determination System
- impact prediction
- mathematical models
- numerical analysis
- orbital mechanics
- preflight analysis
- systems analysis
- trajectory planning

trajectory control

- UF *range control*
- GS **trajectory control**
- . trajectory optimization
- RT attitude control
- ∞ control
- drift rate
- guidance (motion)
- homing devices
- landing sites
- optimal control
- optimization
- post boost propulsion system
- range safety
- thrust programming
- tracking problem

trajectory measurement

trajectory planning

trajectory measurement

- RT ballistic cameras
- ballistics
- flight mechanics
- ∞ measurement
- telemetry
- tracking radar

trajectory optimization

- GS optimization
 - . **trajectory optimization**
- trajectory control
 - . **trajectory optimization**
- RT aircraft maneuvers
- flight mechanics
- flight optimization
- genetic algorithms
- Goddard Trajectory Determination System
- pursuit-evasion games
- tracking problem
- trajectory planning

trajectory planning
(added December 1990)

- UF *path planning*
- GS planning
 - . **trajectory planning**
- RT robot dynamics
- robotics
- trajectory analysis
- trajectory control
- trajectory optimization
- Voronoi diagrams

tranquilizers

- GS drugs
 - . **tranquilizers**
- RT central nervous system depressants
- hypertension
- sedatives

Transall C-160 aircraft

USE **C-160 aircraft**

transatmospheric vehicles

- RT aerospace planes
- aerospace vehicles
- ∞ aircraft
- aircraft design
- National Aerospace Plane Program
- ∞ spacecraft
- spacecraft design
- X-30 vehicle

transceivers

USE **transmitter receivers**

transcendental functions

- GS functions (mathematics)
 - . **transcendental functions**
 - . . . exponential functions
 - . . . logarithms
 - . . . periodic functions
 - . . . trigonometric functions
 - cosine series
 - sine series
 - tangents

transconductance

DEF The real part of the transadmittance. Note: Transconductance is, as most commonly used, the interelectrode transconductance between the control grid and the plate. At low frequencies, transconductance is the slope of the control-grid-to-plate transfer characteristic.

- GS electrical properties
 - . electrical impedance
 - . . electrical resistance
 - . . . **transconductance**
- impedance
 - . electrical impedance
 - . . electrical resistance
 - . . . **transconductance**
- RT ∞ conductivity
- electric potential
- electrodes
- electron tubes

- linear circuits
- low conductivity
- ∞ low resistance
- ohmmeters
- Ohms law
- RC circuits
- reactance
- ∞ resistance
- RL circuits
- RLC circuits
- solid electrodes
- volt-ampere characteristics

transcontinental systems

- RT continents
- ∞ systems
- telecommunication
- transportation

transcription (genetics)
(added April 2002)

DEF Transfer of genetic information from DNA to mRNA.

- RT deoxyribonucleic acid
- gene expression
- gene expression regulation
- genetics
- ribonucleic acids

transducers

DEF Devices capable of being actuated by energy from one or more other transmission systems or media and of supplying related energy to one or more other transmission systems or media as microphones or thermocouples.

- GS **transducers**
 - . digital transducers
 - . electronic transducers
 - . image transducers
 - . interdigital transducers
 - . magnetic transducers
 - . mode transformers
 - . piezoelectric transducers
 - . . piezoelectric gages
 - . . piezoresistive transducers
 - . . piezoelectric gages
 - . . pressure sensors
 - . . Bourdon tubes
 - . quartz transducers
 - . sound transducers
 - . . electroacoustic transducers
 - . . . hydrophones
 - . . . loudspeakers
 - . . . microphones
 - . thermopiles
 - . torquers
 - . ultrasonic wave transducers
- RT bulk acoustic wave devices
- control equipment
- ∞ converters
- data converters
- ∞ detectors
- energy conversion efficiency
- extensometers
- form factors
- instrument receivers
- instrument transmitters
- ∞ instruments
- measuring instruments
- meteorological instruments
- photoelectric cells
- ∞ probes
- recording instruments
- remote sensors
- ∞ sensors
- strain gages
- temperature measuring instruments
- ultrasonic cleaning
- vibration meters

transearth injection

- GS injection
 - . **transearth injection**
- RT injection guidance
- midcourse guidance
- orbital mechanics
- transfer orbits

transequatorial propagation

- GS transmission

- . electromagnetic wave transmission
- . . radio transmission
- . . . **transequatorial propagation**
- . signal transmission
- . . radio transmission
- . . . **transequatorial propagation**
- . wave propagation
- . . **transequatorial propagation**

- RT equators
- F 2 region
- ∞ propagation

transfer

USE **transferring**

transfer functions

- GS functions (mathematics)
 - . **transfer functions**
 - . . loop transfer functions
 - . . modulation transfer function
 - . . optical transfer function
- RT amplification
- automatic control
- bandwidth
- coupling coefficients
- damping
- dynamic characteristics
- dynamic response
- feedback
- feedback circuits
- high gain
- impedance matching
- logarithmic receivers
- negative feedback
- nonlinear feedback
- Nyquist diagram
- output
- positive feedback
- self oscillation
- sensitivity
- ∞ systems
- time constant
- transient response

transfer of training

- GS learning
 - . **transfer of training**
- RT abilities
- education
- generalization (psychology)

transfer orbits

DEF In interplanetary travel, elliptical trajectories tangent to the orbits of both the departure planet and the target planet. Used for Hohmann trajectories, Hohmann transfer orbits, and orbital transfer.

- UF *Hohmann trajectories*
- Hohmann transfer orbits*
- orbital transfer*
- GS orbits
 - . elliptical orbits
 - . . **transfer orbits**
 - . . . interplanetary transfer orbits
 - . . . spacecraft orbits
 - . . . **transfer orbits**
 - . . . interplanetary transfer orbits
- RT aeroassist
- aerobraking
- aerocapture
- aeromaneuvering
- circumlunar trajectories
- Earth orbital rendezvous
- Earth orbits
- Earth-Mars trajectories
- Earth-Mercury trajectories
- Earth-Moon trajectories
- Earth-Venus trajectories
- interplanetary trajectories
- lunar orbits
- lunar trajectories
- moon-Earth trajectories
- orbit insertion
- orbital launching
- orbital mechanics
- parking orbits
- planetary orbits
- satellite orbits
- solar orbits
- space rendezvous

spacecraft docking
trajectories
transearth injection
transferring
translunar injection

transfer RNA

USE **ribonucleic acids**

transfer tunnels

GS passageways
. **transfer tunnels**
RT entrances
∞ tunnels

transferred electron devices

DEF Electronic equipment utilizing diodes exhibiting negative conductance and susceptance. Used for TED.

UF *TED*

GS electronic equipment
. diodes
. . semiconductor diodes
. . . Gunn diodes
. . . . **transferred electron devices**
. solid state devices
. . semiconductor devices
. . . **transferred electron devices**

RT diffraction radiation
electron transfer
gallium arsenides
indium phosphides
microwave amplifiers
microwave oscillators

transferring

UF *transfer*
GS **transferring**
. drop transfer
RT charge transfer
electron transfer
energy transfer
exchanging
heat transfer
mass transfer
materials handling
momentum transfer
∞ shift
technology transfer
transfer orbits
transportation

transform integrals

USE **integral transformations**

transformation tensors

USE **tensors**

∞ transformations

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Fujita method
functions (mathematics)
order-disorder transformations
phase transformations
transformations (mathematics)

transformations (mathematics)

UF *transforms*
GS **transformations (mathematics)**
. coordinate transformations
. discrete cosine transform
. Householder transformations
. integral transformations
. . Fourier transformation
. . . fast Fourier transformations
. . Fourier-Bessel transformations
. . Hilbert transformation
. . Laplace transformation
. Gabor transformation
. linear transformations
RT Fujita method
functions (mathematics)
gauge invariance
Racah coefficient
∞ transformations
wavelet analysis

transformers

GS **transformers**

. instrument transformers
. mode transformers
. voltage converters (AC to AC)

RT amplifiers
ballasts (impedances)
circuit protection
∞ converters
coupling circuits
diplexers
electric coils
electric filters
electric motors
electric reactors
electrical grounding
inductance
magnet coils
magnetic circuits
magnetic cores
oscillators
phase control
plasma control
power supply circuits
resolvers
saturable reactors
solid state devices
toroids
up-converters
voltage regulators

transforming genes

(added July 2002)

USE **oncogenes**

transforms

USE **transformations (mathematics)**

transfusion

RT blood
first aid
medical science
syringes
veins

transgranular corrosion

DEF A slow mode of failure that requires the combined action of stress and aggressive environment where the path of failure runs through the grains producing branched cracking.

GS chemical attack
. **transgranular corrosion**
corrosion
. **transgranular corrosion**
RT corrosion tests
grain boundaries
intergranular corrosion
metal fatigue
protective coatings
stress corrosion

transhorizon radio propagation

GS transmission
. electromagnetic wave transmission
. . radio transmission
. . . **transhorizon radio propagation**
. signal transmission
. . radio transmissions
. . . **transhorizon radio propagation**
RT radio attenuation
radio signals

transient heating

GS heating
. **transient heating**
. . pulse heating
. . shock heating
RT aerodynamic heating

transient loads

SN (LIMITED TO FORCE LOADS)
GS loads (forces)
. dynamic loads
. . **transient loads**
. . . gust loads
. . . impact loads
. . . landing loads
. . . shock loads
. . . . blast loads
RT aerodynamic loads
contact loads
cyclic loads

random loads
structural design criteria

transient oscillations

GS oscillations
. **transient oscillations**
RT damping
electron oscillations
lasers
masers
pilot induced oscillation
stimulated emission devices
transverse oscillation

transient pressures

GS pressure
. **transient pressures**
RT mass flow rate
pressure sensors

Transient Reactor Test Facility

UF *TREAT (test facility)*

GS test facilities

. **Transient Reactor Test Facility**
RT nuclear research and test reactors
reactor safety
SNAP

transient response

GS dynamic characteristics
. **transient response**
responses
. dynamic response
. . **transient response**
RT amplification
∞ compensation
damping
dynamic stability
impedance
pressure sensors
resonant frequencies
response bias
sensitivity
stroking tests
time constant
transfer functions

transients (surges)

USE **surges**

transistor amplifiers

GS amplifiers
. **transistor amplifiers**
electronic equipment
. solid state devices
. . semiconductor devices
. . . **transistor amplifiers**
RT cascode devices
current amplifiers
differential amplifiers
feedback amplifiers
intermediate frequency amplifiers
operational amplifiers
power amplifiers
preamplifiers
transistors

transistor circuits

GS circuits
. **transistor circuits**
RT cascode devices
DTL integrated circuits
∞ electronics
hybrid circuits
integrated circuits
linear integrated circuits
logic circuits
microelectronics
printed circuits
TTL integrated circuits

transistor logic

RT Boolean algebra
∞ logic
logic circuits
logic design
threshold logic

transistors

GS electronic equipment

transit

- . solid state devices
- .. semiconductor devices
- ... **transistors**
- bipolar transistors
- field effect transistors
- charge flow devices
- JFET
- MODFETS
- high electron mobility transistors
- MODFETS
- junction transistors
- JFET
- phototransistors
- silicon transistors
- SOS (semiconductors)
- single electron transistors
- RT cascode devices
- germanium diodes
- ion implantation
- miniaturization
- pentodes
- resonant tunneling
- SIS (semiconductors)
- tetrodes
- transistor amplifiers
- TRAPATT devices
- triodes

transistor-transistor-logic integ circuits

USE **TTL integrated circuits**

∞ transit

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT occultation
- Transit satellites
- transits

Transit Attitude Control satellite

- UF *TRAAC satellite*
- GS artificial satellites
- . navigation satellites
- .. **Transit Attitude Control satellite**
- RT ∞ control
- satellite attitude control

Transit navigation system

- GS satellite navigation systems
- . **Transit navigation system**
- RT NASA programs
- navigation satellites
- Nova satellites
- Transit satellites

Transit satellites

- GS artificial satellites
- . navigation satellites
- .. **Transit satellites**
- RT Discos (satellite attitude control)
- ∞ transit
- Transit navigation system

transit time

- SN (NOT LIMITED TO ASTRONOMICAL TIMES OF TRANSIT)
- GS time
- . **transit time**
- RT Barritt diodes
- CATT devices
- flight time
- ∞ motion

∞ transition

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boundary layer transition
- ductile-brittle transition
- electron transitions
- forbidden transitions
- phase transformations

transition elements (chemistry)

(added March 2000)

USE **transition metals**

transition flight

- (added January 1990)
- RT aircraft maneuvers
- ∞ flight
- horizontal flight

- hovering
- V/STOL aircraft
- vertical flight

transition flow

- GS fluid flow
- . gas flow
- .. molecular flow
- ... **transition flow**
- RT boundary layer thickness
- boundary layer transition
- free molecular flow
- period doubling
- rarefied gas dynamics
- slip flow

∞ transition layers

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT boundary layer transition
- interlayers
- laminar flow
- plasma layers
- shear layers
- shock layers
- shock waves
- surface layers
- turbulent flow

transition metals

- UF *transition elements (chemistry)*
- GS metals
- . **transition metals**
- .. cadmium
- ... cadmium isotopes
- .. chromium
- ... chromium isotopes
- .. cobalt
- ... cobalt isotopes
- cobalt 58
- cobalt 60
- .. copper
- ... copper isotopes
- .. gold
- ... gold isotopes
- gold 198
- .. hafnium
- ... hafnium isotopes
- .. iridium
- ... iridium isotopes
- .. iron
- ... iron isotopes
- iron 57
- iron 58
- iron 59
- .. manganese
- ... manganese isotopes
- .. mercury (metal)
- ... mercury isotopes
- .. mercury vapor
- .. molybdenum
- .. nickel
- ... nickel isotopes
- .. niobium
- ... niobium isotopes
- niobium 95
- .. osmium
- ... osmium isotopes
- .. palladium
- .. platinum
- ... platinum isotopes
- .. rhenium
- ... rhenium isotopes
- .. rhodium
- ... rhodium isotopes
- .. ruthenium
- ... ruthenium isotopes
- .. scandium
- ... scandium isotopes
- .. silver
- ... silver isotopes
- .. tantalum
- ... tantalum isotopes
- .. technetium
- ... technetium isotopes
- .. titanium
- ... titanium isotopes
- .. tungsten
- ... tungsten isotopes

- .. vanadium
- ... vanadium isotopes
- .. yttrium
- ... yttrium isotopes
- .. zinc
- ... zinc isotopes
- .. zirconium
- ... zirconium isotopes
- zirconium 95
- RT actinide series
- complex compounds
- metal nitrides
- palladium compounds
- rare earth elements
- refractory metals
- ruthenium compounds
- shape memory alloys
- transuranium elements

transition points

- DEF In aerodynamics, the points of change from laminar to turbulent flow.
- RT boundary layer transition
- ∞ equilibrium
- Knudsen flow
- phase diagrams
- Reynolds number

transition pressure

- DEF The pressure at which phase transition occurs.
- GS pressure
- . **transition pressure**
- RT high pressure
- hydrostatic pressure
- phase transformations
- pressure effects

transition probabilities

- RT electron transitions
- excitation
- Fermi surfaces
- nuclear capture
- probability theory
- spectra

Transition Region and Coronal Explorer

(added May 1998)

DEF Small Explorer Mission satellite supporting the investigation of the relationships between fine-scale magnetic fields and their associated plasma structures in the transition region and lower corona of the Sun.

UF *Explorer 73 satellite*

TRACE satellite

- GS artificial satellites
- . scientific satellites
- .. Explorer satellites
- ... **Transition Region and Coronal Explorer**
- .. small scientific satellites
- ... **Transition Region and Coronal Explorer**

- RT chromosphere
- SOHO Mission
- solar atmosphere
- solar corona
- solar magnetic field
- solar observatories
- solar physics
- solar transition region

transition temperature

DEF An arbitrarily defined temperature within the temperature range in which metal fracture characteristics determined usually by notched tests are changing rapidly such as from primarily fibrous (shear) to primarily crystalline (cleavage) fracture. The arbitrarily defined temperature in a range in which the ductility of a material changes rapidly with temperature.

- GS temperature
- . **transition temperature**
- RT ductile-brittle transition
- glass transition temperature
- heat of fusion
- Kondo effect
- liquid phases
- melting points
- phase diagrams

- phase transformations
 - solidification
 - superconducting power transmission
 - superconductivity
- transits**
- SN (EXCLUDES PARTIAL OR TOTAL OCCULTATION OF ONE BODY BY ANOTHER)
 - GS measuring instruments
 - . optical measuring instruments
 - . . **transits**
 - . . . theodolites
 - cinetheodolites
 - optical equipment
 - . optical measuring instruments
 - . . **transits**
 - . . . theodolites
 - cinetheodolites
 - RT compasses
 - sextants
 - ∞ transit
- translating**
- GS **translating**
 - . machine translation
 - RT decoding
 - documentation
 - ∞ interpretation
 - languages
 - technical writing
 - ∞ translators
- translational motion**
- GS **translational motion**
 - . three dimensional motion
 - . . three dimensional flow
 - . . . Karman-Bodewadt flow
 - . . . secondary flow
 - RT ∞ motion
 - racks (gears)
 - rigid structures
- ∞ **translators**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT computer programs
 - decoders
 - digital to voice translators
 - language programming
 - repeaters
 - translating
- translucence**
- GS electromagnetic properties
 - . optical properties
 - . . **translucence**
 - RT light transmission
 - opacity
 - optical density
 - transmissivity
 - transparence
- translunar injection**
- GS injection
 - . **translunar injection**
 - RT injection guidance
 - midcourse guidance
 - orbital mechanics
 - transfer orbits
- translunar space*
- USE **interplanetary space**
- transmission**
- DEF Process by which radiant energy proceeds through any material or object. Used for coaxial transmission.
- UF *coaxial transmission*
 - GS **transmission**
 - . demultiplexing
 - . electric power transmission
 - . electromagnetic wave transmission
 - . . light transmission
 - . . . light scattering
 - halos
 - . . microwave attenuation
 - . . radar transmission
 - . . radio transmission
 - . . . double sideband transmission
 - . . . ionospheric propagation
 - ionospheric F-scatter propagation
 - . . . microwave transmission
 - . . . multipath transmission
 - . . . short wave radio transmission
 - . . . single sideband transmission
 - . . . spread spectrum transmission
 - . . . transequatorial propagation
 - . . . transhorizon radio propagation
 - . . scatter propagation
 - . . . ionospheric F-scatter propagation
 - . . television transmission
 - . heat transmission
 - . heat transfer
 - . . aerodynamic heat transfer
 - . . . hypersonic heat transfer
 - supersonic heat transfer
 - . . . conductive heat transfer
 - . . . convective heat transfer
 - . . . laminar heat transfer
 - . . . radiative heat transfer
 - . . . turbulent heat transfer
 - . multiplexing
 - . . code division multiplexing
 - . . frequency division multiplexing
 - . . time division multiplexing
 - . . wavelength division multiplexing
 - . self propagation
 - . signal transmission
 - . . data transmission
 - . . . automatic picture transmission
 - . . . multiple access
 - Aloha system
 - carrier sense multiple access
 - code division multiple access
 - demand assignment multiple access
 - frequency division multiple access
 - time division multiple access
 - . . packet transmission
 - . . . Aloha system
 - . . single channel per carrier transmission
 - . . microwave attenuation
 - . . radar transmission
 - . . radio transmission
 - . . . double sideband transmission
 - . . . ionospheric propagation
 - ionospheric F-scatter propagation
 - . . . microwave transmission
 - . . . multipath transmission
 - . . . short wave radio transmission
 - . . . single sideband transmission
 - . . . spread spectrum transmission
 - . . . transequatorial propagation
 - . . . transhorizon radio propagation
 - . . satellite transmission
 - . . telemetry
 - . . . biotelemetry
 - . . . P.A.C.M. telemetry
 - . . . PCM telemetry
 - . . . radio telemetry
 - pulse frequency modulation telemetry
 - . . television transmission
 - . . sound transmission
 - . . stress propagation
 - . . telephony
 - . . wave propagation
 - . . . acoustic propagation
 - . . . sound propagation
 - . . diffraction propagation
 - . . ground wave propagation
 - . . . ionospheric propagation
 - . . . ionospheric F-scatter propagation
 - . . light scattering
 - . . . halos
 - . . scatter propagation
 - . . . ionospheric F-scatter propagation
 - . . shock wave propagation
 - . . transequatorial propagation
 - RT absorptance
 - atmospheric attenuation
 - attenuation
 - broadcasting
 - ∞ conduction
 - diffraction
 - electromagnetic absorption
 - electromagnetic radiation
 - optical filters
 - output
 - ∞ propagation
 - radar attenuation
 - radio attenuation
 - reflection
 - refraction
 - signal reflection
 - telecommunication
 - transmissivity
 - transmittance
 - wave dispersion
- transmission circuits**
- GS circuits
 - . **transmission circuits**
 - RT circuit protection
 - electric power transmission
 - signal stabilization
 - strip transmission lines
 - telecommunication
- transmission efficiency**
- GS efficiency
 - . **transmission efficiency**
 - RT Aloha system
 - attenuation coefficients
 - bit error rate
 - carrier to noise ratios
 - data transmission
 - downlinking
 - electromagnetic wave transmission
 - frequency hopping
 - intersymbolic interference
 - network control
 - opacity
 - packet transmission
 - packets (communication)
 - power efficiency
 - signal transmission
 - transmission rate (communications)
 - transmittance
 - uplinking
- transmission electron microscopy**
- (added December 1992)
- DEF A type of electron microscopy in which the specimen transmits an electron beam focused on it. Image contrasts are formed by the scattering of electrons out of the beam. Various magnetic lenses perform functions analogous to those of ordinary lenses in light microscopy.
- UF *TEM (microscopy)*
 - GS microscopy
 - . electron microscopy
 - . . **transmission electron microscopy**
 - RT electron beams
 - electron scattering
 - field emission
 - ion microscopes
 - magnetic lenses
 - microanalysis
 - phase contrast
 - scanning tunneling microscopy
- transmission fluids**
- RT fluid transmission lines
 - ∞ fluids
 - hydraulic fluids
 - working fluids
- transmission lines**
- DEF The conductive connectons between system elements which carry signal power. (2) lines used for electric power transmission.
- UF *trunks (lines)*
 - GS **transmission lines**
 - . communication cables
 - . . coaxial cables
 - . . fluid transmission lines
 - . . power lines
 - . . strip transmission lines
 - . . microstrip transmission lines
 - . . submarine cables
 - . . underground transmission lines
 - RT acoustic delay lines

transmission loss

- antenna couplers
- antenna feeds
- backward waves
- ∞ cables
- circuit protection
- circuits
- delta antennas
- directional couplers
- distributed amplifiers
- electric conductors
- electric current
- electric power transmission
- electric wire
- electrical engineering
- electrification
- harnesses
- impedance matching
- insulators
- ∞ lines
- mode transformers
- nonresonance
- optical fibers
- Smith chart
- standing wave ratios
- superconducting power transmission
- telecommunication
- waveguides
- wiring

transmission loss

DEF The reduction in the magnitude of some characteristic of a signal between two stated points in a transmission system.

RT attenuation
current regulators
electric power transmission
insertion
insertion loss
losses
lossy media
silence
transmission rate (communications)
voltage regulators
wave dispersion

transmission rate (communications)

(added July 1993)

UF *transmission speed (communications)*

GS rates (per time)
. **transmission rate**
(communications)

RT access time
bit error rate
channel capacity
data transmission
delay
interprocessor communication
satellite communication
signal reception
signal transmission
telecommunication
time lag
transmission efficiency
transmission loss

transmission speed (communications)

USE **transmission rate**
(communications)

transmissions (machine elements)

DEF The gearing system by which power is transmitted from the engine to the live axle in an automobile. Also known as gearboxes.

UF *gearboxes*
GS mechanical drives
. **transmissions (machine elements)**
RT gears
shafts (machine elements)
torque converters
torque motors
vehicle wheels

transmissivity

DEF Concerning radiation incident upon the boundary between two media, transmissivity is the ratio of the radiation transmitted through the boundary to the component of radiation normal to the boundary.

GS electromagnetic properties
. optical properties

. . . **transmissivity**
RT absorptance
absorptivity
density (mass/volume)
light scattering
opacity
∞ physical properties
translucence
transmission
transmittance
transparence
transponders
visibility

transmissometers

GS measuring instruments
. optical measuring instruments
. . **transmissometers**
optical equipment
. optical measuring instruments
. . **transmissometers**
RT densitometers
photometers
radiance
telephotometry
transmittance

transmittance

DEF The ratio of the radiant flux transmitted by a medium or a body to the incident flux.

GS electromagnetic properties
. optical properties
. . **transmittance**
RT absorptance
attenuation coefficients
density (mass/volume)
electromagnetic absorption
infrared absorption
light (visible radiation)
optical density
photometry
ray tracing
reflectance
scattering
thermochromic coatings
transmission
transmission efficiency
transmissivity
transmissometers
transparence

transmitter receivers

DEF Combinations of transmitters and receivers in single housings, with some components being used by both units. Used for transceivers.

UF *transceivers*
GS communication equipment
. radio receivers
. . **transmitter receivers**
radio equipment
. radio receivers
. . **transmitter receivers**
. radio transmitters
. . **transmitter receivers**
receivers
. radio receivers
. . **transmitter receivers**
transmitters
. radio transmitters
. . **transmitter receivers**
RT interrogation
transponders

transmitters

DEF Devices used for the generation of signals of any type and form which are to be transmitted. Used for senders.

UF *senders*
GS **transmitters**
. emergency locator transmitters
. instrument transmitters
. radar transmitters
. radio transmitters
. . radio beacons
. . . omnidirectional radio ranges
. . . self calibrating omnirange
. . radiometeorographs
. . radiosondes
. . . ionosondes

. . . rawinsondes
. . radiotelephones
. . sonobuoys
. . transmitter receivers
. repeaters
RT antennas
attenuation
duplexers
∞ instruments
microphones
receivers
signal encoding
telecommunication
television transmission
transponders

transmutation

GS nuclear reactions
. nuclear transformations
. . **transmutation**
RT neutron irradiation
neutron transmutation doping
radiogenic materials

trans-Neptunian objects

(added June 2006)

DEF Solar system objects that orbit the sun at an average distance that is greater than the orbital distance of Neptune.

UF *TNO (astronomy)*
GS celestial bodies
. **trans-Neptunian objects**
. . Charon
. . Pluto (planet)
. . Quaoar
RT asteroids
Kuiper belt
Oort cloud
planetology
solar system

transoceanic communication

GS telecommunication
. **transoceanic communication**
transoceanic systems
. **transoceanic communication**
RT facsimile communication
radio communication
Relay satellites

transoceanic flight

DEF Flight across an ocean.
RT ∞ flight

transoceanic systems

GS **transoceanic systems**
. transoceanic communication
RT intercontinental ballistic missiles
ocean data acquisitions systems
∞ systems
telecommunication
transportation
world data centers

transonic aircraft

USE **supersonic aircraft**

Transonic Aircraft Technology Program

USE **TACT program**

transonic compressors

GS compressors
. **transonic compressors**
RT supersonic compressors
turbocompressors

transonic flight

RT ∞ flight
rocket flight
sonic booms
supersonic flight

transonic flow

DEF In aerodynamics, flow of a fluid over a body in the range just above and just below the acoustic velocity. Used for sonic flow and transonics.

UF *sonic flow*
transonics
GS fluid flow

. compressible flow
 . . **transonic flow**
 RT aerodynamics
 compressibility effects
 ∞ flow
 flow velocity
 gas flow
 nozzle flow
 Ringleb flow
 shock waves
 sonic nozzles
 subsonic flow
 supersonic flow
 trisonic wind tunnels
 wind tunnels

transonic flutter
 GS vibration
 . structural vibration
 . . flutter
 . . . **transonic flutter**
 . . self induced vibration
 . . . **transonic flutter**
 RT missile vibration
 subsonic flutter
 supersonic flutter

transonic inlets
 USE **supersonic inlets**

transonic nozzles
 RT conical nozzles
 convergent-divergent nozzles
 hypersonic nozzles
 ∞ nozzles
 sonic nozzles
 supersonic nozzles
 wind tunnel nozzles

transonic speed
 SN (APPROXIMATELY MACH 0. 8 TO 1. 2)
 DEF The speed of a body relative to the surrounding fluid at which the flow is in some places on the body subsonic and in other places supersonic.
 GS rates (per time)
 . **transonic speed**
 velocity
 . **transonic speed**
 RT acoustic velocity
 subsonic speed
 supersonic speed

transonic turbines
 USE **supersonic turbines**

transonic wind tunnels
 GS test facilities
 . wind tunnels
 . . **transonic wind tunnels**
 RT blowdown wind tunnels
 hypersonic wind tunnels
 slotted wind tunnels
 subsonic wind tunnels
 supersonic wind tunnels
 wing flow method tests

transonics
 USE **transonic flow**

transparence
 UF *transparent materials*
 GS electromagnetic properties
 . optical properties
 . . **transparence**
 RT absorptance
 absorptivity
 atmospheric optics
 clarity
 density (mass/volume)
 electromagnetic absorption
 haze
 light transmission
 opacity
 optical density
 radome materials
 translucence
 transmissivity
 transmittance

turbidity

transparent materials
 USE **transparence**

transpiration
 DEF The passage of gas or liquid through a porous solid (usually under conditions of molecular flow). Used for fluid transpiration.

UF *fluid transpiration*
 GS phase transformations
 . vaporizing
 . . evaporation
 . . . **transpiration**

RT cooling
 cooling systems
 evanescence
 evapotranspiration
 evolution (liberation)
 gas evolution
 mass transfer
 molecular flow
 outgassing
 permeating
 perspiration
 plant physiology
 temperature control

transpiration cooling
 USE **sweat cooling**

transplantation
 RT clinical medicine
 heart implantation
 immunosuppression
 surgery

transplutonic planets
 (added June 1998)
 USE **hypothetical planets**

transponder control group
 UF *TCG (tracking)*
 RT ∞ control
 radar tracking
 satellite tracking
 spacecraft tracking
 telemetry
 transponders

transponders
 DEF Combined receiver and transmitter whose function is to transmit signals automatically when triggered by an interrogator. Used for responders.

UF *responders*
 GS radio equipment
 . **transponders**
 RT air traffic control
 Beacon Collision Avoidance System
 interrogation
 radar beacons
 radar equipment
 radio receivers
 radio transmitters
 transmissivity
 transmitter receivers
 transmitters
 transponder control group

transport aircraft
 GS **transport aircraft**
 . Aladin 2 aircraft
 . AN-2 aircraft
 . AN-22 aircraft
 . AN-24 aircraft
 . Argosy MK-1 aircraft
 . BAC 111 aircraft
 . Boeing 707 aircraft
 . Boeing 720 aircraft
 . Boeing 727 aircraft
 . Boeing 733 aircraft
 . Boeing 737 aircraft
 . Boeing 747 aircraft
 . Boeing 757 aircraft
 . Boeing 767 aircraft
 . Boeing 777 aircraft
 . Boeing 2707 aircraft
 . cargo aircraft
 . . Breguet 941 aircraft

. . C-1A aircraft
 . . C-2 aircraft
 . . C-5 aircraft
 . . C-9 aircraft
 . . C-15 aircraft
 . . C-17 aircraft
 . . C-33 aircraft
 . . C-35 aircraft
 . . C-46 aircraft
 . . C-47 aircraft
 . . C-54 aircraft
 . . C-118 aircraft
 . . C-119 aircraft
 . . C-121 aircraft
 . . C-123 aircraft
 . . C-124 aircraft
 . . C-130 aircraft
 . . C-131 aircraft
 . . C-133 aircraft
 . . C-135 aircraft
 . . C-140 aircraft
 . . C-141 aircraft
 . . C-160 aircraft
 . . CH-21 helicopter
 . . CL-44 aircraft
 . . DC 3 aircraft
 . . DC 7 aircraft
 . . P-160 aircraft
 . . P-166 aircraft
 . . spanloader aircraft
 . . YC-14 aircraft
 . CH-3 helicopter
 . CH-34 helicopter
 . CH-46 helicopter
 . CH-47 helicopter
 . CH-54 helicopter
 . CL-84 aircraft
 . CL-823 aircraft
 . Concorde aircraft
 . CV-880 aircraft
 . DC 8 aircraft
 . DC 9 aircraft
 . DC 10 aircraft
 . DH 121 aircraft
 . DH 125 aircraft
 . DHC 2 aircraft
 . DHC 4 aircraft
 . DHC 5 aircraft
 . DO-31 aircraft
 . DO-328 aircraft
 . Electra aircraft
 . European Airbus
 . . A-300 aircraft
 . . A-310 aircraft
 . . A-320 aircraft
 . . A-330 aircraft
 . . A-340 aircraft
 . . A-380 aircraft
 . F-27 aircraft
 . F-28 transport aircraft
 . G-1 aircraft
 . G-222 aircraft
 . H-19 helicopter
 . H-53 helicopter
 . H-56 helicopter
 . HC-3 helicopter
 . HFB-320 aircraft
 . IL-14 aircraft
 . IL-76 aircraft
 . IL-86 aircraft
 . IL-96 aircraft
 . L-1011 aircraft
 . L-2000 aircraft
 . light intratheater transport
 . light transport aircraft
 . Lockheed model 18 aircraft
 . MD 11 aircraft
 . MD 80 aircraft
 . MH-262 aircraft
 . Mystere 20 aircraft
 . Mystere 50 aircraft
 . S-58 helicopter
 . S-61 helicopter
 . SA-330 helicopter
 . SC-5 aircraft
 . SC-7 aircraft
 . SH-3 helicopter
 . SH-4 helicopter
 . short haul aircraft

transport properties

- . . C-8A augmentor wing aircraft
- . . Cessna 402B aircraft
- . . Mercure aircraft
- . Boeing 717 aircraft
- . tanker aircraft
- . TU-124 aircraft
- . TU-144 aircraft
- . TU-154 aircraft
- . TU-204 aircraft
- . UH-34 helicopter
- . UH-60A helicopter
- . UH-61A helicopter
- . VC-10 aircraft
- . very large transport aircraft
- . Viscount aircraft
- . XC-142 aircraft
- . YS-11 aircraft
- RT air transportation
- ∞ aircraft
- commercial aircraft
- general aviation aircraft
- jet aircraft
- light aircraft
- ∞ low wing aircraft
- ∞ military aircraft
- passenger aircraft
- rotary wing aircraft
- ∞ subsonic aircraft
- supersonic aircraft
- ∞ transport vehicles
- turbofan aircraft
- turboprop aircraft
- utility aircraft
- V/STOL aircraft
- water takeoff and landing aircraft

transport coefficients

USE **transport properties**

transport properties

- UF *transport coefficients*
- GS **transport properties**
 - . atmospheric conductivity
 - . . ionospheric conductivity
 - . carrier mobility
 - . . electron mobility
 - . . hole mobility
 - . diffusion coefficient
 - . . Soret coefficient
 - . electrical resistivity
 - . . ionospheric conductivity
 - . . magnetoresistivity
 - . . photoconductivity
 - . . plasma conductivity
 - . . superconductivity
 - . . . Kondo effect
 - . gaseous diffusion
 - . . gaseous self-diffusion
 - . ionic mobility
 - . thermal conductivity
 - . thermal diffusivity
 - . viscosity
 - . . eddy viscosity
 - . . gas viscosity
- RT binary fluids
- Boltzmann transport equation
- ∞ conductivity
- diffusion
- flow coefficients
- Hall effect
- Hall resistance
- heat transfer
- high temperature tests
- kinetic theory
- Lighthill gas model
- mobility
- ∞ physical properties
- pollution transport
- ∞ properties
- radiation transport
- Seebeck effect
- ∞ solid state physics
- thermoelectricity

transport theory

- GS kinetic theory
- . **transport theory**
- . . Chapman-Enskog theory
- . . Eyring theory
- . . mixing length flow theory

- RT Boltzmann transport equation
- diffusion theory
- gas transport
- integral equations
- molecular interactions
- Monte Carlo method
- pollution transport
- reaction-diffusion equations
- ∞ theories

∞ transport vehicles

- SN ((USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW))
- RT crawler tractors
- ground effect machines
- rapid transit systems
- ships
- transport aircraft
- ∞ vehicles

transportation

- GS **transportation**
 - . air transportation
 - . marine transportation
 - . rail transportation
 - . rapid transit systems
 - . space transportation
 - . . space transportation system
 - . . . Advanced Launch System (STS)
 - . . . Saenger space transportation system
- RT . urban transportation
- artificial harbors
- automated guideway transit vehicles
- automated transit vehicles
- cargo
- contractors
- conveyors
- deepwater terminals
- delivery
- distributing
- ∞ distribution
- electric automobiles
- evacuating (transportation)
- freight costs
- freighters
- handling equipment
- hauling
- highways
- logistics
- materials handling
- missiles
- logistics
- motor vehicles
- offshore docking
- offshore platforms
- packaging
- passengers
- pipelines
- riding quality
- roads
- routes
- services
- site selection
- tanker terminals
- terminal facilities
- tourism
- tractors
- traffic
- transcontinental systems
- transferring
- transoceanic systems
- transportation networks
- ∞ travel
- trucks

transportation energy

- RT allocations
- cargo
- commercial energy
- distributing
- domestic energy
- economic factors
- ∞ energy
- energy conversion
- engines
- fuels
- hauling
- industrial energy
- ships

- ∞ tankers
- trucks

transportation networks

- DEF Networks of highways, railways, subways, etc., for the movement of passenger and cargo.
- RT highways
- intersections
- rapid transit systems
- roads
- transportation

transporter

- GS surface vehicles
- . **transporter**
- RT ∞ containers
- ∞ vehicles

transputers

- (added August 1989)
- GS data processing equipment
- . computers
- . . **transputers**
- RT architecture (computers)
- distributed processing
- interprocessor communication
- microprocessors
- parallel processing (computers)

transuranium elements

DEF Elements above uranium in the periodic table, that is, with an atomic number greater than 92.

- GS chemical elements
- . actinide series
- . . **transuranium elements**
- . . . americium
- americium isotopes
- americium 241
- . . . berkelium
- . . . californium
- californium isotopes
- . . . curium
- curium isotopes
- curium 242
- curium 244
- . . . einsteinium
- . . . fermium
- . . . lawrencium
- . . . mendelevium
- . . . neptunium
- neptunium isotopes
- . . . nobelium
- . . . plutonium
- plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244
- . . . sergenium
- . nuclides
- . . isotopes
- . . . radioactive isotopes
- **transuranium elements**
- americium
- americium isotopes
- americium 241
- berkelium
- californium
- californium isotopes
- curium
- curium isotopes
- curium 242
- curium 244
- einsteinium
- fermium
- lawrencium
- mendelevium
- neptunium
- neptunium isotopes
- nobelium
- plutonium
- plutonium isotopes
- plutonium 238
- plutonium 239
- plutonium 240
- plutonium 241
- plutonium 244

. sergenium
 metals
 . actinide series
 . . **transuranium elements**
 . . . americium
 americium isotopes
 americium 241
 . . . berkelium
 . . . californium
 californium isotopes
 . . . curium
 curium isotopes
 curium 242
 curium 244
 . . . einsteinium
 . . . fermium
 . . . lawrencium
 . . . mendeleevium
 . . . neptunium
 neptunium isotopes
 . . . nobelium
 . . . plutonium
 plutonium isotopes
 plutonium 238
 plutonium 239
 plutonium 240
 plutonium 241
 plutonium 244
 . . . sergenium
 RT transition metals

transverse acceleration
 GS rates (per time)
 . acceleration (physics)
 . . **transverse acceleration**
 RT ∞ acceleration
 acceleration measurement
 acceleration stresses (physiology)
 angular acceleration
 transverse momentum

transverse loads
 (added June 1992)
 GS loads (forces)
 . **transverse loads**
 RT dynamic loads
 force distribution
 load distribution (forces)
 loading moments
 shear stress
 static loads
 stress distribution
 stresses

transverse momentum
 (added June 1999)
 GS momentum
 . **transverse momentum**
 RT angular momentum
 elementary particle interactions
 particle motion
 transverse acceleration

transverse oscillation
 DEF Oscillation in which the direction of motion of the particles is perpendicular to the direction of advance of the oscillatory motion in contrast with longitudinal oscillation, in which the direction of motion in the same as that of advance. Used for transverse vibration.
 UF *transverse vibration*
 GS oscillations
 . **transverse oscillation**
 . . H waves
 RT gamma rays
 harmonic oscillation
 lateral oscillation
 stable oscillations
 transient oscillations

transverse vibration
 USE **transverse oscillation**

transverse waves
 DEF Waves in which the direction of displacement at each point of the medium is parallel to the wave front.
 GS **transverse waves**
 . H waves
 RT elastic waves

electromagnetic radiation
 gamma rays
 longitudinal waves
 magnetohydrodynamic flow
 plane waves
 radio waves
 S waves
 SH waves
 vibration mode
 wave packets
 ∞ waves

transversely excited atmospheric lasers
 USE **TEA lasers**

TRAP program
 GS programs
 . **TRAP program**
 RT plasma control
 ∞ radiation

TRAPATT devices
 UF *trapped plasma avalanche triggered transit*
 GS electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . **TRAPATT devices**
 RT avalanche diodes
 ∞ devices
 diodes
 transistors

TRAPATT diodes
 USE **avalanche diodes**

trapezoidal tail surfaces
 GS assemblies
 . tail assemblies
 . . **trapezoidal tail surfaces**
 planforms
 . **trapezoidal tail surfaces**
 tail surfaces
 . **trapezoidal tail surfaces**
 RT control surfaces
 horizontal tail surfaces
 hypersonic aircraft
 rudders
 stabilizers (fluid dynamics)
 supersonic aircraft
 ∞ surfaces
 sweptback tail surfaces

trapezoidal wings
 GS airfoils
 . wings
 . . low aspect ratio wings
 . . . **trapezoidal wings**
 . . swept wings
 . . . swept forward wings
 **trapezoidal wings**
 . . . sweptback wings
 **trapezoidal wings**
 planforms
 . wing planforms
 . . swept forward wings
 . . . **trapezoidal wings**
 . . sweptback wings
 . . . **trapezoidal wings**

. . . radiation belts
 artificial radiation belts
 inner radiation belt
 outer radiation belt
 . . . proton belts
 RT charged particles
 electron precipitation
 laser cooling
 proton precipitation
 trapping

trapped plasma avalanche triggered transit
 USE **TRAPATT devices**

trapped vortices
 (added August 1989)
 DEF Air flow in rotary motion but trapped relative to leading edge vortex separation, which increases not only lift but also drag. The trapped vortices result in thrust and reduced drag. Used for vortex traps.
 UF *vortex traps*
 GS vortices
 . **trapped vortices**
 RT counterflow
 flow distribution
 mixing
 rotating fluids
 rotating liquids
 turbulent mixing
 turbulent wakes
 vortex rings
 vorticity

trapping
 GS **trapping**
 . cryotrapping
 RT conduction bands
 crystal defects
 flux pinning
 ion storage
 phosphorescence
 radiation belts
 trapped magnetic fields
 trapped particles

traps
 GS **traps**
 . cold traps
 . ion traps (instrumentation)
 . vapor traps
 RT concentrators
 entrapment
 separators
 valves

 ∞ **travel**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT distance
 harbors
 logistics
 range (extremes)
 tourism
 transportation

traveling charge
 GS electric charge
 . **traveling charge**
 RT electrodynamics
 energy dissipation
 field theory (physics)

traveling ionospheric disturbances
 DEF Atmospheric gravity waves originating at the auroral oval or at the terminator with speeds of 1000 km/hour over the Earth's surface. Due to interaction between the neutral atmosphere and the ionosphere, they result in temporary enhancements and depletions of the ionosphere that travel with the gravity waves.
 UF *TID*
 GS ionospheric disturbances
 . **traveling ionospheric disturbances**
 RT gravity waves
 ionospheric currents
 ionospheric propagation
 ionospheric storms
 ionospheric tilts

traveling salesman problem

magnetic variations
sudden ionospheric disturbances

traveling salesman problem

RT operations research
probability theory
∞ problems
statistical analysis

traveling solvent method

SN (LIMITED TO CRYSTAL GROWTH
TECHNIQUES)
GS growth
. crystal growth
. . **traveling solvent method**
RT additives
carrier injection
electroepitaxy
∞ methodology

traveling wave amplifiers

GS amplifiers
. **traveling wave amplifiers**
RT amplifier design
power amplifiers
traveling wave tubes

traveling wave masers

GS stimulated emission devices
. masers
. . **traveling wave masers**
RT amplifiers
cavity resonators
coherent electromagnetic radiation

traveling wave modulation

GS modulation
. **traveling wave modulation**
RT lasers
light modulation
wave diffraction

traveling wave tubes

DEF Electron tubes in which streams of electrons interact continuously or repeatedly with guided electromagnetic waves moving substantially in synchronism with them, and in such a way that there is a net transfer of energy from the streams to the waves. Used for crestatrons and helix tubes.

UF *crestatrons*
helix tubes
GS electron tubes
. vacuum tubes
. . microwave tubes
. . . **traveling wave tubes**
. . . . backward wave tubes
. . . . helitrons
. . . . carcinotrons
microwave equipment
. microwave tubes
. . **traveling wave tubes**
. . . backward wave tubes
. . . . helitrons
. . . . carcinotrons
RT backward waves
Brillouin flow
crossed field amplifiers
cyclotron resonance devices
electron bunching
magnetostatic amplifiers
magnetrons
microwave oscillators
oscillations
scalloping
traveling wave amplifiers

traveling waves

GS **traveling waves**
. solitary waves
RT backward waves
elastic waves
electromagnetic radiation
nonresonance
phase velocity
plane waves
radio waves

trays

RT ∞ buckets
∞ containers

∞ plates

treadmills

RT physical exercise
physical fitness
physical work
physiological tests

treads

RT stairways
tires
vehicular tracks

TREAT (test facility)

USE **Transient Reactor Test Facility**

∞ treatment

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
UF *conditioning (treating)*
RT air conditioning
clinical medicine
heat treatment
prewhitening
sewage treatment
surface treatment
thermomechanical treatment
waste treatment
water treatment

tree ring dating

USE **dendrochronology**

∞ trees

SN (USE OF A MORE SPECIFIC TERM IS
RECOMMENDED--CONSULT THE TERMS
LISTED BELOW)
RT conifers
trees (mathematics)
trees (plants)

trees (mathematics)

GS **trees (mathematics)**
. fault trees
RT analysis (mathematics)
circuits
graph theory
graphs (charts)
∞ nets
Petri nets
sneak circuit analysis
topology
∞ trees

trees (plants)

DEF Woody plants having one well defined stem and a more or less definitely formed crown, usually attaining a height of at least 8 feet.

GS plants (botany)
. **trees (plants)**
. . citrus trees
. . conifers
. . deciduous trees
RT balsa
canopies (vegetation)
chaparral
clearings (openings)
defoliant
defoliation
dendrochronology
forests
geobotany
herbicides
logging (industry)
Masonite (trademark)
orchards
phreatophytes
plywood
silviculture
timber identification
timber inventory
timber vigor
timberline
∞ trees
vegetation
wood

Trefftz method

(added July 1998)

DEF Boundary-type approximation scheme for the solution of boundary value problems for

partial differential equations.

UF *hybrid-Trefftz finite element method*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . boundary element method
. . . . **Trefftz method**
RT bending theory
boundary conditions
boundary value problems
finite element method
partial differential equations
plate theory
structural analysis

trellis coding

(added August 1991)

DEF A 'sliding window' method of encoding a binary data stream into a sequence of real numbers that are input to a noisy transmission channel.

GS coding
. signal encoding
. . **trellis coding**
RT binary codes
channel noise
∞ codes
concatenated codes
convolution integrals
phase modulation
phase shift keying

tremors

RT earthquake resistance
earthquakes
paralysis
Parkinson disease
Rouse belts

trend analysis

(added May 1989)

DEF A management tool for evaluating variation in data with the ultimate objective of forecasting future events based upon an examination of past results.

GS information analysis
. **trend analysis**
RT ∞ analyzing
data mining
failure analysis
performance prediction
prediction analysis techniques
regularity
reliability analysis
statistical analysis
time series analysis
trends

trends

RT extrapolation
forecasting
growth
periodic variations
∞ projection
time series analysis
trend analysis

Tresca flow

GS fluid flow
. plastic flow
. . **Tresca flow**
RT ductility
stability
yield point

triacetin

GS acetates
. **triacetin**
esters
. **triacetin**
RT acetic acid
glycerols
plasticizers
solvents

triaminoguanidinenitrate

USE **TAGN**

triaminoguanidinium azide

GS nitrogen compounds

. azides (organic)
 . . **triaminoguanidinium azide**
 organic compounds
 . amines
 . . diamines
 . . . guanidines
 **triaminoguanidinium azide**

triaminotrinitrobenzene
 USE **TATB**

triangles

GS geometry
 . Euclidean geometry
 . . polygons
 . . . **triangles**
 RT tetrahedrons
 trigonometry

triangular wings

USE **delta wings**

triangulation

RT angles (geometry)
 mapping
 navigation
 trigonometry
 wildlife radiolocation

triatomic molecules

GS molecules
 . polyatomic molecules
 . . **triatomic molecules**
 RT diatomic molecules

triaxial stresses

UF *triaxiality*
 GS stresses
 . **triaxial stresses**
 RT mechanical properties
 tensile stress

triaxiality

USE **triaxial stresses**

tribolia

GS animals
 . invertebrates
 . . arthropods
 . . . insects
 Coleoptera
 beetles
 **tribolia**

tribology

DEF Science of friction, wear, and lubrication.

RT abrasion
 corrosion
 erosion
 erosive burning
 fretting
 friction
 interfacial tension
 lubrication
 triboluminescence
 tribometers
 vapor phase lubrication
 wear

triboluminescence

DEF The emission of light caused by application of mechanical energy to a solid.

GS emission
 . light emission
 . . luminescence
 . . . photoluminescence
 **triboluminescence**

RT fluorescence
 friction
 mechanical properties
 photoluminescent bands
 stresses
 tribology

tribometers

(*added September 2002*)

DEF Instruments and related methods for determining the degree of friction between two bodies.

GS measuring instruments

. tribometers

RT friction
 friction measurement
 ∞ instruments
 lubricant tests
 sliding friction
 tribology
 wear tests

tribometry

(*added September 2002*)

USE **friction measurement**

tributaries

RT drainage patterns
 Earth resources
 estuaries
 rivers

trichlorides

USE **chlorides**

trichloroethylene

(*added September 1995*)

GS halogen compounds
 . chlorine compounds
 . . **trichloroethylene**
 organic compounds
 . ethylene compounds
 . . chloroethylene
 . . . **trichloroethylene**

RT cleaning
 reduction (chemistry)
 solvents

Trident aircraft

USE **DH 121 aircraft**

trident submarine

GS water vehicles
 . ships
 . . submarines
 . . . **trident submarine**
 . underwater vehicles
 . . submarines
 . . . **trident submarine**
 RT navy
 nuclear propulsion

trienes

GS organic compounds
 . hydrocarbons
 . . aliphatic hydrocarbons
 . . . alkenes
 **trienes**

triethyl compounds

GS alkyl compounds
 . **triethyl compounds**
 RT ∞ chemical compounds
 diethyl compounds
 ethyl compounds

trifluoroamine oxide

GS halogen compounds
 . fluorine compounds
 . . fluoro compounds
 . . . fluorine organic compounds
 fluoroamines
 **trifluoroamine oxide**
 organic compounds
 . amines
 . . fluoroamines
 . . . **trifluoroamine oxide**
 . fluorine organic compounds
 . . fluoroamines
 . . . **trifluoroamine oxide**

trigatrons

GS switches
 . **trigatrons**
 RT ∞ gas tubes
 pulse modulation
 spark gaps
 trigger circuits

trigger circuits

DEF Circuits that have two conditions of stability, with means for passing from one to the other when certain conditions are satisfied, ei-

ther spontaneously or through application of an external stimulus.

GS circuits
 . **trigger circuits**
 RT anticoincidence detectors
 bistable circuits
 gates (circuits)
 multivibrators
 threshold gates
 threshold logic
 thyristors
 trigatrons

triggers

USE **actuators**

trigonometric functions

GS analysis (mathematics)
 . real variables
 . . periodic functions
 . . . **trigonometric functions**
 cosine series
 sine series
 tangents
 functions (mathematics)
 . transcendental functions
 . . periodic functions
 . . . **trigonometric functions**
 cosine series
 sine series
 tangents
 RT Fresnel integrals
 sine waves
 trigonometry

trigonometry

GS geometry
 . Euclidean geometry
 . . analytic geometry
 . . . **trigonometry**
 RT angles (geometry)
 ∞ science
 triangles
 triangulation
 trigonometric functions

trim (balance)

USE **aerodynamic balance**

trimers

GS oligomers
 . **trimers**
 prepolymers
 . **trimers**
 RT dimers
 monomers

trimethadione

GS drugs
 . **trimethadione**
 ketones
 . **trimethadione**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . **trimethadione**

trimethyl compounds

GS alkyl compounds
 . **trimethyl compounds**
 RT ∞ chemical compounds
 dimethyl compounds
 methyl compounds

Trinidad and Tobago

GS landforms
 . islands
 . . West Indies
 . . . **Trinidad and Tobago**
 nations
 . **Trinidad and Tobago**
 RT Caribbean region
 South America

trinitramine

GS nitrogen compounds
 . **trinitramine**
 organic compounds
 . amines

trinitro compounds

. . **trinitramine**

trinitro compounds
GS nitrogen compounds
. nitro compounds
. . **trinitro compounds**
RT ∞ chemical compounds

trinitrotoluene
UF *TNT (trinitrotoluene)*
GS explosives
. **trinitrotoluene**
. nitrogen compounds
. nitro compounds
. . nitrobenzenes
. . . **trinitrotoluene**
RT exposure

trinitrotriazocyclohexane
USE **RDX**

triodes
RT CATT devices
diodes
electron tubes
microwave tubes
semiconductor devices
tetrodes
thyristors
transistors

triols
GS hydroxyl compounds
. alcohols
. . **triols**
. . . cyanuric acid

triphenyl silicon
GS organic compounds
. organic silicon compounds
. . **triphenyl silicon**
silicon compounds
. organic silicon compounds
. . **triphenyl silicon**

triphenyls
GS organic compounds
. hydrocarbons
. . **triphenyls**
phenyls
. polyphenyls
. . **triphenyls**

triple axis spectrometers
USE **neutron spectrometers**

triple stars
(added October 1988)
GS celestial bodies
. stars
. . **triple stars**
RT binary stars
companion stars
stellar systems
three body problem

triplet excitation
USE **atomic energy levels**

triplet state
USE **atomic energy levels**

tripods
GS supports
. **tripods**
RT optical equipment

tripropellants
USE **liquid rocket propellants**

trisonic wind tunnels
DEF Wind tunnels designed for subsonic, transonic, and supersonic flows.
GS test facilities
. wind tunnels
. . **trisonic wind tunnels**
RT slotted wind tunnels
transonic flow

wind tunnel tests

tritium
UF *hydrogen 3*
GS chemical elements
. hydrogen
. . hydrogen isotopes
. . . **tritium**
. nuclides
. . isotopes
. . . hydrogen isotopes
. . . . **tritium**
. . . . radioactive isotopes
. . . . **tritium**
gases
. hydrogen
. . hydrogen isotopes
. . . **tritium**
RT heavy water
nuclear fuels

Triton
DEF One of the two satellites of the planet Neptune, with a diameter of about 4800 kilometers, orbiting at a mean distance of 354,000 kilometers.
GS celestial bodies
. natural satellites
. . Neptune satellites
. . . **Triton**
RT Galilean satellites
Neptune (planet)
Neptune atmosphere
satellite atmospheres
Titan

tritons
GS ions
. **tritons**
particles
. charged particles
. . energetic particles
. . . nuclei (nuclear physics)
. . . . **tritons**
. . . . corpuscular radiation
. . . . energetic particles
. . . . nuclei (nuclear physics)
. . . . **tritons**
RT alpha particles
protons

trivalent ions
GS ions
. **trivalent ions**
RT free radicals
positive ions
valence

TRMM satellite
(added May 1998)
DEF Satellite supporting the joint US-Japanese Tropical Rainfall Measuring Mission (TRMM) to explore tropical rainfall and its effects on the Earth energy budget, general circulation, and climate. The TRMM satellite represents the first dual deployment of a precipitation radar and passive microwave radiometer on an Earth-viewing satellite.

UF *Tropical Rainfall Measuring Mission sat*
GS artificial satellites
. meteorological satellites
. . **TRMM satellite**
. . scientific satellites
. . . **TRMM satellite**
RT atmospheric circulation
CERES (experiment)
Earth radiation budget
equatorial atmosphere
rain
tropical meteorology

trochoids
USE **pivots**

troilite
GS chalcogenides
. sulfides
. . pyrrhotite
. . . **troilite**

iron compounds
. pyrrhotite
. . **troilite**
minerals
. pyrrhotite
. . **troilite**
sulfur compounds
. sulfides
. . pyrrhotite
. . . **troilite**
RT iron meteorites
meteoritic composition

Trojan aircraft
USE **T-28 aircraft**

Trojan asteroids
(added August 2000)
DEF Any asteroid that orbits in the Lagrange points of another (larger) body. In particular, those asteroids with a revolution period approximately equal to that of Jupiter (1:1 resonance) and clustered at either of the two Lagrange points--60 degrees ahead of or behind the Jupiter. Most asteroids of this group are named after the heroes of the Trojan War.

GS celestial bodies
. asteroids
. . **Trojan asteroids**
RT Jupiter (planet)
Lagrangian equilibrium points
three body problem
Trojan orbits

Trojan orbits
GS orbits
. **Trojan orbits**
RT celestial mechanics
many body problem
three body problem
Trojan asteroids

Trombe walls
DEF Structures with passive solar collectors in the walls.
GS walls
. **Trombe walls**
RT energy technology
heat storage
phase change materials
radiative heat transfer
solar energy absorbers
solar heating
solar houses
thermal insulation

tropical meteorology
GS meteorology
. **tropical meteorology**
RT agrometeorology
el Nino
equatorial atmosphere
GARP Atlantic Tropical Experiment
intertropical convergent zones
intraseasonal variations
Madden-Julian Oscillation
meteorological parameters
quasi-biennial oscillation
TRMM satellite

Tropical Rainfall Measuring Mission sat
(added May 1998)
USE **TRMM satellite**

tropical regions
UF *jungles*
low latitudes
subtropical regions
tropics
GS regions
. **tropical regions**
. . Amazon region (South America)
. . . intertropical convergent zones
RT climatology
equatorial atmosphere
equatorial regions
GARP Atlantic Tropical Experiment
geography
hot weather
laterites

- Lomonosov current
 meteorology
 rain forests
 temperate regions
 Virgin Islands
- tropical storms**
 GS storms
 . storms (meteorology)
 . . **tropical storms**
 . . . hurricanes
 Anna hurricane
 . . . typhoons
 RT atmospheric circulation
 cyclones
 meteorology
 storm damage
 tornadoes
- tropics*
 USE **tropical regions**
- tropism**
 GS **tropism**
 . aeolotropism
 . geotropism
 . gravitropism
 . gyrotropism
 . neurotropism
- tropopause**
 SN (ALTITUDE APPROXIMATELY 15 TO 20 KM)
 DEF The boundary between the troposphere and the stratosphere, usually characterized by an abrupt change of lapse rate. The change is in the direction of increased atmospheric stability from regions below to regions above the tropopause. Its height varies from 15 to 20 kilometers in the tropics to about 10 kilometers in polar regions. In polar regions in winter it is often difficult or impossible to determine just where the tropopause lies, since under some conditions there is no abrupt change in lapse rate at any height.
 GS Earth atmosphere
 . lower atmosphere
 . . troposphere
 . . . **tropopause**
 RT diurnal variations
 isothermal layers
 middle atmosphere
- troposphere**
 SN (GROUND LEVEL TO APPROXIMATELY 15 KM)
 DEF That portion of the atmosphere from the Earth's surface to the stratosphere; that is, the lowest 10 to 20 kilometers of the atmosphere. The troposphere is characterized by decreasing temperature with height, appreciable vertical wind motion, appreciable water vapor content, and weather. Dynamically, the troposphere can be divided into the following layers: surface boundary layer, Ekman layer, and free atmosphere.
 GS Earth atmosphere
 . lower atmosphere
 . . **troposphere**
 . . . tropopause
 RT chemosphere
 homosphere
 Intasat satellite
- tropospheric radiation**
 SN (EXCLUDES TERRESTRIAL RADIATION)
 GS atmospheric radiation
 . **tropospheric radiation**
 electromagnetic radiation
 . **tropospheric radiation**
 RT ∞ radiation
 sky radiation
 stratosphere radiation
 terrestrial radiation
- tropospheric scattering**
 GS scattering
 . wave scattering
 . . atmospheric scattering
 . . . **tropospheric scattering**
 RT light scattering
- wideband communication
- tropospheric waves**
 SN (EXCLUDES RADIO WAVES)
 DEF Radio waves that are propagated by reflection from a place of abrupt change in the dielectric constant or its gradient in the troposphere.
 GS **tropospheric waves**
 . planetary waves
 RT elastic waves
 lee waves
 radio waves
 surface waves
 ∞ waves
- tropyl compounds**
 GS bases (chemical)
 . alkaloids
 . . **tropyl compounds**
 nitrogen compounds
 . alkaloids
 . . **tropyl compounds**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . alkaloids
 **tropyl compounds**
 RT ∞ chemical compounds
- troubleshooting*
 USE **maintenance**
- troughs**
 RT canals
 ditches
 irrigation
 low pressure
- trucks**
 SN (EXCLUDES UNDERCARRIAGES)
 UF *vans*
 GS surface vehicles
 . motor vehicles
 . . **trucks**
 . . . tank trucks
 RT antiskid devices
 automobiles
 cargo
 delivery
 dollies
 electric motor vehicles
 ground handling
 hauling
 materials handling
 ∞ military vehicles
 recovery vehicles
 tractors
 trailers
 transportation
 transportation energy
- truncation (mathematics)*
 USE **approximation**
- truncation errors**
 DEF In computations, the errors resulting from the use of only a finite number of terms of an infinite series or from the approximation of operations in the infinitesimal calculus by operations in the calculus of finite differences.
 GS analysis (mathematics)
 . numerical analysis
 . . **truncation errors**
 errors
 . **truncation errors**
 RT ill-conditioned problems (mathematics)
 precision
- trunks (lines)*
 USE **transmission lines**
- trunnions*
 USE **shafts (machine elements)**
- trusses**
 GS structural members
 . **trusses**
 RT arches
 beams (supports)
- construction industry
 frames
 girders
 I beams
 Integrated Truss Structure P1
 Integrated Truss Structure S1
 Integrated Truss Structure Z1
 loops
 Maxwell-Mohr method
 megamechanics
 ∞ structures
 struts
 supports
 Timoshenko beams
- trypanosome**
 GS animals
 . protozoa
 . . Flagellata
 . . . **trypanosome**
 microorganisms
 . protozoa
 . . Flagellata
 . . . **trypanosome**
 parasites
 . **trypanosome**
 RT parasitic diseases
- trypsin**
 GS biopolymers
 . proteins
 . . enzymes
 . . . **trypsin**
 organic compounds
 . proteins
 . . enzymes
 . . . **trypsin**
 RT pancreas
- tryptamines**
 GS organic compounds
 . amines
 . . **tryptamines**
 . . . melatonin
 . . . serotonin
 . cyclic compounds
 . . heterocyclic compounds
 . . . indoles
 **tryptamines**
 melatonin
 serotonin
- tryptophan**
 GS acids
 . amino acids
 . . **tryptophan**
 . carboxylic acids
 . . **tryptophan**
 nitrogen compounds
 . **tryptophan**
 organic compounds
 . amino acids
 . . **tryptophan**
 . carboxylic acids
 . . **tryptophan**
 . cyclic compounds
 . . heterocyclic compounds
 . . . indoles
 **tryptophan**
- TS-11 aircraft**
 UF *Iskra aircraft*
Polish TS-11 aircraft
 GS jet aircraft
 . **TS-11 aircraft**
 monoplanes
 . **TS-11 aircraft**
 training aircraft
 . **TS-11 aircraft**
 RT ∞ aircraft
- TSR-2 aircraft**
 UF *BAC TSR 2 aircraft*
 attack aircraft
 GS **TSR-2 aircraft**
 BAC aircraft
 . **TSR-2 aircraft**
 jet aircraft
 . **TSR-2 aircraft**
 monoplanes

tsunami waves

. **TSR-2 aircraft**
reconnaissance aircraft
. **TSR-2 aircraft**
supersonic aircraft
. **TSR-2 aircraft**
RT ∞ aircraft

tsunami waves

DEF A series of waves of extremely long length and period typically caused by a sudden vertical displacement of a large area of the sea floor during an undorsa earthquake.

RT Earth movements
earthquake damage
earthquakes
frontal waves
seismic waves
shock waves
surface waves
tidal waves
water waves

TTL integrated circuits

SN (TRANSISTOR-TRANSISTOR-LOGIC INTEGRATED CIRCUITS)
UF *transistor-transistor-logic integ circuits*
GS circuits
. integrated circuits
. . **TTL integrated circuits**
RT electronic packaging
large scale integration
microminiaturization
molecular electronics
transistor circuits

TU-104 aircraft

UF *Camel aircraft*
GS commercial aircraft
. **TU-104 aircraft**
jet aircraft
. **TU-104 aircraft**
monoplanes
. **TU-104 aircraft**
passenger aircraft
. **TU-104 aircraft**
Tupolev aircraft
. **TU-104 aircraft**
RT ∞ aircraft
TU-154 aircraft

TU-124 aircraft

UF *Cookpot aircraft*
GS commercial aircraft
. **TU-124 aircraft**
jet aircraft
. **TU-124 aircraft**
monoplanes
. **TU-124 aircraft**
passenger aircraft
. **TU-124 aircraft**
transport aircraft
. **TU-124 aircraft**
Tupolev aircraft
. **TU-124 aircraft**
RT ∞ aircraft
turbofan engines

TU-134 aircraft

GS commercial aircraft
. **TU-134 aircraft**
jet aircraft
. turbofan aircraft
. . **TU-134 aircraft**
monoplanes
. **TU-134 aircraft**
passenger aircraft
. **TU-134 aircraft**
Tupolev aircraft
. **TU-134 aircraft**
RT ∞ aircraft

TU-144 aircraft

GS commercial aircraft
. supersonic commercial air transport
. . **TU-144 aircraft**
jet aircraft
. turbofan aircraft
. . **TU-144 aircraft**
passenger aircraft
. **TU-144 aircraft**

supersonic aircraft
. supersonic transports
. . supersonic commercial air transport
. . . **TU-144 aircraft**
transport aircraft
. **TU-144 aircraft**
RT ∞ aircraft

TU-154 aircraft

GS commercial aircraft
. **TU-154 aircraft**
jet aircraft
. **TU-154 aircraft**
transport aircraft
. **TU-154 aircraft**
Tupolev aircraft
. **TU-154 aircraft**
RT ∞ aircraft
cargo aircraft
passenger aircraft
TU-104 aircraft

TU-204 aircraft

(added September 1994)
GS commercial aircraft
. **TU-204 aircraft**
jet aircraft
. **TU-204 aircraft**
passenger aircraft
. **TU-204 aircraft**
transport aircraft
. **TU-204 aircraft**
Tupolev aircraft
. **TU-204 aircraft**
RT ∞ aircraft

tube anodes

GS electrodes
. anodes
. . **tube anodes**
RT cathodes
electrode materials
electron guns

tube cathodes

GS electrodes
. cathodes
. . **tube cathodes**
. . . cold cathodes
. . . hot cathodes
. . . photocathodes
. . . thermionic cathodes
. . . tunnel cathodes
RT cold cathode tubes
electron guns
hollow cathodes

tube grids

GS electrodes
. **tube grids**
RT bias
electron guns
electron tubes
∞ grids
ionizers

tube heat exchangers

GS heat exchangers
. **tube heat exchangers**
RT regenerators

tube lasers

DEF Stimulated emission devices activated with shock tubes.
RT chemical lasers
gasdynamic lasers
laser outputs
pulsed lasers
shock tubes
waveguide lasers

tuberculosis

GS diseases
. infectious diseases
. . bacterial diseases
. . . **tuberculosis**
. respiratory diseases

. . tuberculosis

∞ tubes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT Bourdon tubes
bronchi
burettes
cannulae
capillary tubes
circular tubes
ducts
electron tubes
eustachian tubes
Hilsch tubes
hoses
linings
manifolds
microwave tubes
nanotubes
pipes (tubes)
pitot tubes
shock tubes
siphons
trachea
Venturi tubes

tubing

USE **pipes (tubes)**

tubular fullerenes

(added September 2001)
USE **carbon nanotubes**

Tully-Fisher relation

(added March 2004)
DEF A correlation for spiral galaxies between their luminosity and rotational velocity that can be used to calculate the distance to the galaxy or associated galactic cluster.
RT cosmology
distance
galactic rotation
luminosity
spiral galaxies

tumbling motion

DEF An attitude situation in which the vehicle continues on its flight, but turns end over end about its center of mass.
RT attitude stability
coning motion
destabilization
mixers
∞ motion
rotating environments
satellite rotation
∞ separation
spacecraft motion
spacecraft stability

tumor suppressor genes

(added June 2004)
DEF Genes that inhibit expression of the tumorigenic phenotype. They are normally involved in holding cellular growth in check. When tumor suppressor genes are inactivated or lost, a barrier to normal proliferation is removed and unregulated growth is possible.
GS genes
. **tumor suppressor genes**
RT cancer
neoplasms
tumor suppressor proteins
tumors

tumor suppressor proteins

(added June 2004)
DEF Proteins that are normally involved in holding cellular growth in check. Deficiencies or abnormalities in these proteins may lead to unregulated cell growth and tumor development.
GS biopolymers
. proteins
. . **tumor suppressor proteins**
organic compounds
. proteins
. . **tumor suppressor proteins**
RT cancer
neoplasms

tumor suppressor genes
tumors

tumors
GS diseases
. **tumors**
. . . neoplasms
. . . . cancer
. . . . leukemias
RT cysts
occupational diseases
tumor suppressor genes
tumor suppressor proteins

tunable filters
(added June 1995)
DEF Filters consisting generally of combinations of capacitors, inductors, and resistors that have been selected in such a way as to present a relative minimum (maximum) impedance to one or more specific frequencies.
RT acousto-optics
adaptive filters
charge transfer devices
crystal filters
electric filters
electro-optics
∞ filters
microwave filters
optical filters
radio filters
tuning

tunable lasers
DEF Stimulated emission devices with selectable frequency output.
GS stimulated emission devices
. lasers
. . . **tunable lasers**
RT DBR lasers
diffraction radiation
light modulation
optical communication
tuning
wiggler magnets

tundra
DEF A treeless, level or gently undulating plain characteristic of arctic and subarctic regions. It usually has a marshy surface which supports a growth of mosses, lichens, and numerous low shrubs underlain by a dark, mucky soil and permafrost.
GS land
. plains
. . . **tundra**
landforms
. plains
. . . **tundra**
RT Arctic regions
Asia
geography
North America

turners
GS **turners**
. waveguide tuners
RT radio receivers
resonance probes
resonant frequencies
television receivers

tungstates
GS tungsten compounds
. **tungstates**
. . . calcium tungstates
. . . lead tungstates
. . . zinc tungstates

tungsten
UF *wolfram*
GS chemical elements
. **tungsten**
metals
. refractory metals
. . . **tungsten**
. transition metals
. . . **tungsten**
refractory materials
. refractory metals

. . . **tungsten**

tungsten alloys
GS alloys
. heat resistant alloys
. . . refractory metal alloys
. . . . **tungsten alloys**
refractory materials
. refractory metal alloys
. . . **tungsten alloys**
RT hafnium alloys
Stellite (trademark)

tungsten carbides
GS carbon compounds
. carbides
. . . **tungsten carbides**
tungsten compounds
. **tungsten carbides**

tungsten chlorides
GS halogen compounds
. chlorine compounds
. chlorides
. . . **tungsten chlorides**
. halides
. . . chlorides
. . . . **tungsten chlorides**
. metal halides
. . . tungsten halides
. . . . **tungsten chlorides**
tungsten compounds
. tungsten halides
. . . **tungsten chlorides**

tungsten compounds
GS **tungsten compounds**
. tungstates
. . . calcium tungstates
. . . lead tungstates
. . . zinc tungstates
. tungsten carbides
. tungsten halides
. . . tungsten chlorides
. . . tungsten fluorides
. tungsten oxides
. . . scheelite
RT ∞ chemical compounds
∞ Group 6B compounds
∞ metal compounds

tungsten fluorides
GS halogen compounds
. fluorine compounds
. . . fluorides
. . . . metal fluorides
. **tungsten fluorides**
. halides
. . . fluorides
. . . . metal fluorides
. **tungsten fluorides**
. metal halides
. . . metal fluorides
. **tungsten fluorides**
. . . tungsten halides
. **tungsten fluorides**
tungsten compounds
. tungsten halides
. . . **tungsten fluorides**

tungsten halides
GS halogen compounds
. halides
. . . metal halides
. . . . **tungsten halides**
. tungsten chlorides
. tungsten fluorides
tungsten compounds
. **tungsten halides**
. . . tungsten chlorides
. . . tungsten fluorides

tungsten inert gas welding
USE **gas tungsten arc welding**

tungsten isotopes
GS chemical elements
. nuclides
. . . isotopes
. . . . **tungsten isotopes**

metals
. refractory metals
. . . **tungsten isotopes**
. transition metals
. . . **tungsten isotopes**
refractory materials
. refractory metals
. . . **tungsten isotopes**

tungsten oxides
GS chalcogenides
. oxides
. . . metal oxides
. . . . **tungsten oxides**
. scheelite
tungsten compounds
. **tungsten oxides**
. . . scheelite

Tungusk meteorite
UF *Tunguska event*
GS celestial bodies
. meteorites
. . . stony meteorites
. . . . **Tungusk meteorite**
RT meteorite collisions
meteorite craters

Tunguska event
USE **Tungusk meteorite**

tuning
GS **tuning**
. Schuler tuning
RT automatic frequency control
automatic gain control
dye lasers
frequency pulling
mistuning (turbomachinery)
Q factors
resonance
resonant frequencies
resonators
tunable filters
tunable lasers

tuning fork gyroscopes
GS gyroscopes
. **tuning fork gyroscopes**
RT resonators

Tunisia
GS nations
. **Tunisia**
RT Africa

tunnel cathodes
GS electrodes
. cathodes
. . . tube cathodes
. . . . **tunnel cathodes**
RT cold cathode tubes
cold cathodes
electron tubes
hollow cathodes
∞ tunnels

tunnel diodes
UF *Esaki diodes*
GS electronic equipment
. diodes
. . . semiconductor diodes
. . . . **tunnel diodes**
. resonant tunneling diodes
RT electron tunneling
junction diodes
MIM diodes
negative conductance
negative resistance circuits
resonant tunneling
tunnel junctions
∞ tunnels

tunnel junctions
(added September 1993)
DEF An electronic device having an extremely thin potential barrier to electron flow, so that the transport characteristic (the current-voltage flow) is primarily governed by the quantum-mechanical tunneling process which

tunneling

permits electrons to penetrate the barrier.

- RT barrier layers
- electron tunneling
- heterojunctions
- Josephson junctions
- photoconductors
- quantum electronics
- semiconductor devices
- semiconductor junctions
- single electron transistors
- solar cells
- superconducting devices
- tunnel diodes

tunnel resistors

- USE **electron tunneling resistors**

∞ tunneling

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT electron tunneling
- resonant tunneling
- tunneling (excavation)

tunneling (excavation)

- GS excavation
- . **tunneling (excavation)**
- RT bedrock
- construction
- drainage
- drilling
- jacks (lifts)
- lining processes
- rocks
- soils
- ∞ tunneling
- underground structures

∞ tunnels

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)
- RT gaps
- hydraulic test tunnels
- lunar shelters
- passageways
- streets
- transfer tunnels
- tunnel cathodes
- tunnel diodes
- wind tunnels

Tupolev aircraft

- GS **Tupolev aircraft**
- . TU-104 aircraft
- . TU-124 aircraft
- . TU-134 aircraft
- . TU-154 aircraft
- . TU-204 aircraft
- RT ∞ aircraft

turbidity

- GS electromagnetic properties
- . optical properties
- . . **turbidity**
- RT absorbance
- clarity
- haze
- light transmission
- opacity
- optical density
- ∞ properties
- solubility
- transparence

turbine blades

- DEF The blades of a turbine wheel.
- GS turbomachine blades
- . **turbine blades**
- RT ∞ blades
- compressor blades
- engine parts
- fan blades
- rotor blades (turbomachinery)
- rotor stator interactions
- stator blades

turbines

turbine engines

DEF Engines incorporating a turbine as a principal component; especially gas turbine engines.

- GS engines
- . **turbine engines**
- . . gas turbine engines
- . . . hydrogen engines
- . . . jet engines
- . . . T-58 engine
- . . . ramjet engines
- integral rocket ramjets
- low volume ramjet engines
- pulsejet engines
- supersonic combustion ramjet engines
- turboramjet engines
- turbojet engines
- Bristol-Siddeley Olympus 593 engine
- Bristol-Siddeley Viper engine
- ducted fan engines
- J-33 engine
- J-34 engine
- J-47 engine
- J-52 engine
- J-57 engine
- J-58 engine
- J-65 engine
- J-69-T-25 engine
- J-71 engine
- J-73 engine
- J-75 engine
- J-79 engine
- J-85 engine
- J-93 engine
- RA-28 engine
- turbofan engines
- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines
- RT aircraft engines
- automobile engines
- convergent nozzles
- gas bearings
- integral rocket ramjets
- torpedo engines

turbine exhaust nozzles

- GS exhaust nozzles
- . **turbine exhaust nozzles**
- RT conical nozzles
- convergent-divergent nozzles

turbine instruments

- RT flowmeters
- ∞ instruments
- turbomachinery

turbine pumps

- UF *turbopumps*
- GS pumps
- . axial flow pumps
- . . **turbine pumps**
- turbomachinery
- . **turbine pumps**
- RT centrifugal pumps
- fuel pumps
- jet pumps
- preburners
- turbines

turbocompressors

turbine wheels

DEF Multivaned wheels or rotors, especially in gas turbine engines, rotated by the impulse from or reaction to a fluid passing across the vanes. Used for rotor disks and turborotors.

- UF *rotor disks*
- turborotors*
- GS rotating bodies
- . rotors
- . . **turbine wheels**
- wheels
- . **turbine wheels**
- RT compressor rotors
- engine parts
- hydraulic equipment
- impellers
- turbines
- turbomachine blades
- water wheels

turbines

- GS turbomachinery
- . **turbines**
- . . axial flow turbines
- . . gas turbines
- . . shrouded turbines
- . . steam turbines
- . . supersonic turbines
- . . two stage turbines
- . . wind turbines
- . . . tip vanes
- RT engines
- geothermal energy conversion
- geothermal energy extraction
- impellers
- impulse generators
- jet engine fuels
- jet propulsion
- ∞ nozzles
- refractories
- rotating generators
- rotors
- stators
- turbine blades
- turbine pumps
- turbine wheels
- turbogenerators
- turboshafts

turbochargers

- USE **superchargers**
- turbocompressors**

turbocompressors

- UF *axial compressors*
- axial flow compressors*
- multistage compressors*
- turbochargers*
- GS compressors
- . **turbocompressors**
- turbomachinery
- . **turbocompressors**
- RT centrifugal compressors
- centrifugal pumps
- compressor blades
- compressor rotors
- rotating stalls
- rotors
- superchargers
- supersonic compressors
- transonic compressors
- turbine pumps
- turbofans

turboconverters

- USE **turbogenerators**

turboelectric conversion

- USE **turbogenerators**

turbofan aircraft

- GS jet aircraft
- . **turbofan aircraft**
- . . A-7 aircraft
- . . BAC 111 aircraft
- . . Boeing 707 aircraft
- . . Boeing 717 aircraft
- . . Boeing 720 aircraft

- .. Boeing 727 aircraft
 - .. Boeing 733 aircraft
 - .. Boeing 737 aircraft
 - .. Boeing 757 aircraft
 - .. Boeing 767 aircraft
 - .. C-141 aircraft
 - .. CL-600 challenger aircraft
 - .. Concorde aircraft
 - .. CV-990 aircraft
 - .. DC 8 aircraft
 - .. DH 121 aircraft
 - .. DO-31 aircraft
 - .. F-5 aircraft
 - .. F-28 transport aircraft
 - .. F-111 aircraft
 - .. IL-62 aircraft
 - .. Mystere 20 aircraft
 - .. P-1127 aircraft
 - .. P-1154 aircraft
 - .. Saab 37 aircraft
 - .. Saab 105 aircraft
 - .. SE-210 aircraft
 - .. TU-134 aircraft
 - .. TU-144 aircraft
 - RT ∞ aircraft
 - C-135 aircraft
 - ∞ low wing aircraft
 - passenger aircraft
 - transport aircraft
 - turboprop aircraft
- turbofan engines**
- GS engines
 - . air breathing engines
 - .. gas turbine engines
 - ... jet engines
 - turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - . internal combustion engines
 - .. gas turbine engines
 - ... jet engines
 - turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - . turbine engines
 - .. gas turbine engines
 - ... jet engines
 - turbojet engines
 - **turbofan engines**
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - RT B-52 aircraft
 - Boeing 747 aircraft
 - Boeing 767 aircraft
 - C-5 aircraft
 - C-17 aircraft
 - C-141 aircraft
 - DC 10 aircraft
 - ducted fan engines
 - L-1011 aircraft
 - Mystere 50 aircraft
 - P-1127 aircraft
 - P-1154 aircraft
 - TU-124 aircraft
 - turbofans
 - turboprop engines
- turbofans**
- DEF Turbojet engines in which additional propulsive thrust is gained by extending a portion of the compressor or turbine blades outside the inner engine cases.
 - GS turbomachinery
 - . **turbofans**
 - RT ducted fans
 - ∞ fans
 - lift fans
 - turbocompressors
 - turbofan engines
- turbogenerators**
- UF *thermal power*
 - turboconverters*
 - turboelectric conversion*
 - GS electric generators
 - . rotating generators
 - .. **turbogenerators**
 - ... ASTEC solar turboelectric generator
 - turbomachinery
 - .. **turbogenerators**
 - ... ASTEC solar turboelectric generator
 - RT AC generators
 - ∞ conversion
 - ∞ electric power
 - electrical engineering
 - gas turbine engines
 - gas turbines
 - ∞ generators
 - geothermal energy conversion
 - geothermal energy extraction
 - geothermal energy utilization
 - hydroelectric power stations
 - hydroelectricity
 - SNAP
 - SNAP 1
 - SNAP 2
 - SNAP 8
 - solar generators
 - space power reactors
 - space power unit reactors
 - steam turbines
 - turbines
 - wind turbines
- turbojet aircraft*
- USE **jet aircraft**
- turbojet engine control**
- GS engine control
 - . **turbojet engine control**
 - RT aircraft control
 - automatic control
 - ∞ control
 - flight control
 - fuel control
 - remote control
 - servocontrol
 - thrust control
- turbojet engines**
- DEF Jet engines incorporating a turbine driven air compressor to take in and compress the air for the combustion of fuel (or for heating by a nuclear reactor), the gases of combustion (or the heated air) being used both to rotate the turbine and create a thrust producing jet.
 - GS engines
 - . air breathing engines
 - .. gas turbine engines
 - ... jet engines
 - **turbojet engines**
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines
 - Bristol-Siddeley BS 53 engine
 - CF-700 engine
 - convertible fan-shaft engines
 - J-97 engine
 - TF-30 engine
 - TF-34 engine
 - TF-41 engine
 - turboprop engines
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - turboramjet engines
 - turbine engines
 - gas turbine engines
 - jet engines
 - turbojet engines**
 - Bristol-Siddeley Olympus 593 engine
 - Bristol-Siddeley Viper engine
 - ducted fan engines
 - J-33 engine
 - J-34 engine
 - J-47 engine
 - J-52 engine
 - J-57 engine
 - J-58 engine
 - J-65 engine
 - J-69-T-25 engine
 - J-71 engine
 - J-73 engine
 - J-75 engine
 - J-79 engine
 - J-85 engine
 - J-93 engine
 - RA-28 engine
 - turbofan engines

turbomachine blades

- Bristol-Siddeley BS 53 engine
- CF-700 engine
- convertible fan-shaft engines
- J-97 engine
- TF-30 engine
- TF-34 engine
- TF-41 engine
- turboprop engines
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- turboramjet engines

- RT convergent nozzles
- Hound Dog missile
- jet aircraft
- Mace missiles
- quail missile
- ramjet engines
- Regulus missile

turbomachine blades

- GS **turbomachine blades**
 - . compressor blades
 - . rotor blades (turbomachinery)
 - . stator blades
 - . turbine blades

- RT airfoils
- ∞ blades
- ∞ buckets
- cascade flow
- fan blades
- impellers
- mistuning (turbomachinery)
- paddles
- rotors
- turbine wheels
- vanes

turbomachinery

- GS **turbomachinery**
 - . centrifugal compressors
 - . centrifugal pumps
 - . J-33 engine
 - . turbine pumps
 - . turbines
 - . . axial flow turbines
 - . . gas turbines
 - . . shrouded turbines
 - . . steam turbines
 - . . supersonic turbines
 - . . two stage turbines
 - . . wind turbines
 - . . tip vanes
 - . turbocompressors
 - . turbofans
 - . turbogenerators
 - . . ASTEC solar turboelectric generator

- RT blowers
- compressors
- ∞ machinery
- pumps
- rotating generators
- rotor dynamics
- superchargers
- turbine instruments
- wave rotors

turbopause

- GS Earth atmosphere
 - . upper atmosphere
 - . . . thermosphere
 - . . . **turbopause**
- RT atmospheric circulation
- atmospheric physics
- atmospheric turbulence

turboprop aircraft

- GS jet aircraft
 - . **turboprop aircraft**
 - . . AN-22 aircraft
 - . . AN-24 aircraft
 - . . Argosy MK-1 aircraft

- . . ATR-72 aircraft
- . . Breguet 941 aircraft
- . . Breguet 1150 aircraft
- . . C-2 aircraft
- . . C-130 aircraft
- . . C-133 aircraft
- . . C-160 aircraft
- . . CL-44 aircraft
- . . CL-84 aircraft
- . . DHC 5 aircraft
- . . DO-328 aircraft
- . . E-2 aircraft
- . . Electra aircraft
- . . F-27 aircraft
- . . G-222 aircraft
- . . HS-748 aircraft
- . . MH-262 aircraft
- . . OV-1 aircraft
- . . OV-10 aircraft
- . . P-3 aircraft
- . . SC-5 aircraft
- . . Viscount aircraft
- . . YS-11 aircraft

- RT ∞ aircraft
 - general aviation aircraft
 - ∞ low wing aircraft
 - passenger aircraft
 - ∞ subsonic aircraft
 - transport aircraft
 - turbofan aircraft

turboprop engines

- UF *Dart turboprop engines*
- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turboprop engines**
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - . internal combustion engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turboprop engines**
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine
 - . turbine engines
 - . . gas turbine engines
 - . . . jet engines
 - turbojet engines
 - **turboprop engines**
 - T-34 engine
 - T-38 engine
 - T-53 engine
 - T-55 engine
 - T-56 engine
 - T-63 engine
 - T-64 engine
 - T-74 engine
 - T-76 engine
 - T-78 engine

- **turboprop engines**
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine
- . turbine engines
- . . gas turbine engines
- . . . jet engines
- turbojet engines
- **turboprop engines**
- T-34 engine
- T-38 engine
- T-53 engine
- T-55 engine
- T-56 engine
- T-63 engine
- T-64 engine
- T-74 engine
- T-76 engine
- T-78 engine

- RT C-160 aircraft
- contrarotating propellers
- E-2 aircraft
- P-3 aircraft
- prop-fan technology
- turbofan engines

- XC-142 aircraft

turbopumps

- USE **turbine pumps**

turboramjet engines

- GS engines
 - . air breathing engines
 - . . gas turbine engines
 - . . . jet engines
 - ramjet engines
 - **turboramjet engines**
 - turbojet engines
 - **turboramjet engines**
 - internal combustion engines
 - gas turbine engines
 - jet engines
 - ramjet engines
 - **turboramjet engines**
 - turbojet engines
 - **turboramjet engines**
 - turbine engines
 - gas turbine engines
 - jet engines
 - ramjet engines
 - **turboramjet engines**
 - turbojet engines
 - **turboramjet engines**
- RT ∞ hybrid rocket engines

turborocket engines

- GS engines
 - . rocket engines
 - . . **turborocket engines**
 - . . . torpedo engines
 - **turborocket engines**
- RT booster rocket engines
- hydrazine engines
- hydrogen oxygen engines
- liquid air cycle engines
- restartable rocket engines
- sustainer rocket engines

turborotors

- USE **turbine wheels**

turboshfts

- GS shafts (machine elements)
 - . rotating shafts
 - . . **turboshfts**
- RT convertible fan-shaft engines
- rotors
- turbines
- wave rotors

Turbo-Skyvan aircraft

- USE **SC-7 aircraft**

turbulence

- DEF A state of fluid flow in which the instantaneous velocities exhibit irregular and apparently random fluctuations so that in practice only statistical properties can be recognized and subjected to analysis.

- GS **turbulence**
 - . atmospheric turbulence
 - . . clear air turbulence
 - . . . gusts
 - . . . low level turbulence
 - . . . homogeneous turbulence
 - . . . isotropic turbulence
 - . . . low turbulence
 - . . . magnetohydrodynamic turbulence
 - . . . plasma turbulence
 - Langmuir turbulence

- RT aerodynamic drag
- atmospheric effects
- backwash
- boundary layer control
- boundary layer transition
- flow characteristics
- fluid dynamics
- gas streams
- micrometeorology
- mixing
- ∞ motion
 - nonuniformity
 - panel method (fluid dynamics)
 - period doubling
 - sea roughness

- slipstreams
 - steady flow
 - strange attractors
 - Strouhal number
 - surface noise interactions
 - turbulent boundary layer
 - turbulent flow
 - unsteady flow
 - vertical air currents
 - vortex filaments
 - vortices
 - vorticity
 - wakes
 - wind effects
- turbulence effects**
- RT aerodynamic stability
 - buffeting
 - ∞ effects
 - flutter
 - seeing (astronomy)
 - separated flow
- turbulence meters**
- UF *hot-wire turbulence meters*
 - GS measuring instruments
 - . **turbulence meters**
 - RT hot-wire flowmeters
- turbulence models**
(added September 1988)
- GS models
 - . mathematical models
 - . . **turbulence models**
 - . . . Baldwin-Lomax turbulence model
 - . . . k-epsilon turbulence model
 - . . . k-omega turbulence model
 - RT computational fluid dynamics
 - flow equations
 - large eddy simulation
 - magnetohydrodynamic simulation
 - mixing length flow theory
 - renormalization group methods
 - Reynolds averaging
 - turbulent boundary layer
 - turbulent combustion
 - turbulent flow
- turbulent boundary layer**
- DEF The layer in which the Reynolds stresses are much larger than the viscous stresses. When the Reynolds number is sufficiently high, there is a turbulent layer adjacent to the laminar boundary layer.
- GS boundary layers
 - . **turbulent boundary layer**
 - RT Baldwin-Lomax turbulence model
 - boundary layer transition
 - compressible boundary layer
 - Ekman layer
 - hypersonic boundary layer
 - incompressible boundary layer
 - k-epsilon turbulence model
 - k-omega turbulence model
 - laminar boundary layer
 - ∞ layers
 - mixing layers (fluids)
 - Reynolds stress
 - riblets
 - supersonic boundary layers
 - thermal boundary layer
 - three dimensional boundary layer
 - turbulence
 - turbulence models
 - two dimensional boundary layer
- turbulent combustion**
(added September 1992)
- DEF Combustion or combustible flow in which turbulence is superimposed on the main movement of the flame fronts resulting in random, unpredictable fluctuations.
- GS combustion
 - . **turbulent combustion**
 - RT chemical explosions
 - combustible flow
 - combustion physics
 - combustion stability
 - flame propagation
 - flames
- fuel combustion
 - oxidation
 - premixed flames
 - propellant combustion
 - reacting flow
 - turbulence models
 - turbulent flames
 - turbulent flow
- turbulent diffusion**
- UF *eddy diffusion*
 - GS diffusion
 - . **turbulent diffusion**
 - RT atmospheric diffusion
 - atmospheric turbulence
 - clear air turbulence
 - counterflow
- turbulent flames**
(added June 1997)
- GS flames
 - . **turbulent flames**
 - RT combustible flow
 - flame propagation
 - flame stability
 - premixed flames
 - turbulent combustion
 - turbulent flow
- turbulent flow**
- DEF Fluid motion in which random motions of parts of the fluid are superimposed upon a simple pattern of flow. All or nearly all fluid flow displays some degree of turbulence. The opposite is laminar flow.
- GS fluid flow
 - . **turbulent flow**
 - . . cavitation flow
 - . . . supercavitating flow
 - RT aerodynamic interference
 - aerodynamics
 - annular flow
 - atmospheric turbulence
 - Baldwin-Lomax turbulence model
 - Blasius flow
 - boundary layer transition
 - closure law
 - combustible flow
 - counterflow
 - critical flow
 - direct numerical simulation
 - eddy viscosity
 - flow characteristics
 - flow stability
 - fluid amplifiers
 - free convection
 - gas flow
 - gust alleviators
 - inviscid flow
 - isotropic turbulence
 - k-epsilon turbulence model
 - Kolmogorov theory
 - k-omega turbulence model
 - Lagrange similarity hypothesis
 - laminar flow
 - large eddy simulation
 - liquid flow
 - mass flow
 - mixing length flow theory
 - multiphase flow
 - nonuniform flow
 - open channel flow
 - orifice flow
 - particle laden jets
 - period doubling
 - pipe flow
 - pressure oscillations
 - reacting flow
 - recirculative fluid flow
 - Reynolds number
 - Reynolds stress
 - rotating fluids
 - single-phase flow
 - steady flow
 - steam flow
 - subcritical flow
 - supercritical flow
 - Tollmien-Schlichting waves
 - ∞ transition layers
 - turbulence
- turbulence models
 - turbulent combustion
 - turbulent flames
 - two phase flow
 - uniform flow
 - viscous drag
 - viscous flow
 - vortex avoidance
 - vortex breakdown
 - vortices
 - vorticity transport hypothesis
- turbulent heat transfer**
- GS transmission
 - . heat transmission
 - . . heat transfer
 - . . . **turbulent heat transfer**
 - RT aerodynamic heat transfer
 - convective heat transfer
 - laminar heat transfer
 - thermohydraulics
- turbulent jets**
- RT fluid amplifiers
 - jet streams (meteorology)
 - ∞ jets
- turbulent mixing**
- GS mixing
 - . **turbulent mixing**
 - RT agitation
 - laminar mixing
 - mixing layers (fluids)
 - mixing length flow theory
 - recirculative fluid flow
 - trapped vortices
 - vortices
- turbulent wakes**
- UF *swirling wakes*
 - GS wakes
 - . **turbulent wakes**
 - . . slipstreams
 - . . . propeller slipstreams
 - RT aircraft wakes
 - laminar wakes
 - trapped vortices
 - vortex advisory system
 - vortex sheets
 - vortex streets
- Turing machines**
- DEF Mathematical models of devices that change their internal states and read from, write on, and move potentially infinite tapes, all in accordance with their present states, thereby constituting models for computerlike behavior. Invented in the 1930s, they are named after their inventor, A.M. Turing. Used for finite-state machines.
- UF *finite-state machines*
 - RT automata theory
 - cellular automata
 - digital computers
 - ∞ machinery
 - mathematical logic
 - quantum computation
 - self organizing systems
- Turkey**
- GS nations
 - . **Turkey**
 - RT Black Sea
 - Europe
 - Turkish space program
- turkeys**
- GS animals
 - . vertebrates
 - . . birds
 - . . . **turkeys**
 - RT livestock
- Turkish space program**
(added August 1990)
- GS programs
 - . space programs
 - . . European space programs
 - . . . **Turkish space program**

Turkmenistan

RT Turkey

Turkmenistan

(added August 1993)

GS nations

. Turkmenistan

RT Asia

turnaround (STS)

DEF The intervals between flights of the shuttle orbiters.

RT downtime

flight time

launch dates

schedules

sequencing

spacecraft maintenance

testing time

turning flight

UF *banking flight*

GS **turning flight**

. minor circle turning flight

RT aerodynamic balance

aircraft maneuvers

aircraft stability

climbing flight

∞ flight

flight paths

horizontal flight

lateral oscillation

lateral stability

maneuvers

momentum

roll

yaw

turnstile antennas

DEF Antennas composed of two dipole antennas, normal to each other, with their axes intersecting at their midpoints. Usually, the currents are equal and in phase quadrature.

GS antennas

. omnidirectional antennas

. . turnstile antennas

arrays

. antenna arrays

. . turnstile antennas

RT dipole antennas

∞ grids

wire grid lenses

turpentine

GS solvents

. turpentine

terpenes

. turpentine

RT paints

∞ turret

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

RT gun turrets

turret lathes

turret lathes

GS tools

. machine tools

. . lathes

. . . turret lathes

RT ∞ turret

turtles

GS animals

. vertebrates

. . reptiles

. . . turtles

Tutor aircraft

USE CL-41 aircraft

TVC (control)

USE thrust vector control

TVD schemes

(added August 1989)

UF *total variation diminishing schemes*

GS analysis (mathematics)

. numerical analysis

. . approximation

. . . TVD schemes

RT computational fluid dynamics

essentially non-oscillatory schemes

finite difference theory

finite volume method

twenty-four hour orbits

GS orbits

. Earth orbits

. . **twenty-four hour orbits**

. spacecraft orbits

. . satellite orbits

RT circular orbits

equatorial orbits

geosynchronous orbits

orbital mechanics

PAS

planetary orbits

polar orbits

stationary orbits

Synchronous Communications

Satellite Proj

synchronous satellites

twenty-seven day variation

GS variations

. **twenty-seven day variation**

RT solar cycles

solar rotation

starspots

sunspots

twilight glow

GS atmospheric radiation

. sky radiation

. . airglow

. . . **twilight glow**

electromagnetic radiation

. light (visible radiation)

. . sky radiation

. . . airglow

. . . . **twilight glow**

RT dayglow

night

night sky

twinning

GS **twinning**

. mechanical twinning

RT crystal defects

crystal growth

crystal structure

grain boundaries

stacking fault energy

twisted wings

GS airfoils

. wings

. . **twisted wings**

RT cambered wings

fixed wings

flexible wings

ring wings

uncambered wings

twisting

UF *pretwisting*

RT bending

buckling

deformation

distortion

kinking

structural strain

torque

torsion

torsional vibration

warpage

winding

twitching

RT involuntary actions

muscles

muscular function

two body orbits

USE **two body problem**

two body problem

DEF That problem in classical celestial me-

chanics which treats of the relative motion of two point masses under their mutual gravitational attraction. Used for two body orbits.

UF *two body orbits*

RT binary stars

celestial mechanics

Earth-Moon system

Hylleraas coordinates

many body problem

orbital mechanics

orbits

perturbation

∞ problems

Roche limit

three body problem

two dimensional bodies

RT ∞ bodies

∞ cross sections

ducted bodies

mathematical models

∞ surfaces

two dimensional boundary layer

GS boundary layers

. **two dimensional boundary layer**

RT laminar boundary layer

supersonic boundary layers

turbulent boundary layer

two dimensional flow

GS fluid flow

. **two dimensional flow**

. . Couette flow

. . Ringleb flow

RT

axial flow

Blasius flow

capillary waves

coaxial flow

flow geometry

Hartmann flow

one dimensional flow

Prandtl-Meyer expansion

radial flow

Rayleigh waves

steady flow

stream functions (fluids)

Taylor instability

three dimensional flow

wall flow

wedge flow

two dimensional jets

RT jet flow

jet mixing flow

∞ jets

wall flow

two dimensional models

(added August 1988)

GS models

. **two dimensional models**

RT computerized simulation

mathematical models

three dimensional models

two fluid models

RT Boltzmann distribution

liquid helium

magnetohydrodynamic flow

mixing layers (fluids)

rotating plasmas

shock wave propagation

superfluidity

two phase flow

GS fluid flow

. multiphase flow

. . **two phase flow**

RT

gas flow

laminar flow

liquid flow

particle image velocimetry

∞ pressure drop

single-phase flow

solids flow

turbulent flow

two phase systems
 USE **binary systems (materials)**

two photon coherent states
 USE **squeezed states (quantum theory)**

two reflector antennas
 GS antennas
 . directional antennas
 . . reflector antennas
 . . . **two reflector antennas**

RT Cassegrain antennas
 radio antennas
 reflectometers
 reflectors

two stage plasma engines
 GS engines
 . rocket engines
 . . electric rocket engines
 . . . plasma engines
 **two stage plasma engines**

RT electric propulsion
 plasmas (physics)

two stage turbines
 GS turbomachinery
 . turbines
 . . **two stage turbines**

RT gas turbine engines
 gas turbines
 steam turbines

two-wavelength lasers
 GS stimulated emission devices
 . lasers
 . . **two-wavelength lasers**

RT coherent light
 dye lasers
 laser outputs
 masers
 molecular oscillators
 quantum amplifiers
 stimulated emission

TX-33-39 engine
 USE **XM-33 engine**

TX-77 engine
 GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **TX-77 engine**

RT Lance missile

TX-354 engine
 UF *Castor 2 engine*

GS engines
 . rocket engines
 . . solid propellant rocket engines
 . . . **TX-354 engine**

RT booster rocket engines
 Little Joe 2 launch vehicle
 RAM B launch vehicle
 Scout launch vehicle
 sustainer rocket engines
 Trailblazer 2 reentry vehicle
 XM-33 engine

Tycho crater
 GS craters
 . lunar craters
 . . **Tycho crater**

RT meteorite craters

type 2 bursts
 GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 2 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 2 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 2 bursts**

. . . radio emission
 . . . radio bursts
 solar radio bursts
 **type 2 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 2 bursts**
 emission
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 2 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 2 bursts**
 extraterrestrial radiation
 . extraterrestrial radio waves
 . . radio bursts
 . . . solar radio bursts
 **type 2 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 2 bursts**
 solar radiation
 . . solar radio emission
 . . . solar radio bursts
 **type 2 bursts**

type 3 bursts
 GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 3 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 3 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 3 bursts**
 . . radio emission
 . . . radio bursts
 solar radio bursts
 **type 3 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 3 bursts**
 emission
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 3 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 3 bursts**
 extraterrestrial radiation
 . extraterrestrial radio waves
 . . radio bursts
 . . . solar radio bursts
 **type 3 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 3 bursts**
 solar radiation
 . . solar radio emission
 . . . solar radio bursts
 **type 3 bursts**

type 4 bursts
 GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 4 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 4 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 4 bursts**
 . . radio emission
 . . . radio bursts
 solar radio bursts
 **type 4 bursts**
 . . solar radio emission

. . . . solar radio bursts
 **type 4 bursts**
 emission
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 4 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 4 bursts**
 extraterrestrial radiation
 . extraterrestrial radio waves
 . . radio bursts
 . . . solar radio bursts
 **type 4 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 4 bursts**
 solar radiation
 . . solar radio emission
 . . . solar radio bursts
 **type 4 bursts**

type 5 bursts
 GS bursts
 . radio bursts
 . . solar radio bursts
 . . . **type 5 bursts**
 electromagnetic radiation
 . radio waves
 . . extraterrestrial radio waves
 . . . radio bursts
 solar radio bursts
 **type 5 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 5 bursts**
 . . radio emission
 . . . radio bursts
 solar radio bursts
 **type 5 bursts**
 . . . solar radio emission
 solar radio bursts
 **type 5 bursts**
 emission
 . radio emission
 . . radio bursts
 . . . solar radio bursts
 **type 5 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 5 bursts**
 extraterrestrial radiation
 . extraterrestrial radio waves
 . . radio bursts
 . . . solar radio bursts
 **type 5 bursts**
 . . solar radio emission
 . . . solar radio bursts
 **type 5 bursts**
 solar radiation
 . . solar radio emission
 . . . solar radio bursts
 **type 5 bursts**

typewriters
 GS **typewriters**
 . automatic typewriters
 . teletypewriters
 . . teleprinters

RT printers

typhoid
 GS diseases
 . infectious diseases
 . . bacterial diseases
 . . . **typhoid**

Typhon weapon system
 GS weapon systems
 . **Typhon weapon system**

RT Bumblebee project
 ∞ systems

typhoons
 GS storms
 . storms (meteorology)
 . . cyclones
 . . . **typhoons**
 . . tropical storms

typhus

RT . . . **typhoons**
atmospheric circulation
hurricanes
marine meteorology
meteorology
storm damage
tornadoes

typhus
GS diseases

. infectious diseases
. . . bacterial diseases
. . . **typhus**

tyrosine
GS acids
. amino acids
. . **tyrosine**

organic compounds
. amino acids
. . **tyrosine**
RT enzyme activity
liver

U

U bends

- GS pipes (tubes)
 - . **U bends**
- RT fittings

U spin space

- GS algebra
 - . vector spaces
 - . . **U spin space**
- RT matrices (mathematics)
 - quantum mechanics

U tubes

- USE **manometers**

U-2 aircraft

- UF *ER-2 aircraft*
 - Lockheed U-2 aircraft*
 - WU-2 aircraft*
- GS jet aircraft
 - . **U-2 aircraft**
 - Lockheed aircraft
 - . **U-2 aircraft**
 - monoplanes
 - . **U-2 aircraft**
 - reconnaissance aircraft
 - . **U-2 aircraft**
 - research vehicles
 - . research aircraft
 - . . **U-2 aircraft**
 - utility aircraft
 - . **U-2 aircraft**
- RT ∞ aircraft

U-10 aircraft

- UF *Courier aircraft*
 - L-28 aircraft*
- GS Helio aircraft
 - . **U-10 aircraft**
 - light aircraft
 - . **U-10 aircraft**
 - monoplanes
 - . **U-10 aircraft**
 - passenger aircraft
 - . **U-10 aircraft**
 - utility aircraft
 - . **U-10 aircraft**
 - V/STOL aircraft
 - . short takeoff aircraft
 - . . **U-10 aircraft**
- RT ∞ aircraft

U.S.S.R.

- UF *Soviet Union*
- GS nations
 - . **U.S.S.R.**
- RT Asia
 - Barents Sea
 - Black Sea
 - Caucasus Mountains (U.S.S.R.)
 - Europe
 - Kurile Islands
 - Moscow
 - Sea of Okhotsk
 - Siberia

U.S.S.R. space program

- GS programs
 - . space programs
 - . . **U.S.S.R. space program**
- RT Apollo Soyuz test project
 - Automatic Universal Orbiting Stations
 - Buran space shuttle
 - GLONASS
 - international cooperation
 - international relations
 - International Satellite Geodesy Experiment
 - lunar retroreflectors
 - Lunik 19 lunar probe
 - Lunik 22 lunar probe
 - Lunik lunar probes
 - Lunokhod lunar roving vehicles
 - Mars 1 spacecraft
 - Mars 2 spacecraft
 - Mars 3 spacecraft
 - Mars 4 Spacecraft
 - Mars 5 spacecraft
 - Mars 6 spacecraft

- Mars 7 spacecraft
- Mir space station
- Molniya satellites
- Proton satellites
- Russian Space Program
- Salyut space station
- Soyuz spacecraft
- Vega project
- Venera 8 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite
- Venera satellites

UARS (satellite)

- USE **Upper Atmosphere Research Satellite (UARS)**

UAS

- (added August 2007)
- USE **unmanned aircraft systems**

UBV spectra

- GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **UBV spectra**
- RT color-color diagram

Udimet alloys

- GS alloys
 - . heat resistant alloys
 - . . **Udimet alloys**
 - . nickel alloys
 - . . **Udimet alloys**

UFO

- USE **unidentified flying objects**

Uganda

- GS nations
 - . **Uganda**
- RT Africa

UGV (vehicles)

- (added July 2002)
- USE **unmanned ground vehicles**

UH-1 helicopter

- UF *HU-1 helicopter*
 - Iroquois helicopter*
 - RH-2 helicopter*
 - YHU-1 helicopter*
 - YUH-1 helicopter*
- GS Bell aircraft
 - . **UH-1 helicopter**
 - utility aircraft
 - . **UH-1 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-1 helicopter**
- RT UH-60A helicopter
 - UH-61A helicopter

UH-2 helicopter

- UF *HU2K-1 helicopter*
 - Kaman UH-2A helicopter*
 - Seasprite helicopter*
- GS Kaman aircraft
 - . **UH-2 helicopter**
 - utility aircraft
 - . **UH-2 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-2 helicopter**

UH-12 helicopter

- USE **OH-23 helicopter**

UH-13 helicopter

- USE **OH-13 helicopter**

UH-34 helicopter

- UF *HUS-1 helicopter*
 - Seahorse helicopter*

- GS Sikorsky aircraft
 - . **UH-34 helicopter**
 - transport aircraft
 - . **UH-34 helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-34 helicopter**
- RT S-58 helicopter

UH-60A helicopter

- UF *YUH-60A helicopter*
- GS Sikorsky aircraft
 - . **UH-60A helicopter**
 - transport aircraft
 - . **UH-60A helicopter**
 - utility aircraft
 - . **UH-60A helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-60A helicopter**
- RT helicopter design
 - UH-1 helicopter

UH-61A helicopter

- UF *YUH-61A helicopter*
- GS Sikorsky aircraft
 - . **UH-61A helicopter**
 - transport aircraft
 - . **UH-61A helicopter**
 - utility aircraft
 - . **UH-61A helicopter**
 - V/STOL aircraft
 - . rotary wing aircraft
 - . . helicopters
 - . . . military helicopters
 - **UH-61A helicopter**
- RT helicopter design
 - UH-1 helicopter

UHTREX (nuclear reactors)

- USE **high temperature nuclear reactors**

Uhuru satellite

- UF *Explorer 42 satellite*
- GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **Uhuru satellite**
- RT galactic radiation
 - SAS
 - satellite observation
 - x ray astronomy
 - x ray stars

UK 4 satellite

- GS artificial satellites
 - . scientific satellites
 - . . UK satellites
 - . . . **UK 4 satellite**

UK satellites

- UF *United Kingdom satellites*
- GS artificial satellites
 - . scientific satellites
 - . . **UK satellites**
 - . . . Ariel 4 satellite
 - . . . Ariel 5 satellite
 - . . . Miranda satellite
 - . . . UK 4 satellite
- RT Infrared Astronomy Satellite
 - Skynet satellites
 - UK space program

UK space program

- GS programs
 - . space programs
 - . . European space programs
 - . . . **UK space program**
- RT HOTOL launch vehicle
 - UK satellites
 - United Kingdom

Ukraine

- (added August 1993)
- GS nations

Ukrainian space program

- . **Ukraine**
- RT Europe
 - Ukrainian space program
- Ukrainian space program**
 - (added January 1999)
 - GS programs
 - . space programs
 - . . **Ukrainian space program**
 - RT Ukraine
 - Zenit launch vehicles
- ulcers**
- GS diseases
 - . **ulcers**
- RT cancer
- ullage**
- DEF The amount that a container, such as a fuel tank, lacks of being full.
- RT fuel tank pressurization
 - fuel tanks
 - interface stability
 - liquid sloshing
 - propellant tanks
 - splashing
 - tank geometry
 - ullage rocket engines
- ullage rocket engines**
- GS engines
 - . rocket engines
 - . . **ullage rocket engines**
 - . torpedo engines
 - . . **ullage rocket engines**
- RT solid propellant rocket engines
 - ullage
- ULM (light modulation)*
- USE **ultrasonic light modulation**
- ulna**
- GS anatomy
 - . musculoskeletal system
 - . . bones
 - . . . **ulna**
- RT arm (anatomy)
 - elbow (anatomy)
- ultra short wave radio equipment*
- USE **very high frequency radio equipment**
- ultracapacitors*
 - (added September 2003)
 - USE **electrochemical capacitors**
- ultrahigh frequencies**
- SN (300 TO 3000 MHZ)
- UF *L band*
 - S band*
- GS frequencies
 - . radio frequencies
 - . . **ultrahigh frequencies**
 - . . . P band
- RT decimeter waves
 - EISCAT radar system (Europe)
 - Fleet Satellite Communication System
 - low frequencies
 - passive L-band radiometers
 - praeterersonic devices
 - unified S band
 - very high frequency radio equipment
- ultrahigh vacuum**
- GS pressure
 - . vacuum
 - . . **ultrahigh vacuum**
- RT high vacuum
 - low density research
 - residual gas
 - vacuum apparatus
 - vacuum tests
- ultralight aircraft**
- DEF An aircraft for one person weighing less than 254 pounds with a top speed of 55 knots and a maximum stalling speed of 24 knots.
- RT ∞ aircraft
 - hang gliders
- light aircraft
- man powered aircraft
- ∞ winged vehicles
- ultralow frequencies*
- USE **extremely low frequencies**
- ultralow temperature*
- USE **cryogenic temperature**
- ultrapure metals**
- GS metals
 - . **ultrapure metals**
- RT crystal lattices
 - impurities
 - purification
 - purity
 - single crystals
 - space processing
 - vapor deposition
 - zone melting
- ultrashort pulsed lasers**
- GS stimulated emission devices
 - . lasers
 - . . pulsed lasers
 - . . . **ultrashort pulsed lasers**
- RT glass lasers
 - laser applications
 - light amplifiers
 - pulse duration
 - quantum amplifiers
 - stimulated emission
- ultrasonic agitation**
- GS agitation
 - . **ultrasonic agitation**
- RT ultrasonics
- ultrasonic cleaning**
- GS cleaning
 - . **ultrasonic cleaning**
- RT acoustics
 - cavitation flow
 - cleaners
 - etching
 - fluid flow
 - grinding machines
 - machine tools
 - piezoelectric transducers
 - polishing
 - tools
 - transducers
 - ultrasonic processing
 - ultrasonics
- ultrasonic densimeters**
- DEF Density measuring instruments utilizing ultrasonic devices (sensors).
- GS measuring instruments
 - . densimeters
 - . . **ultrasonic densimeters**
- RT density (mass/volume)
 - density measurement
 - ∞ instruments
 - ∞ measurement
- ultrasonic flaw detection**
- GS detection
 - . **ultrasonic flaw detection**
- RT acoustic imaging
 - ∞ detectors
 - examination
 - identifying
 - inspection
 - nondestructive tests
 - quality control
 - ultrasonic scanners
- ultrasonic grinding machines*
- USE **ultrasonic machining**
- ultrasonic light modulation**
- UF *ULM (light modulation)*
- GS modulation
 - . light modulation
 - . . **ultrasonic light modulation**
- RT Bragg cells
- ultrasonics
- ultrasonic machining**
- UF *ultrasonic grinding machines*
- GS machining
 - . **ultrasonic machining**
- RT ultrasonics
- ultrasonic processing**
 - (added June 1998)
 - DEF The use of ultrasonic radiation to synthesize a compound or material, or alter the structure, properties, or form of a material.
 - UF *sonochemistry*
 - ultrasonic treatment*
 - RT ∞ processing
 - ultrasonic cleaning
 - ultrasonics
- ultrasonic radiation**
- UF *ultrasonic waves*
- GS elastic waves
 - . **ultrasonic radiation**
- RT acoustic frequencies
 - coherent acoustic radiation
 - magnetoelastic waves
 - ∞ radiation
 - sound waves
 - ultrasonics
 - underwater acoustics
- ultrasonic scanners**
- GS scanners
 - . **ultrasonic scanners**
- RT acoustics
 - imaging techniques
 - measuring instruments
 - scanning
 - ultrasonic flaw detection
 - ultrasonics
- ultrasonic soldering**
- UF *sonic soldering*
- GS soldering
 - . **ultrasonic soldering**
- RT brazing
 - ∞ joining
 - ultrasonic welding
 - ultrasonics
- ultrasonic spectroscopy**
- GS spectroscopy
 - . **ultrasonic spectroscopy**
- RT cracks
 - nondestructive tests
 - spectrum analysis
- ultrasonic tests**
- RT acoustic measurement
 - acoustic sounding
 - dynamic modulus of elasticity
 - Lamb waves
 - ∞ materials tests
 - nondestructive tests
 - SH waves
 - ∞ tests
 - ultrasonics
- ultrasonic treatment*
 - (added June 1998)
 - USE **ultrasonic processing**
- ultrasonic wave transducers**
- GS transducers
 - . **ultrasonic wave transducers**
- RT electroacoustics
 - electronic transducers
 - microphones
 - piezoelectric actuators
 - piezoelectric motors
 - pressure sensors
 - sonar
 - surface acoustic wave devices
 - ultrasonics
 - underwater acoustics
- ultrasonic waves*
- USE **ultrasonic radiation**
- ultrasonic welding**
- GS welding

- . pressure welding
- . . **ultrasonic welding**
- RT spot welds
- ultrasonic soldering
- ultrasonics
- ultrasonics**
- DEF The technology of sound at frequencies above the audio frequency range.
- RT acoustics
- electroacoustics
- ultrasonic agitation
- ultrasonic cleaning
- ultrasonic light modulation
- ultrasonic machining
- ultrasonic processing
- ultrasonic radiation
- ultrasonic scanners
- ultrasonic soldering
- ultrasonic tests
- ultrasonic wave transducers
- ultrasonic welding
- ultraviolet absorption**
- GS energy absorption
- . radiation absorption
- . . electromagnetic absorption
- . . . **ultraviolet absorption**
- RT ∞ absorption
- ultraviolet detectors
- ultraviolet astronomy**
- DEF Use of special optical instruments for the observation of astronomical phenomena in the ultraviolet spectrum.
- GS astronomy
- . **ultraviolet astronomy**
- RT electromagnetic radiation
- Extreme Ultraviolet Explorer satellite
- Hubble Space Telescope
- Lyman alpha radiation
- Lyman beta radiation
- Spartan satellites
- Starsat telescope
- telescopes
- ultraviolet telescopes
- ultraviolet detectors**
- GS measuring instruments
- . radiation measuring instruments
- . . actinometers
- . . . **ultraviolet detectors**
- ultraviolet spectrometers
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- ultraviolet spectrophotometers
- RT ∞ detectors
- photometers
- radiometers
- ultraviolet absorption
- ultraviolet radiation
- ultraviolet spectra
- x ray detectors
- ultraviolet emission**
- (added August 1991)
- GS electromagnetic radiation
- . ultraviolet radiation
- . . **ultraviolet emission**
- emission
- . **ultraviolet emission**
- RT emission spectra
- spectral emission
- ultraviolet spectra
- ultraviolet filters**
- GS electromagnetic wave filters
- . optical filters
- . . **ultraviolet filters**
- RT bandpass filters
- electric filters
- infrared filters
- ultraviolet imagery**
- (added January 1997)
- GS imagery
- . **ultraviolet imagery**
- . . ultraviolet photography
- RT ultraviolet photometry
- ultraviolet telescopes
- ultraviolet lasers**
- UF *UV lasers*
- GS stimulated emission devices
- . lasers
- . . gas lasers
- . . . **ultraviolet lasers**
- . . . pulsed lasers
- **ultraviolet lasers**
- RT coherent light
- laser outputs
- light amplifiers
- light transmission
- masers
- molecular oscillators
- nitrogen lasers
- quantum amplifiers
- stimulated emission
- xenon chloride lasers
- ultraviolet light*
- USE **ultraviolet radiation**
- ultraviolet lithography*
- USE **lithography**
- ultraviolet microscopy**
- GS microscopy
- . **ultraviolet microscopy**
- RT microscopes
- ultraviolet photography**
- GS imagery
- . photography
- . . **ultraviolet photography**
- . ultraviolet imagery
- . . **ultraviolet photography**
- RT aerial photography
- cameras
- color photography
- faint object camera
- infrared photography
- radar photography
- ultraviolet photometry**
- GS imagery
- . photography
- . . **ultraviolet photometry**
- optical measurement
- . photometry
- . . **ultraviolet photometry**
- RT black and white photography
- ultraviolet imagery
- ultraviolet radiation**
- DEF Electromagnetic radiation of shorter wavelength than visible radiation; roughly, radiation in the wavelength interval from 100 to 4000 angstroms. Used for ultraviolet light.
- UF *ultraviolet light*
- GS electromagnetic radiation
- . **ultraviolet radiation**
- . . extreme ultraviolet radiation
- . . far ultraviolet radiation
- . . . Lyman alpha radiation
- . . . Lyman beta radiation
- . . near ultraviolet radiation
- . . ultraviolet emission
- RT beams (radiation)
- black body radiation
- Cerenkov radiation
- coherent electromagnetic radiation
- coronal holes
- dayglow
- IUE
- microchannels
- monochromatic radiation
- polarized electromagnetic radiation
- ∞ radiation
- Seyfert galaxies
- solar radiation
- sterilization
- sunlight
- thermal radiation
- ultraviolet detectors
- Umkehr effect
- ultraviolet reflection**
- GS reflection
- . **ultraviolet reflection**
- RT infrared reflection
- radio echoes
- reflectometers
- spread reflection
- ultraviolet spectra**
- GS spectra
- . radiation spectra
- . . electromagnetic spectra
- . . . **ultraviolet spectra**
- RT absorption spectra
- emission spectra
- Herzberg bands
- high dispersion spectrographs
- light (visible radiation)
- line spectra
- Lyman spectra
- molecular spectra
- radio spectroscopy
- solar spectra
- stellar spectra
- ultraviolet detectors
- ultraviolet emission
- ultraviolet spectrographs*
- USE **ultraviolet spectrometers**
- ultraviolet spectrometers**
- UF *ultraviolet spectrographs*
- GS measuring instruments
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . radiation measuring instruments
- . . actinometers
- . . . ultraviolet detectors
- **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- . spectrometers
- . . **ultraviolet spectrometers**
- . . . high dispersion spectrographs
- . . . Total Ozone Mapping Spectrometer
- optical equipment
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrometers**
- high dispersion spectrographs
- Total Ozone Mapping Spectrometer
- RT Ebert spectrometers
- Solar Maximum Mission
- solar spectrometers
- ultraviolet spectrophotometers**
- GS measuring instruments
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrophotometers**
- . . . spectrophotometers
- **ultraviolet spectrophotometers**
- . radiation measuring instruments
- . . actinometers
- . . . spectrophotometers
- **ultraviolet spectrophotometers**
- ultraviolet detectors
- **ultraviolet spectrophotometers**
- photometers
- **ultraviolet spectrophotometers**
- optical equipment
- . optical measuring instruments
- . . photometers
- . . . **ultraviolet spectrophotometers**
- . . . spectrophotometers

ultraviolet spectroscopy

. . . ultraviolet spectrophotometers

ultraviolet spectroscopy

- GS spectroscopy
- . **ultraviolet spectroscopy**
- RT absorption spectroscopy
- astronomical spectroscopy
- molecular spectroscopy
- optogalvanic spectroscopy
- radio spectroscopy
- spectroscopic analysis
- spectrum analysis
- vacuum spectroscopy
- x ray spectroscopy

ultraviolet telescopes

DEF Optical telescopes designed to collect ultraviolet light (wavelengths not capable of passing through Earth's atmosphere) and as such must be used in space.

- GS telescopes
- . **ultraviolet telescopes**
- . . Starlab
- RT far ultraviolet radiation
- spaceborne astronomy
- Swift observatory
- ultraviolet astronomy
- ultraviolet imagery
- x ray astronomy

Ulysses mission

DEF A proposed ESA/NASA mission using the STS for orbital launching of two spin-stabilized spacecraft equipped with instruments for solar and astrophysical observations. Used for International Solar Polar Mission.

- UF *International Solar Polar Mission*
- GS space missions
- . **Ulysses mission**
- RT Inertial Upper Stage
- mission planning
- ∞ missions
- Solar Maximum Mission
- solar probes
- sun

umbilical connectors

- GS connectors
- . **umbilical connectors**
- RT bundles
- extravehicular activity
- tetherlines

umbilical towers

- GS towers
- . **umbilical towers**
- RT gantry cranes
- launching pads

umbras

DEF The darkest parts of shadows in which light is completely cut off by intervening objects. Lighter parts surrounding the umbras, in which the light is only partly cut off, are called penumbras. The darker central portions of sun spots, surrounded by lighter penumbra.

- RT eclipses
- penumbras
- shadows

Umbriel

DEF A satellite of Uranus orbiting at a mean distance of 267,000 kilometers.

- GS celestial bodies
- . natural satellites
- . . Uranus satellites
- . . . **Umbriel**
- RT Uranus (planet)

Umkehr effect

DEF Due to the presence of the ozone layer, an anomaly of the relative zenith intensities of scattered sunlight at certain wavelengths in the ultraviolet as the sun approaches the horizon.

- RT ∞ effects
- light scattering
- ozonosphere
- sunlight

ultraviolet radiation

Umklapp process

- RT electron scattering
- phonon beams
- phonons
- photon-electron interaction
- ∞ processes

uncambered wings

- GS airfoils
- . wings
- . . **uncambered wings**
- . . . ring wings
- RT cambered wings
- fixed wings
- thin wings
- twisted wings

uncertain systems

- (added June 2000)
- RT control systems design
- control theory
- fuzzy systems
- linear systems
- nonlinear systems
- probability theory
- ∞ systems

unconsciousness

- GS **unconsciousness**
- . blackout (physiology)
- . . blackout prevention
- . . narcosis
- RT anesthesia
- ∞ coma
- syncope

uncontrolled reentry (spacecraft)

DEF The descent into a denser atmosphere of a spacecraft in an elliptical orbit due to aerodynamic drag and other perturbation forces. The gradually increasing deceleration causes some kinetic energy to be converted into atmospheric heat. The centrifugal force decreases and gravity pulls the spacecraft further into the atmosphere. The spacecraft eventually burns.

- GS atmospheric entry
- . reentry
- . . hypersonic reentry
- . . . **uncontrolled reentry (spacecraft)**
- . . spacecraft reentry
- . . . **uncontrolled reentry (spacecraft)**
- RT aerodynamic heating
- Cosmos 954 satellite
- descent
- flight paths
- plasma sheaths
- spacecraft breakup
- spacecraft survivability

uncoupled modes

DEF Modes of vibration that can exist in systems concurrently with and independently of other modes.

- GS modes
- . vibration mode
- . . **uncoupled modes**
- RT coupled modes
- couples
- modes (standing waves)

undamped oscillations

- GS oscillations
- . **undamped oscillations**
- RT airfoil oscillations
- flapping
- flutter
- resonant vibration
- stable oscillations
- wing oscillations

under surface blowing

DEF Use of jets blowing on the underside of airfoils for variations in pressure distribution.

- GS blowing
- . **under surface blowing**
- RT aerodynamic characteristics

- aircraft configurations
- circulation control airfoils
- lift
- ∞ surfaces
- upper surface blowing

undercarriages

- GS frames
- . **undercarriages**
- RT carriages
- carts
- chassis
- dollies
- landing gear
- substructures
- suspension systems (vehicles)

undercooling

(added May 1999)

USE **supercooling**

underground acoustics

DEF The sounding of subsoils, rocks, etc., for mineralogy and other exploratory purposes.

- RT acoustic sounding
- exploration
- minerals
- strata

underground communication

- GS communicating
- . **underground communication**
- RT radio communication

underground explosions

- GS explosions
- . **underground explosions**
- RT chemical explosions
- gas explosions
- mines (excavations)
- nuclear explosions
- seismic waves
- thermonuclear explosions

underground radio antenna grid (navy)

USE **Seafarer project**

underground storage

- RT decommissioning
- mines (excavations)
- missile storage
- propellant storage
- ∞ storage
- storage tanks
- waste management

underground structures

DEF Subterranean construction of tunnels, passageways, chambers, or excavations.

- RT caves
- excavation
- foundations
- mines (excavations)
- mining
- passageways
- tunneling (excavation)

underground transmission lines

- GS transmission lines
- . **underground transmission lines**
- RT circuits
- electric power transmission
- ∞ lines
- power lines

underwater acoustics

- UF *hydroacoustics*
- underwater sound*
- GS acoustics
- . **underwater acoustics**
- RT acoustic scattering
- coherent acoustic radiation
- deep scattering layers
- echo sounding
- elastic waves
- flow noise
- LOFAR
- noise (sound)
- shock waves
- sonar

- sonobuoys
- sound fixing and ranging
- sound transducers
- thermoclines
- ultrasonic radiation
- ultrasonic wave transducers
- underwater breathing apparatus**
 - GS breathing apparatus
 - . **underwater breathing apparatus**
 - RT argon-oxygen atmospheres
 - bioengineering
 - helium-oxygen atmospheres
 - life support systems
- underwater communication**
 - GS telecommunication
 - . communication
 - . . **underwater communication**
 - RT Seafarer project
 - shock waves
 - sonar
 - sonobuoys
 - sound transducers
- underwater engineering**
 - RT breakwaters
 - ∞ engineering
 - submerged bodies
- underwater explosions**
 - GS explosions
 - . **underwater explosions**
 - RT antisubmarine warfare
 - chemical explosions
 - hydroballistics
 - nuclear explosions
 - thermonuclear explosions
- underwater optics**
 - RT diffraction patterns
 - diffraction propagation
 - geometrical optics
 - opacity
 - optical density
 - optical paths
 - ∞ optics
 - refractivity
- underwater photography**
 - GS imagery
 - . photography
 - . . **underwater photography**
 - RT cameras
 - color photography
 - sea water
 - seas
 - submerged bodies
- underwater physiology**
 - DEF The study of the bodily responses to the environmental stresses of the underwater milieu such as pressure, temperature and immersion effects.
 - GS physiology
 - . **underwater physiology**
 - RT diving (underwater)
 - ∞ science
 - stress (physiology)
- underwater propulsion**
 - GS propulsion
 - . marine propulsion
 - . . **underwater propulsion**
 - . . . submarine propulsion
 - RT aeroquatic vehicles
 - chemical propulsion
 - electric propulsion
 - nuclear propulsion
 - propeller drive
 - torpedo engines
- underwater research laboratories**
 - GS laboratories
 - . **underwater research laboratories**
 - research vehicles
 - . **underwater research laboratories**
 - submerged bodies
 - . **underwater research laboratories**
 - water vehicles
- . underwater vehicles
- . . **underwater research laboratories**
- RT bathymeters
- ocean data acquisitions systems
- oceanography
- underwater resources**
 - DEF Earth resources (minerals, petroleum, etc.) within or under the oceans.
 - GS resources
 - . Earth resources
 - . . **underwater resources**
 - RT crude oil
 - dredging
 - fossil fuels
 - geothermal resources
 - marine resources
 - mineral deposits
 - ocean bottom
 - oceanography
 - oil exploration
 - sea water
 - water resources
- underwater sound*
- USE **underwater acoustics**
- underwater structures**
 - RT breakwaters
 - structural design
 - submerged bodies
- underwater tests**
 - GS environmental tests
 - . **underwater tests**
 - . . neutral buoyancy simulation
 - RT corrosion tests
 - diving (underwater)
 - water immersion
- underwater to surface missiles**
 - GS missiles
 - . **underwater to surface missiles**
 - . . Subroc missile
 - RT ∞ surfaces
- underwater trajectories**
 - GS trajectories
 - . **underwater trajectories**
 - RT antisubmarine warfare
 - hydroballistics
 - missile trajectories
 - Subroc missile
 - torpedoes
- underwater vehicles**
 - GS water vehicles
 - . **underwater vehicles**
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
 - . . underwater research laboratories
 - RT aeroquatic vehicles
 - boats
 - ∞ military vehicles
 - research vehicles
 - ships
 - submerged bodies
 - surface vehicles
 - ∞ vehicles
- uniaxial strain*
- USE **axial strain**
- unidentified flying objects**
 - UF *UFO*
 - RT ∞ aircraft
 - extraterrestrial intelligence
 - ∞ spacecraft
 - ∞ vehicles
- unified field theory**
 - DEF Any theory which attempts to express gravitational theory and electromagnetic theory within a single unified framework; usually, an attempt to generalize Einstein's general theory of gravitation alone to a theory of gravitation and classical electromagnetism.
- GS field theory (physics)
- . gauge theory
- . . **unified field theory**
- . . . electroweak model
- . . . standard model (particle physics)
- RT electromagnetic fields
- electromagnetic interactions
- electromagnetism
- gravitational theory
- gravitational fields
- particle theory
- plasma physics
- relativity
- string theory
- supergravity
- supersymmetry
- theoretical physics
- unified S band**
 - RT Apollo spacecraft
 - carrier frequencies
 - circumlunar communication
 - communication equipment
 - differential pulse code modulation
 - manned space flight network
 - pulse code modulation
 - satellite communication
 - spacecraft communication
 - spacecraft tracking
 - superhigh frequencies
 - ultrahigh frequencies
- uniform flow**
 - GS fluid flow
 - . **uniform flow**
 - . . Blasius flow
 - RT aerodynamics
 - gas flow
 - heat transmission
 - laminar flow
 - liquid flow
 - mass flow
 - multiphase flow
 - nonuniform flow
 - pipe flow
 - pressure gradients
 - quasi-steady states
 - single-phase flow
 - solids flow
 - steady flow
 - steam flow
 - subcritical flow
 - turbulent flow
 - unsteady flow
- unimolecular structures**
 - RT molecular structure
 - ∞ structures
- unionization**
 - RT federations
 - organizing
 - personnel
 - ∞ unions
- ∞ **unions**
 - SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 - RT Boolean algebra
 - unionization
 - unions (connectors)
- unions (connectors)**
 - GS connectors
 - . **unions (connectors)**
 - RT couplings
 - fasteners
 - fittings
 - joints (junctions)
 - linkages
 - ∞ unions
- uniphase flow*
- USE **single-phase flow**
- unipolar transistors*
- USE **field effect transistors**
- uniqueness**
 - RT abnormalities

uniqueness theorem

ill-conditioned problems
(mathematics)
ill-posed problems (mathematics)
singularity (mathematics)

uniqueness theorem

GS theorems
. **uniqueness theorem**
RT algebra
complex variables
geometry
number theory
probability theory
real variables

United Arab Emirates

GS nations
. **United Arab Emirates**

United Kingdom

UF *Great Britain*
GS nations
. **United Kingdom**
.. England
.. Gibraltar
.. Northern Ireland
.. Scotland
.. Wales
RT English Channel
Europe
UK space program

United Kingdom satellites

USE **UK satellites**

United Nations

RT communities
developing nations
European Union
federations
international cooperation
international law
nations
organizations
politics
sea law
World Meteorological Organization

United States

UF *USA (United States)*
GS nations
. **United States**
.. Alabama
.. Alaska
.. Arizona
.. Arkansas
.. California
.. Colorado
.. Connecticut
.. Delaware
.. District of Columbia
.. Florida
.. Georgia
.. Guam
.. Hawaii
.. Idaho
.. Illinois
.. Indiana
.. Iowa
.. Kansas
.. Kentucky
.. Louisiana
.. Maine
.. Maryland
.. Massachusetts
.. Michigan
.. Minnesota
.. Mississippi
.. Missouri
.. Montana
.. Nebraska
.. Nevada
.. New Hampshire
.. New Jersey
.. New Mexico
.. New York
.. North Carolina
.. North Dakota
.. Ohio
.. Oklahoma

.. Oregon
.. Pennsylvania
.. Puerto Rico
.. Rhode Island
.. South Carolina
.. South Dakota
.. Tennessee
.. Texas
.. Utah
.. Vermont
.. Virgin Islands
.. Virginia
.. Washington
.. West Virginia
.. Wisconsin
.. Wyoming

RT Aleutian Islands (US)
Cascade Range (CA-OR-WA)
Central Atlantic Region (US)
Great Lakes (North America)
Great Plains Corridor (North America)
International Field Year for Great
Lakes
International Hydrological Decade
Missouri River (US)
New England (US)
North America
Pacific Northwest (US)
Panama Canal Zone
Rocky Mountains (North America)
Southern California

units of measurement

DEF Precisely stated quantities in terms of which the magnitudes of other quantities of the same kind can be stated. f shichrms of which the magnitude of other Precisely specified quantities in te

GS **units of measurement**
. International System of Units
RT conversion tables
dimensional analysis
dimensions
∞ measurement
metrication
metrology
month
parameterization
sidereal time
symbols
time

unity

RT homogeneity
stability

Unity connecting module

(added November 1998)

DEF Component of the International Space Station providing six ports that serve as connecting points for other station modules and framework elements.

GS modules
. space station modules
.. **Unity connecting module**
RT Integrated Truss Structure Z1
International Space Station
spacecraft docking

Univac 80 computer

GS data processing equipment
. computers
.. digital computers
.. **Univac 80 computer**
.. Univac computers
.. **Univac 80 computer**

Univac 418 computer

GS data processing equipment
. computers
.. digital computers
.. **Univac 418 computer**
.. Univac computers
.. **Univac 418 computer**

Univac 490 computer

GS data processing equipment
. computers
.. digital computers
.. **Univac 490 computer**

.. Univac computers
.. **Univac 490 computer**

Univac 494 computer

GS data processing equipment
. computers
.. digital computers
.. **Univac 494 computer**
.. Univac computers
.. **Univac 494 computer**

Univac 1100 series computers

GS data processing equipment
. computers
.. analog computers
.. **Univac 1100 series computers**
.. Univac 1105 computer
.. Univac 1106 computer
.. Univac 1107 computer
.. Univac 1108 computer
.. Univac 1110 computer
.. digital computers
.. **Univac 1100 series computers**
.. Univac 1105 computer
.. Univac 1106 computer
.. Univac 1107 computer
.. Univac 1108 computer
.. Univac 1110 computer
.. Univac computers
.. **Univac 1100 series computers**
.. Univac 1105 computer
.. Univac 1106 computer
.. Univac 1107 computer
.. Univac 1108 computer
.. Univac 1110 computer

Univac 1105 computer

GS data processing equipment
. computers
.. analog computers
.. Univac 1100 series computers
.. **Univac 1105 computer**
.. digital computers
.. Univac 1100 series computers
.. **Univac 1105 computer**
.. Univac computers
.. Univac 1100 series computers
.. **Univac 1105 computer**

Univac 1106 computer

GS data processing equipment
. computers
.. analog computers
.. Univac 1100 series computers
.. **Univac 1106 computer**
.. digital computers
.. Univac 1100 series computers
.. **Univac 1106 computer**
.. Univac computers
.. Univac 1100 series computers
.. **Univac 1106 computer**

Univac 1107 computer

GS data processing equipment
. computers
.. analog computers
.. Univac 1100 series computers
.. **Univac 1107 computer**
.. digital computers
.. Univac 1100 series computers
.. **Univac 1107 computer**
.. Univac computers
.. Univac 1100 series computers
.. **Univac 1107 computer**

Univac 1108 computer

GS data processing equipment
. computers
.. analog computers
.. Univac 1100 series computers
.. **Univac 1108 computer**
.. digital computers
.. Univac 1100 series computers
.. **Univac 1108 computer**
.. Univac computers
.. Univac 1100 series computers
.. **Univac 1108 computer**

Univac 1110 computer

GS data processing equipment

- . computers
 - .. analog computers
 - ... Univac 1100 series computers
 - **Univac 1110 computer**
 - .. digital computers
 - ... Univac 1100 series computers
 - **Univac 1110 computer**
 - .. Univac computers
 - ... Univac 1100 series computers
 - **Univac 1110 computer**
- Univac 1230 computer**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... **Univac 1230 computer**
 - .. Univac computers
 - ... **Univac 1230 computer**
- Univac computers**
 - GS data processing equipment
 - . computers
 - .. **Univac computers**
 - ... Univac 1100 series computers
 - Univac 1105 computer
 - Univac 1106 computer
 - Univac 1107 computer
 - Univac 1108 computer
 - Univac 1110 computer
 - ... Univac 80 computer
 - ... Univac 418 computer
 - ... Univac 490 computer
 - ... Univac 494 computer
 - ... Univac 1230 computer
 - ... Univac Larc computer
 - RT digital computers
- Univac Larc computer**
 - GS data processing equipment
 - . computers
 - .. digital computers
 - ... **Univac Larc computer**
 - .. Univac computers
 - ... **Univac Larc computer**
- universal time**
 - DEF Time defined by the rotational motion of the Earth and determined from the apparent diurnal motions which reflect this rotation; because of variations in the rate of rotation, universal time is not rigorously uniform. Also called Greenwich mean time.
 - GS time
 - . **universal time**
 - RT ephemeris time
 - time synchronization
- universe**
 - UF *metagalaxy*
 - RT big bang cosmology
 - celestial bodies
 - cosmology
 - ∞ cosmos
 - dark energy
 - dark matter
 - large-scale structure of the universe
 - relic radiation
- universities**
 - UF *colleges*
 - RT education
 - instructors
 - learning
 - schools
 - students
- university program**
 - GS programs
 - . **university program**
 - RT bureaus (organizations)
 - investigation
 - NASA programs
 - teams
- UNIX (operating system)**
 - (added October 1988)
 - GS computer programs
 - . computer systems programs
 - .. operating systems (computers)
 - ... **UNIX (operating system)**
- RT computer programming
 - software engineering
 - workstations
- unloading**
 - RT ∞ discharge
 - disposal
 - dumping
 - ejection
 - emptying
 - evacuating (transportation)
 - expulsion
 - loading operations
 - materials handling
 - releasing
 - removal
 - spreading
- unloading waves**
 - GS elastic waves
 - . **unloading waves**
- unmanned aerial vehicles*
- USE **pilotless aircraft**
- unmanned aircraft systems**
 - (added August 2007)
 - DEF Pilotless flight systems consisting of an unmanned aircraft, sensors, payloads, communications equipment carried on board the aircraft, and ground control stations that control the flight of the aircraft and receive information collected and transmitted by the payloads.
 - UF *UAS*
 - RT aerial reconnaissance
 - ∞ military aircraft
 - pilotless aircraft
 - reconnaissance aircraft
 - remotely piloted vehicles
 - ∞ systems
- unmanned ground vehicles**
 - (added July 2002)
 - DEF Ground vehicles using remote or autonomous control.
 - UF *UGV (vehicles)*
 - GS surface vehicles
 - . **unmanned ground vehicles**
 - RT autonomous navigation
 - remotely piloted vehicles
 - robot control
 - robotics
 - roving vehicles
 - surface navigation
- unmanned spacecraft**
 - GS **unmanned spacecraft**
 - . Echo 2 satellite
 - . HEAO 1
 - . HEAO 2
 - . HEAO 3
 - . HOTOL launch vehicle
 - . Pioneer Venus spacecraft
 - .. Pioneer Venus 1 spacecraft
 - .. Pioneer Venus 2 spacecraft
 - ... Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - ... Pioneer Venus 2 transporter bus
 - . space probes
 - .. Explorer 18 satellite
 - .. Giotto mission
 - .. Jupiter probes
 - ... Galileo probe
 - ... Galileo spacecraft
 - .. lunar probes
 - ... Lunik lunar probes
 - Lunik 2 lunar probe
 - Lunik 3 lunar probe
 - Lunik 9 lunar probe
 - Lunik 10 lunar probe
 - Lunik 11 lunar probe
 - Lunik 12 lunar probe
 - Lunik 13 lunar probe
 - Lunik 14 lunar probe
 - Lunik 16 lunar probe
 - Lunik 17 lunar probe
 - Lunik 19 lunar probe
 - Lunik 20 lunar probe
 - Lunik 22 lunar probe
 - ... Ranger lunar probes
 - Ranger 1 lunar probe
 - Ranger 2 lunar probe
 - Ranger 3 lunar probe
 - Ranger 4 lunar probe
 - Ranger 5 lunar probe
 - Ranger 6 lunar probe
 - Ranger 7 lunar probe
 - Ranger 8 lunar probe
 - Ranger 9 lunar probe
 - ... Ranger lunar landing vehicles
 - ... Surveyor lunar probes
 - Surveyor 1 lunar probe
 - Surveyor 2 lunar probe
 - Surveyor 3 lunar probe
 - Surveyor 4 lunar probe
 - Surveyor 5 lunar probe
 - Surveyor 6 lunar probe
 - Surveyor 7 lunar probe
 - ... LCROSS (satellite)
 - ... Lunar Reconnaissance Orbiter
 - .. Mariner space probes
 - ... Mariner 1 space probe
 - ... Mariner 2 space probe
 - ... Mariner 3 space probe
 - ... Mariner 4 space probe
 - ... Mariner 5 space probe
 - ... Mariner 6 space probe
 - ... Mariner 7 space probe
 - ... Mariner 8 space probe
 - ... Mariner 9 space probe
 - ... Mariner 10 space probe
 - ... Mariner 11 space probe
 - ... Mariner R 2 space probe
 - .. Mariner spacecraft
 - ... Mariner C spacecraft
 - ... Mariner Venus 67 spacecraft
 - .. Mars probes
 - ... Advanced Recon Electric Spacecraft
 - ... Mariner 3 space probe
 - ... Mariner 4 space probe
 - ... Mariner 6 space probe
 - ... Mariner 7 space probe
 - ... Mariner 8 space probe
 - ... Mariner 9 space probe
 - ... Mars 1 spacecraft
 - ... Mars 2 spacecraft
 - ... Mars 3 spacecraft
 - ... Mars 4 spacecraft
 - ... Mars 5 spacecraft
 - ... Mars 6 spacecraft
 - ... Mars 7 spacecraft
 - ... Mars Observer
 - ... Mars Pathfinder
 - ... Viking 1975 entry vehicle
 - ... Viking spacecraft
 - ... Viking 1 spacecraft
 - ... Viking lander 1
 - ... Viking orbiter 1
 - ... Viking 2 spacecraft
 - ... Viking lander 2
 - ... Viking orbiter 2
 - ... Viking lander spacecraft
 - ... Viking lander 1
 - ... Viking lander 2
 - ... Viking orbiter spacecraft
 - ... Viking orbiter 1
 - ... Viking orbiter 2
 - ... Viking orbiter 1975
 - ... Mars Climate Orbiter
 - ... Mars Express
 - ... Mars Global Surveyor
 - ... Mars Polar Lander
 - ... Mars Reconnaissance Orbiter
 - ... Nozomi Mars Orbiter
 - ... Phobos spacecraft
 - ... Phoenix Mars Lander
 - ... Zond 2 space probe
 - .. Pioneer space probes
 - ... Pioneer 1 space probe
 - ... Pioneer 2 space probe
 - ... Pioneer 3 space probe
 - ... Pioneer 4 space probe
 - ... Pioneer 5 space probe
 - ... Pioneer 6 space probe
 - ... Pioneer 7 space probe
 - ... Pioneer 8 space probe
 - ... Pioneer 9 space probe

unsaturation (chemistry)

... Pioneer 10 space probe
... Pioneer 11 space probe
... Pioneer Venus 2 entry probes
... Pioneer Venus 2 night probe
... Pioneer Venus 2 sounder probe
... solar probes
... Helios 1
... Helios 2
... Helios A
... Helios B
... Starprobe spacecraft
... Sunblazer space probe
... Venus probes
... Magellan spacecraft (NASA)
... Mariner 1 space probe
... Mariner 2 space probe
... Mariner 5 space probe
... Mariner 10 space probe
... Pioneer Venus 2 spacecraft
... Pioneer Venus 2 entry probes
... Pioneer Venus 2 night probe
... Pioneer Venus 2 sounder probe
... Pioneer Venus 2 transporter bus
... Venera satellites
... Venera 2 satellite
... Venera 3 satellite
... Venera 4 satellite
... Venera 5 satellite
... Venera 6 satellite
... Venera 7 satellite
... Venera 8 satellite
... Venera 9 satellite
... Venera 10 satellite
... Venera 11 satellite
... Venera 12 satellite
... Zond 1 space probe
... Zond 3 space probe
... Zond 4 space probe
... Zond 5 space probe
... Zond 6 space probe
... Zond 7 space probe
... Zond 8 space probe
... Huygens probe
... MESSENGER (spacecraft)
... Microwave Anisotropy Probe
... Voyager 1 spacecraft
... Voyager 2 spacecraft
... technology feasibility spacecraft
... Zond space probes
... Zond 1 space probe
... Zond 2 space probe
... Zond 3 space probe
... Zond 4 space probe
... Zond 5 space probe
... Zond 6 space probe
... Zond 7 space probe
... Zond 8 space probe

RT artificial satellites
autonomous docking
communication satellites
geophysical satellites
gravity gradient satellites
inflatable spacecraft
interplanetary spacecraft
lunar landing modules
lunar satellites
lunar spacecraft
manned spacecraft
Mariner program
meteorological satellites
military spacecraft
reconnaissance spacecraft
recoverable spacecraft
rendezvous spacecraft
reusable spacecraft
SIRS B satellite
space capsules
∞ spacecraft
Voyager project

unsaturation (chemistry)

DEF A state in which the atomic bonds of an organic compound's chain or ring are not completely satisfied (not saturated); unsaturation usually results in a double bond (as for olefins) or a triple bond (as for the acetylenes).

RT chemical bonds
∞ chemistry

precipitation (chemistry)
∞ saturation
saturation (chemistry)

unsteady aerodynamics

GS mechanics (physics)
... fluid mechanics
... fluid dynamics
... gas dynamics
... aerodynamics
... **unsteady aerodynamics**
RT aerodynamic characteristics
aerodynamic forces
aerodynamic stability
aeroelasticity
aeroservoelasticity
flutter
flutter analysis
unsteady flow
wing oscillations

unsteady flow

UF *pulsating flow*
GS fluid flow
... **unsteady flow**
... oscillating flow
RT aerodynamics
critical flow
∞ flow
flow stability
flow velocity
gas flow
heat transmission
hydrodynamic coefficients
laminar flow
liquid flow
mass flow
method of characteristics
multiphase flow
nonequilibrium flow
nonNewtonian flow
nonuniform flow
orifice flow
pipe flow
pressure gradients
single-phase flow
solids flow
steady flow
steady state
steam flow
Strouhal number
subcritical flow
supercritical flow
turbulence
uniform flow
unsteady aerodynamics

unsteady state

RT ∞ equilibrium
fluid dynamics
metastable state
nonequilibrium conditions
stability
steady state
systems stability
thermodynamics

unstructured grids (mathematics)

(added May 1995)

DEF In computational fluid dynamics, grid systems where the flowfield is discretized into triangular-shaped elements for two-dimensional fields, and tetrahedral elements for three-dimensional fields. In this type of grid system the grid points cannot be associated with grid lines.

GS coordinates
... computational grids
... **unstructured grids (mathematics)**
RT computational fluid dynamics
finite element method
finite volume method
grid generation (mathematics)
multigrid methods
structured grids (mathematics)

unswept wings

GS airfoils
... wings
... **unswept wings**

... infinite span wings
... rectangular wings
... ring wings

RT fixed wings
swept wings
wing planforms

up-converters

DEF Parametric amplifiers characterized by the output signal frequencies being greater than the frequencies of the input signals.

GS frequency converters
... **up-converters**
RT ∞ converters
parametric frequency converters
transformers

updrafts

USE **vertical air currents**

upgrading

RT beneficium
concentrating
enrichment
experience
improvement
promotion
public relations
purification
quality
refining

uplinking

DEF The transmission of signals from ground terminals to satellites in telecommunication systems.

RT carrier to noise ratios
communication satellites
downlinking
frequency reuse
microwave transmission
satellite transmission
transmission efficiency

upper air

USE **upper atmosphere**

upper atmosphere

DEF The general term applied to the atmosphere above the troposphere. Used for upper air.

UF *upper air*
GS Earth atmosphere
... **upper atmosphere**
... Earth ionosphere
... E region
... E-1 layer
... E-2 layer
... sporadic E layer
... lower ionosphere
... D region
... upper ionosphere
... F region
... F 1 region
... F 2 region
... exosphere
... thermosphere
... turbopause
RT acoustic sounding

aeronomy
chemosphere
field aligned currents
heterosphere
high altitude
homosphere
meteor trails
meteorological balloons
middle atmosphere
ozonosphere
plasmasphere
proton precipitation
radiation belts
satellite atmospheres
Upper Atmosphere Research Satellite (UARS)

Upper Atmosphere Research Satellite (UARS)

(added August 1989)
UF *UARS (satellite)*

- GS artificial satellites
 . scientific satellites
 . . **Upper Atmosphere Research Satellite (UARS)**
- RT upper atmosphere
- upper ionosphere**
- GS Earth atmosphere
 . upper atmosphere
 . . Earth ionosphere
 . . . **upper ionosphere**
 F region
 F 1 region
 F 2 region
- RT E region
- upper stage rocket engines**
- GS engines
 . rocket engines
 . . **upper stage rocket engines**
- RT Ares 1 upper stage
 Inertial Upper Stage
 multistage rocket vehicles
 spacecraft configurations
 spinning solid upper stage
 stage separation
- upper surface blowing**
- DEF Use of jet blowing on the upper surface of airfoils to create variations in pressure distribution.
- GS blowing
 . **upper surface blowing**
- RT aerodynamic characteristics
 aircraft configurations
 circulation control airfoils
 lift
 ∞ surfaces
 under surface blowing
- upper surface blown flaps**
- GS airfoils
 . flaps (control surfaces)
 . . externally blown flaps
 . . . **upper surface blown flaps**
 control surfaces
 . flaps (control surfaces)
 . . externally blown flaps
 . . . **upper surface blown flaps**
- RT aircraft stability
 blowing
 boundary layer control
 lift augmentation
 lift devices
 ∞ surfaces
- Upper Volta*
- USE **Burkina**
- upsetting**
- RT cold pressing
 cold working
 forming techniques
 hot isostatic pressing
 hot pressing
 hot working
 pressing (forming)
 stamping
- upstream**
- RT air currents
 water currents
 wind direction
- upwash**
- RT downwash
 ∞ draft
 interference drag
 interference lift
- upwelling*
- USE **upwelling water**
- upwelling water**
- DEF The process by which water rises from a deeper to a shallower depth. Used for upwelling.
- UF *upwelling*
- RT atmospheric circulation
 coasts
- ocean currents
 thermohaline circulation
 wind (meteorology)
 wind direction
- upwind schemes (mathematics)**
(added July 1992)
- GS analysis (mathematics)
 . numerical analysis
 . . approximation
 . . . **upwind schemes (mathematics)**
- RT computational fluid dynamics
 Euler equations of motion
 finite difference theory
- uracil**
- GS bases (chemical)
 . **uracil**
 nitrogen compounds
 . **uracil**
 organic compounds
 . cyclic compounds
 . . heterocyclic compounds
 . . . pyrimidines
 **uracil**
- RT alloxan
 uridylic acid
- uranium**
- GS chemical elements
 . actinide series
 . . **uranium**
 . . . uranium isotopes
 uranium 232
 uranium 233
 uranium 234
 uranium 235
 uranium 238
 metals
 . actinide series
 . . **uranium**
 . . . uranium isotopes
 uranium 232
 uranium 233
 uranium 234
 uranium 235
 uranium 238
 metals
 . actinide series
 . . uranium
 . . . uranium isotopes
 uranium 238
- RT fissionable materials
 jet membrane process
 nuclear fuels
 uranium plasmas
- uranium 232**
- GS chemical elements
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 232**
 nuclides
 isotopes
 radioactive isotopes
 **uranium 232**
 uranium isotopes
 **uranium 232**
 metals
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 232**
- uranium 233**
- GS chemical elements
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 233**
 nuclides
 isotopes
 radioactive isotopes
 **uranium 233**
 uranium isotopes
 **uranium 233**
 metals
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 233**
- uranium 234**
- GS chemical elements
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 234**
 nuclides
 isotopes
 uranium isotopes
 **uranium 234**
 metals
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 234**
- uranium 235**
- GS chemical elements
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 235**
 nuclides
 isotopes
 uranium isotopes
 **uranium 235**
 metals
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 235**
- RT nuclear fuels
- uranium 238**
- GS chemical elements
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 238**
 nuclides
 isotopes
 radioactive isotopes
 **uranium 238**
 uranium isotopes
 **uranium 238**
 metals
 . actinide series
 . . uranium
 . . . uranium isotopes
 **uranium 238**
- RT nuclear fuels
- uranium alloys**
- GS alloys
 . **uranium alloys**
- RT nuclear fuel elements
 nuclear fuels
- uranium carbides**
- GS actinide series compounds
 . uranium compounds
 . . **uranium carbides**
 carbon compounds
 . carbides
 . . **uranium carbides**
- RT ceramic nuclear fuels
 nuclear fuel elements
 nuclear fuels
- uranium compounds**
- GS actinide series compounds
 . **uranium compounds**
 . . uranium carbides
 . . uranium fluorides
 . . uranium oxides
- RT ceramic nuclear fuels
 ∞ chemical compounds
 ∞ metal compounds
 nuclear fuels
- uranium fluorides**
- GS actinide series compounds
 . uranium compounds
 . . **uranium fluorides**
 halogen compounds
 . fluorine compounds
 . . fluorides
 . . . metal fluorides

uranium isotopes

- **uranium fluorides**
- . halides
- . . fluorides
- . . . metal fluorides
- **uranium fluorides**
- . . metal halides
- . . . metal fluorides
- **uranium fluorides**
- uranium isotopes**
- GS chemical elements
- . actinide series
- . . uranium
- **uranium isotopes**
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- . nuclides
- . . isotopes
- **uranium isotopes**
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- metals
- . actinide series
- . . uranium
- **uranium isotopes**
- uranium 232
- uranium 233
- uranium 234
- uranium 235
- uranium 238
- uranium oxides**
- GS actinide series compounds
- . uranium compounds
- . . **uranium oxides**
- chalcogenides
- . oxides
- . . metal oxides
- . . . **uranium oxides**
- RT ceramic nuclear fuels
- mixed oxides
- nuclear fuels
- uranium plasmas**
- GS metals
- . **uranium plasmas**
- particles
- . charged particles
- . . energetic particles
- . . . plasmas (physics)
- metallic plasmas
- **uranium plasmas**
- . corpuscular radiation
- . . energetic particles
- . . . plasmas (physics)
- metallic plasmas
- **uranium plasmas**
- RT magnetohydrodynamics
- plasma composition
- plasma physics
- radioactive materials
- uranium
- Uranus (planet)**
- GS celestial bodies
- . planets
- . . gas giant planets
- . . . **Uranus (planet)**
- RT Ariel
- Cordelia
- Miranda
- Oberon
- Puck
- Titania
- Umbriel
- Uranus atmosphere
- Uranus rings
- Voyager 2 spacecraft
- Uranus atmosphere**
- DEF The atmosphere of the planet Uranus.
- GS environments
- . extraterrestrial environments
- . . planetary environments
- . . . planetary atmospheres
- **Uranus atmosphere**
- RT aerospace environments
- ∞ atmospheres
- gas giant planets
- hydrogen
- methane
- planetary ionospheres
- Uranus (planet)
- Uranus rings**
- DEF Ring structures encircling the planet
- Uranus and similar to those of the planet Saturn.
- GS celestial bodies
- . planetary rings
- . . **Uranus rings**
- RT Jupiter rings
- moonlets
- natural satellites
- planetary structure
- ∞ rings
- Saturn rings
- Uranus (planet)
- Uranus satellites**
- GS celestial bodies
- . natural satellites
- . . **Uranus satellites**
- . . . Ariel
- . . . Cordelia
- . . . Miranda
- . . . Oberon
- . . . Puck
- . . . Titania
- . . . Umbriel
- urban areas*
- USE **cities**
- urban development**
- RT cities
- communities
- ∞ development
- economic development
- industrial areas
- land use
- megalopolises
- operations research
- parks
- planning
- ∞ plans
- regional planning
- residential areas
- resources
- Starsite program
- technologies
- urban planning**
- GS planning
- . regional planning
- . . **urban planning**
- RT census
- cities
- communities
- heat islands
- highways
- land management
- land use
- parks
- public health
- recreation
- social factors
- sociology
- Starsite program
- streets
- urban research**
- RT cities
- communities
- land use
- recreation
- social factors
- streets
- urban transportation**
- GS transportation
- . **urban transportation**
- RT automated guideway transit vehicles
- automated mixed traffic vehicles
- automated transit vehicles
- industrial areas
- megalopolises
- rail transportation
- rapid transit systems
- regional planning
- surface vehicles
- ureas**
- GS nitrogen compounds
- . amides
- . . **ureas**
- . . . difluorourea
- . . . thioureas
- . . . thiuronium
- RT diuretics
- fertilizers
- urine
- ureilites**
- (added December 1988)*
- GS celestial bodies
- . meteorites
- . . stony meteorites
- . . . achondrites
- **ureilites**
- . . . carbonaceous meteorites
- **ureilites**
- RT meteoritic diamonds
- urethanes**
- GS esters
- . Carbamates (tradename)
- . . **urethanes**
- poisons
- . pesticides
- . . insecticides
- . . . Carbamates (tradename)
- **urethanes**
- RT cyanates
- uric acid**
- GS acids
- . **uric acid**
- fungicides
- . xanthines
- . . **uric acid**
- nitrogen compounds
- . xanthines
- . . **uric acid**
- organic compounds
- . cyclic compounds
- . . heterocyclic compounds
- . . . purines
- xanthines
- **uric acid**
- RT alloxan
- uridylic acid**
- GS acids
- . **uridylic acid**
- organic compounds
- . nucleotides
- . . **uridylic acid**
- . organic phosphorus compounds
- . . **uridylic acid**
- phosphorus compounds
- . organic phosphorus compounds
- . . **uridylic acid**
- . phosphates
- . . **uridylic acid**
- RT amino acids
- nucleic acids
- uracil
- urinalysis**
- GS chemical tests
- . chemical analysis
- . . **urinalysis**
- RT diabetes mellitus
- physiological tests
- urine
- urination**
- UF *micturition*
- RT diuresis
- urine
- water balance
- urine**
- GS body fluids

- . **urine**
 - wastes
 - . liquid wastes
 - . . **urine**
 - . metabolic wastes
 - . . human wastes
 - . . . **urine**
 - RT antidiuretics
 - creatinine
 - excretion
 - feces
 - hematuria
 - kidneys
 - ureas
 - urinalysis
 - urination
- urography**
- GS imagery
 - . photography
 - . . **urography**
 - . radiography
 - . . **urography**
 - RT black and white photography
- urolithiasis**
- GS diseases
 - . **urolithiasis**
 - RT calculi
 - kidneys
 - urology
- urology**
- GS medical science
 - . **urology**
 - RT bladder
 - genitourinary system
 - kidneys
 - urolithiasis
- Uruguay**
- GS nations
 - . **Uruguay**
 - RT South America
- US Laboratory Module (ISS)*
(added February 2001)
USE **Destiny Laboratory Module**
- US-2A aircraft*
USE **S-2 aircraft**
- USA (United States)*
USE **United States**
- user manuals (computer programs)**
- GS documents
 - . handbooks
 - . . **user manuals (computer programs)**
 - . manuals
 - . . **user manuals (computer programs)**
 - RT computer programs
 - programs
 - report generators
 - ∞ routines
- subroutines
- user requirements**
- GS requirements
 - . **user requirements**
 - RT commerce lab
 - human-computer interface
 - international cooperation
 - specifications
- user-computer interface*
USE **human-computer interface**
- USNS Kingsport*
USE **satellite communications ships**
- Utah**
- GS nations
 - . United States
 - . . **Utah**
 - RT Colorado Plateau (US)
 - Colorado River (North America)
 - Great Basin (US)
 - Great Salt Lake (UT)
- uterus**
- GS anatomy
 - . genitourinary system
 - . . reproductive systems
 - . . . **uterus**
- utilities**
- RT ∞ electric equipment
 - ∞ electric power
 - garbage
 - industries
 - integrated energy systems
 - logistics
 - Modular Integrated Utility System
 - services
 - site selection
 - telephones
 - waste disposal
 - water
- utility aircraft**
- GS **utility aircraft**
 - . BO-105 helicopter
 - . DHC 4 aircraft
 - . DHC 5 aircraft
 - . HH-43 helicopter
 - . S-2 aircraft
 - . Saab 105 aircraft
 - . T-39 aircraft
 - . U-2 aircraft
 - . U-10 aircraft
 - . UH-1 helicopter
 - . UH-2 helicopter
 - . UH-60A helicopter
 - . UH-61A helicopter
 - . XV-8A aircraft
 - . Z-37 aircraft
 - RT ∞ aircraft
 - biplanes
 - cargo aircraft
 - commercial aircraft
 - general aviation aircraft
- helicopters
 - light aircraft
 - ∞ military aircraft
 - observation aircraft
 - reconnaissance aircraft
 - ∞ subsonic aircraft
 - transport aircraft
 - V/STOL aircraft
 - water takeoff and landing aircraft
- utilization**
- UF *application*
 - GS **utilization**
 - . coal utilization
 - . geothermal energy utilization
 - . laser applications
 - . . laser ablation
 - . . laser annealing
 - . . laser cooling
 - . . laser cutting
 - . . laser deposition
 - . . . pulsed laser deposition
 - . . laser drilling
 - . . laser fusion
 - . . laser guidance
 - . . laser guide stars
 - . . laser heating
 - . . laser induced fluorescence
 - . . laser interferometry
 - . . laser machining
 - . . laser microscopy
 - . . laser power beaming
 - . . laser propulsion
 - . . laser spectroscopy
 - . . . optogalvanic spectroscopy
 - . . laser ranging
 - . . laser weapons
 - . . laser welding
 - . . . satellite laser ranging
 - . reuse
 - . . software reuse
 - . in situ resource utilization
 - . technology utilization
 - . waste energy utilization
 - . waste utilization
 - . windpower utilization
 - RT consumption
 - depletion
 - efficiency
- utricle**
- RT plants (botany)
 - seeds
- UV Ceti stars*
USE **flare stars**
- UV lasers*
USE **ultraviolet lasers**
- Uzbekistan**
(added August 1993)
- GS nations
 - . **Uzbekistan**
 - RT Asia

V

V band

USE **extremely high frequencies**

V grooves

GS grooves
 . **V grooves**
 . . riblets
 RT machining
 micromachining
 notches

V-1 missile

GS missiles
 . surface to surface missiles
 . . **V-1 missile**
 RT liquid propellant rocket engines
 pulsejet engines

V-2 missile

GS missiles
 . ballistic missiles
 . . **V-2 missile**
 RT liquid propellant rocket engines

V-3 aircraft

USE **XV-3 aircraft**

V-4 aircraft

USE **XV-4 aircraft**

V-5 aircraft

USE **XV-5 aircraft**

V-9 aircraft

USE **XV-9A aircraft**

V-22 aircraft

(added September 1990)

DEF A Bell/Boeing developed tilt rotor aircraft, nicknamed "Osprey", and designed for light multiservice use. Used for Osprey aircraft.

UF *Osprey aircraft*
 GS Bell aircraft
 . **V-22 aircraft**
 Boeing aircraft
 . **V-22 aircraft**
 V/STOL aircraft
 . rotary wing aircraft
 . . tilt rotor aircraft
 . . . **V-22 aircraft**
 RT ∞ aircraft
 helicopters
 ∞ military aircraft
 rotary wings
 Tilt Rotor Research Aircraft Program
 tilt wing aircraft
 tilting rotors

V/STOL aircraft

DEF A hybrid form of heavier-than-air aircraft that is capable, by virtue of one or more horizontal rotors or units acting as rotors, of taking off, hovering, and landing as, or in a fashion similar to, a helicopter, and once aloft, and moving forward, capable, by means of a mechanical conversion of one sort or another, of flying as a fixed-wing aircraft, especially in its higher speed ranges. Used for convertiplanes and steep gradient aircraft.

UF *convertiplanes*
steep gradient aircraft

GS **V/STOL aircraft**
 . CL-84 aircraft
 . DO-31 aircraft
 . FV-12A aircraft
 . G-95/4 aircraft
 . G-222 aircraft
 . L-29 jet trainer
 . P-1127 aircraft
 . P-1154 aircraft
 . rotary wing aircraft
 . . autogyros
 . . . Avian 2/180 autogyro
 . . . helicopters
 Alouette helicopters
 SA-330 helicopter
 SE-3160 helicopter
 . . . Bell 214A helicopter
 . . . compound helicopters

. . . . S-67 helicopter
 . . . H-17 helicopter
 . . . heavy lift helicopters
 . . . CH-62 helicopter
 . . . light helicopters
 . . . OH-4 helicopter
 . . . OH-5 helicopter
 . . . OH-6 helicopter
 . . . OH-58 helicopter
 . . . military helicopters
 . . . AH-1G helicopter
 . . . AH-1S helicopter
 . . . AH-1W helicopter
 . . . AH-63 helicopter
 . . . AH-64 helicopter
 . . . BO-105 helicopter
 . . . CH-3 helicopter
 . . . CH-21 helicopter
 . . . CH-34 helicopter
 . . . CH-46 helicopter
 . . . CH-47 helicopter
 . . . CH-54 helicopter
 . . . CH-62 helicopter
 . . . H-19 helicopter
 . . . H-43 helicopter
 . . . H-53 helicopter
 . . . H-54 helicopter
 . . . H-56 helicopter
 . . . H-60 Helicopter
 . . . HC-3 helicopter
 . . . HH-43 helicopter
 . . . HH-65 helicopter
 . . . OH-4 helicopter
 . . . OH-5 helicopter
 . . . OH-6 helicopter
 . . . OH-13 helicopter
 . . . OH-23 helicopter
 . . . OH-58 helicopter
 . . . P-531 helicopter
 . . . QH-50 helicopter
 . . . S-67 helicopter
 . . . SA-321 helicopter
 . . . SA-330 helicopter
 . . . SH-3 helicopter
 . . . SH-4 helicopter
 . . . Sikorsky Whirlwind helicopter
 . . . UH-1 helicopter
 . . . UH-2 helicopter
 . . . UH-34 helicopter
 . . . UH-60A helicopter
 . . . UH-61A helicopter
 . . . Westland Whirlwind helicopter
 . . . XV-9A aircraft
 . . . rigid rotor helicopters
 . . . CH-3 helicopter
 . . . F-28 helicopter
 . . . XH-51 helicopter
 . . . S-58 helicopter
 . . . S-61 helicopter
 . . . tandem rotor helicopters
 . . . CH-46 helicopter
 . . . CH-47 helicopter
 . . . H-25 helicopter
 . . . EH-101 helicopter
 . . . TH-55 helicopter
 . . rotor systems research aircraft
 . . tilt rotor aircraft
 . . V-22 aircraft
 . . XV-15 aircraft
 . . short takeoff aircraft
 . . Aladin 2 aircraft
 . . Breguet 940 aircraft
 . . Breguet 941 aircraft
 . . C-8A augmentor wing aircraft
 . . C-15 aircraft
 . . C-123 aircraft
 . . DHC 4 aircraft
 . . DHC 5 aircraft
 . . Questol aircraft
 . . U-10 aircraft
 . . vertical takeoff aircraft
 . . flying platforms
 . . SC-1 aircraft
 . . VJ-101 aircraft
 . . VZ-8 aircraft
 . . X-13 aircraft
 . . X-14 aircraft
 . . X-19 aircraft

. . X-22 aircraft
 . . X-22A aircraft
 . . XC-142 aircraft
 . . XV-4 aircraft
 . . XV-11A aircraft
 . . VZ-2 aircraft
 . . X-32 aircraft
 . . X-35 aircraft
 . . XV-3 aircraft
 . . XV-5 aircraft
 . . XV-8A aircraft
 RT ∞ aircraft
 antisubmarine warfare aircraft
 attack aircraft
 commercial aircraft
 convertible fan-shaft engines
 drone aircraft
 fan in wing aircraft
 fighter aircraft
 ground effect machines
 heliports
 hovering
 jet aircraft
 ∞ military aircraft
 passenger aircraft
 reconnaissance aircraft
 research aircraft
 short haul aircraft
 STOVL aircraft
 tilt wing aircraft
 transition flight
 transport aircraft
 utility aircraft
 vertical flight
 Weser aircraft
 Westland aircraft

vacancies (crystal defects)

DEF Vacant sites in a crystal structure due to the absence of an atom or ion from its normal structural position.

GS defects
 . crystal defects
 . . point defects
 . . . **vacancies (crystal defects)**
 Frenkel defects

RT antisite defects
 binding energy
 holes (electron deficiencies)
 square wells

vaccines

GS **vaccines**
 . inoculum
 RT acquired immunodeficiency syndrome
 antibodies
 antigens
 antiserums
 bacteriology
 biocompatibility
 diseases
 drugs
 epidemiology
 human immunodeficiency virus
 inoculation
 toxicology
 toxins and antitoxins

vacillation

RT dithers
 human reactions

vacuum

DEF A given space filled with gas at pressures below atmospheric pressure. Used for aspiration.

UF *aspiration*
 GS pressure
 . **vacuum**
 . . high vacuum
 . . low vacuum
 . . ultrahigh vacuum
 RT aerospace environments
 boundary layer control
 evacuating (vacuum)
 getters
 high pressure
 Knudsen flow

- low pressure
- mean free path
- offgassing
- outgassing
- pressure measurement
- rarefaction
- suction
- vacuum apparatus**
 - GS **vacuum apparatus**
 - . vacuum chambers
 - . vacuum furnaces
 - . vacuum gages
 - . . ionization gages
 - . . . alphasatrons
 - . . . Bayard-Alpert ionization gages
 - . . . Penning gages
 - . . . Philips ionization gages
 - . . Knudsen gages
 - . . Mcleod gages
 - . . Pirani gages
 - . vacuum pumps
 - . . condensation pumps
 - . . ion pumps
 - . . molecular pumps
 - RT cold traps
 - diffusion pumps
 - high vacuum
 - low density research
 - residual gas
 - suction
 - ultrahigh vacuum
 - vacuum arc switches
- vacuum arc switches**
 - GS switches
 - . electric switches
 - . . **vacuum arc switches**
 - RT airborne equipment
 - switching circuits
 - vacuum apparatus
 - vacuum effects
- vacuum chambers**
 - UF *low pressure chambers*
 - GS compartments
 - . test chambers
 - . . pressure chambers
 - . . . **vacuum chambers**
 - vacuum apparatus
 - . **vacuum chambers**
 - RT altitude simulation
 - ∞ chambers
 - high altitude environments
 - high altitude pressure
 - hyperbaric chambers
 - pressure
 - space environment simulation
 - space simulators
 - thermal vacuum tests
 - wind tunnel drives
- vacuum deposition**
 - GS deposition
 - . vapor deposition
 - . . **vacuum deposition**
 - RT ceramic coatings
 - diamond films
 - electroless deposition
 - ion plating
- vacuum effects**
 - RT cold welding
 - ∞ effects
 - environments
 - offgassing
 - pressure effects
 - space manufacturing
 - vacuum arc switches
- vacuum furnaces**
 - GS heating equipment
 - . furnaces
 - . . **vacuum furnaces**
 - vacuum apparatus
 - . **vacuum furnaces**
 - RT solar furnaces
- vacuum gages**
 - GS measuring instruments
 - . pressure gages
 - . . **vacuum gages**
 - . . . ionization gages
 - alphasatrons
 - Bayard-Alpert ionization gages
 - Penning gages
 - Philips ionization gages
 - . . . Knudsen gages
 - . . . Mcleod gages
 - . . . Pirani gages
 - vacuum apparatus
 - . **vacuum gages**
 - . . ionization gages
 - . . . alphasatrons
 - . . . Bayard-Alpert ionization gages
 - . . . Penning gages
 - . . . Philips ionization gages
 - . . Knudsen gages
 - . . Mcleod gages
 - . . Pirani gages
 - RT barometers
 - manometers
 - orbitrons
 - pressure measurement
- vacuum melting**
 - GS phase transformations
 - . melting
 - . . **vacuum melting**
 - RT arc melting
 - induction heating
 - levitation
 - powder metallurgy
 - zone melting
- vacuum pumps**
 - GS pumps
 - . **vacuum pumps**
 - . . condensation pumps
 - . . ion pumps
 - . . molecular pumps
 - vacuum apparatus
 - . **vacuum pumps**
 - . . condensation pumps
 - . . ion pumps
 - . . molecular pumps
 - RT compressors
 - cryopumping
 - diffusion pumps
 - ejectors
 - evacuating (vacuum)
 - jet pumps
 - materials handling
 - outgassing
 - suction
- vacuum spectroscopy**
 - GS spectroscopy
 - . **vacuum spectroscopy**
 - RT gas spectroscopy
 - inductively coupled plasma mass spectrometry
 - infrared spectroscopy
 - magnetic spectroscopy
 - mass spectroscopy
 - molecular spectroscopy
 - nuclear radiation spectroscopy
 - spectroscopic analysis
 - ultraviolet spectroscopy
 - x ray spectroscopy
- vacuum systems**
 - DEF Chambers having walls capable of withstanding atmospheric pressure and having an opening through which the gas can be removed through a pipe or manifold to a pumping system. The pumping system may or may not be considered as part of the vacuum system.
 - RT ampoules
 - ∞ systems
- vacuum tests**
 - GS **vacuum tests**
 - . thermal vacuum tests
 - RT high vacuum
 - hypobaric atmospheres
 - test chambers
 - ∞ tests
- ultrahigh vacuum
- vacuum tube oscillators**
 - GS electron tubes
 - . vacuum tubes
 - . . **vacuum tube oscillators**
 - oscillators
 - . **vacuum tube oscillators**
 - RT autodynes
 - frequency modulation photomultipliers
 - microwave oscillators
- vacuum tubes**
 - DEF Electron tubes evacuated to such a degree that their electrical characteristics are essentially unaffected by the presence of residual gas or vapor.
 - GS electron tubes
 - . **vacuum tubes**
 - . . cathode ray tubes
 - . . . monoscopes
 - . . . picture tubes
 - . . cesium diodes
 - . . microwave tubes
 - . . . celescopes
 - . . . cyclotron resonance devices
 - . . . klystrons
 - . . . magnetrons
 - nigotrons
 - . . . planotrons
 - . . . traveling wave tubes
 - backward wave tubes
 - helitrons
 - carcinotrons
 - . . vacuum tube oscillators
 - RT pentodes
 - perveance
 - residual gas
- vacuum ultraviolet radiation*
- USE **far ultraviolet radiation**
- vadose water**
 - GS water
 - . **vadose water**
 - RT coastal water
 - evapotranspiration
 - Lake Texoma (OK-TX)
 - nearshore water
 - river basins
 - soils
 - water tables
- valence**
 - DEF numbers representing the combining or displacing power of an atom, number of electrons lost, gained or shared by an atom in a compound, number of hydrogen atoms with which an atom will combine, or which it will displace. The valance of an element is the ratio of the atomic weight to the equivalent weight.
 - GS **valence**
 - . octets
 - RT chemical bonds
 - conduction electrons
 - ion charge
 - ions
 - positive ions
 - quantum wells
 - trivalent ions
- valeric acid**
 - GS acids
 - . carboxylic acids
 - . . fatty acids
 - . . . **valeric acid**
 - organic compounds
 - . carboxylic acids
 - . . fatty acids
 - . . . **valeric acid**
- Valiant aircraft**
 - UF *Vickers Valiant aircraft*
 - GS attack aircraft
 - . bomber aircraft
 - . . **Valiant aircraft**
 - BAC aircraft
 - . **Valiant aircraft**
 - jet aircraft
 - . **Valiant aircraft**

validity

monoplanes
· **Valiant aircraft**
RT ∞ aircraft
reconnaissance aircraft
tanker aircraft

validation

USE **proving**

validity

RT acceptability
accuracy
adequacy
consistency
correlation
existence
mathematical models
precision
quality
reliability
simulation
standards
statistical tests
variability

Valkyrie aircraft

USE **B-70 aircraft**

valleys

UF *intermontane floors*
rift valleys
rills

GS valleys

· Coachella Valley (CA)
· Death Valley (CA)
· Imperial Valley (CA)
· Magdalena-Cauca Valley (Colombia)
· Palo Verde Valley (CA)
· Potomac River Valley (MD-VA-WV)
· Sacramento Valley (CA)
· San Joaquin Valley (CA)
· Shenandoah Valley (VA)
· St Lawrence Valley (North America)
· Tennessee Valley (AL-KY-TN)

RT

canyons
Delaware River Basin (US)
erosion
meanders
Missouri River (US)
ravines
rivers
structural basins
Susquehanna River Basin
(MD-NY-PA)
topography
wadis
watersheds

Valsalva exercise

DEF The procedure of raising the pressure in the nasopharynx by forcible expiration with the mouth closed and nostrils pinched, in order to clear the eustachian tubes. Used for valsalva maneuver.

UF *Valsalva maneuver*

RT respiration

Valsalva maneuver

USE **Valsalva exercise**

value

GS value

· Q values (nuclear physics)

RT

amount
assessments
costs
damage assessment
estimates
estimating
evaluation
figure of merit
level (quantity)
norms
ranking
technology assessment

value engineering

RT concurrent engineering
cost analysis
cost estimates

cost incentives
cost reduction
design analysis
economic analysis
∞ engineering
incentive techniques
life cycle costs
management planning
quality control
reliability engineering
standards
total quality management

valves

UF *hydraulic valves*

GS valves

· automatic control valves
· pressure regulators
· relief valves
· butterfly valves
· dampers (valves)
· cocks
· control valves
· fuel valves
· gas valves
· heart valves
· artificial heart valves
· solenoid valves

RT

balls
chokes (restrictions)
closures
diverters
engine parts
hydraulic equipment
packings (seals)
pneumatic circuits
pneumatic equipment
seals (stoppers)
traps
water hammer

Vampire aircraft

USE **DH 115 aircraft**

Vampire MK 35 aircraft

GS attack aircraft
· fighter aircraft
· **Vampire MK 35 aircraft**
Hawker Siddeley aircraft
· **Vampire MK 35 aircraft**
jet aircraft
· **Vampire MK 35 aircraft**
single engine aircraft
· **Vampire MK 35 aircraft**
RT ∞ aircraft
bomber aircraft
Harrier aircraft

Van Allen radiation belts

USE **radiation belts**

Van Biesbroeck star

GS celestial bodies
· stars
· late stars
· cool stars
· M stars
· **Van Biesbroeck star**

Van de Graaff accelerators

DEF Electrostatic machines in which an electrical charge is carried into the high voltage terminal by a belt made of insulating materials moving at high speed. The particles are then accelerated along a discharge path through a vacuum tube by the potential difference between the insulated terminal and the grounded end of the accelerator.

GS particle accelerators

· **Van de Graaff accelerators**

RT ∞ accelerators

electron accelerators

Van der Waals forces

RT dipole moments
∞ force
interatomic forces

intermolecular forces

Van Slyke method

GS chemical tests
· chemical analysis
· gas analysis
· **Van Slyke method**
· quantitative analysis
· **Van Slyke method**
RT ∞ methodology

vanadates

GS vanadium compounds
· **vanadates**
· calcium vanadates
RT metal oxides
vanadium oxides

vanadium

GS chemical elements
· **vanadium**
· vanadium isotopes
metals
· transition metals
· **vanadium**
· vanadium isotopes
RT vanadium alloys

vanadium alloys

GS alloys
· **vanadium alloys**
RT aluminum alloys
microstructure
titanium alloys
vanadium

vanadium carbides

GS carbon compounds
· carbides
· **vanadium carbides**
vanadium compounds
· **vanadium carbides**

vanadium compounds

GS **vanadium compounds**
· vanadates
· calcium vanadates
· vanadium carbides
· vanadium oxides
· vanadyl compounds
RT ∞ chemical compounds
∞ Group 5B compounds
∞ metal compounds

vanadium isotopes

GS chemical elements
· nuclides
· isotopes
· **vanadium isotopes**
· vanadium
· **vanadium isotopes**
metals
· transition metals
· vanadium
· **vanadium isotopes**

vanadium oxides

GS chalcogenides
· oxides
· metal oxides
· **vanadium oxides**
vanadium compounds
· **vanadium oxides**
RT thermochromic coatings
vanadates

vanadyl compounds

GS vanadium compounds
· **vanadyl compounds**
RT ∞ chemical compounds
∞ metal compounds

vanadyl radical

GS ions
· molecular ions
· **vanadyl radical**
· positive ions
· cations
· **vanadyl radical**
radicals

. **vanadyl radical**

vaneless diffusers
 RT compressors
 ∞ diffusers
 exhaust diffusers
 pumps
 supersonic diffusers

vanes
 GS **vanes**
 . guide vanes
 . jet vanes
 . wind vanes
 RT airfoils
 ∞ blades
 compressor blades
 control surfaces
 fins
 impellers
 nose fins
 stator blades
 tail assemblies
 turbomachine blades
 windpower utilization
 windpowered generators
 windpowered pumps

Vanguard 1 satellite
 GS artificial satellites
 . geodetic satellites
 . . **Vanguard 1 satellite**
 . Vanguard satellites
 . . **Vanguard 1 satellite**

vanguard 2 launch vehicle
 GS launch vehicles
 . **vanguard 2 launch vehicle**
 rocket vehicles
 . multistage rocket vehicles
 . . **vanguard 2 launch vehicle**
 RT liquid propellant rocket engines
 solid propellant rocket engines
 Viking rocket vehicle
 X-248 engine

Vanguard 2 satellite
 GS artificial satellites
 . meteorological satellites
 . . **Vanguard 2 satellite**
 . Vanguard satellites
 . . **Vanguard 2 satellite**

Vanguard 3 satellite
 GS artificial satellites
 . geophysical satellites
 . . **Vanguard 3 satellite**
 . Vanguard satellites
 . . **Vanguard 3 satellite**

Vanguard project
 GS programs
 . NASA programs
 . . NASA space programs
 . . . **Vanguard project**
 . projects
 . . **Vanguard project**
 . space programs
 . . NASA space programs
 . . . **Vanguard project**
 RT X-405 engine

Vanguard satellites
 GS artificial satellites
 . **Vanguard satellites**
 . . Vanguard 1 satellite
 . . Vanguard 2 satellite
 . . Vanguard 3 satellite
 RT geodetic satellites
 geophysical satellites
 International Geophysical Year
 meteorological satellites

vans
 USE **trucks**

vapor barrier clothing
 DEF Impermeable garments used with respirators as life support systems in toxic environments (caustic chemicals, etc.).

GS clothing
 . protective clothing
 . . **vapor barrier clothing**
 RT ∞ barriers
 life support systems
 textiles

vapor deposition
 UF *chemical vapor deposition*
CVD (deposition)
 GS deposition
 . **vapor deposition**
 . . metalorganic chemical vapor deposition
 . . vacuum deposition
 RT atomic layer epitaxy
 coating
 coatings
 crystal growth
 diamond films
 electroless deposition
 laser deposition
 metal vapors
 metallizing
 nanostructure growth
 pulsed laser deposition
 ultrapure metals
 vaporizers
 vaporizing

vapor generators
 USE **vaporizers**

vapor jets
 GS fluid jets
 . **vapor jets**
 RT air jets
 gas flow
 jet flow
 plasma jets

vapor liquid equilibrium
 USE **liquid-vapor equilibrium**

vapor phase epitaxy
 DEF A crystal growth process whereby an element or a compound is deposited as a thin layer on a slice of substrate single crystal material by the vapor phase technique.
 GS growth
 . crystal growth
 . . epitaxy
 . . . **vapor phase epitaxy**
 RT atomic layer epitaxy
 crystal structure
 liquid phase epitaxy
 liquid phases

vapor phase lubrication
(added August 1996)
 DEF The use of an organic liquid that is vaporized into a flowing air stream directed to sliding surfaces where lubrication is needed. The organic vapor reacts at the concentrated contact sliding area generating a lubricous deposit. This deposit has been characterized as a thin polymeric film that can provide effective lubrication temperatures greater than 400 degrees Celsius.
 GS lubrication
 . **vapor phase lubrication**
 RT boundary lubrication
 lubrication systems
 ∞ sliding contact
 squeeze films
 tribology

vapor phases
 UF *gas phases*
 RT association reactions
 critical pressure
 gases
 gas-metal interactions
 gas-solid interfaces
 hydrogen clouds
 liquid phases
 liquid-gas mixtures
 liquids
 liquid-vapor interfaces
 metal-gas systems

phase diagrams
 ∞ phases
 prevaporization
 solids
 supercritical pressures
 vapors
 volatility

vapor pressure
 DEF The pressure exerted by the molecules of a given vapor. For a pure confined vapor, it is that vapor's pressure on the walls of its containing vessel; and for a vapor mixed with other vapors or gases, it is that vapor's contribution to the total pressure (i.e., its partial pressure).
 GS pressure
 . **vapor pressure**
 thermodynamic properties
 . thermophysical properties
 . . **vapor pressure**
 RT Dalton law
 flash point
 fuel tank pressurization
 Henry law
 humidity
 interfacial tension
 liquid-gas mixtures
 liquid-vapor interfaces
 partial pressure
 Raoult law
 sublimation
 supercritical pressures
 volatility

vapor trails
 USE **contrails**

vapor traps
 GS traps
 . **vapor traps**
 RT cold traps
 getters
 ion traps (instrumentation)

vaporization heat
 USE **heat of vaporization**

vaporizers
 UF *vapor generators*
 GS heating equipment
 . **vaporizers**
 . . evaporators
 RT boilers
 cavity vapor generators
 colloidal generators
 columns (process engineering)
 condensers (liquefiers)
 gas generators
 ∞ generators
 ∞ heaters
 separators
 sprayers
 vapor deposition
 vaporizing
 vapors

vaporizing
 UF *volatilization*
 GS phase transformations
 . **vaporizing**
 . . boiling
 . . . film boiling
 . . . nucleate boiling
 Leidenfrost phenomenon
 . . evaporation
 . . . evapotranspiration
 . . . propellant evaporation
 . . . transpiration
 . . flashing (vaporizing)
 . . prevaporization
 . . sublimation
 RT ablation
 concentrating
 desalinization
 distillation
 evolution (liberation)
 gasification
 heat of vaporization
 heating
 ∞ separation

vapors

spraying
stripping (distillation)
surface reactions
vapor deposition
vaporizers
vapors
volatility

vapors

DEF Gases whose temperatures are below their critical temperatures, so that they can be condensed to the liquid or solid state by increase of pressure alone.

GS vapors

. cesium vapor
. metal vapors
. . mercury vapor
. . sodium vapor
. water vapor

RT

cavity vapor generators
combustion products
condensates
exhaust gases
fumes
gases
haze detection
hydrogen clouds
liquid-vapor equilibrium
prevaporization
smoke
vapor phases
vaporizers
vaporizing

varactor diode circuits

GS circuits

. **varactor diode circuits**

RT

diodes

varactor diodes

UF varactors

GS electronic equipment

. diodes
. . semiconductor diodes
. . . **varactor diodes**
. solid state devices
. . semiconductor devices
. . . **varactor diodes**

RT

junction diodes
parametric diodes
varistors

varactors

USE **varactor diodes**

variability

RT

consistency
continuity
convergence
correlation
covariance
∞ dispersion
∞ eccentricity
∞ equilibrium
factor analysis
heterogeneity
linearity
nonlinearity
periodic variations
quality
quality control
range (extremes)
regression analysis
reliability
sampling
stability
standard deviation
standardization
validity
∞ variable
variance (statistics)

∞ variable

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

UF factors

RT complex variables
dependent variables
form factors
independent variables

Latin square method
race factors
random variables
real variables
social factors
variability

variable amplitude loading

(added September 1993)

GS loads (forces)

. dynamic loads

. . **variable amplitude loading**

RT

cyclic loads
load tests
∞ loading
loading rate
random loads
stress cycles

variable area wings

USE **trailing edge flaps**

variable cycle engines

UF VCE

GS engines

. aircraft engines

. . **variable cycle engines**

RT

coaxial nozzles
convertible fan-shaft engines
supersonic aircraft
variable stream control engines

variable geometry structures

RT expandable structures
folding structures
inflatable structures
mission adaptive wings
∞ structures

variable lift

USE **lift**

variable mass systems

GS kinetics

. **variable mass systems**

RT

equations of motion
∞ mass balance
mass distribution
∞ systems

variable pitch propellers

UF constant speed propellers

GS propellers

. **variable pitch propellers**

RT

helicopter propeller drive
pitch (inclination)

Variable Specific Impulse Magnetoplasma Rocket

(added December 2000)

USE **VASIMR (propulsion system)**

variable stars

GS celestial bodies

. stars

. . **variable stars**

. . . cataclysmic variables

. . . cepheid variables

. . . flare stars

. . . irregular variable stars

. . . R Coronae Borealis stars

. . . Lambda Tauri stars

. . . Mira variables

. . . Omicron Ceti star

. . . novae

. . . dwarf novae

. . . Hercules nova

. . . semiregular variable stars

. . . supernovae

. . . supernova 1987A

. . . symbiotic stars

. . . T Tauri stars

RT

binary stars
companion stars
eclipsing binary stars
periodic variations
solar oscillations
stellar mass
stellar mass ejection

stellar oscillations

variable stream control engines

DEF Advanced, moderate bypass-ratio turbofan configurations that use duct burner thrust augmentation and coannular nozzles for jet noise reduction.

GS engines

. aircraft engines

. . **variable stream control engines**

RT ∞ control

engine control
supersonic aircraft
supersonic nozzles
variable cycle engines

variable sweep wings

UF M wings

ogee wings

W wings

GS

airfoils

. wings

. . **variable sweep wings**

planforms

. wing planforms

. . **variable sweep wings**

RT

arrow wings
Boeing 733 aircraft
delta wings
F-111 aircraft
folding structures
mission adaptive wings
ogee shape
swept forward wings
sweptback wings

variable thrust

GS thrust

. **variable thrust**

RT

control rockets
high thrust
jet control
jet thrust
low thrust
low thrust propulsion
microthrust
rocket thrust
throttling
thrust augmentation
thrust control
thrust termination
thrust vector control

∞ variance

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

DEF A measure of the precision of a measurement based on summing the squares of the deviations from individual determinations from the average and dividing by the degrees of freedom.

RT

analysis of variance
degrees of freedom
multivariate statistical analysis
variance (statistics)

variance (statistics)

GS statistical analysis

. **variance (statistics)**

. . analysis of variance

. . multivariate statistical analysis

. . . bivariate analysis

. . . covariance

. . . orthogonality

. . . regression analysis

. . . regression coefficients

RT

confidence limits
correlation
Cramer-Rao bounds
distribution moments
experiment design
factor analysis
Gauss-Markov theorem
goodness of fit
heterogeneity
homogeneity
kriging
mean
moments

quality control
range (extremes)
standard deviation
variability
∞ variance

variation method

USE **calculus of variations**

variational principles

RT calculus of variations
∞ dynamics
equilibrium methods
irreversible processes
Onsager phenomenological coefficient
Rayleigh-Ritz method

variations

UF *fluctuation*

GS **variations**

. magnetic variations
. . geomagnetic pulsations
. . . geomagnetic micropulsations
. . nocturnal variations
. periodic variations
. . alternations
. . annual variations
. . diurnal variations
. . intraseasonal variations
. . nocturnal variations
. . secular variations
. . . Madden-Julian Oscillation
. . quasi-biennial oscillation
. twenty-seven day variation
. wind variations

RT

alternatives
asymmetry
deflection
deviation
differences
displacement
distortion
divergence
eccentricity
gradients
micropulsations
perturbation
revisions
substitutes
surges

variometers

DEF Instruments for comparing magnetic forces, especially of the Earth's magnetic field. Used for magnetovariographs.

UF *magnetovariographs*

GS measuring instruments
. magnetometers
. . **variometers**

RT

geomagnetism

varistors

DEF Two electrode semiconductor devices having a voltage dependent nonlinear resistance.

GS electronic equipment
. solid state devices
. . semiconductor devices
. . . **varistors**

RT

resistors
thermistors
varactor diodes

varnishes

RT fillers
finishes
paints
primers (coatings)
protective coatings
sealers
sprayed coatings

vascular system

USE **cardiovascular system**

VASIMR (propulsion system)

(added November 2000)

DEF A high-power, RF-driven magneto-plasma rocket system capable of I(sp) thrust modulation at constant power. The VASIMR

utilizes radiofrequency (RF) power both to generate a high-density plasma in a helicon source and to accelerate the plasma ions to high velocity by ion cyclotron resonance heating (ICRH). The system features a magnetic nozzle, which accelerates the plasma particles by converting their azimuthal energy into directed momentum.

UF *Variable Specific Impulse Magnetoplasma Rocket*

GS

engines
. rocket engines
. . electric rocket engines
. . . plasma engines
. . . . **VASIMR (propulsion system)**

RT

magnetic nozzles
plasma heating
plasma propulsion
radio frequency heating
spacecraft propulsion

vasoconstriction

RT

angiotensins
blood vessels
body temperature
cold tolerance
ischemia
reflexes
sneezing

vasoconstrictor drugs

UF *pressors*

GS

vasoconstrictor drugs
. hypertensin
. . serotonin
RT angiotensins
pharmacology
vasopressins

vasodilation

RT

blood vessels
body temperature
congestion
reflexes
vasodilator agents

vasodilator agents

(added August 2004)

DEF Drugs used to cause dilation of the blood vessels.

GS

vasodilator agents
RT acetylcholine
blood circulation
blood vessels
vasodilation

vasomotor nervous system

USE **nervous system**

vasopressins

(added August 2004)

DEF Octapeptide antidiuretic hormones released by the neurohypophysis of all vertebrates (chemical composition varies with species). They control water metabolism and balance by regulating lung, gill, kidney, etc., and water loss, and also contract smooth muscle. They may also be neurotransmitters. Also included are synthetic vasopressin derivatives. Vasopressins are used pharmacologically as renal agents, vasoconstrictor agents, and hemostatics.

GS

neurotransmitters
. **vasopressins**
organic compounds
. peptides
. . **vasopressins**
secretions
. endocrine secretions
. . hormones
. . . pituitary hormones
. . . . **vasopressins**

RT

diuresis
hemostatics
metabolism
pituitary gland
renal function

vasoconstrictor drugs

Vatican City

GS

cities
. **Vatican City**
nations

RT

Europe
Italy

VATOL aircraft

SN (VERTICAL ATTITUDE TAKEOFF AND LANDING AIRCRAFT)

DEF Vertical attitude takeoff and landing aircraft. Used for vertical attitude takeoff-landing aircraft and XBQM-180A aircraft.

UF *vertical attitude takeoff-landing aircraft XBQM-180A aircraft*

RT ∞

aircraft
delta wings
remotely piloted vehicles
vertical landing
vertical takeoff aircraft

VAX computers

GS data processing equipment
. computers
. . digital computers
. . . **VAX computers**
. . . . VAX-11 series computers
. VAX-11/780 computer

VAX-11 series computers

GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . **VAX-11 series computers**
. VAX-11/780 computer

VAX-11/780 computer

GS data processing equipment
. computers
. . digital computers
. . . VAX computers
. . . . VAX-11 series computers
. **VAX-11/780 computer**

VC-10 aircraft

UF *Vickers 1100 aircraft Vickers VC-10 aircraft*

GS

BAC aircraft
. **VC-10 aircraft**
commercial aircraft
. **VC-10 aircraft**
jet aircraft
. **VC-10 aircraft**
monoplanes
. **VC-10 aircraft**
passenger aircraft
. **VC-10 aircraft**
transport aircraft
. **VC-10 aircraft**

RT ∞

aircraft
cargo aircraft

VCE

USE **variable cycle engines**

VCO

USE **voltage controlled oscillators**

vector analysis

GS analysis (mathematics)
. calculus
. . **vector analysis**
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
. real variables
. . **vector analysis**
. . . collinearity
. . . coplanarity
. . . curl (vectors)
. . . . vorticity
geometry
. **vector analysis**
. . collinearity
. . coplanarity
. . curl (vectors)

vector currents

... vorticity
RT differential equations
Euler-Cauchy equations
flux vector splitting
gradients
Poynting theorem
resultants
stability derivatives

vector calculus
USE **vector spaces**

vector control
USE **directional control**

vector currents
RT current algebra
parity
radioactive decay
superconductivity

vector dominance model
GS models
. **vector dominance model**
RT hadrons
high energy interactions
nucleons
photoneutrons
photoproduction

vector mesons
GS particles
. elementary particles
. . bosons
. . . mesons
. . . . **vector mesons**
. rho-mesons
. sigma-mesons
. . hadrons
. . . mesons
. . . . **vector mesons**
. rho-mesons
. sigma-mesons
. nuclear particles
. . bosons
. . . mesons
. . . . **vector mesons**
. rho-mesons
. sigma-mesons

vector processing (computers)
(added July 1989)
GS data processing
. **vector processing (computers)**
RT multiprocessing (computers)
parallel processing (computers)
pipelining (computers)

vector quantization
(added June 1989)
RT coding
data compression
digital techniques
image processing
vectors (mathematics)
voice data processing

vector spaces
UF *Grassmann algebra*
vector calculus
GS algebra
. **vector spaces**
. . Banach space
. . . Hilbert space
. . . . Sobolev space
. . matrices (mathematics)
. . . adjoints
. . . canonical forms
. . . eigenvalues
. . . eigenvectors
. . . Hessian matrices
. . . Jordan form
. . . stiffness matrix
. . Stokes theorem (vector calculus)
. . U spin space
. . vectors (mathematics)
. . . eigenvectors
. . . state vectors
. . . vorticity
RT analysis (mathematics)

Chaplygin equation
Hermitian polynomial
hodographs
Kakutani theorem
linear transformations

vectorcardiography
GS bioengineering
. biometrics
. . cardiography
. . . **vectorcardiography**
RT electrocardiography
phonocardiography

vectors (mathematics)
DEF Quantities such as force, velocity, or acceleration, which have both magnitude and direction at each point in space, as opposed to scalar which has magnitude only. Such quantities may be represented geometrically by an arrow of length proportional to its magnitude, pointing in the assigned direction.
GS algebra
. vector spaces
. . **vectors (mathematics)**
. . . eigenvectors
. . . state vectors
. . . vorticity
RT dyadics
flux vector splitting
function space
Schwartz inequality
vector quantization

Vega launch vehicle
UF *Vega rocket vehicle*
GS launch vehicles
. **Vega launch vehicle**
rocket vehicles
. multistage rocket vehicles
. . **Vega launch vehicle**
RT Atlas D ICBM
liquid propellant rocket engines

Vega project
RT flyby missions
Halley's comet
international cooperation
U.S.S.R. space program
Venera satellites
Venus (planet)

Vega rocket vehicle
USE **Vega launch vehicle**

Vegard-Kaplan bands
GS spectra
. spectral bands
. . **Vegard-Kaplan bands**
RT ∞ bands
emission spectra
molecular spectra
nitrogen

vegetables
GS **vegetables**
. potatoes
. spinach
RT angiosperms
 ∞ food
leguminous plants
planting
seeds

vegetation
GS **vegetation**
. canopies (vegetation)
RT bioconversion
biomass energy production
Earth resources
locusts
normalized difference vegetation index
oases
plants (botany)
rain forests
resources
sea grasses

trees (plants)

vegetation growth
GS growth
. **vegetation growth**
. . crop growth
RT agriculture
biochemistry
botany
crop vigor
ecology
fertilizers
gravitropism
hydroponics
irrigation
photosynthetically active radiation
phytochrome
plant physiology
plant roots
plant stress
soil moisture
soil science
soils
vegetative index

vegetative index
DEF Linear combinations of spectral band responses in digital count, reflectance factor, or voltage to determine the vigor, greenness and/or biomass of the vegetation. Observations can be made by satelliteborne, aircraftborne, truck mounted, or hand held spectrometers.
GS ratios
. indexes (ratios)
. . **vegetative index**
. . . leaf area index
. . . normalized difference vegetation index
RT AgRISTARS project
atmospheric attenuation
atmospheric effects
atmospheric optics
atmospheric scattering
canopies (vegetation)
color
correction
crop identification
crop inventories
geographic distribution
image enhancement
imaging techniques
multispectral band scanners
radiometric correction
reflectance
remote sensing
satellite imagery
satellite observation
spectral reflectance
vegetation growth

vehicle wheels
GS wheels
. **vehicle wheels**
. . nose wheels
RT aircraft tires
brakes (for arresting motion)
landing gear
mechanical drives
rollers
shafts (machine elements)
suspension systems (vehicles)
tires
toroidal wheels
transmissions (machine elements)
wheel brakes

∞ **vehicles**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
UF *craft*
rotating vehicles
RT amphibious vehicles
Arcas rocket vehicles
Arcon rocket vehicle
Argo rocket vehicles
Astrobee rocket vehicles
Atlas Agena launch vehicles
Atlas launch vehicles
automated guideway transit vehicles

- automated mixed traffic vehicles
Automated Transfer Vehicle
automated transit vehicles
automobiles
∞ ballistic vehicles
boostglide vehicles
captured air bubble vehicles
control configured vehicles
crawler tractors
drone vehicles
electric hybrid vehicles
electric motor vehicles
engines
Europa launch vehicles
flight test vehicles
∞ flight vehicles
ground effect machines
heavy lift launch vehicles
HOTOL launch vehicle
hovering rocket vehicles
hydroplanes (vehicles)
hypersonic vehicles
intraorbit transfer vehicles
Juno launch vehicles
Kappa rocket vehicles
Lambda rocket vehicles
launch vehicles
low observable reentry vehicles
lunar flying vehicles
lunar roving vehicles
lunar surface vehicles
Lunokhod lunar roving vehicles
magnetic levitation vehicles
manned lunar surface vehicles
Mars roving vehicles
Marsokhod Mars roving vehicles
∞ military vehicles
missiles
motor vehicles
multiengine vehicles
multistage rocket vehicles
Nike rocket vehicles
Nike-Hydac rocket vehicle
Nike-Iroquois rocket vehicle
Nova launch vehicles
nuclear engine for rocket vehicles
orbit transfer vehicles
Ranger lunar landing vehicles
recoverable launch vehicles
recovery vehicles
reentry vehicles
remotely piloted vehicles
research vehicles
reusable launch vehicles
rocket vehicles
roving vehicles
Saturn launch vehicles
single stage rocket vehicles
single stage to orbit vehicles
Skua rocket vehicles
∞ spacecraft
Standard Launch Vehicles
surface effect ships
surface vehicles
SWATH (ship)
tanks (combat vehicles)
Terminal Configured Vehicle Program
test vehicles
Thor launch vehicles
Thorad launch vehicles
Titan 4 launch vehicle
Titan launch vehicles
tracked vehicles
tractors
∞ transport vehicles
transporter
underwater vehicles
unidentified flying objects
Veronique rocket vehicles
water vehicles
∞ winged vehicles
- vehicular tracks**
RT idlers
surface vehicles
suspension systems (vehicles)
tracked vehicles
∞ tracks
- treads
- veins**
GS anatomy
. circulatory system
. . . cardiovascular system
. . . . blood vessels
. . . . **veins**
RT arteries
bifurcation (biology)
transfusion
- veins (petrology)**
(added June 2001)
DEF A relatively thin mass of mineral that fills a crack or joint in a host rock.
RT inclusions
meteoritic composition
mineral deposits
minerals
rock intrusions
rocks
- Vela satellites**
GS artificial satellites
. **Vela satellites**
military spacecraft
. **Vela satellites**
RT Fishbowl Operation
high altitude nuclear detection
high altitude tests
nuclear explosions
nuclear radiation
post-blast nuclear radiation
radiation detectors
radiation measuring instruments
satellite observation
- velardenite*
USE **gehlenite**
- velocity**
DEF Rate of motion. Rate of motion in a straight line is called linear speed, whereas change of direction per unit time is called angular speed. Used for speed.
UF *speed*
GS **velocity**
. acoustic velocity
. airspeed
. angular velocity
. critical velocity
. escape velocity
. exhaust velocity
. flow velocity
. . solar wind velocity
. ground speed
. group velocity
. high speed
. hypersonic speed
. landing speed
. light speed
. low speed
. orbital velocity
. phase velocity
. propagation velocity
. radial velocity
. relativistic velocity
. rotor speed
. solar velocity
. subsonic speed
. supersonic speed
. terminal velocity
. tip speed
. transonic speed
. wind velocity
. . solar wind velocity
. impact velocity
RT acceleration (physics)
body kinematics
de Broglie wavelengths
∞ dynamics
Fermat principle
kinematics
kinetics
loading rate
∞ motion
perceptual time constant
pressure measurement
relativistic effects
- solitary waves
time measurement
- velocity coupling**
DEF The response of the burning propellant surface to the local velocity which would include both mean flow as well as acoustic velocity (both being parallel to the burning surface).
RT burning rate
combustion stability
coupling
propellant combustion
- velocity distribution**
UF *velocity fields*
velocity profiles
GS distribution (property)
. **velocity distribution**
RT circulation distribution
flow distribution
flow velocity
galactic rotation
Orr-Sommerfeld equations
Pohlhausen method
pressure distribution
shock wave profiles
three dimensional boundary layer
- velocity errors**
GS errors
. **velocity errors**
RT escape velocity
orbital velocity
position errors
- velocity fields*
USE **velocity distribution**
- velocity measurement**
UF *anemometry*
GS mechanical measurement
. **velocity measurement**
. . particle image velocimetry
. . wind velocity measurement
RT acceleration measurement
accelerometers
anemometers
drag force anemometers
flow measurement
flow velocity
flowmeters
hot-film anemometers
hot-wire anemometers
Hubble constant
Hubble diagram
laser anemometers
laser doppler velocimeters
∞ measurement
pitot tubes
pressure measurement
radial velocity
solar wind velocity
sonic anemometers
speed indicators
stroboscopes
tachometers
time measurement
Venturi tubes
vortex precession
- velocity modulation**
GS modulation
. **velocity modulation**
RT bunching
cavity resonators
electron bunching
electron tubes
- velocity profiles*
USE **velocity distribution**
- veneers**
RT coatings
finishes
laminates
masonry
- Venera 2 satellite**
GS artificial satellites
. Soviet satellites

- ... Venera 6 satellite
 - ... Venera 7 satellite
 - ... Venera 8 satellite
 - ... Venera 9 satellite
 - ... Venera 10 satellite
 - ... Venera 11 satellite
 - ... Venera 12 satellite
 - RT U.S.S.R. space program
 - Vega project
- Veneziano model**
 - GS models
 - . mathematical models
 - . **Veneziano model**
 - RT elementary particle interactions
- Venezuela**
 - GS nations
 - . **Venezuela**
 - RT South America
- Venn diagrams**
 - GS diagrams
 - . **Venn diagrams**
 - RT analysis (mathematics)
 - geometry
 - mathematical logic
- Venom aircraft*
 - USE **DH 112 aircraft**
- ventilation**
 - RT air conditioning
 - air cooling
 - air filters
 - air flow
 - air intakes
 - air purification
 - blowers
 - comfort
 - cooling
 - cooling systems
 - draft (gas flow)
 - ducts
 - environmental engineering
 - exhaust systems
 - . **Venturi tubes**
 - exhausting
 - life support systems
 - refrigerating
 - temperature
 - temperature control
 - temperature distribution
 - ventilators
 - venting
 - vents
- ventilation fans**
 - RT blowers
 - cooling
 - cooling systems
 - ducted fans
 - fan blades
 - ∞ fans
 - ventilators
- ventilators**
 - RT air ducts
 - air intakes
 - blowers
 - ∞ diffusers
 - exhaust systems
 - ventilation
 - ventilation fans
 - vents
- venting**
 - RT breathing vibration
 - cooling
 - ∞ discharge
 - evacuating (vacuum)
 - exhausting
 - flushing
 - purgig
 - releasing
 - relief valves
 - ∞ separation
 - ventilation
- vents
 - ventral sections**
 - RT abdomen
 - vents**
 - GS outlets
 - . **vents**
 - RT annular ducts
 - apertures
 - cavities
 - chimneys
 - cooling systems
 - ducts
 - evacuating (vacuum)
 - exhaust systems
 - flues
 - gates (openings)
 - louvers
 - ∞ nozzles
 - openings
 - ports (openings)
 - relief valves
 - slotted wind tunnels
 - ventilation
 - ventilators
 - venting
 - windows (apertures)
- VentureStar launch vehicle**
 - (added June 1999)
 - DEF Reusable single-stage-to-orbit launch vehicle employing linear aerospike engines, and having a payload capacity roughly equivalent to that of the Space Shuttle; developed in coordination with the X-33 advanced technology demonstrator vehicle.
 - GS aerospace vehicles
 - . aerospace planes
 - . . **VentureStar launch vehicle**
 - maneuverable spacecraft
 - . aerospace planes
 - . . **VentureStar launch vehicle**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . aerospace planes
 - **VentureStar launch vehicle**
 - soft landing spacecraft
 - . aerospace planes
 - . . **VentureStar launch vehicle**
 - RT aerospike engines
 - commercial spacecraft
 - X-33 reusable launch vehicle
- Venturi tubes**
 - DEF Short tubes of smaller diameter in the middle than at the ends. When fluids flow through such tubes, the pressure decreases as the diameters become smaller, the amount of decrease being proportional to the speed of flow and the amount of restriction.
 - RT ∞ detectors
 - flow measurement
 - flowmeters
 - gas meters
 - measuring instruments
 - orifices
 - pitot tubes
 - pressure gradients
 - pressure measurement
 - ∞ tubes
 - velocity measurement
- Venus (planet)**
 - GS celestial bodies
 - . planets
 - . . terrestrial planets
 - . . . **Venus (planet)**
 - RT planetary craters
 - Vega project
 - Venera 8 satellite
 - Venera 10 satellite
 - Venera 11 satellite
 - Venera 12 satellite
- Venus atmosphere**
 - GS environments
 - . extraterrestrial environments
 - . . planetary environments
- planetary atmospheres
 - ... **Venus atmosphere**
 - ... Venus clouds
 - RT aerospace environments
 - ionopause
 - planetary ionospheres
 - planetary meteorology
 - Venera 11 satellite
 - Venera 12 satellite
 - Venus orbiting imaging radar (spacecraft)
 - Venus clouds**
 - GS environments
 - . extraterrestrial environments
 - . . planetary environments
 - . . . planetary atmospheres
 - Venus atmosphere
 - **Venus clouds**
 - RT atmospheric models
 - cloud cover
 - cloud physics
 - ∞ clouds
 - greenhouse effect
 - Venus fly trap rocket vehicle**
 - GS rocket vehicles
 - . sounding rockets
 - . . **Venus fly trap rocket vehicle**
 - RT cosmic dust
 - extraterrestrial matter
 - Venus orbiting imaging radar (spacecraft)**
 - DEF A spacecraft also known as VOIR whose mission is to obtain synthetic aperture radar (SAR) images of at least 708 of the surface of Venus as well as information on the gravity field of the planet, nature of its inertial composition and dynamics of its atmosphere and interaction with the solar wind.
 - GS radar
 - . **Venus orbiting imaging radar (spacecraft)**
 - RT Magellan project (NASA)
 - Magellan spacecraft (NASA)
 - synthetic aperture radar
 - Venus atmosphere
 - Venus probes
 - Venus surface
 - Venus probes**
 - GS interplanetary spacecraft
 - . **Venus probes**
 - . . Magellan spacecraft (NASA)
 - . . Mariner 1 space probe
 - . . Mariner 2 space probe
 - . . Mariner 5 space probe
 - . . Mariner 10 space probe
 - . . Pioneer Venus 2 spacecraft
 - . . . Pioneer Venus 2 entry probes
 - Pioneer Venus 2 night probe
 - Pioneer Venus 2 sounder probe
 - . . Pioneer Venus 2 transporter bus
 - . . Venera satellites
 - . . . Venera 2 satellite
 - . . . Venera 3 satellite
 - . . . Venera 4 satellite
 - . . . Venera 5 satellite
 - . . . Venera 6 satellite
 - . . . Venera 7 satellite
 - . . . Venera 8 satellite
 - . . . Venera 9 satellite
 - . . . Venera 10 satellite
 - . . . Venera 11 satellite
 - . . . Venera 12 satellite
 - . . Zond 1 space probe
 - . . Zond 3 space probe
 - . . Zond 4 space probe
 - . . Zond 5 space probe
 - . . Zond 6 space probe
 - . . Zond 7 space probe
 - . . Zond 8 space probe
 - unmanned spacecraft
 - . space probes
 - . . **Venus probes**
 - . . . Magellan spacecraft (NASA)
 - . . . Mariner 1 space probe
 - . . . Mariner 2 space probe
 - . . . Mariner 5 space probe
 - . . . Mariner 10 space probe

Venus radar echoes

- . . . Pioneer Venus 2 spacecraft
- Pioneer Venus 2 entry probes
- Pioneer Venus 2 night probe
- Pioneer Venus 2 sounder probe
- Pioneer Venus 2 transporter bus
- . . . Venera satellites
- Venera 2 satellite
- Venera 3 satellite
- Venera 4 satellite
- Venera 5 satellite
- Venera 6 satellite
- Venera 7 satellite
- Venera 8 satellite
- Venera 9 satellite
- Venera 10 satellite
- Venera 11 satellite
- Venera 12 satellite
- . . . Zond 1 space probe
- . . . Zond 3 space probe
- . . . Zond 4 space probe
- . . . Zond 5 space probe
- . . . Zond 6 space probe
- . . . Zond 7 space probe
- . . . Zond 8 space probe
- RT Magellan project (NASA)
- Mariner program
- Mariner Venus 67 spacecraft
- Mars probes
- outer planets explorers
- Sputnik 5 satellite
- Venus orbiting imaging radar (spacecraft)
- Voyager project

Venus radar echoes

- GS echoes
- . radar echoes
- . . **Venus radar echoes**

Venus Radar Mapper

USE **Magellan spacecraft (NASA)**

Venus Radar Mapper Project

USE **Magellan project (NASA)**

Venus surface

DEF The surface features and/or composition of the planet Venus.

- GS planetary surfaces
- . **Venus surface**
- RT cloud cover
- extraterrestrial environments
- Magellan project (NASA)
- Magellan spacecraft (NASA)
- planetary craters
- solar system
- ∞ surfaces
- terraforming
- topography
- Venera 11 satellite
- Venera 12 satellite
- Venus orbiting imaging radar (spacecraft)

verbal communication

- GS communicating
- . **verbal communication**
- . . conversation
- RT acoustics
- languages
- lectures
- phonetics
- telephony
- voice communication
- voice data processing
- words (language)

verification (proving)

USE **proving**

vermiculite

DEF An aggregate used in lightweight insulating concrete, formed by heating and expanding a micaceous mineral.

- GS clays
- . **vermiculite**
- minerals
- . **vermiculite**
- RT insulation

- mica
- packaging
- silicates

Vermont

- GS nations
- . United States
- . . **Vermont**
- RT Lake Champlain Basin (NY-VT)
- St Lawrence Valley (North America)

Verneuil process

DEF Method of single-crystal growth in which powder is dropped through an oxy-hydrogen flame, falling molten on crystal seed.

- GS growth
- . crystal growth
- . . **Verneuil process**
- RT Czochralski method
- ruby lasers

Vernier engines

DEF Rocket engines of small thrust used primarily to obtain a fine adjustment in the velocity and trajectory of a rocket vehicle just after the thrust cutoff of the last sustainer engine, and used secondarily to add thrust to a booster or sustainer engine.

- GS engines
- . rocket engines
- . . **Vernier engines**
- . . . control rockets
- . . . SYNCOM apogee engines
- . torpedo engines
- . . **Vernier engines**
- . . . control rockets
- . . . SYNCOM apogee engines
- RT electric rocket engines
- electrostatic engines
- hybrid propellant rocket engines
- internal combustion engines
- launch vehicles
- liquid propellant rocket engines
- MA-2 engine
- MA-3 engine
- MA-5 engine
- microrocket engines
- restartable rocket engines
- solid propellant rocket engines
- thrust vector control

vernine

USE **guanosines**

Veronique rocket vehicles

- GS rocket vehicles
- . single stage rocket vehicles
- . . **Veronique rocket vehicles**
- . . . sounding rockets
- . . . **Veronique rocket vehicles**
- RT liquid propellant rocket engines
- ∞ vehicles

versatility

- RT compatibility
- flexibility

vertebrae

- GS anatomy
- . musculoskeletal system
- . . bones
- . . . spine
- **vertebrae**
- RT intervertebral disks
- neck (anatomy)

vertebral column

USE **spine**

vertebrates

- GS animals
- . **vertebrates**
- . . amphibia
- . . . frogs
- . . . birds
- chickens
- pigeons
- turkeys
- waterfowl
- . . . fishes

- . . . schools (fish)
- . . . sharks
- . . . mammals
- . . . bats
- . . . bears
- . . . cats
- . . . cattle
- calves
- deer
- caribous
- goats
- horses
- marine mammals
- dolphins
- manatees
- porpoises
- seals (animals)
- whales
- moles
- primates
- apes
- chimpanzees
- baboons
- human beings
- monkeys
- rodents
- guinea pigs
- hamsters
- mice
- jerboas
- knockout mice
- pocket mice
- rabbits
- rats
- squirrels
- ground squirrels
- dogs
- sheep
- swine
- wolves
- reptiles
- lizards
- snakes
- turtles
- RT homeotherms

vertical air currents

- UF *updrafts*
- GS fluid flow
- . gas flow
- . . air flow
- . . . air currents
- **vertical air currents**
- RT atmospheric circulation
- convection clouds
- convection currents
- downbursts
- lee waves
- microbursts (meteorology)
- mixing height
- soaring
- turbulence
- wind (meteorology)
- winds aloft

vertical attitude takeoff-landing aircraft

USE **VATOL aircraft**

vertical distribution

- GS distribution (property)
- . spatial distribution
- . . **vertical distribution**
- . . . star distribution
- RT electron distribution
- horizontal distribution
- ion distribution
- pressure distribution
- radiation distribution
- temperature distribution
- wind profiles

vertical fins

USE **fins**

vertical flight

- RT balloon flight
- climbing flight
- ∞ flight
- flight paths
- hovering

rocket flight
 transition flight
 V/STOL aircraft

vertical junction solar cells
 DEF Solar cells made from wafers on which narrow grooves are formed using a preferential KOH etch. The grooved region is radiation tolerant.
 GS electric generators
 . direct power generators
 . . photoelectric generators
 . . . photovoltaic cells
 solar cells
 **vertical junction solar cells**
 . solar generators
 . . solar cells
 . . . **vertical junction solar cells**
 electronic equipment
 . solid state devices
 . . semiconductor devices
 . . . photovoltaic cells
 solar cells
 **vertical junction solar cells**
 photoelectric cells
 . photovoltaic cells
 . . solar cells
 . . . **vertical junction solar cells**

RT wafers

vertical landing
 UF *vertical takeoff and landing*
 VTOL
 GS landing
 . **vertical landing**
 RT aircraft landing
 spacecraft landing
 STOVL aircraft
 touchdown
 VATOL aircraft

vertical motion
 RT falling
 ∞ motion
 touchdown

vertical motion simulators
 DEF Vibration machines which produce mechanical oscillations parallel to the vertical axis.
 GS simulators
 . vibration simulators
 . . **vertical motion simulators**

RT ∞ motion
 shakers
 shock simulators
 vibratory loads

vertical orientation
 DEF The attitude of an object in reference to a plane which is parallel to the direction of gravity (determined with a plumbline).
 RT alignment
 attitude (inclination)
 directional stability
 dynamic stability
 horizontal orientation
 lateral stability
 ∞ orientation
 stabilization

vertical perception
 GS perception
 . sensory perception
 . . **vertical perception**

RT body sway test
 gravireceptors
 oculogravic illusions
 ∞ orientation
 otolith organs
 ∞ space orientation
 vestibular tests

vertical stabilizers
 USE **stabilizers (fluid dynamics)**

vertical tails
 USE **stabilizers (fluid dynamics)**
tail assemblies

vertical takeoff
 UF *vertical takeoff and landing*

VTOL
 GS takeoff
 . **vertical takeoff**

vertical takeoff aircraft
 UF *VTOL aircraft*
 GS V/STOL aircraft
 . **vertical takeoff aircraft**
 . . flying platforms
 . . SC-1 aircraft
 . . VJ-101 aircraft
 . . VZ-8 aircraft
 . . X-13 aircraft
 . . X-14 aircraft
 . . X-19 aircraft
 . . X-22 aircraft
 . . X-22A aircraft
 . . XC-142 aircraft
 . . XV-4 aircraft
 . . XV-11A aircraft

RT ∞ aircraft
 Bell 214A helicopter
 CF-700 engine
 circulation control rotors
 compound helicopters
 convertible fan-shaft engines
 Cushioncraft ground effect machine
 fan in wing aircraft
 GETOL aircraft
 helicopters
 lift fans
 lifting rotors
 ∞ military aircraft
 powered lift aircraft
 research aircraft
 rotary wing aircraft
 short takeoff aircraft
 ∞ subsonic aircraft
 T-58 engine
 tilt wing aircraft
 VATOL aircraft
 ∞ winged vehicles

vertical takeoff and landing
 USE **vertical landing**
vertical takeoff

vertices
 USE **apexes**

vertigo
 DEF The sensation that the outer world is revolving about the person (objective vertigo) or that he himself is moving in space (subjective vertigo). The word frequently is used erroneously as a synonym for dizziness or giddiness to indicate an unpleasant sensation of disturbed relations to surrounding objects in space.
 GS signs and symptoms
 . **vertigo**

RT Barany chair
 ear pressure test
 vestibular tests

Vertikal rockets
(added August 1995)
 GS rocket vehicles
 . sounding rockets
 . . **Vertikal rockets**

RT rocket sounding
 Russian Space Program

Vertol military helicopters
 USE **Boeing aircraft**

very high frequencies
 SN (30 TO 300 MHZ)
 GS frequencies
 . radio frequencies
 . . **very high frequencies**
 . . . P band

RT decametric waves
 low frequencies
 maximum usable frequency

very high frequency radio equipment
 UF *ultra short wave radio equipment*
 GS radio equipment
 . **very high frequency radio equipment**

RT radio astronomy
 ultrahigh frequencies

very high speed integrated circuits
 USE **VHSIC (circuits)**

Very Large Array (VLA)
 DEF A synthetic aperture radio telescope, consisting of 27 parabolic antennas each of which is 25 meters in diameter. The system when connected together is capable of arcsecond resolution with high sensitivity resulting in the world's most powerful radio telescope. Operated by the National Radio Astronomy Observatory, it is located in Socorro, New Mexico.
 GS radio equipment
 . radio telescopes
 . . **Very Large Array (VLA)**
 telescopes
 . radio telescopes
 . . **Very Large Array (VLA)**

RT antenna arrays
 radio astronomy

very large scale integration
 DEF A very complex integrated circuit, which contains ten thousand or more individual devices, such as basic logic gates and transistors, placed on a single semiconductor chip. Used for VLSI.
 UF *VLSI*
 GS circuits
 . integrated circuits
 . . **very large scale integration**
 microelectronics
 . **very large scale integration**
 application specific integrated circuits
 architecture (computers)
 chips (electronics)
 hardware description languages
 large scale integration
 molecular electronics
 RISC processors
 systolic arrays

very large transport aircraft
(added November 1998)
 DEF Aircraft capable of a maximum takeoff weight greater than 400 metric tons (881,600 lbs) or having a seating capacity greater than 660.
 UF *VLTA (aircraft)*
 GS transport aircraft
 . **very large transport aircraft**

RT cargo aircraft
 passenger aircraft

very long base interferometry
 DEF The simultaneous observation of radio sources by two radio telescopes spaced very far apart to enhance angular resolution. The signals are recorded on magnetic tapes and combined electronically on a computer. Used for VLBI.
 UF *VLBI*
 GS interferometry
 . **very long base interferometry**

RT astronomical interferometry
 diffraction patterns
 etalons
 interferometers
 null zones
 Quasat
 radio astronomy
 radio interferometers
 Very Long Baseline Array (VLBA)

Very Long Baseline Array (VLBA)
 DEF A transcontinental radio telescope, being developed by the National Radio Astronomy Observatory, to consist of ten dedicated and automated 25-meter (82 foot) diameter antennas distributed from Hawaii to St. Croix, Virgin Islands.
 GS radio equipment
 . radio telescopes
 . . **Very Long Baseline Array (VLBA)**
 telescopes
 . radio telescopes

very low frequencies

. . **Very Long Baseline Array (VLBA)**
 RT antenna arrays
 radio astronomy
 very long base interferometry

very low frequencies
 SN (3 TO 30 KHZ)
 GS frequencies
 . radio frequencies
 . . low frequencies
 . . . **very low frequencies**
 RT audio frequencies
 Earth-ionosphere waveguide

very small aperture terminals
 USE **VSAT (network)**

∞ **vessels**
 SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
 RT blood vessels
 ∞ capsules
 fluid filled shells
 liquid filled shells
 navy
 pressure vessels
 ships

Vesta asteroid
 GS celestial bodies
 . asteroids
 . . **Vesta asteroid**
 RT asteroid belts
 meteoroids
 solar system
 space debris

vestibular nystagmus
 GS eye movements
 . nystagmus
 . . **vestibular nystagmus**
 reflexes
 . **vestibular nystagmus**
 RT anatomy
 eye (anatomy)
 ophthalmology

vestibular tests
 GS physiological tests
 . **vestibular tests**
 RT body sway test
 Coriolis effect
 ear pressure test
 head down tilt
 head movement
 vertical perception
 vertigo

vestibules
 GS anatomy
 . sense organs
 . . ear
 . . . labyrinth
 **vestibules**
 RT morphology
 passageways
 semicircular canals

vests
 RT clothing
 garments

veterinary medicine
 DEF The branch of medical practice dealing with the treatment of diseases and injuries of animals.
 GS medical science
 . **veterinary medicine**
 RT ∞ biology
 diagnosis
 diseases
 epidemiology
 immunology
 injuries
 ∞ medicine
 pathology
 pharmacology

surgery

VFR (rules)
 USE **visual flight rules**

VHDL (computers)
 USE **hardware description languages**

VHF omnirange navigation
 UF *omnirange navigation*
VOR systems
 GS navigation
 . radio navigation
 . . **VHF omnirange navigation**
 RT air navigation
 navigation aids
 radio direction finders
 solar compasses

VHSIC (circuits)
 DEF Chips being developed by a DOD program to provide high speed MIL spec VLSI device for use in military systems. Used for very high speed integrated circuits.
 UF *very high speed integrated circuits*
 GS circuits
 . integrated circuits
 . . **VHSIC (circuits)**
 RT chips (electronics)
 large scale integration
 signal processing

viability
 RT animals
 carbon cycle
 crop vigor
 germination
 growth
 plants (botany)
 seeds

vibration
 DEF Motion due to a continuous change in the magnitude of a given force which reverses its direction with time. Motion of an oscillating body during one complete cycle; two oscillations. Used for jitter.
 UF *jitter*
 GS **vibration**
 . combustion vibration
 . forced vibration
 . free vibration
 . lattice vibrations
 . POGO effects
 . random vibration
 . resonant vibration
 . structural vibration
 . . bending vibration
 . . breathing vibration
 . . flutter
 . . . panel flutter
 . . . subsonic flutter
 . . . supersonic flutter
 . . . transonic flutter
 . . linear vibration
 . . missile vibration
 . . self induced vibration
 . . . panel flutter
 . . . subsonic flutter
 . . . supersonic flutter
 . . . transonic flutter
 . . torsional vibration
 RT acoustics
 airfoil oscillations
 amplitudes
 antinodes
 compacting
 cyclic loads
 displacement
 ∞ dynamics
 elastic waves
 fatigue (materials)
 flapping
 harmonics
 isolators
 mechanical oscillators
 mechanical shock
 mistuning (turbomachinery)
 modes (standing waves)
 ∞ motion

nodes (standing waves)
 nutation
 oscillating cylinders
 oscillations
 oscillators
 resonance
 shaking
 shock resistance
 spacecraft motion
 standing waves
 vibrational stress
 vibratory loads
 vibratory polishing
 ∞ waves
 wing oscillations

vibration dampers
 USE **vibration isolators**

vibration damping
 GS damping
 . **vibration damping**
 RT acoustics
 attenuation
 DAST program
 elastic damping
 flexible spacecraft
 gyrodampers
 harmonic control
 magnetic damping
 magnetorheological fluids
 molecular relaxation
 nonoscillatory action
 nonstabilized oscillation
 piezoelectric actuators
 shock absorbers
 smart materials

vibration effects
 GS **vibration effects**
 . POGO effects
 RT ∞ effects
 support interference
 vibrational stress

vibration isolators
 DEF Resilient supports that tend to isolate systems from steady state excitation. Used for vibration dampers and vibration protection.
 UF *vibration dampers*
vibration protection
 GS isolators
 . **vibration isolators**
 RT ∞ absorbers
 acoustic retrofitting
 cushions
 ∞ dampers
 dampers (valves)
 damping
 energy absorption
 noise reduction
 oscillation dampers
 shock absorbers
 springs (elastic)
 suspension systems (vehicles)

vibration measurement
 GS mechanical measurement
 . **vibration measurement**
 RT cepstral analysis
 damping tests
 frequency analyzers
 frequency measurement
 ∞ measurement
 stress measurement

vibration meters
 UF *vibrometers*
 GS measuring instruments
 . **vibration meters**
 . . seismographs
 . . . lunar seismographs
 RT accelerometers
 transducers

vibration mode
 DEF In a system undergoing vibration, a characteristic pattern assumed by the system in which the motion of every particle is simple

harmonic with the same frequency. Used for mode of vibration.

- UF *mode of vibration*
- GS modes
 - . **vibration mode**
 - . . uncoupled modes
- RT airfoil oscillations
 - free vibration
 - linear vibration
 - mode transformers
 - transverse waves

vibration perception

- GS perception
 - . sensory perception
 - . . **vibration perception**

vibration protection

- USE **vibration isolators**

vibration simulators

- UF *vibration testing machines*
- GS simulators
 - . **vibration simulators**
 - . . vertical motion simulators
- RT flutter
 - ∞ machinery
 - shakers
 - shock simulators
 - vibratory loads

vibration testing machines

- USE **vibration simulators**

vibration tests

- GS **vibration tests**
 - . damping tests
 - . . stroking tests
- RT destructive tests
 - dynamic tests
 - electronic equipment tests
 - engine tests
 - environmental tests
 - flight tests
 - flutter
 - mechanical engineering
 - oscillations
 - resonance testing
 - shock tests
 - stability tests
 - static tests
 - structural vibration
 - ∞ tests

vibrational freezing

- GS phase transformations
 - . freezing
 - . . **vibrational freezing**

vibrational frequencies (molecular)

- USE **vibrational spectra**

vibrational frequencies (structural)

- USE **resonant frequencies**

vibrational relaxation

- USE **molecular relaxation**

vibrational spectra

- UF *vibrational frequencies (molecular)*
- GS molecular properties
 - . molecular spectra
 - . . **vibrational spectra**
 - spectra
 - . molecular spectra
 - . . **vibrational spectra**
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **vibrational spectra**
- RT electronic spectra
 - energy spectra
 - molecular relaxation
 - Raman spectra
 - rotational spectra
 - vibrational states

vibrational states

(added December 1993)

- SN (LIMITED TO MOLECULAR ENERGY LEVELS - EXCLUDES VIBRATION

MODES/CONDITIONS OF STRUCTURES

- OR VEHICLES)
- GS level (quantity)
 - . energy levels
 - . . molecular energy levels
 - . . . **vibrational states**
 - molecular properties
 - . molecular energy levels
 - . . **vibrational states**
- RT molecular excitation
 - vibrational spectra

vibrational stress

- GS stresses
 - . **vibrational stress**
- RT flutter
 - vibration
 - vibration effects
 - vibratory loads

vibratory loads

- GS loads (forces)
 - . dynamic loads
 - . . **vibratory loads**
- RT aerodynamic loads
 - cyclic loads
 - structural design criteria
 - vertical motion simulators
 - vibration
 - vibration simulators
 - vibrational stress

vibratory polishing

- GS polishing
 - . **vibratory polishing**
- RT metallography
 - vibration

vibrocardiography

- USE **phonocardiography**

vibrometers

- USE **vibration meters**

VIC method

- USE **vortex in cell technique**

Vickers 1100 aircraft

- USE **VC-10 aircraft**

Vickers hardness

(added October 2001)

DEF The hardness of a material as determined by the Vickers hardness test, which interprets the degree of penetration made by a load-variable diamond pyramid stylus.

- UF *diamond pyramid hardness*
- GS mechanical properties
 - . hardness
 - . . **Vickers hardness**
- RT hardness tests

Vickers Scimitar aircraft

- USE **Scimitar aircraft**

Vickers Valiant aircraft

- USE **Valiant aircraft**

Vickers VC-10 aircraft

- USE **VC-10 aircraft**

Victor MK-1 aircraft

- GS attack aircraft
 - . bomber aircraft
 - . . **Victor MK-1 aircraft**
 - Handley Page aircraft
 - . **Victor MK-1 aircraft**
 - jet aircraft
 - . **Victor MK-1 aircraft**
 - monoplanes
 - . **Victor MK-1 aircraft**
 - reconnaissance aircraft
 - . **Victor MK-1 aircraft**
- RT ∞ aircraft

video communication

- GS telecommunication
 - . **video communication**
 - . . video conferencing
- RT high definition television
 - multimedia

television systems
video signals

video compression

(added September 1993)

- UF *compressed video*
- GS data compression
 - . **video compression**
- RT analog data
 - digital data
 - digital television
 - discrete cosine transform
 - image motion compensation
 - image processing
 - signal encoding
 - video conferencing
 - video data
 - video signals

video conferencing

(added August 2000)

- UF *video teleconferencing*
- GS telecommunication
 - . teleconferencing
 - . . **video conferencing**
 - . video communication
 - . . **video conferencing**
- RT communication networks
 - conferences
 - television systems
 - video compression
 - video data

video data

- RT analog data
- ∞ data
 - data converters
 - data transmission
 - digital data
 - display devices
 - high definition television
 - multimedia
 - radar data
 - smear
 - telecommunication
 - television systems
 - video compression
 - video conferencing
 - video disks
 - video signals

video disks

DEF Disks, usually the size of long-playing stereo records, which store video data. The data is recorded by one of two techniques: the capacitance method, in which the disk has spiral grooves and is read by a contact stylus, and the optical method, which uses lasers in both the recording and playback of the data.

- GS documents
 - . records
 - . . **video disks**
- RT data recorders
 - data recording
 - data storage
 - disks (shapes)
 - magnetic disks
 - memory (computers)
 - optical data storage materials
 - optical disks
 - optical memory (data storage)
 - playbacks
 - video data
 - video equipment

video equipment

- GS **video equipment**
 - . picture tubes
 - . video tape recorders
- RT Advanced Vidicon Camera System (AVCS)
 - audio visual equipment
 - camera tubes
 - cathode ray tubes
 - compensators
 - digital cameras
 - display devices
 - flying spot scanners
 - motion pictures
 - optical equipment

video landmark acquisition and tracking

- oscilloscopes
- recording heads
- television equipment
- video disks
- vidicons

video landmark acquisition and tracking

DEF Shuttle era system for earth-feature identification, acquisition, and tracking.

GS tracking (position)
. **video landmark acquisition and tracking**

RT avionics
image correlators
map matching guidance
scene analysis
signatures
TERCOM
terrain analysis
tracking filters

video signals

DEF Signals with a bandwidth of over 20 kilohertz.

RT signal processing
signal transmission
∞ signals
video communication
video compression
video data

video tape recorders

(added January 1990)

GS recording instruments
. tape recorders
. . **video tape recorders**
video equipment
. **video tape recorders**

RT multimedia
video tapes

video tapes

(added April 1989)

RT audio tapes
cinematography
∞ films
information
magnetic tapes
motion pictures
multimedia
photographs
photography
∞ tapes
video tape recorders
visual aids

video teleconferencing

(added August 2000)

USE **video conferencing**

vidicons

DEF Television pickup tubes utilizing photo-conductors as the sensing elements.

GS electron tubes
. camera tubes
. . **vidicons**
. . . return beam vidicons
. . . thermicons

RT Advanced Vidicon Camera System (AVCS)
fiber optics
pixels
video equipment

Vietnam

UF *North Vietnam*
Republic of Vietnam
South Vietnam

GS nations
. **Vietnam**

RT Asia
Southeast Asia

view effects

SN (LIMITED TO EFFECTS OF CHANGE IN ANGULAR SIZE OF FIELD OF VIEW UPON RECEPTORS OF RADIATION)

DEF Effects of change in angular size of field of view upon receptors of radiation.

RT angular correlation
∞ effects

- radiant flux density
- radiation measuring instruments
- radiative heat transfer
- viewing

viewing

GS **viewing**
. field of view
RT display devices
periscopes
view effects
visibility
vision

Vigilante aircraft

USE **A-5 aircraft**

vignetting

RT defects
focusing
lenses

Viking 1 spacecraft

GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . **Viking 1 spacecraft**
. . . . Viking lander 1
. . . . Viking orbiter 1
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . **Viking 1 spacecraft**
. Viking lander 1
. Viking orbiter 1

RT interplanetary trajectories
space exploration
space flight

Viking 2 spacecraft

GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . **Viking 2 spacecraft**
. . . . Viking lander 2
. . . . Viking orbiter 2
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . **Viking 2 spacecraft**
. Viking lander 2
. Viking orbiter 2

RT interplanetary trajectories
space exploration
space flight

Viking 1975 entry vehicle

GS interplanetary spacecraft
. Mars probes
. . **Viking 1975 entry vehicle**
unmanned spacecraft
. space probes
. . Mars probes
. . . **Viking 1975 entry vehicle**

RT Mars landing
soft landing

Viking lander 1

GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . **Viking lander 1**
. Viking lander spacecraft
. **Viking lander 1**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. **Viking lander 1**
. Viking lander spacecraft
. **Viking lander 1**

RT interplanetary trajectories
Mars surface samples
space exploration

- space flight

Viking lander 2

GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 2 spacecraft
. . . . **Viking lander 2**
. Viking lander spacecraft
. **Viking lander 2**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 2 spacecraft
. **Viking lander 2**
. Viking lander spacecraft
. **Viking lander 2**
RT interplanetary trajectories
Mars surface samples
space exploration
space flight

Viking lander spacecraft

GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . **Viking lander spacecraft**
. . . . Viking lander 1
. . . . Viking lander 2
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . **Viking lander spacecraft**
. Viking lander 1
. Viking lander 2
RT interplanetary trajectories
space exploration
space flight

Viking Mars program

GS programs
. NASA programs
. . NASA space programs
. . . **Viking Mars program**
. . . . space programs
. NASA space programs
. **Viking Mars program**
RT space exploration
Viking spacecraft

Viking orbiter 1

GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 1 spacecraft
. . . . **Viking orbiter 1**
. Viking orbiter spacecraft
. **Viking orbiter 1**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 1 spacecraft
. **Viking orbiter 1**
. Viking orbiter spacecraft
. **Viking orbiter 1**
RT interplanetary trajectories
space exploration
space flight
∞ spacecraft

Viking orbiter 2

GS interplanetary spacecraft
. Mars probes
. . Viking spacecraft
. . . Viking 2 spacecraft
. . . . **Viking orbiter 2**
. Viking orbiter spacecraft
. **Viking orbiter 2**
unmanned spacecraft
. space probes
. . Mars probes
. . . Viking spacecraft
. . . . Viking 2 spacecraft
. **Viking orbiter 2**
. Viking orbiter spacecraft
. **Viking orbiter 2**
RT interplanetary trajectories

- space exploration
- space flight
- ∞ spacecraft
- Viking orbiter 1975**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . Viking spacecraft
 - . . . Viking orbiter spacecraft
 - **Viking orbiter 1975**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . Viking spacecraft
 - Viking orbiter spacecraft
 - **Viking orbiter 1975**
- Viking orbiter spacecraft**
 - GS interplanetary spacecraft
 - . Mars probes
 - . . Viking spacecraft
 - . . . **Viking orbiter spacecraft**
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . Viking spacecraft
 - **Viking orbiter spacecraft**
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - RT interplanetary trajectories
 - planetary orbits
 - space exploration
 - space flight
 - ∞ spacecraft
- Viking rocket vehicle**
 - GS rocket vehicles
 - . single stage rocket vehicles
 - . . **Viking rocket vehicle**
 - RT liquid propellant rocket engines
 - sounding rockets
 - vanguard 2 launch vehicle
- Viking spacecraft**
 - DEF A collective term for the composite Viking orbiter-lander space vehicle.
 - GS interplanetary spacecraft
 - . Mars probes
 - . . **Viking spacecraft**
 - . . . Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - Viking lander 2
 - Viking orbiter 2
 - Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Viking spacecraft**
 - Viking 1 spacecraft
 - Viking lander 1
 - Viking orbiter 1
 - Viking 2 spacecraft
 - Viking lander 2
 - Viking orbiter 2
 - Viking lander spacecraft
 - Viking lander 1
 - Viking lander 2
 - Viking orbiter spacecraft
 - Viking orbiter 1
 - Viking orbiter 2
 - Viking orbiter 1975
 - RT Viking Mars program
- vineyards**
 - RT agriculture
 - blight
 - botany
 - crop growth
- crop vigor
- ∞ crops
- Earth resources
 - farm crops
- ∞ food
 - irrigation
 - plants (botany)
 - wines
- vinti theory**
 - GS perturbation theory
 - . **vinti theory**
 - RT geodesy
 - orbit perturbation
 - ∞ theories
- vinyl copolymers**
 - GS copolymers
 - . **vinyl copolymers**
 - plastics
 - . synthetic resins
 - . . addition resins
 - . . . **vinyl copolymers**
 - resins
 - . synthetic resins
 - . . addition resins
 - . . . **vinyl copolymers**
 - vinyl polymers
 - . **vinyl copolymers**
 - RT additives
 - copolymerization
 - ∞ polymers
- vinyl cyanide*
 - USE **acrylonitriles**
- vinyl ethylene*
 - USE **butadiene**
- vinyl polymers**
 - GS **vinyl polymers**
 - . polymethyl methacrylate
 - . polystyrene
 - . polyvinyl chloride
 - . polyvinyl fluoride
 - . vinyl copolymers
 - . . styrofoam (trademark)
 - . polyvinyl alcohol
 - . vinylidene
 - RT ∞ polymers
- vinyl radical**
 - GS radicals
 - . **vinyl radical**
 - RT free radicals
- vinylidene**
 - UF *polyvinylidene*
 - GS organic compounds
 - . hydrocarbons
 - . . aliphatic hydrocarbons
 - . . . alkenes
 - ethylene
 - **vinylidene**
 - vinyl polymers
 - . **vinylidene**
- violence**
 - GS **violence**
 - . attacking (assaulting)
 - RT crime
 - disorders
 - police
 - terrorism
 - warfare
- viral diseases**
 - SN (EXCLUDES PLANT DISEASES)
 - GS diseases
 - . infectious diseases
 - . . **viral diseases**
 - . . . acquired immunodeficiency syndrome
 - influenza
 - poliomyelitis
 - smallpox
 - RT encephalitis
 - hepatitis
 - human immunodeficiency virus
 - meningitis
- pneumonia
- viruses
- Virgin Islands**
 - GS landforms
 - . islands
 - . . West Indies
 - . . . **Virgin Islands**
 - nations
 - . United States
 - . . **Virgin Islands**
 - RT archipelagoes
 - Caribbean region
 - Caribbean Sea
 - tropical regions
- Virginia**
 - GS nations
 - . United States
 - . . **Virginia**
 - RT Allegheny Plateau (US)
 - Assateague Island (MD-VA)
 - Chesapeake Bay (US)
 - Delmarva Peninsula (DE-MD-VA)
 - Potomac River Valley (MD-VA-WV)
 - Shenandoah Valley (VA)
 - Wallops Island
- Virgo galactic cluster**
 - DEF A cluster of galaxies nearest to the Milky Way Galaxy, centered in the constellation Virgo and about 16 million light-years from Earth. Used for Virgo star cluster.
 - UF *Virgo star cluster*
 - GS celestial bodies
 - . galactic clusters
 - . . **Virgo galactic cluster**
 - . . . galaxies
 - **Virgo galactic cluster**
 - RT agglomeration
 - barred galaxies
 - ∞ clusters
 - . disk galaxies
 - . elliptical galaxies
 - . local group (astronomy)
 - . spiral galaxies
 - . star clusters
 - . star distribution
 - . stars
- Virgo star cluster*
 - USE **Virgo galactic cluster**
- virial coefficients**
 - GS coefficients
 - . **virial coefficients**
 - RT equations of state
 - intermolecular forces
 - virial theorem
- virial theorem**
 - GS theorems
 - . **virial theorem**
 - RT kinetic energy
 - kinetic equations
 - missing mass (astrophysics)
 - statistical mechanics
 - virial coefficients
- virtual memory systems**
 - RT computer systems design
 - data management
 - data storage
 - magnetic storage
- virtual properties**
 - RT accuracy
 - ∞ physical properties
 - ∞ properties
- virtual reality**
 - (added February 1992)
 - DEF An artificial reality that projects the user into a three dimensional space generated by the computer.
 - UF *VR (virtual reality)*
 - RT cockpit simulators
 - computerized simulation
 - environment simulation
 - flight simulation

virulence

human-computer interface
man machine systems
motion simulation
simulation
space environment simulation
training simulators

virulence

RT biological weapons
human immunodeficiency virus
microorganisms
toxicity
viruses

viruses

GS microorganisms
. **viruses**
. . adenoviruses
. . bacteriophages
. . human immunodeficiency virus
RT biological weapons
∞ blisters
interferon
protobiology
viral diseases
virulence

viscera

SN (FOR SPECIFIC ORGANS SEE ANATOMY)
GS organs
. **viscera**
RT abdomen
anatomy
peritoneum
thorax

viscoelastic cylinders

RT ∞ cylinders
cylindrical bodies
cylindrical shells

viscoelastic damping

DEF The absorption of oscillatory motions by materials which are viscous while exhibiting certain elastic properties.
GS damping
. elastic damping
. . **viscoelastic damping**
. viscous damping
. . **viscoelastic damping**
elastodynamics
. elastic damping
. . **viscoelastic damping**

viscoelastic flow

USE **viscoelasticity**

viscoelasticity

DEF Property of materials that strain under stress partly elastically and partly viscously, that is, whose strain is partly dependent on time and magnitude of stress. Used for viscoelastic flow.

UF *viscoelastic flow*
GS mechanical properties
. elastic properties
. . **viscoelasticity**
. . . photoviscoelasticity
. . . thermoviscoelasticity
RT hydroelasticity
hysteresis
Maxwell fluids
nonNewtonian flow
nonNewtonian fluids
plastic flow
relaxation (mechanics)
shear thinning
squeeze films
viscoplasticity
viscous damping

viscometers

GS measuring instruments
. **viscometers**
RT rotating cylinders
viscometry
viscosity

viscometry

RT rotating cylinders
viscometers

viscosity
viscous drag
viscous flow

viscoplastic flow

USE **viscoplasticity**

viscoplasticity

UF *viscoplastic flow*
GS mechanical properties
. plastic properties
. . **viscoplasticity**
RT hysteresis
nonNewtonian flow
nonNewtonian fluids
plastic anisotropy
plastic flow
relaxation (mechanics)
viscoelasticity
viscous damping

viscopumps

GS pumps
. **viscopumps**
RT viscous flow

viscosity

DEF That molecular property of a fluid which enables it to support tangential stresses for a finite time and thus to resist deformation; the ratio of shear stress divided by shearing strain.

GS transport properties
. **viscosity**
. . eddy viscosity
. . gas viscosity
RT density (mass/volume)
flow characteristics
flow resistance
internal friction
low Reynolds number
∞ motion
∞ physical properties
rheology
shear thinning
similitude law
solubility
Stokes law (fluid mechanics)
superfluidity
surface properties
thermal diffusion
thermal diffusivity
thixotropy
viscometers
viscometry
viscous flow

Viscount aircraft

GS BAC aircraft
. **Viscount aircraft**
jet aircraft
. turboprop aircraft
. . **Viscount aircraft**
monoplanes
. **Viscount aircraft**
passenger aircraft
. **Viscount aircraft**
transport aircraft
. **Viscount aircraft**
RT ∞ aircraft

viscous damping

DEF The dissipation of energy that occurs when a particle in a vibrating system is resisted by a force that has a magnitude proportional to the magnitude of the velocity of the particle and direction opposite to the direction of the particle.

GS damping
. **viscous damping**
. . viscoelastic damping
RT elastic damping
resonance testing
viscoelasticity
viscoplasticity

viscous drag

GS dynamic characteristics
. drag
. . friction drag
. . . **viscous drag**

friction
. flow resistance
. . friction drag
. . . **viscous drag**
. skin friction
. . friction drag
. . . **viscous drag**
RT eddy viscosity
Hartmann number
laminar flow
turbulent flow
viscometry

viscous flow

DEF The flow of a fluid through a duct under conditions such that the mean free path is very small in comparison with the smallest dimensions of a transverse section of the duct. This flow may be either laminar or turbulent.

GS fluid flow
. **viscous flow**
. . boundary layer flow
. . . reattached flow
. . . secondary flow
. . . separated flow
. . . . boundary layer separation
. Couette flow
. Karman-Bodewadt flow
. Stokes flow
RT aerodynamics
barotropic flow
Brinkman number
eddy viscosity
∞ flow
flow characteristics
gas flow
inviscid flow
Knudsen flow
laminar flow
magneto hydrodynamic shear heating
Maxwell fluids
Milne-Thomson method
Navier-Stokes equation
Pohlhausen method
Prandtl number
Reynolds number
turbulent flow
viscometry
viscopumps
viscosity
wedge flow

viscous fluids

DEF Fluids whose molecular viscosity is sufficiently large to make the viscous forces a significant part of the total force field in the fluid.

RT flow stability
∞ fluids
Maxwell fluids
Navier-Stokes equation
Newtonian fluids
nonNewtonian fluids
. . Oseen approximation
semisolids
squeeze films
weightless fluids

visibility

UF *invisibility*
GS **visibility**
. low visibility
RT appearance
brightness
ceilings (meteorology)
character recognition
color
contrast
darkening
enhanced vision
fog
glare
haze
human factors engineering
illuminance
image contrast
legibility
light (visible radiation)
light transmission
luminescence
luminosity

night flights (aircraft)
opacity
optical properties
perception
radiance
reading
resolution
retinal adaptation
sensitivity
smoke
symbols
transmissivity
viewing
vision
visual control
visual observation
whiteout

visible infrared spin scan radiometer

DEF A radiometer used for satellite sound-
ing of the atmosphere.

GS measuring instruments
. radiation measuring instruments
. . actinometers
. . . radiometers
. . . . infrared detectors
. infrared radiometers
. **visible infrared spin scan
radiometer**
. . infrared instruments
. . . infrared detectors
. . . . infrared radiometers
. **visible infrared spin scan
radiometer**

RT atmospheric sounding
satellite sounding
satellite-borne instruments

visible radiation

USE **light (visible radiation)**

visible spectrum

DEF The range of wavelengths of visible
radiation; display or graph of the intensity of
visible radiation emitted or absorbed by a mate-
rial as a function of wavelength or some related
parameter.

GS spectra
. radiation spectra
. . electromagnetic spectra
. . . **visible spectrum**

RT ∞ absorption
absorption spectra
astronomical spectroscopy
auroral spectroscopy
cathodoluminescence
emission spectra
gas spectroscopy
light (visible radiation)
line spectra
molecular spectra
solar spectra
spectral bands
spectroscopy
stellar spectra

vision

UF *macular vision*
GS **vision**
. binocular vision
. color vision
. enhanced vision
. monocular vision
. night vision
. peripheral vision
. stereoscopic vision

RT adaptation
anastigmatism
blindness
brightness
choroid membranes
color
conjunctiva
contrast
cornea
dark adaptation
eye (anatomy)
eye dominance
flash blindness
glare

heterophoria
human factors engineering
hyperopia
illusions
images
legibility
light adaptation
miosis
myopia
oculomotor nerves
ophthalmodynamometry
optometry
perception
phosphene
presbyopia
pupils
resolution
retina
retinal adaptation
retinal images
thresholds (perception)
viewing
visibility
visual acuity

visors

RT eye protection
radiation protection
sunglasses

visual accommodation

RT accommodation

visual acuity

DEF Keeness of perception and sharpness
of vision.

GS acuity
. **visual acuity**
. . hyperopia

RT peripheral vision
Snellen tests
vision

visual aids

RT ∞ aids
audio visual equipment
audio visual material
charts
diagrams
display devices
drawings
multimedia
photographs
training devices
video tapes

visual control

GS manual control
. **visual control**

RT aircraft control
approach control
attitude control
∞ control
display devices
guidance (motion)
missile control
remote control
runway lights
servocontrol
spacecraft control
visibility

visual discrimination

GS discrimination
. sensory discrimination
. . **visual discrimination**
perception
. sensory perception
. . visual perception
. . . **visual discrimination**

RT ∞ recovery

visual displays

USE **display devices**

visual fields

RT field of view
∞ fields
peripheral vision
retina

retinal images
Saccadic eye movements
space perception

visual flight

RT air navigation
collision avoidance
∞ flight
flight conditions
flight paths
flight safety
landing
whiteout

visual flight rules

UF *VFR (rules)*
GS rules
. flight rules
. . **visual flight rules**

visual observation

GS observation
. **visual observation**

RT optical tracking
surveillance
visibility
visual perception
visual tasks

visual perception

UF *sight*
GS perception
. sensory perception
. . **visual perception**
. . . critical flicker fusion
. . . space perception
. . . . autokinesis
. . . visual discrimination

RT afterimages
blinking
brightness discrimination
elevator illusion
motion perception
∞ orientation
perceptual errors
∞ space orientation
tachistoscopes
thresholds (perception)
visual observation
visual tasks

visual photometry

DEF A subjective approach to the problem
of photometry, wherein the human eye is used
as the sensing instrument; to be distinguished
from photoelectric photometry.

GS optical measurement
. photometry
. . **visual photometry**

visual pigments

GS pigments
. **visual pigments**

RT dark adaptation
photoreceptors
photosensitivity
retina

visual signals

RT beacons
cues
luminaires
optical communication
∞ signals

visual stimuli

RT perceptual errors
∞ signals
∞ stimuli
visual tasks
zeitgebers

visual tasks

GS tasks
. **visual tasks**

RT eye movements
human performance
visual observation
visual perception

vitamins

visual stimuli
visual tracking
USE **optical tracking**

visualization of flow
USE **flow visualization**

vitamin A
USE **retinene**

vitamin B
USE **thiamine**

vitamin B 2
USE **riboflavin**

vitamin B 6
USE **pyridoxine**

vitamin B 12
USE **cyanocobalamin**

vitamin B complex
USE **biotin**

vitamin C
USE **ascorbic acid**

vitamin D
USE **calciferol**

vitamin E
USE **tocopherol**

vitamin G
USE **riboflavin**

vitamin K
USE **phylloquinone**

vitamin M
USE **folic acid**

vitamin P
USE **bioflavonoids**

vitamins
GS **vitamins**
. ascorbic acid
. bioflavonoids
. biotin
. calciferol
. carnitine
. cyanocobalamin
. folic acid
. nicotinamide
. nicotinic acid
. phylloquinone
. pyridoxine
. retinene
. riboflavin
. thiamine
. tocopherol
RT ascorbic acid metabolism
choline
drugs
∞ food
∞ nutrients

Viterbi decoders
GS decoders
. **Viterbi decoders**
RT coding
decoding
signal encoding
signal processing

Viton rubber (trademark)
GS copolymers
. **Viton rubber (trademark)**
elastomers
. rubber
. . . synthetic rubbers
. . . **Viton rubber (trademark)**
RT fluorohydrocarbons

vitreous materials
RT frit
glass
∞ inorganic materials
∞ materials

metallic glasses
porcelain
vitrification

vitrification
DEF Formation of a glassy or noncrystalline material.
RT ceramics
glass
porcelain
solidification
vitreous materials

VJ-101 aircraft
GS jet aircraft
. **VJ-101 aircraft**
monoplanes
. **VJ-101 aircraft**
single engine aircraft
. **VJ-101 aircraft**
supersonic aircraft
. **VJ-101 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . **VJ-101 aircraft**
RT ∞ aircraft

vlasov equations
GS analysis (mathematics)
. real variables
. . differential equations
. . . partial differential equations
. . . . **vlasov equations**
RT ∞ equations
stability

VLBI
USE **very long base interferometry**

VLF emission recorders
RT atmospheric radiation
atmospherics
cosmic rays
electromagnetic radiation
planetary radiation
∞ recorders
recording instruments

VLSI
USE **very large scale integration**

VLTA (aircraft)
(added November 1998)
USE **very large transport aircraft**

VOC (organic chemistry)
(added March 2000)
USE **volatile organic compounds**

vocal cords
GS anatomy
. respiratory system
. . larynx
. . . **vocal cords**
RT glottis

vocoders
RT bandpass filters
computers
digital to voice translators
frequency modulation
messages
radio communication
scrambling (communication)
signal reception
speech baseband compression
voice communication
voice data processing

voice
RT audio frequencies
speech
tongue

voice communication
GS telecommunication
. communication
. . **voice communication**
. . . telephony
RT acoustics
conversation

echo suppressors
ground-air-ground communication
multimedia
radio communication
radiotelephones
reentry communication
scrambling (communication)
single channel per carrier
transmission
single sideband transmission
speech
speech baseband compression
verbal communication
vocoders
voice control
voice data processing
wireless communication
words (language)

voice control
SN (DEVICE OPERATION BY VOICE)
DEF Using the voice to activate devices which respond or operate by means of speech recognition. SN (device operation by voice).
RT bioengineering
∞ control
robotics
robots
speech recognition
voice communication
voice data processing

voice data processing
GS data processing
. **voice data processing**
. . cepstral analysis
RT artificial intelligence
∞ data
digital to voice translators
signal encoding
single channel per carrier
transmission
vector quantization
verbal communication
vocoders
voice communication
voice control

Voice of America
RT broadcasting
radio transmission

void ratio
UF *compactness*
GS ratios
. **void ratio**
RT ∞ conductivity
density (mass/volume)
free flow
hole distribution (mechanics)
packing density
permeability
porosity
reactor cores
surface properties
voids

voids
RT buoyancy
cavities
crack geometry
crack opening displacement
defects
inclusions
infiltration
interstices
percolation
permeability
porosity
void ratio

Voigt effect
RT birefringence
∞ effects
optical paths
refraction
Zeeman effect

volatile organic compounds
(added March 2000)

DEF Any compounds of carbon (excluding carbon oxides, carbonic acid, metallic carbonates and carbides, and carbon-nitrogen compounds) that are readily vaporizable; any of such compounds that participate in atmospheric photochemical reactions, or that are considered indoor, local, regional, or global contaminants.

UF *VOC (organic chemistry)*

GS organic compounds
. **volatile organic compounds**

RT air pollution
air quality
contaminants
exhaust emission
indoor air pollution
ozone
photochemical reactions

volatility

GS thermodynamic properties
. thermophysical properties
. . **volatility**

RT coal gasification
evaporation
flash point
prevaporization
vapor phases
vapor pressure
vaporizing

volatilization

USE **vaporizing**

volcanic eruptions

(added October 2001)

DEF The sudden ejection of solid, liquid, or gaseous matter from a volcanic vent or fissure.

UF *eruptions (volcanology)*

RT calderas
effluents
lava
magma
submarine hydrothermal vents
volcanoes
volcanology

volcanics

USE **volcanology**

volcanoes

DEF Naturally occurring vents or fissures at the Earth's surface through which erupt molten, solid, and gaseous materials.

UF *active volcanoes*

GS geology
. **volcanoes**
. . Mars volcanoes
landforms
. **volcanoes**
. . Mars volcanoes

RT basalt
calderas
cones (volcanoes)
effusives
geomorphology
geothermal resources
lava
mountains
orography
paleomagnetism
petrology
Rouse belts
volcanic eruptions
volcanology

volcanology

UF *volcanics*

GS geology
. **volcanology**

RT basalt
calderas
cones (volcanoes)
effusives
geomorphology
lava
Mars volcanoes
mountains
orography
paleomagnetism
petrogenesis

petrology
Rouse belts
volcanic eruptions
volcanoes

voltage

USE **electric potential**

voltage amplifiers

GS amplifiers
. **voltage amplifiers**

RT current amplifiers
feedback amplifiers
magnetic amplifiers
preamplifiers
volt-ampere characteristics

voltage breakdown

USE **electrical faults**

voltage controlled oscillators

DEF An oscillator whose frequency of oscillation can be varied by changing an applied voltage. Used for VCO.

UF *VCO*

GS oscillators
. **voltage controlled oscillators**

RT circuits
electric control
electric networks
frequency modulation
frequency stability
microwave oscillators
voltage regulators

voltage converters (AC to AC)

GS transformers
. **voltage converters (AC to AC)**

RT alternating current
auxiliary power sources
∞ converters
∞ electric equipment
∞ electric power
∞ power supplies

voltage converters (DC to DC)

RT auxiliary power sources
∞ converters
direct current
electric batteries
∞ electric equipment
∞ electric power
∞ power supplies
power supply circuits

voltage generators

RT arc generators
electrostatic generators
function generators
∞ generators
signal generators

voltage measurement

USE **electrical measurement**

voltage regulators

GS control equipment
. regulators
. . **voltage regulators**

RT avalanche diodes
circuit protection
controllers
current regulators
electric switches
electronic control
power factor controllers
power supply circuits
switching circuits
transformers
transmission loss
voltage controlled oscillators

voltage variation indicators

USE **voltmeters**

volt-ampere characteristics

RT capacitance-voltage characteristics
∞ characteristics
electric current
electric potential
∞ electronics

linear circuits
Ohms law
open circuit voltage
optogalvanic spectroscopy
proximity effect (electricity)
quantum efficiency
short circuit currents
threshold voltage
transconductance
voltage amplifiers

Volterra equations

GS analysis (mathematics)
. functional analysis
. . integral equations
. . . **Volterra equations**
RT ∞ equations
nonlinearity
∞ radiation

voltmeters

UF *voltage variation indicators*
GS measuring instruments
. **voltmeters**
. . millivoltmeters
RT ammeters
coulometers
electrometers
potentiometers (instruments)

volume

GS **volume**
. body volume (biology)
RT area
∞ capacity
dimensions
frustums
geometry
isochoric processes
rates (per time)
thickness
volumetric analysis
weight (mass)

volume fraction

USE **concentration (composition)**

volumetric analysis

GS chemical tests
. chemical analysis
. . **volumetric analysis**
RT analytical chemistry
gas analysis
quantitative analysis
volume

volumetric efficiency

RT energy conversion efficiency
engine design
fuel-air ratio
laser outputs

volumetric strain

GS fatigue (materials)
. **volumetric strain**
RT deformation
structural strain
temperature inversions

voluntary muscle

(added December 2004)

USE **skeletal muscle**

vomiting

RT motion sickness
nausea

Von Karman equation

GS flow equations
. **Von Karman equation**
RT ∞ equations
flow stability
Karman vortex street
vortex breakdown
vortex streets

von Zeipel method

vorticity equations

von Mises theory

USE **stress functions**

von Zeipel method

RT equations of motion
Hamiltonian functions
∞ methodology
perturbation theory

Voodoo aircraft

USE **F-101 aircraft**

VOR systems

USE **VHF omnirange navigation**

Voronoi diagrams

(added October 2000)

DEF In computational geometry, a partitioning of a space containing a finite set of points, P, in such a way that each partition contains a single point in P and the subspace for which it is the nearest point from the set. Some applications include regional planning, image analysis, and robot path planning.

GS diagrams

. **Voronoi diagrams**

RT computational geometry
geometry
grid generation (mathematics)
image analysis
partitions (mathematics)
spatial distribution
topology
trajectory planning

vortex advisory system

DEF Display system which compares measured on-minute-average wind magnitudes and direction with the wind-rose criterion to predict wake vorticity and to indicate to the air traffic controller (with a red or green light) when the interarrival spacings for landings may be reduced to the 3 nautical mile limit.

RT air traffic control
aircraft approach spacing
aircraft wakes

∞ systems
turbulent wakes
vortex alleviation

vortex alleviation

DEF The alteration of airfoil configurations to change the airflow patterns directly behind the wings to eliminate or inhibit the vertical motion which directly affects the aircraft immediately following, during closely spaced landings.

RT aircraft wakes
drag devices
gust alleviators
protuberances
riblets
spoilers
vortex advisory system
vortices
wakes
winglets

vortex avoidance

DEF Schemes which involve airborne or ground-based equipment to track, monitor, and/or predict vortex behavior which might affect the approach and landing operations.

GS avoidance

. **vortex avoidance**

RT aerodynamic stability
air traffic control
aircraft approach spacing
aircraft landing
buffeting
gusts
rotation
safety
turbulent flow
vortices
winglets

vortex breakdown

RT flow stability

turbulent flow

Von Karman equation

vortex flaps

vortex columns

USE **vortices**

vortex disturbances

USE **vortices**

vortex filaments

DEF The fine-scale structure of turbulent flow; the small non energy containing eddies convected at mean freestream velocities.

RT ∞ filaments
flow stability
fluid dynamics
horseshoe vortices
turbulence
vortex in cell technique
vortices

vortex flaps

DEF Leading edge flap designs for highly swept wings, in which the leading edge tabs, which are counter reflected, cause vortices to form on the flap. The trapped vortices cause significantly improved wind flow characteristics.

GS airfoils
. flaps (control surfaces)
. . wing flaps
. . . **vortex flaps**
brakes (for arresting motion)
. aerodynamic brakes
. . wing flaps
. . . **vortex flaps**
. aircraft brakes
. . wing flaps
. . . **vortex flaps**
control surfaces
. flaps (control surfaces)
. . wing flaps
. . . **vortex flaps**
drag devices
. aerodynamic brakes
. . wing flaps
. . . **vortex flaps**

RT aerodynamic drag
jet flaps
leading edge flaps
leading edges
lift augmentation
separated flow
trailing edge flaps
trailing edges
vortex breakdown
vortices
wing loading

vortex flow

USE **vortices**

vortex generation

USE **vortex generators**

vortex generators

UF *vortex generation*
RT airfoil fences
boundary layer control
boundary layer separation
∞ generators
Hilsch tubes
horseshoe vortices
inlet flow
vortices
wing slots

vortex in cell technique

(added April 1993)

UF *VIC method*
GS analysis (mathematics)
. numerical analysis
. . approximation
. . . **vortex in cell technique**
RT computational fluid dynamics
fast Fourier transformations
finite difference theory
∞ methodology
particle in cell technique
Poisson equation

vortex filaments

vortices

vortex injectors

GS injectors
. **vortex injectors**

vortex lattice method

(added April 1992)

RT boundary conditions
computational fluid dynamics
flow velocity
flux vector splitting
lattices (mathematics)
panel method (fluid dynamics)
vortices

vortex precession

RT flow velocity
flowmeters
precession
velocity measurement
vortices

vortex rings

RT horseshoe vortices
∞ rings
trapped vortices
vortices

vortex shedding

DEF Periodic separation of a fluid flowing past an unstreamlined body.
GS mechanics (physics)
. fluid mechanics
. . fluid dynamics
. . . **vortex shedding**
RT shedding
vortices

vortex sheets

RT aircraft design
flow distribution
rotating fluids
∞ sheets
turbulent wakes
vortices
vorticity

vortex streets

DEF Two parallel rows of alternately placed vortices along the wake of an obstacle in a fluid of moderate Reynolds number.
GS **vortex streets**
. Karman vortex street
RT discontinuity
∞ sheets
turbulent wakes
Von Karman equation
vortices

vortex traps

USE **trapped vortices**

vortex tubes

USE **Hilsch tubes**
vortices

vortex-blade interaction

USE **blade-vortex interaction**

vortices

DEF In fluids, circulations drawing their energy from flows of much larger scale and brought about by pressure irregularities. Used for eddies, rotational flow, vortex columns, vortex disturbances, vortex flow, and vortex tubes.

UF *eddies*
rotational flow
vortex columns
vortex disturbances
vortex flow
vortex tubes

GS **vortices**
. horseshoe vortices
. trapped vortices
. wing tip vortices
RT Abrikosov theory
agitation
Biot-Savart law
blade-vortex interaction

- cavitation flow
- counterflow
- ∞ disturbances
- divergence
- flow distortion
- flow stability
- fluid flow
- Goertler instability
- Hilsch tubes
- Kolmogorov theory
- large eddy simulation
- meteorological solenoids
- mixing
- planetary waves
- recirculative fluid flow
- rotating fluids
- rotating liquids
- rotation
- secondary flow
- Strouhal number
- superconductivity
- superfluidity
- thrust distribution
- turbulence
- turbulent flow
- turbulent mixing
- vortex alleviation
- vortex avoidance
- vortex filaments
- vortex flaps
- vortex generators
- vortex in cell technique
- vortex lattice method
- vortex precession
- vortex rings
- vortex shedding
- vortex sheets
- vortex streets
- vorticity
- wakes

vorticity

- UF *enstrophy*
- GS algebra
 - . vector spaces
 - . vectors (mathematics)
 - . . . **vorticity**
 - analysis (mathematics)
 - . calculus
 - . vector analysis
 - . . . curl (vectors)
 - **vorticity**
 - . real variables
 - . vector analysis
 - . . . curl (vectors)
 - **vorticity**
 - geometry
 - . vector analysis
 - . . curl (vectors)
 - **vorticity**
- RT atmospheric circulation
 - Beltrami flow
 - Crocco method
 - flow stability
 - Helmholtz vorticity equation
 - horseshoe vortices
 - potential flow
 - secondary flow
 - trapped vortices
 - turbulence
 - vortex sheets
 - vortices

vorticity equations

- DEF Dynamic equations for the rate of change on the vorticity of a parcel, obtained by taking the curl of the vector equation of motion.
- GS analysis (mathematics)
 - . real variables
 - . differential equations
 - . . . **vorticity equations**
 - Helmholtz vorticity equation
 - flow equations
 - . **vorticity equations**
 - . . Helmholtz vorticity equation
- RT ∞ equations
 - Karman vortex street

Von Karman equation

vorticity transport hypothesis

- GS hypotheses
 - . **vorticity transport hypothesis**
- RT conservation equations
 - eddy currents
 - mixing length flow theory
 - turbulent flow

Voskhod 1 spacecraft

- GS manned spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 1 spacecraft**
 - reentry vehicles
 - . recoverable spacecraft
 - . . voskhod manned spacecraft
 - . . . **Voskhod 1 spacecraft**
 - soft landing spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 1 spacecraft**

Voskhod 2 spacecraft

- GS manned spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 2 spacecraft**
 - reentry vehicles
 - . recoverable spacecraft
 - . . voskhod manned spacecraft
 - . . . **Voskhod 2 spacecraft**
 - soft landing spacecraft
 - . voskhod manned spacecraft
 - . . **Voskhod 2 spacecraft**

voskhod manned spacecraft

- GS manned spacecraft
 - . **voskhod manned spacecraft**
 - . . Voskhod 1 spacecraft
 - . . Voskhod 2 spacecraft
 - reentry vehicles
 - . recoverable spacecraft
 - . . **voskhod manned spacecraft**
 - . . . Voskhod 1 spacecraft
 - . . . Voskhod 2 spacecraft
 - soft landing spacecraft
 - . **voskhod manned spacecraft**
 - . . Voskhod 1 spacecraft
 - . . Voskhod 2 spacecraft
- RT space capsules

Vostok 1 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 1 spacecraft**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 1 spacecraft**
 - soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 1 spacecraft**

Vostok 2 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 2 spacecraft**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 2 spacecraft**
 - soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 2 spacecraft**

Vostok 3 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 3 spacecraft**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 3 spacecraft**
 - soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 3 spacecraft**

Vostok 4 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 4 spacecraft**

- reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 4 spacecraft**
- soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 4 spacecraft**

Vostok 5 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 5 spacecraft**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 5 spacecraft**
 - soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 5 spacecraft**

Vostok 6 spacecraft

- GS manned spacecraft
 - . Vostok spacecraft
 - . . **Vostok 6 spacecraft**
 - reentry vehicles
 - . recoverable spacecraft
 - . . Vostok spacecraft
 - . . . **Vostok 6 spacecraft**
 - soft landing spacecraft
 - . Vostok spacecraft
 - . . **Vostok 6 spacecraft**

Vostok spacecraft

- GS manned spacecraft
 - . **Vostok spacecraft**
 - . . Vostok 1 spacecraft
 - . . Vostok 2 spacecraft
 - . . Vostok 3 spacecraft
 - . . Vostok 4 spacecraft
 - . . Vostok 5 spacecraft
 - . . Vostok 6 spacecraft
 - reentry vehicles
 - . recoverable spacecraft
 - . . **Vostok spacecraft**
 - . . . Vostok 1 spacecraft
 - . . . Vostok 2 spacecraft
 - . . . Vostok 3 spacecraft
 - . . . Vostok 4 spacecraft
 - . . . Vostok 5 spacecraft
 - . . . Vostok 6 spacecraft
 - soft landing spacecraft
 - . **Vostok spacecraft**
 - . . Vostok 1 spacecraft
 - . . Vostok 2 spacecraft
 - . . Vostok 3 spacecraft
 - . . Vostok 4 spacecraft
 - . . Vostok 5 spacecraft
 - . . Vostok 6 spacecraft
- RT space capsules

voting

- RT governments
 - law (jurisprudence)
 - minorities
 - politics
 - sovereignty

vowels

- RT consonants (speech)
 - grammars
 - languages
 - words (language)

Voyager 1 spacecraft

- DEF A spacecraft launched in the 1977 Voyager mission.
- GS interplanetary spacecraft
 - . **Voyager 1 spacecraft**
 - unmanned spacecraft
 - . space probes
 - . . **Voyager 1 spacecraft**
- RT flyby missions
 - Grand Tours
 - Jupiter (planet)
 - Jupiter probes
 - Jupiter rings

Voyager 2 spacecraft

∞ spacecraft

Voyager 2 spacecraft

DEF A spacecraft launched in the 1977 Voyager mission.

GS interplanetary spacecraft

. **Voyager 2 spacecraft**

unmanned spacecraft

. space probes

. . . **Voyager 2 spacecraft**

RT flyby missions

Grand Tours

Jupiter (planet)

Jupiter probes

Neptune (planet)

Saturn (planet)

∞ spacecraft

Uranus (planet)

Voyager 1977 mission

DEF The launching of two advanced three-axis attitude stabilized spacecraft for the exploration of Jovian and Saturnian environments including investigation of the gravitational fields, atmospheric dynamics, and magnetospheres of these planets.

GS space missions

. flyby missions

. . Grand Tours

. . . **Voyager 1977 mission**

RT interplanetary spacecraft

Jupiter (planet)

Jupiter probes

∞ missions

solar system

space probes

Voyager project

GS programs

. NASA programs

. . NASA space programs

. . . **Voyager project**

. projects

. . **Voyager project**

. space programs

. . NASA space programs

. . . **Voyager project**

RT Mars probes

Saturn project

space probes

unmanned spacecraft

Venus probes

Voyageur helicopter

USE **CH-46 helicopter**

VR (virtual reality)

USE **virtual reality**

VSAT (network)

UF *very small aperture terminals*

GS data processing equipment

. data processing terminals

. . **VSAT (network)**

networks

. communication networks

. . **VSAT (network)**

. satellite networks

. . **VSAT (network)**

RT Aloha system

apertures

ARPA computer network

computer networks

data links

data transmission

distributed processing

Earth terminals

interprocessor communication

local area networks

microwave transmission

needs (data system)

personal computers

random access

superhigh frequencies

telecommunication

VTOL

USE **vertical landing**

vertical takeoff

VTOL aircraft

USE **vertical takeoff aircraft**

Vulcan aircraft

UF *AVRO 698 aircraft*

GS attack aircraft

. bomber aircraft

. . **Vulcan aircraft**

Hawker Siddeley aircraft

. **Vulcan aircraft**

jet aircraft

. **Vulcan aircraft**

tailless aircraft

. **Vulcan aircraft**

RT ∞ aircraft

AVRO 707 aircraft

Harrier aircraft

vulcanizates

USE **vulcanized elastomers**

vulcanized elastomers

UF *gum vulcanizates*

vulcanizates

GS elastomers

. rubber

. . synthetic rubbers

. . . **vulcanized elastomers**

. . . . RTV-40 rubber (trademark)

. . . . RTV-60 rubber (trademark)

RT addition resins

polyether resins

thermoplastic resins

vulcanizing

vulcanizing

DEF A chemical reaction in which the physical properties of a rubber are changed in the direction of decreased plastic flow, less surface tackiness, and increased tensile strength by reacting it with sulfur or other suitable agents.

GS crosslinking

. **vulcanizing**

RT curing

vulcanized elastomers

vulnerability

GS **vulnerability**

. nuclear vulnerability

RT aircraft reliability

aircraft survivability

airport security

durability

integrity

life (durability)

obstacle avoidance

penetration

piercing

reliability

∞ resistance

security

sensitivity

spacecraft defense

spacecraft survivability

stability

Vycor

GS fibers

. synthetic fibers

. . **Vycor**

glass

. **Vycor**

semiconductors (materials)

. **Vycor**

RT glass fibers

∞ materials

silicon dioxide

VZ-2 aircraft

GS Boeing aircraft

. **VZ-2 aircraft**

research vehicles

. research aircraft

. . **VZ-2 aircraft**

tilt wing aircraft

. **VZ-2 aircraft**

V/STOL aircraft

. **VZ-2 aircraft**

RT ∞ aircraft

VZ-8 aircraft

UF *Airgeep aircraft*

GS light aircraft

. **VZ-8 aircraft**

Piasecki aircraft

. **VZ-8 aircraft**

research vehicles

. research aircraft

. . **VZ-8 aircraft**

V/STOL aircraft

. vertical takeoff aircraft

. . **VZ-8 aircraft**

RT ∞ aircraft

flying platforms

VZ-10 aircraft

USE **XV-4 aircraft**

VZ-11 aircraft

USE **XV-5 aircraft**

VZ-12 aircraft

USE **P-1127 aircraft**

W

W stars
USE **Wolf-Rayet stars**

W wings
USE **variable sweep wings**

W2F aircraft
USE **E-2 aircraft**

Wabash River Basin (IL-IN-OH)
GS landforms
. structural basins
. . river basins
. . . **Wabash River Basin (IL-IN-OH)**
RT Illinois
Indiana
Ohio
rivers

wadis
DEF A term used in the desert regions of Southwest Asia and Northern Africa for a stream bed or channel, or a steep sided and bouldery ravine, gully or valley, or a dry wash, that is usually dry except during the rainy season and that often forms an oasis.

GS landforms
. structural basins
. . river basins
. . . **wadis**
RT arid lands
desertification
rivers
streams
topography
valleys
water runoff

wafers
RT microelectronics
microminiaturization
miniaturization
photomasks
semiconductor devices
solid state devices
thin films
vertical junction solar cells

wage surveys
GS reports
. **wage surveys**
surveys
. **wage surveys**
RT cost analysis
cost estimates
cost reduction
employee relations
finance
personnel

wakefulness
RT alertness
sleep deprivation

wakes
GS **wakes**
. aircraft wakes
. . helicopter wakes
. . slipstreams
. . . propeller slipstreams
. hypersonic wakes
. laminar wakes
. near wakes
. supersonic wakes
. turbulent wakes
. . slipstreams
. . . propeller slipstreams
RT backwash
base flow
bubbles
cavitation flow
contrails
downwash
∞ draft
drag
ground effect (aerodynamics)
horseshoe vortices
Strouhal number
turbulence

vortex alleviation
vortices

Wales
(added November 1989)
GS nations
. United Kingdom
. . **Wales**
RT Europe

walking
GS locomotion
. **walking**
RT gait
physical exercise
running

walking machines
GS surface vehicles
. **walking machines**
RT astronaut maneuvering equipment
gait
lunar surface vehicles
∞ machinery
manned lunar surface vehicles
prosthetic devices

wall flow
GS fluid flow
. **wall flow**
RT boundary layer flow
channel flow
conical flow
discharge coefficient
ducted flow
Goertler instability
heat transmission
Manning theory
two dimensional flow
two dimensional jets

wall jets
RT fluid amplifiers
jet boundaries
jet flow
jet vanes
∞ jets

wall pressure
GS pressure
. **wall pressure**
RT boundary layers
pressure distribution
pressure vessels
thick walls

wall temperature
GS surface properties
. surface temperature
. . **wall temperature**
temperature
. surface temperature
. . **wall temperature**
RT Brinkman number
operating temperature
thick walls

Wallops Island
GS landforms
. islands
. . **Wallops Island**
RT Atlantic Ocean
Virginia

walls
UF *cold walls*
GS **walls**
. bulkheads
. nozzle walls
. porous walls
. thick walls
. thin walls
. Trombe walls
. wind tunnel walls
RT ∞ barriers
buildings
curtains
enclosures
floors

gates (openings)
housings
limiters (fusion reactors)
panels
partitions (structures)
sandwich structures
sheaths
shells (structural forms)
sides
studs (structural members)
substructures
tiles

Walsh function
GS analysis (mathematics)
. complex variables
. . orthogonal functions
. . . **Walsh function**
functions (mathematics)
. orthogonal functions
. . **Walsh function**
RT fast Fourier transformations
Fourier transformation
functional analysis
matrices (mathematics)

WAN
USE **wide area networks**

Wankel engines
GS engines
. internal combustion engines
. . rotary engines
. . . **Wankel engines**
RT aircraft engines
automobile engines
piston engines

war games
GS games
. **war games**
RT digital simulation
game theory
mathematical models
operations research
simulation

warfare
GS **warfare**
. antiship warfare
. antisubmarine warfare
. chemical warfare
. combat
. electronic warfare
. nuclear warfare
RT attacking (assaulting)
B-1 aircraft
chemical defense
evasive actions
infiltration
international law
ordnance
peacetime
politics
strategy
violence

warheads
DEF Originally the parts of the missile carrying the explosive, chemical, or other charge intended to damage the enemy. By extension, the term is sometimes used as synonymous with payload or nose cone.

GS weapons
. **warheads**
. . nuclear warheads
. . precision guided projectiles
RT ammunition
antiship warfare
bombs (ordnance)
explosive devices
explosives
∞ fuses
fuses (ordnance)
missile components
missiles
nose cones
nuclear devices
nuclear weapons

warm fronts

payloads
projectiles
∞ rockets
shaped charges
torpedoes

warm blooded animals
USE **homeotherms**

warm fronts

GS fronts (meteorology)
. **warm fronts**
RT air masses
cold fronts
∞ fronts
meteorological parameters
meteorology
storms
synoptic meteorology
thunderstorms
tornadoes
weather forecasting

warming
USE **heating**

warning

RT accident prevention
auditory signals
bells
civil defense
collision avoidance
detection
∞ detectors
early warning systems
fire prevention
horns
mine detectors
monitors
protection
safety
safety devices

warning devices
USE **warning systems**

warning signals
USE **warning systems**

Warning Star aircraft
USE **C-121 aircraft**

warning systems

UF *alarms*
collision warning devices
warning devices
warning signals
GS **warning systems**
. early warning systems
. . Ballistic Missile Early Warning System
RT . mine detectors
accident prevention
auditory signals
avoidance
bells
civil defense
collision avoidance
detection
∞ detectors
display devices
explosions
false alarms
fire prevention
fires
gas detectors
hazards
head-up displays
horns
monitors
National Severe Storms Project
pollution monitoring
protection
public address systems
safety
safety devices
safety management
sanitation
sirens
sound generators

∞ systems
threat evaluation

warpage

RT bending
buckling
camber
damage
deformation
distortion
growth
heaving
plastic deformation
shrinkage
structural strain
surface distortion
thermal expansion
twisting

∞ washers

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT washers (cleaners)
washers (spacers)

washers (cleaners)

RT cleaners
concentrators
extraction
separators
∞ washers
washing

washers (spacers)

GS fasteners
. **washers (spacers)**
RT inserts
separators
spacers
∞ washers

washing

UF *scrubbing*
GS cleaning
. **washing**
RT . . bathing
beneficiation
decontamination
dissolving
distillation
elution
flushing
housekeeping (spacecraft)
purification
scrubbers
∞ separation
washers (cleaners)
waste water

Washington

GS nations
. United States
. . **Washington**
RT Cascade Range (CA-OR-WA)
Columbia River Basin (ID-OR-WA)

washout (radioactivity)

USE **fallout**

WASP sounding rocket

UF *high altitude sounding projectile*
window atmosphere sounding projectile
GS rocket vehicles
. multistage rocket vehicles
. . **WASP sounding rocket**
. . sounding rockets
. . **WASP sounding rocket**
RT Loki rocket vehicle
solid propellant rocket engines

Waspaloy

GS alloys
. heat resistant alloys
. . **Waspaloy**
. . nickel alloys
. . **Waspaloy**
RT chromium alloys
cobalt alloys

wrought alloys

waste disposal

GS disposal
. **waste disposal**
. . composting
. . hazardous material disposal (in space)
management
. waste management
. . **waste disposal**
. . . composting
. . . hazardous material disposal (in space)
RT air pollution
deep well injection (wastes)
dewatering
dilution
dissipation
drainage
effluents
elimination
environment effects
environment pollution
environment protection
environmental chemistry
environmental cleanup
environmental engineering
environmental surveys
exhaust gases
exhaust systems
garbage
hazardous materials
hazardous wastes
human wastes
incinerators
industrial wastes
landfills
manures
materials handling
metabolic wastes
mines (excavations)
Modular Integrated Utility System
pipelines
plasma core reactors
pollution
ponds
radioactive wastes
sanitation
sewage
sewage treatment
sewers
soil pollution
solid wastes
space flight feeding
∞ storage
sumps
toilets
utilities
wastes
water pollution

waste energy utilization

GS utilization
. **waste energy utilization**
RT boilers
burners
chimneys
cogeneration
energy conversion
exergy
exhaust gases
furnaces
heat transfer
heating
incinerators
lighting equipment
ovens
solid wastes
space heating (buildings)
waste heat
wastes

waste heat

RT energy technology
heat exchangers
heat pumps

- waste energy utilization
- waste management**
(added March 1997)
- GS management
 - . **waste management**
 - . . waste disposal
 - . . . composting
 - . . . hazardous material disposal (in space)
 - . . waste treatment
 - . . . sewage treatment
 - . . waste utilization
 - RT environment management
 - environmental engineering
 - landfills
 - life support systems
 - materials recovery
 - reclamation
 - recycling
 - sanitation
 - underground storage
 - wastes
- waste treatment**
DEF The processing of waste materials (liquid and solid) with chemicals, high temperature, chopping, grinding, and filtering equipment, bacterial action, dryers, separators, for conversion to useful products.
- GS management
 - . waste management
 - . . **waste treatment**
 - . . . sewage treatment
 - RT bacteria
 - composting
 - environmental cleanup
 - garbage
 - residues
 - sludge
 - ∞ treatment
 - wastes
- waste utilization**
- GS management
 - . waste management
 - . . **waste utilization**
 - utilization
 - . **waste utilization**
 - RT biomass energy production
 - composting
 - hydrocarbon fuel production
 - industrial wastes
 - landfills
 - manures
 - renewable energy
 - solid wastes
 - wastes
- waste water**
- GS wastes
 - . liquid wastes
 - . . **waste water**
 - water
 - . **waste water**
 - RT bathing
 - cleaning
 - flushing
 - industrial wastes
 - residues
 - washing
 - water cooled reactors
- wastes**
- GS **wastes**
 - . garbage
 - . industrial wastes
 - . liquid wastes
 - . . urine
 - . . waste water
 - . manures
 - . metabolic wastes
 - . . human wastes
 - . . . feces
 - . . . urine
 - . hazardous wastes
 - . radioactive wastes
 - . sewage
 - . solid wastes
 - RT activated sludge
- air pollution
- beneficiation
- by-products
- combustion products
- contaminants
- debris
- effluents
- environment effects
- exhaust gases
- forest fires
- fumes
- gas recovery
- impurities
- leakage
- losses
- nonpoint sources
- organic wastes (fuel conversion)
- pollution
- residues
- scrap
- sewers
- slags
- sludge
- waste disposal
- waste energy utilization
- waste management
- waste treatment
- waste utilization
- watches*
- USE **clocks**
- water**
DEF Dihydrogen oxide (molecular formula H₂O). The word is used ambiguously to refer to the chemical compound in general and to its liquid phase; when the former is meant, the term water substance is often used.
- GS **water**
 - . cold water
 - . deep water
 - . fresh water
 - . heavy water
 - . inland waters
 - . . ground water
 - . extraterrestrial water
 - . light water
 - . nearshore water
 - . . coastal water
 - . polywater
 - . potable water
 - . sea water
 - . shallow water
 - . shoals
 - . springs (water)
 - . surface water
 - . vadose water
 - . waste water
 - RT aquifers
 - arroyos
 - bay ice
 - body fluids
 - cavitation flow
 - fiords
 - humidity
 - hydrates
 - ∞ hydraulics
 - hydrodynamics
 - hydrogen bonds
 - hydrogen compounds
 - hydrology
 - hydromechanics
 - hydrostatics
 - ice
 - isthmuses
 - Lake Erie
 - Lake Huron
 - lake ice
 - Lake Michigan
 - Lake Ontario
 - Lake Superior
 - laterites
 - life support systems
 - limnology
 - liquids
 - moderators
 - moisture
 - moisture content
 - muskegs
- oxides
- peninsulas
- pollution
- precipitation (meteorology)
- runway conditions
- slush
- sounds (topographic features)
- steam
- straits
- utilities
- water sampling
- water splitting
- watersheds
- wharves
- windpowered pumps
- water balance**
- GS balance
 - . material balance
 - . . **water balance**
 - RT body fluids
 - edema
 - ∞ equilibrium
 - homeostasis
 - hydrometeorology
 - lysimeters
 - osmosis
 - urination
- water circulation**
- GS circulation
 - . **water circulation**
 - . . water currents
 - . . . ocean currents
 - . . . coastal currents
 - el Nino
 - Gulf Stream
 - Lomonosov current
 - . . thermohaline circulation
 - RT lakes
 - oceanography
 - pollution transport
 - wind effects
- water color**
- GS electromagnetic properties
 - . optical properties
 - . . color
 - . . . **water color**
 - RT Coastal Zone Color Scanner
 - dissolved organic matter
 - lakes
 - ocean color scanner
 - oceans
 - rivers
 - Sea-viewing Wide Field-of-view Sensor
- water consumption**
- GS consumption
 - . **water consumption**
 - RT drought
 - irrigation
 - seepage
- water content*
- USE **moisture content**
- water cooled reactors**
- UF *physical constants testing reactor*
 - GS nuclear reactors
 - . liquid cooled reactors
 - . . **water cooled reactors**
 - . . . boiling water reactors
 - experimental boiling water reactors
 - Halden Boiling Water Reactor
 - Los Alamos Water Boiler Reactor
 - Pathfinder nuclear reactor
 - Spert reactors
 - . . . heavy water reactors
 - heavy water components test reactors
 - plutonium recycle test reactor
 - zero power reactor 2
 - . . light water reactors
 - . . . NRX reactors
 - . . . Plum Brook Reactor
 - . . . pressurized water reactors

water currents

- spectral shift control reactor
- swimming pool reactors
- zero power reactors
- zero power reactor 2
- zero power reactor 3
- zero power reactor 6
- zero power reactor 9

RT chemical reactors
nuclear engine for rocket vehicles

∞ reactors
waste water

water cooling

USE **liquid cooling**

water currents

DEF Net transport of water along a definable path. Used for currents (oceanography).

UF *currents (oceanography)*

GS circulation

- . water circulation
- . . **water currents**
- . . . ocean currents
- coastal currents
- el Nino
- Gulf Stream
- Lomonosov current

RT arroyos

∞ currents

- oceanography
- rapids
- sea roughness
- sea states
- surface waves
- tides
- upstream

water cycle (hydrology)

USE **hydrological cycle**

water deprivation

GS deprivation

- . **water deprivation**

water depth

RT cnoidal waves
coastal water
lakes
nearshore water
oceans
shallow water
shoals

water erosion

GS erosion

- . **water erosion**

RT arroyos
canyons
drainage patterns
flood damage
rain impact damage
ravines
soil erosion
wind erosion

water flow

GS fluid flow

- . liquid flow
- . . **water flow**

RT alluvium
canals
drainage
drainage patterns
flood damage
floods
flow measurement
Great Lakes (North America)
ground water

∞ hydraulics

- hydrodynamics
- hydrology models
- open channel flow
- pipe flow
- rapids
- watersheds

water hammer

RT hydraulic equipment
hydrodynamics
pipe flow

- pipelines
- rams (pumps)
- surges
- valves

water heating

DEF The heating of water by any means including solar technology.

GS heating

- . **water heating**

RT domestic energy
geothermal energy extraction
heat exchangers

∞ heaters

- heating equipment
- residential energy
- temperature control

water immersion

RT baths

- liquid cooling
- quenching (cooling)
- sinking

∞ soaking

- submerged bodies
- submerging
- underwater tests

water injection

GS injection

- . fluid injection
- . . liquid injection
- . . . **water injection**

RT gas injection
perforating
thrust augmentation

∞ water intakes

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

RT air intakes
intake systems
manifolds
nose inlets
plenum chambers
scoops
side inlets

water jets

USE **hydraulic jets**

water landing

GS landing

- . **water landing**

RT aircraft landing
crash landing
ditching (landing)
glide landings
hard landing
horizontal spacecraft landing
hydroplaning
planetary landing
soft landing
spacecraft landing
spacecraft recovery
splashing
touchdown

water loss

RT dehydration
drying
evaporation
losses

water management

GS management

- . **water management**

RT conservation
drought
environment management
floods
hydrology
Lake Erie
Lake Huron
Lake Michigan
Lake Ontario
Lake Superior
limnology
potable water
Pyramid Lake (NV)

watersheds

water masers

GS emission

- . **water masers**

stimulated emission devices

- . masers
- . . **water masers**

RT gas lasers
gas masers
interstellar masers
maser outputs

water moderated reactors

GS nuclear reactors

- . **water moderated reactors**
- . . experimental boiling water reactors
- . . heavy water components test reactors
- . . plutonium recycle test reactor

RT light water reactors

water pollution

GS pollution

- . environment pollution
- . . **water pollution**
- . . . oil pollution

RT algae
alkalinity
biochemical oxygen demand
clean energy
contamination
dissolved organic matter
drought
environment effects
environment protection
environmental chemistry
environmental cleanup
environmental quality
environmental surveys
inland waters
landfills
limnology
lysimeters
marine resources
oil slicks
phytoplankton
pollution monitoring
pollution transport
purity
soil pollution
thermal pollution
waste disposal
water sampling

water pressure

GS pressure

- . fluid pressure
- . . **water pressure**

RT ∞ hydraulics

- hydrodynamics
- hydrostatic pressure
- hydrostatics
- inlet pressure
- pipe flow

water purification

USE **water treatment**

water quality

GS quality

- . environmental quality
- . . **water quality**

RT alkalinity
environment effects
water sampling

water reclamation

UF *water recovery*

GS reclamation

- . materials recovery
- . . **water reclamation**

RT conservation
dewatering
drought

- pollution
- water recovery*
- USE **water reclamation**
- water resources**
- GS resources
- . Earth resources
 - . . . **water resources**
 - . . . aquifers
- RT environment effects
- environment management
 - Great Lakes (North America)
 - ground water
 - hydrology
 - inland waters
 - International Hydrological Decade
 - lakes
 - limnology
 - oceans
 - ponds
 - potable water
 - precipitation (meteorology)
 - Pyramid Lake (NV)
 - rainmaking
 - reservoirs
 - sea water
 - underwater resources
 - wetlands
 - windpowered pumps
- water runoff**
- RT drainage
- ground water
 - inland waters
 - resources management
 - rivers
 - wadis
- water sampling**
- (added March 1998)
- DEF The process of obtaining a representative sample of water from any natural or artificial environment.
- GS sampling
- . **water sampling**
- RT environmental monitoring
- ground water
 - pollution monitoring
 - sea water
 - surface water
 - water
 - water pollution
 - water quality
- water splitting**
- (added September 1988)
- GS splitting
- . **water splitting**
- RT electrolysis
- hydrogen fuels
 - hydrogen production
 - thermochemistry
 - water
- water tables**
- RT aquifers
- drainage
 - ground water
 - potable water
 - springs (water)
 - vadose water
 - watersheds
- water takeoff and landing aircraft**
- GS **water takeoff and landing aircraft**
- . seaplanes
- RT ∞ aircraft
- amphibious aircraft
 - antisubmarine warfare aircraft
 - commercial aircraft
 - ground effect machines
 - hovercraft ground effect machines
 - light aircraft
 - monoplanes
 - passenger aircraft
 - reconnaissance aircraft
 - S-61 helicopter
 - sea launching
 - submersible aircraft
- ∞ subsonic aircraft
- transport aircraft
 - utility aircraft
- water temperature**
- GS temperature
- . **water temperature**
 - . . ocean temperature
 - . . . sea surface temperature
- RT surface temperature
- temperature distribution
 - thermal pollution
- water treatment**
- UF *water purification*
- RT activated carbon
- adsorption
 - aeration
 - agitation
 - bentonite
 - biochemical oxygen demand
 - chlorination
 - coagulation
 - contaminants
 - corrosion prevention
 - demineralizing
 - desalinization
 - environmental cleanup
 - filtration
 - floculating
 - flotation
 - ion exchanging
 - material absorption
 - pollution
 - potable water
 - purification
- ∞ screening
- settling
 - sewage
- ∞ treatment
- water tunnel tests**
- RT air water interactions
- cross flow
 - flow distribution
 - flow visualization
 - strakes
- ∞ tests
- water waves
 - wind tunnel tests
- water tunnels*
- USE **hydraulic test tunnels**
- water vapor**
- DEF Water (H₂O) in gaseous form. Also called aqueous vapor.
- GS vapors
- . **water vapor**
- RT atmospheric moisture
- dew
 - humidity
 - mixing ratios
 - moisture
 - moisture content
 - steam
- water vehicles**
- GS **water vehicles**
- . boats
 - . . lifeboats
 - . . . captured air bubble vehicles
 - . ships
 - . . Advanced Range Instrumentation Ship
 - . . aircraft carriers
 - . . cargo ships
 - . . . Savannah nuclear ship
 - . . . tanker ships
 - . . nuclear powered ships
 - . . . Savannah nuclear ship
 - . . satellite communications ships
 - . . submarines
 - . . . ballistic missile submarines
 - . . . guided missile submarines
 - . . . trident submarine
 - . . surface effect ships
 - . . SWATH (ship)
 - . . underwater vehicles
 - . . submarines
- . . . ballistic missile submarines
- . . . guided missile submarines
 - . . . trident submarine
 - . . underwater research laboratories
- RT amphibious vehicles
- harbors
 - marine transportation
- ∞ military vehicles
- research vehicles
 - shipyards
 - surface vehicles
 - ∞ vehicles
- water waves**
- GS **water waves**
- . tidal waves
- RT breakwaters
- capillary waves
 - cnoidal waves
 - elastohydrodynamics
 - frontal waves
 - gravity waves
 - hydrodynamic coefficients
 - littoral transport
 - ocean dynamics
 - ripples
 - sea roughness
 - sea states
 - surface waves
 - tsunami waves
 - water tunnel tests
 - waterwave energy
 - waterwave energy conversion
 - waterwave powered machines
 - ∞ waves
- water wheels**
- GS wheels
- . **water wheels**
- RT hydroelectric power stations
- turbine wheels
- waterfowl**
- GS animals
- . vertebrates
 - . . birds
 - . . . **waterfowl**
- RT beaches
- coastal ecology
 - marine biology
 - marine environments
 - marshlands
 - migration
 - oceanography
 - wetlands
- waterproofing**
- RT barrier layers
- caulking
 - coatings
 - hydrophobicity
 - insulation
 - moisture resistance
 - protective coatings
 - sealing
 - weatherproofing
- watersheds**
- UF *catchment areas*
- GS landforms
- . structural basins
 - . . **watersheds**
- RT divides (landforms)
- drainage patterns
 - flood control
 - floods
 - hydrogeology
 - hydrology
 - International Hydrological Decade
 - Missouri River Basin (US)
 - mountains
 - ponds
 - precipitation (meteorology)
 - rain
 - river basins
 - rivers
 - storms (meteorology)
 - valleys
 - water
 - water flow

waterwave energy

water management
water tables

waterwave energy

GS renewable energy
. **waterwave energy**
RT clean energy
Earth resources
∞ energy
oceanography
tidepower
water waves
∞ waves

waterwave energy conversion

GS energy conversion
. **waterwave energy conversion**
RT ∞ conversion
Earth resources
energy conversion efficiency
∞ energy sources
ocean currents
ocean surface
oceanography
oceans
renewable energy
sea roughness
tide powered generators
tide powered machines
tidepower
tides
water waves

waterwave powered machines

RT ∞ machinery
ocean currents
ocean surface
sea roughness
tide powered generators
tide powered machines
tidepower
tides
water waves

waterways

DEF Navigable streams or canals; also channels for the passage or escape of water.

GS **waterways**
. canals
. harbors
. . . artificial harbors
RT lakes
rivers
straits

wattmeters

DEF Instruments for measuring the magnitude of the active power in an electric circuit. They are provided with a scale usually graduated in either watts, kilowatts, or megawatts. If the scale is graduated in kilowatts or megawatts, the instruments are usually designated as kilowattmeters or megawattmeters.

GS measuring instruments
. **wattmeters**
RT electrical measurement
electrometers

wave amplification

GS amplification
. **wave amplification**
RT baroclinic waves
electromagnetic radiation
∞ waves

wave attenuation

GS attenuation
. **wave attenuation**
. . . acoustic attenuation
. . . shock wave attenuation
. . . radar attenuation
. . . radio attenuation
RT atmospheric attenuation
electromagnetic absorption
electromagnetic missiles
infrared absorption
radar transmission
radio transmission

shock wave propagation

wave degradation

GS degradation
. **wave degradation**
RT attenuation
electromagnetic missiles
scattering
shock wave interaction

wave diffraction

GS diffraction
. **wave diffraction**
RT apodization
attenuation
crosstalk
diffraction radiation
Fresnel integrals
geometrical theory of diffraction
holographic optical elements
∞ interference
traveling wave modulation

wave dispersion

RT acoustic properties
atmospheric refraction
attenuation
∞ coherence
color
deflection
diffraction
∞ dispersion
elastic waves
electromagnetic radiation
fading
light transmission
optical paths
optical properties
radiation distribution
radio wave refraction
refraction
scattering
sound-sound interactions
transmission
transmission loss

wave drag

GS dynamic characteristics
. drag
. . . pressure drag
. . . **wave drag**
. . . . interference drag
RT friction drag
supersonic drag

wave equations

SN (NOT EQUATIONS OF MOTION)
GS **wave equations**
. Dirac equation
. eikonal equation
. Fowcs Williams-Hawkings equation
. Klein-Gordon equation
. Korteweg-Devries equation
. Lamé wave equations
. Schroedinger equation
RT Boltzmann-Vlasov equation
density wave model
∞ equations
forbidden bands
∞ Helmholtz equations
hyperbolic differential equations
partial differential equations
quantum theory

wave excitation

GS excitation
. **wave excitation**
. . . acoustic excitation
. . . harmonic excitation
RT diffraction radiation
stroking tests
∞ waves

wave front deformation

GS deformation
. **wave front deformation**
RT ∞ interference

thermal lensing

wave front reconstruction

GS reconstruction
. **wave front reconstruction**
RT acoustical holography
diffractometers
holographic interferometry
holographic spectroscopy
holography
kinoform
microwave holography
photography
white light holography

wave fronts

DEF A continuous surface drawn through the most forward points in wave disturbances that have the same phase.

GS **wave fronts**
. shock fronts
RT caustic lines
eikonal equation
∞ fronts
Huygens principle
phase coherence
phase velocity
shock discontinuity
∞ waves

wave functions

GS **wave functions**
. molecular orbitals
. Pauli exclusion principle
RT density functional theory
forbidden transitions
Hartree approximation
perturbation theory
square waves
time functions

wave generation

RT electromagnetic radiation
function generators
∞ generators
harmonic generations
shock wave generators
wave rotors

wave incidence control

RT ∞ control
incident radiation

wave interaction

GS **wave interaction**
. shock wave interaction
. wave-particle interactions
RT acoustic coupling
coupling
damping
electroacoustic waves
electromagnetic interactions
four-wave mixing
∞ interactions
intermodulation
modulation
orthogonal multiplexing theory
plasma interactions
propagation modes
scattering
shock wave luminescence
shock wave profiles
shock wave propagation

wave motion

USE **waves**

wave oscillators

USE **oscillators**

wave packets

RT longitudinal waves
packets (communication)
plasma waves
quantum mechanics
transverse waves

wave propagation

UF *Kirchhoff-Huygens principle*
GS transmission

- . **wave propagation**
 - .. acoustic propagation
 - ... sound propagation
 - .. diffraction propagation
 - .. ground wave propagation
 - .. ionospheric propagation
 - ... ionospheric F-scatter propagation
 - .. light scattering
 - ... halos
 - .. scatter propagation
 - ... ionospheric F-scatter propagation
 - .. shock wave propagation
 - .. transequatorial propagation
- RT acoustic attenuation
- acoustic microscopes
- atmospheric attenuation
- attenuation
- automatic picture transmission
- beam waveguides
- ∞ coherence
- coherent radiation
- computational aeroacoustics
- ∞ conduction
- diffraction
- double sideband transmission
- electromagnetic absorption
- electromagnetic missiles
- electromagnetic wave transmission
- evanescent waves
- Ffowcs Williams-Hawkings equation
- geometrical acoustics
- group velocity
- Huygens principle
- hydraulic analogies
- ion acoustic waves
- Lame wave equations
- light transmission
- lossy media
- microwave attenuation
- microwave transmission
- multipath transmission
- nonadiabatic theory
- phase velocity
- plasma acceleration
- plasmaguides
- ∞ propagation
- propagation modes
- propagation velocity
- pulse diffraction
- radar attenuation
- radar transmission
- radio attenuation
- radio transmission
- refraction
- Sagnac effect
- screen effect
- shock fronts
- shock wave attenuation
- short wave radio transmission
- single sideband transmission
- sound transmission
- square waves
- stress waves
- television transmission
- waveforms
- whispering gallery modes
- Whitham rule

wave radiation

USE **electromagnetic radiation**

wave reflection

GS reflection

- . **wave reflection**
- .. Mach reflection

RT ground effect (communications)

reflected waves

signal reflection

spread reflection

wave resistance

RT blast loads

erosion

impact strength

∞ resistance

structural stability

wave rotors

(added March 1998)

DEF Rotor devices that use gasdynamic

waves to transfer energy rather than the motion of solid surfaces. Typically, they consist of a series of passages arranged on a drum which rotates about an axis. Through rotation, the ends of the passages are periodically exposed to various circumferentially arranged ports which initiate the traveling expansion or compression waves within the passages. The particular circumferential location of the ports determines the thermodynamic cycle of the working fluid.

GS rotating bodies

- . rotors

- .. **wave rotors**

RT compression waves

energy transfer

engine parts

gas dynamics

gas generators

gas turbine engines

topping cycle engines

turbomachinery

turboshafts

wave generation

wave scattering

GS scattering

- . **wave scattering**
- .. acoustic scattering
- ... reverberation
- .. atmospheric scattering
- ... tropospheric scattering
- .. electromagnetic scattering
- ... ionospheric F-scatter propagation
- ... light scattering
 - ... halos
- ... microwave scattering
- ... Mie scattering
- ... Rayleigh scattering
- ... Raman spectra
- ... Thomson scattering
- ... x ray scattering

RT Faddeev equations

magnetic dispersion

reciprocity theorem

scattering amplitude

scatterometers

shock fronts

waveforms

DEF The graphical representations of waves, showing variation of amplitude with time.

GS **waveforms**

- . pulse amplitude
- . pulse duration
- . sawtooth waveforms
- . square waves

RT form factors

speech baseband compression

time functions

wave propagation

waveguide antennas

GS antennas

- . **waveguide antennas**
- .. horn antennas

RT corrugated waveguides

dielectric waveguides

lens antennas

microstrip antennas

microwave antennas

monopulse antennas

radant

slot antennas

Yagi antennas

waveguide filters

GS electromagnetic wave filters

- . electric filters
- .. **waveguide filters**

RT bandstop filters

dielectric waveguides

microwave filters

radar filters

waveguides

waveguide lasers

DEF Pump sources for deuterium oxide lasers.

GS stimulated emission devices

- . lasers

.. **waveguide lasers**

- ... fiber lasers

RT aluminum gallium arsenide lasers

carbon dioxide lasers

gallium arsenide lasers

heterojunction devices

infrared lasers

laser modes

laser outputs

optical waveguides

pulsed lasers

quantum well lasers

semiconductor lasers

surface emitting lasers

tube lasers

waveguide tuners

GS tuners

- . **waveguide tuners**

RT impedance matching

mode transformers

yttrium-iron garnet

waveguide windows

RT impedance matching

irises (mechanical apertures)

∞ windows

waveguides

GS **waveguides**

- . beam waveguides
- . circular waveguides
- . Earth-ionosphere waveguide
- . optical waveguides
- . optical fibers
- ... scintillating fibers
- . corrugated waveguides
- . dielectric waveguides
- . plasmaguides
- . rectangular waveguides

RT antenna feeds

coaxial cables

communication cables

crossed fields

electromagnetic surface waves

gyrators

irises (mechanical apertures)

microwave switching

microwave transmission

parallel plates

plastic fibers

propagation modes

Smith chart

transmission lines

waveguide filters

wavelength division multiplexing

DEF The process in which each modulating wave modulates a separate subcarrier and the subcarriers are spaced in wavelengths. This term is used in optical communication where wavelength usage is preferred over frequency.

GS transmission

- . multiplexing
- .. **wavelength division multiplexing**

RT code division multiplexing

demultiplexing

frequency division multiplexing

orthogonal multiplexing theory

time division multiplexing

wavelengths

DEF Distance in the direction of propagation of a periodic wave between two successive points at which the phase is the same (at the same time).

GS **wavelengths**

- . de Broglie wavelengths

RT antinodes

harmonics

infrared radiation

laser modes

laser outputs

longitudinal waves

maser outputs

millimeter waves

nodes (standing waves)

spectral emission

standing waves

Stokes law of radiation

wavelet analysis

submillimeter waves
whispering gallery modes

wavelet analysis

(added September 1993)

UF *wavelet transform*

RT cosine series

Fourier analysis

Fourier transformation

functions (mathematics)

Gabor transformation

image processing

orthonormal functions

signal analysis

signal encoding

signal processing

sine waves

time functions

transformations (mathematics)

∞ waves

wavelet transform

USE **wavelet analysis**

wave-particle interactions

(added July 1991)

GS particle interactions

. **wave-particle interactions**

wave interaction

RT . **wave-particle interactions**

beam interactions

electromagnetic interactions

electrostatic waves

magnetohydrodynamic waves

magnetohydrodynamics

particle acceleration

plasma acceleration

plasma interactions

plasma waves

plasma-electromagnetic interaction

plasma-particle interactions

space plasmas

waveriders

GS aerodynamic configurations

. **waveriders**

RT airfoils

caret wings

delta wings

hypersonic flight

hypersonic vehicles

lifting bodies

∞ waves

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED—CONSULT THE TERMS LISTED BELOW)

UF *crests*

wave motion

RT baroclinic waves

breakwaters

cnoidal waves

corrugating

cylindrical waves

detonation waves

dilatational waves

eikonal equation

elastic waves

electroacoustic waves

electromagnetic radiation

electromagnetic surface waves

evanescent waves

frontal waves

gravitational waves

internal waves

ionic waves

Kelvin waves

kilometric waves

littoral transport

longitudinal waves

nodes (standing waves)

plane waves

planetary waves

refracted waves

seismic waves

SH waves

shock waves

sine waves

sound waves

spherical waves

square waves

standing waves

stress waves

surface waves

surges

tidal waves

transverse waves

tropospheric waves

vibration

water waves

waterwave energy

wave amplification

wave excitation

wave fronts

wavelet analysis

waxes

GS **waxes**

. ceresin

RT alkanes

coatings

crude oil

finishes

phase change materials

weak energy interactions

GS decay

. **weak energy interactions**

. . weak interactions (field theory)

particle interactions

. elementary particle interactions

. . **weak energy interactions**

. . . weak interactions (field theory)

RT beta particles

grand unified theory

gravitinos

∞ interactions

particle theory

weak interactions (field theory)

DEF One class of the fundamental interactions among elementary particles responsible for beta decay of nuclei, and for the decay of elementary particles with lifetimes greater than about 10⁻¹⁰ seconds such as muons, K mesons, and lambda hyperons; it is several orders of magnitude weaker than the strong and electromagnetic interactions and fails to conserve strangeness or parity. Used for beta interactions.

UF *beta interactions*

GS decay

. weak energy interactions

. . **weak interactions (field theory)**

nuclear reactions

. nuclear interactions

. . **weak interactions (field theory)**

particle interactions

. elementary particle interactions

. . weak energy interactions

. . . **weak interactions (field theory)**

. nuclear interactions

. . **weak interactions (field theory)**

RT CP violation

electroweak interactions (field theory)

electroweak model

field theory (physics)

grand unified theory

∞ interactions

standard model (particle physics)

strong interactions (field theory)

∞ theories

weakly interacting massive particles

(added November 1999)

DEF Hypothetical elementary particles predicted by supersymmetry theories, that interact only through gravity and weak-type interactions; postulated to account for dark matter in the Universe.

UF *cosmions*

WIMPs (astronomy)

GS particles

. elementary particles

. . hypothetical particles

. . . **weakly interacting massive particles**

RT dark matter

missing mass (astrophysics)

solar neutrinos

weapon system 107A-1

GS weapon systems

. **weapon system 107A-1**

weapon system 107A-2

GS weapon systems

. **weapon system 107A-2**

weapon system 133A

GS weapon systems

. **weapon system 133A**

weapon system 133B

GS weapon systems

. **weapon system 133B**

weapon system 315A

GS weapon systems

. **weapon system 315A**

weapon system management

GS management

. **weapon system management**

RT project management

∞ systems

weapon systems

DEF A combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency.

GS **weapon systems**

. ground operational support system

. laser weapons

. missile systems

. . Nike X systems

. . Safeguard system

. Sentinel system

. Success project

. Typhon weapon system

. weapon system 107A-1

. weapon system 107A-2

. weapon system 133A

. weapon system 133B

. weapon system 315A

RT air to surface missiles

antiship missiles

fire control

Harpoon missile

∞ military aircraft

military spacecraft

missile launchers

missiles

mobile missile launchers

nuclear weapons

ordnance

∞ rockets

space weapons

∞ systems

weapons

weapons development

weapons

GS **weapons**

. guns (ordnance)

. . artillery

. . . howitzers

. . . precision guided projectiles

. . rifles

. laser weapons

. mines (ordnance)

. nuclear weapons

. . fission weapons

. . fusion weapons

. space weapons

. warheads

. . nuclear warheads

. . precision guided projectiles

. biological weapons

RT ammunition

antiquities

antiship warfare

armed forces (foreign)

armed forces (United States)

∞ ballistic vehicles

disarmament

fire control

gunnery training

military technology
missiles
ordnance
Patriot missile
projectiles
shaped charges
shrapnel
tanks (combat vehicles)
Tomahawk missiles
torpedoes
weapon systems
weapons delivery
wing-fuselage stores

weapons delivery

DEF Total requirements for locating the target, establishing the release conditions, and maintaining to the target (if required); includes the detection, recognition, and acquisition of the target, the weapons release as well as guidance.

GS delivery
. **weapons delivery**
RT air defense
∞ aircraft
defense program
military technology
missile defense
nuclear weapons
∞ rockets
space weapons
weapons

weapons development

GS product development
. **weapons development**
RT research and development
weapon systems

weapons industry

GS industries
. defense industry
. . **weapons industry**
RT armed forces (United States)
military technology

wear

DEF Damage to a solid surface, generally involving progressive loss of material, due to relative motion between that surface and a contacting substance or substances.

RT abrasion
chipping
corrosion
damage
depreciation
deterioration
durability
erosion
failure
flaking
flaking
fretting corrosion
friction
grinding (material removal)
hardness
removal
scoring
sliding friction
spalling
surface finishing
∞ surfaces
system failures
tribology
wear resistance

wear inhibitors

GS inhibitors
. **wear inhibitors**
RT retardants
wear resistance

wear resistance

GS mechanical properties
. **wear resistance**
. . abrasion resistance
RT abrasion
boundary lubrication
coefficient of friction
deterioration
hardness

lubricant tests
∞ resistance
sliding friction
toughness
wear
wear inhibitors
wear tests

wear tests

RT cumulative damage
destructive tests
erosion
ferrography
fretting
friction
hardness tests
∞ materials tests
quality control
spalling
static tests
∞ tests
tribometers
wear resistance

weather

UF *weather conditions*
GS **weather**
. cold weather
. hot weather
RT aircraft accidents
aircraft hazards
aircraft safety
Alpine meteorology
annual variations
anvil clouds
Atmospheric & Oceanographic Inform Sys
atmospheric pressure
atmospheric temperature
cap clouds
cirrocumulus clouds
cirrostratus clouds
climate
climatology
clouds (meteorology)
flight hazards
flight plans
Global Atmospheric Research Program
long term effects
meteorological parameters
meteorology
METEOSAT satellite
navigation aids
precipitation (meteorology)
runway conditions
seasons
solar compasses
solar terrestrial interactions
space weather
wind (meteorology)

weather charts

USE **meteorological charts**

weather conditions

USE **weather**

weather control

USE **weather modification**

weather data recorders

GS data recorders
. **weather data recorders**
measuring instruments
. meteorological instruments
. . **weather data recorders**
recording instruments
. **weather data recorders**
RT automatic weather stations
∞ data
telemetry

weather forecasting

GS meteorology
. **weather forecasting**
. . long range weather forecasting
. . nowcasting
. . numerical weather forecasting
. . statistical weather forecasting

predictions
. forecasting
. . **weather forecasting**
. . . long range weather forecasting
. . . nowcasting
. . . numerical weather forecasting
. . . statistical weather forecasting

RT

air masses
atmospheric models
cirrus shields
cloud cover
cockpit weather information systems
cold fronts
environmental monitoring
flight conditions
flood predictions
GARP Atlantic Tropical Experiment
hindcasting
humidity
meteorological balloons
meteorological flight
meteorological radar
meteorological satellites
meteorological services
nephelanalysis
NOAA 19 satellite
NPOESS
precipitation (meteorology)
snowstorms
storms
storms (meteorology)
synoptic meteorology
warm fronts
wind (meteorology)

weather fronts

USE **fronts (meteorology)**

weather maps

USE **meteorological charts**

weather modification

UF *weather control*
GS **weather modification**
. cloud dispersal
. cloud seeding
. fog dispersal
. lightning suppression
. rainmaking
. storm enhancement
. storm suppression
RT artificial clouds
cloud physics
∞ control
environmental control
heat islands
snowstorms

weather radar

USE **meteorological radar**

weather reconnaissance aircraft

GS reconnaissance aircraft
. **weather reconnaissance aircraft**
RT ∞ aircraft
Global Atmospheric Research Program
meteorological instruments
observation aircraft

weather stations

UF *meteorological stations*
GS stations
. **weather stations**
. . automatic weather stations
RT ground stations
instrument packages
integrated global ocean station systems
meteorological instruments
meteorological satellites
meteorological services
ocean data acquisitions systems

weathering

DEF The process of disintegration and decomposition as a consequence of exposure to the atmosphere, to chemical action, and to the action of frost water and heat.

GS exposure

weatherproofing

. **weathering**
. . space weathering
RT corrosion
corrosion tests
curing
damage
degradation
deterioration
Earth atmosphere
erosion
mechanical properties
rusting
soil erosion

weatherproofing
RT coatings
cold weather
corrosion prevention
moisture resistance
packaging
preserving
waterproofing

weaving
RT fabrics
sewing
woven composites

web services
(added May 2007)
DEF A software system designed to support interoperable machine to machine interactions over a network.
GS computer programs
. applications programs (computers)
. . **web services**
services
. **web services**
RT internets
on-line systems
service oriented architecture
World Wide Web

web sites
(added March 2001)
USE **websites**

webbing
RT fabrics
mesh
∞ webs
webs (sheets)

Weber test
GS physiological tests
. **Weber test**
RT auditory perception
binaural hearing

Weber-Fechner law
DEF An approximate psychological law relating the degree of response or sensation of a sense organ and the intensity of the stimulus. The law asserts that equal increments of sensation are associated with equal increments of the logarithm of the stimulus, or that the just noticeable difference in any sensation results from a change in the stimulus which bears a constant ratio to the value of the stimulus.
GS laws
. **Weber-Fechner law**

∞ **webs**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
RT membranes
mesh
webbing
webs (sheets)
webs (supports)

webs (membranes)
USE **membranes**

webs (sheets)
SN (EXCLUDES POLYMERIC FILMS AND STRUCTURAL REINFORCEMENTS)
RT diaphragms (mechanics)
elastic sheets
fabrics

∞ films
membranes
netting (materials/structures)
paper (material)
papers
∞ rovings
∞ sheets
webbing
∞ webs
webs (supports)

webs (supports)
GS **webs (supports)**
. girder webs
RT diaphragms (mechanics)
elastic sheets
membrane structures
membranes
ribs (supports)
skin (structural member)
stiffening
∞ webs
webs (sheets)

websites
(added March 2001)
DEF Locations on the World Wide Web providing a collection of linked resources, usually including a homepage, and prepared and maintained as a collection of information by a person, group, or organization.
UF *web sites*
GS resources
. Internet resources
. . **websites**
RT electronic bulletin boards
electronic commerce
information dissemination
information resources management
information systems
internets
on-line systems
World Wide Web

wedge flow
GS fluid flow
. **wedge flow**
RT Blasius flow
conical flow
Falkner-Skan equation
flow geometry
laminar flow
shock waves
supersonic flow
three dimensional flow
two dimensional flow
viscous flow

wedges
RT aerodynamic configurations
airfoil profiles
airfoils

Weibel instability
DEF An instability of collisionless plasmas characterized by the unstable growth of transverse electromagnetic waves and large magnetic field fluctuation brought about by an anisotropic distribution of electronic velocities.
GS dynamic characteristics
. dynamic stability
. . motion stability
. . . flow stability
. . . . magnetohydrodynamic stability
. . . . **Weibel instability**
. flow characteristics
. . flow stability
. . . magnetohydrodynamic stability
. . . . **Weibel instability**
stability
. dynamic stability
. . motion stability
. . . flow stability
. . . . magnetohydrodynamic stability
. **Weibel instability**
RT plasma interactions

Weibull density functions
GS functions (mathematics)
. probability density functions

. . **Weibull density functions**
statistical analysis
. probability density functions
. . **Weibull density functions**
RT exponential functions
fatigue tests
sampling

Weierstrass functions
GS analysis (mathematics)
. real variables
. . **Weierstrass functions**
RT elliptic functions
Jacobi integral

∞ **weight**
SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
DEF The force exerted on a body by gravity.
RT atomic weights
biomass
coefficients
payloads
weight (mass)

weight (mass)
UF *weight factors*
GS **weight (mass)**
. atomic weights
. biomass
. body weight
. organ weight
. structural weight
RT center of mass
∞ force
gravitation
loads (forces)
low molecular weights
mascons
mass
molecular weight
payloads
pressure
volume
∞ weight

weight analysis
RT ∞ analyzing
NEW MOONS project
preflight analysis
structural weight
systems analysis

weight factors
USE **weight (mass)**

weight indicators
UF *wind tunnel balances*
GS measuring instruments
. indicating instruments
. . **weight indicators**
. . . microbalances
. . . strain gage balances
. . . thermobalances
RT balance
mechanical measurement
pressure gages
pressure measurement
∞ scale
strain gages
tensometers

weight measurement
UF *microweighing*
RT density (mass/volume)
hydrometers
∞ measurement

weight reduction
RT aircraft design
materials selection
spacecraft design
structural design
structural weight
systems analysis

weighting functions
GS analysis (mathematics)
. real variables
. . measure and integration

... **weighting functions**
 functions (mathematics)
 . **weighting functions**
 RT meshfree methods
 statistical mechanics

weightless fluids
 RT ∞ fluids
 viscous fluids

weightlessness
 DEF A condition in which no acceleration, whether of gravity or other force, can be detected by an observer within the system in question. Used for zero gravity.
 UF *zero gravity*
 RT aerospace medicine
 artificial gravity
 astronaut performance
 ∞ astronautics
 bioprocessing
 blackout prevention
 body weight
 bone demineralization
 clinorotation
 containerless melts
 disorientation
 drop towers
 electrolyte metabolism
 environments
 extravehicular activity
 flight stress (biology)
 free fall
 gravitation
 gravitational effects
 intravehicular activity
 life support systems
 low weight
 lower body negative pressure
 microgravity
 neutral buoyancy simulation
 parabolic flight
 space adaptation syndrome
 space flight stress
 space manufacturing
 Space Processing Applications
 Rocket
 spaceborne experiments
 spacecraft environments
 suborbital flight

weightlessness simulation
 GS simulation
 . environment simulation
 . . space environment simulation
 . . . **weightlessness simulation**
 neutral buoyancy simulation
 RT clinorotation
 clinostats
 flight simulation
 head down tilt
 head up tilt
 hindlimb suspension
 Langley complex coordinator
 parabolic flight
 submerging
 tilt-table test

Weinberg-Salam Gauge Model
 USE **electroweak model**

weld strength
 GS mechanical properties
 . **weld strength**
 RT ∞ strength
 weldability
 welded joints

weld tests
 RT fatigue tests
 ∞ tests
 welded joints

weldability
 RT brittleness
 ductility
 heat affected zone

weld strength

welded joints
 GS joints (junctions)
 . metal joints
 . . **welded joints**
 . . . spot welds
 RT beads
 bonded joints
 butt joints
 friction stir welding
 lap joints
 riveted joints
 weld strength
 weld tests
 welding

welded structures
 GS **welded structures**
 . steel structures
 RT rigid structures
 ∞ structures

welding
 DEF Joining two or more pieces of metal by applying heat, pressure, or both, with or without filler material to produce a localized union through fusion or recrystallization across the interface.
 GS **welding**
 . fusion welding
 . . electric welding
 . . . arc welding
 gas tungsten arc welding
 plasma arc welding
 electroslag welding
 flash welding
 electron beam welding
 . . gas welding
 . . . brazing
 low temperature brazing
 . . laser welding
 . pressure welding
 . . cold welding
 . . diffusion welding
 . . explosive welding
 . . friction welding
 . . . friction stir welding
 . . ultrasonic welding
 RT backups
 beads
 bonding
 construction
 fillets
 flame plating
 fluxes
 fusibility
 heat affected zone
 ∞ joining
 metal bonding
 metal-metal bonding
 sealing
 soldering
 torches
 welded joints

welding machines
 RT ∞ electric equipment
 electric welding
 ∞ machinery
 torches

wells
 RT aquifers
 drilling
 ground water
 limnology
 oases
 springs (water)
 square wells
 stratigraphy

Wentzel-Kramer-Brillouin method
 UF *WKB approximation*
 RT de Broglie wavelengths
 ∞ methodology
 perturbation theory
 Plancks constant

Schroedinger equation

Weser aircraft
 RT ∞ aircraft
 helicopters
 rotary wing aircraft
 V/STOL aircraft

West comet
 DEF A comet discovered in 1976.
 GS celestial bodies
 . comets
 . . **West comet**
 RT solar system

West Ford project
 GS programs
 . projects
 . . **West Ford project**

West Germany
 UF *Federal Republic of Germany*
 GS nations
 . **West Germany**
 RT Alps Mountains (Europe)
 Azur satellite
 Central Europe
 East Germany
 Europe
 German Infrared Laboratory
 German space program
 Germany

West Indies
 GS landforms
 . islands
 . . **West Indies**
 . . . Antigua and Barbuda
 . . . Bahamas
 . . . Barbados
 . . . Cuba
 . . . Dominica
 . . . Grenada
 . . . Guadeloupe
 . . . Haiti
 . . . Jamaica
 . . . Lesser Antilles
 . . . Martinique
 . . . Puerto Rico
 . . . Trinidad and Tobago
 . . . Virgin Islands
 RT Atlantic Ocean
 Caribbean region

West Virginia
 GS nations
 . United States
 . . **West Virginia**
 RT Allegheny Plateau (US)
 Ohio River (US)
 Potomac River Valley (MD-VA-WV)

Westar satellites
 GS artificial satellites
 . communication satellites
 . . **Westar satellites**
 RT point to point communication
 telecommunication
 telegraph systems

Western hemisphere
 RT Earth (planet)
 Eastern Hemisphere
 geography

Westland aircraft
 GS **Westland aircraft**
 . P-531 helicopter
 . Westland Whirlwind helicopter
 RT ∞ aircraft
 helicopters
 rotary wing aircraft
 V/STOL aircraft

Westland ground effect machines
 UF *SR-N2 ground effect machine*
SR-N3 ground effect machine
SR-N5 ground effect machine
Westland SR-N2 ground effect machine

Westland Whirlwind helicopter

Westland SR-N2 hovercraft
Westland SR-N3 ground effect machine
Westland SR-N3 hovercraft
Westland SR-N5 ground effect machine

GS ground effect machines
. **Westland ground effect machines**
RT ∞ aircraft

Westland MK-10 helicopter
USE **Westland Whirlwind helicopter**

Westland P-531 helicopter
USE **P-531 helicopter**

Westland SR-N2 ground effect machine
USE **Westland ground effect machines**

Westland SR-N2 hovercraft
USE **Westland ground effect machines**

Westland SR-N3 ground effect machine
USE **Westland ground effect machines**

Westland SR-N3 hovercraft
USE **Westland ground effect machines**

Westland SR-N5 ground effect machine
USE **Westland ground effect machines**

Westland Whirlwind helicopter
UF *Westland MK-10 helicopter*
Whirlwind MK-10 helicopter
GS V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. . . . **Westland Whirlwind helicopter**
Westland aircraft
. **Westland Whirlwind helicopter**
RT ∞ aircraft

wet cells
GS electrochemical cells
. electric batteries
. . . **wet cells**
RT ∞ electric cells
electrolytes
fuel cells
nonaqueous electrolytes
primary batteries

wet spinning
DEF The production of synthetic and man-made filaments by extruding the chemical solution through spinnerets into a chemical bath where they coagulate.
RT extruding fibers
∞ filaments
∞ processing
synthetic fibers
textiles
wetting

wetlands
DEF Lands which have the water table at, near, or above the land surface, or which are saturated for long enough periods to promote hydrophylic vegetation and various kinds of biological activity which are adapted to the wet environment.

GS land
. **wetlands**
. . marshlands
RT coastal currents
coastal ecology
coastal plains
coastal water
environment effects
fisheries
marine biology
marine environments
marine resources
nearshore water
oceanography
oil pollution
sea grasses
shorelines
tides

water resources
waterfowl
wildlife

wetness
USE **moisture content**

wettability
RT adhesion
adhesion tests
formations
hydrophobicity
hygroscopicity
permeability
porosity
surface properties
wetting

wetting
RT cooling
dipping
foaming
hydrophobicity
interfacial tension
∞ saturation
∞ soaking
soaps
spraying
sprinkling
submerging
wet spinning
wettability

whales
GS animals
. vertebrates
. . mammals
. . . marine mammals
. . . . **whales**

wharves
UF *piers*
RT cargo ships
dams
Earth resources
freighters
harbors
marine technology
materials handling
∞ ports
rivers
ship terminals
tanker ships
terminal facilities
water

wheat
GS farm crops
. grains (food)
. . **wheat**
RT crop growth
crop vigor
∞ crops
rice

Wheatstone bridges
GS circuits
. electric bridges
. . wire bridge circuits
. . . **Wheatstone bridges**
RT measuring instruments
ohmmeters

wheel brakes
GS brakes (for arresting motion)
. **wheel brakes**
RT aircraft brakes
aircraft safety
antiskid devices
controllability
friction
hydraulic equipment
landing gear
tires
vehicle wheels

wheelchairs
DEF Four wheeled ambulatory devices for persons with minimal or no use of lower extremities which can be either manually or electrically

powered. They are often individually fitted.
RT disabilities
human factors engineering
locomotion
ramps (structures)

wheels
DEF Rims fitted with disks for affixment to axles.
GS **wheels**
. counter-rotating wheels
. flywheels
. reaction wheels
. toroidal wheels
. turbine wheels
. vehicle wheels
. . nose wheels
. water wheels
RT bearings
brakes (for arresting motion)
gears
hubs
landing gear
pulleys
rollers
rotors
shafts (machine elements)
spokes
tires

whip antennas
DEF Thin flexible monopole antennas.
GS antennas
. omnidirectional antennas
. . monopole antennas
. . . **whip antennas**
RT radio antennas

whiplash injuries
GS injuries
. **whiplash injuries**
RT back injuries
crash injuries
spinal cord injuries

whirl
USE **rotation**

whirl instability
USE **rotary stability**

whirl towers
RT helicopter design
hovering
hovering stability
parachutes
rotary wings
rotor aerodynamics
spin tests

whirling
USE **rotation**

whirling tests
USE **spin tests**

Whirlwind MK-10 helicopter
USE **Westland Whirlwind helicopter**

whisker composites
UF *metal whisker reinforcement*
GS composite materials
. **whisker composites**
RT aramid fiber composites
eutectic alloys
metal matrix composites
reinforcing fibers

whiskers (crystals)
GS crystals
. **whiskers (crystals)**
RT dendritic crystals
fibers
∞ filaments

whispering gallery modes
(*added September 1988*)
DEF Electromagnetic (or elastic) waves that differ in frequency by more than an order of magnitude.
GS modes

- . propagation modes
- . . **whispering gallery modes**
- RT acoustic frequencies
- acoustic propagation
- electromagnetic radiation
- electromagnetic wave transmission
- wave propagation
- wavelengths
- whistler recorders**
- GS communication equipment
- . radio receivers
- . . **whistler recorders**
- radio equipment
- . radio receivers
- . . **whistler recorders**
- receivers
- . radio receivers
- . . **whistler recorders**
- recording instruments
- . **whistler recorders**
- RT sonograms
- whistlers**
- DEF Radiofrequency electromagnetic signals generated by some lightning discharges.
- GS atmospheric radiation
- . ionospheric noise
- . . **whistlers**
- electromagnetic interference
- . radio frequency interference
- . . electromagnetic noise
- . . . atmospherics
- **whistlers**
- . . . ionospheric noise
- **whistlers**
- electromagnetic radiation
- . radio waves
- . . sky waves
- . . . **whistlers**
- RT dawn chorus
- electromagnetic fields
- lightning
- microwaves
- radio signals
- sonograms
- white blood cells*
- USE **leukocytes**
- white dwarf stars**
- GS celestial bodies
- . stars
- . . early stars
- . . . hot stars
- **white dwarf stars**
- RT cataclysmic variables
- degenerate matter
- dwarf novae
- dwarf stars
- red dwarf stars
- subdwarf stars
- supernova remnants
- Wolf-Rayet stars
- white holes (astronomy)**
- DEF Time-reversed black holes, expanding sources with growing intensity and photon energy.
- GS celestial bodies
- . stars
- . . **white holes (astronomy)**
- RT black holes (astronomy)
- cosmology
- electromagnetic radiation
- event horizon
- gravitational collapse
- gravitational lenses
- light emission
- naked singularities
- supernova remnants
- white light holography**
- GS imagery
- . photography
- . . holography
- . . . **white light holography**
- RT data storage
- holographic optical elements
- wave front reconstruction
- white noise**
- DEF A sound or electromagnetic wave whose spectrum is continuous and uniform as a function of frequency. Used for spectral noise.
- UF *spectral noise*
- GS electromagnetic interference
- . radio frequency interference
- . . electromagnetic noise
- . . . **white noise**
- thermal noise
- RT electromagnetic noise measurement
- jamming
- ∞ noise
- noise (sound)
- noise spectra
- random noise
- signal to noise ratios
- spectral bands
- white smokers (oceanography)*
- (added April 2005)
- USE **submarine hydrothermal vents**
- whiteout**
- RT visibility
- visual flight
- Whitham rule**
- GS rules
- . **Whitham rule**
- RT shock waves
- wave propagation
- Whittaker functions**
- GS analysis (mathematics)
- . real variables
- . . **Whittaker functions**
- functions (mathematics)
- . **Whittaker functions**
- RT differential equations
- wicks**
- RT fuses (ordnance)
- wide angle lenses**
- GS lenses
- . **wide angle lenses**
- optical equipment
- . **wide angle lenses**
- RT all sky photography
- cameras
- panoramic cameras
- wide area networks**
- (added August 1995)
- UF WAN
- GS networks
- . communication networks
- . . **wide area networks**
- . . computer networks
- . . . **wide area networks**
- RT distributed processing
- local area networks
- packets (communication)
- telecommunication
- wideband*
- USE **broadband**
- wideband communication**
- GS telecommunication
- . **wideband communication**
- RT broadband amplifiers
- code division multiple access
- multiple access
- point to point communication
- time division multiple access
- tropospheric scattering
- Wide-field Infrared Survey Explorer**
- (added January 2010)
- DEF An unmanned satellite carrying an infrared telescope for imaging the entire sky. Successor to the Infrared Astronomical Satellite.
- UF *WISE (astronomy)*
- GS artificial satellites
- . scientific satellites
- . . astronomical satellites
- . . . **Wide-field Infrared Survey Explorer**
- observatories
- . astronomical observatories
- . . astronomical satellites
- . . . **Wide-field Infrared Survey Explorer**
- telescopes
- . spaceborne telescopes
- . . **Wide-field Infrared Survey Explorer**
- infrared astronomy
- Infrared Astronomy Satellite
- sky surveys (astronomy)
- Widmanstatten structure**
- GS crystal structure
- . **Widmanstatten structure**
- microstructure
- . **Widmanstatten structure**
- RT iron meteorites
- metallography
- meteoritic microstructures
- ∞ patterns
- width**
- GS dimensions
- . **width**
- RT bandwidth
- ∞ span
- Wiener filtering**
- RT electric filters
- optimization
- statistical analysis
- Wiener Hopf equations**
- GS analysis (mathematics)
- . functional analysis
- . . integral equations
- . . . **Wiener Hopf equations**
- RT ∞ equations
- WIG vehicles*
- (added December 1999)
- USE **wing-in-ground effect vehicles**
- wiggler magnets**
- DEF Components used in the production of coherent x rays by the pumping of a gas with synchrotron radiation in combination with low energy photon beams.
- GS magnets
- . **wiggler magnets**
- reflectors
- . **wiggler magnets**
- RT diffraction radiation
- free electron lasers
- laser pumping
- tunable lasers
- Wightman theory*
- USE **field theory (physics)**
- quantum theory**
- relativistic theory**
- Wigner coefficient**
- GS coefficients
- . **Wigner coefficient**
- RT angular momentum
- quantum mechanics
- Wild 2 comet**
- (added March 1999)
- DEF Periodic comet, discovered January 1978, relatively new to the inner Solar System due to a shift in its orbit caused by the gravitational influence of Jupiter.
- GS celestial bodies
- . comets
- . . **Wild 2 comet**
- RT Stardust Mission
- wilderness**
- RT deserts
- forests
- land management
- plains
- remote regions

wildlife

rural areas

wildlife

GS animals

. **wildlife**

RT birds

endangered species

environment effects

fishes

habitats

wetlands

wildlife radiolocation

GS tracking (position)

. radio tracking

. . **wildlife radiolocation**

RT animals

bioinstrumentation

biotelemetry

radio transmitters

remote sensors

satellite instruments

satellite observation

triangulation

Williston Basin (North America)

GS landforms

. structural basins

. . **Williston Basin (North America)**

RT Canada

Montana

North America

North Dakota

WIMPs (astronomy)
(added November 1999)

USE **weakly interacting massive particles**

winches

RT cranes

elevators (lifts)

∞ lifts

pulleys

wind (meteorology)

DEF A natural motion of the air, especially a noticeable current of air moving in the atmosphere parallel to the Earth's surface.

GS **wind (meteorology)**

. circumpolar westerlies

. ground wind

. gusts

. monsoons

. sea breeze

. squalls

. winds aloft

. . geostrophic wind

. . jet streams (meteorology)

RT aeolian tones

aerology

air currents

air pollution

Alpine meteorology

anemometers

atmospheric circulation

barotropic flow

∞ barriers

blowing

climatology

cyclones

gravity waves

hot-film anemometers

jimsphere balloons

marine meteorology

meridional flow

mesoscale phenomena

meteorology

mixing height

pressure ice

ripples

storm damage

storms

storms (meteorology)

thunderstorms

tidal waves

tornadoes

upwelling water

vertical air currents

weather

weather forecasting

windmills (windpowered machines)

windpower utilization

windpowered generators

zonal flow (meteorology)

wind circulation

USE **atmospheric circulation**

wind direction

DEF The direction from which the wind is blowing, measured in points of the compass or in azimuth degree.

RT atmospheric circulation

ground wind

meridional flow

meteorological parameters

sea breeze

smoke trails

upstream

upwelling water

windmills (windpowered machines)

windpowered generators

zonal flow (meteorology)

wind effects

RT atmospheric effects

dunes

dust storms

∞ effects

erosion

ground wind

pressure effects

sea breeze

sea roughness

sea states

soil erosion

turbulence

water circulation

wind energy

USE **windpower utilization**

wind erosion

GS erosion

. **wind erosion**

RT atmospheric effects

ground wind

sea breeze

water erosion

wind measurement

GS mechanical measurement

. **wind measurement**

. . wind velocity measurement

RT aerodynamics

anemometers

hot-film anemometers

∞ measurement

meteorological parameters

meteorology

QuikSCAT satellite

rawinsondes

sea breeze

smoke trails

sodar

wind pressure

GS pressure

. **wind pressure**

RT dynamic loads

ground wind

gust loads

loads (forces)

windpower utilization

windpowered generators

wind profiles

RT atmospheric circulation

ground wind

∞ profiles

radial distribution

smoke trails

sodar

vertical distribution

zonal flow (meteorology)

Wind River Range (WY)

GS landforms

. mountains

. . **Wind River Range (WY)**

RT Wyoming

wind shear

DEF A sharp change in wind speed and direction over a short distance

UF *Dungeys wind shear mechanism*

RT aviation meteorology

barotropic flow

clear air turbulence

downbursts

geostrophic wind

ground wind

microbursts (meteorology)

wind tunnel apparatus

UF *wind tunnel balances*

GS **wind tunnel apparatus**

. wind tunnel drives

. wind tunnel nozzles

RT ∞ equipment

supersonic test apparatus

wind tunnel balances

USE **weight indicators**

wind tunnel apparatus

wind tunnel calibration

GS calibrating

. **wind tunnel calibration**

RT measuring instruments

pressure measurement

scaling laws

temperature measurement

wind tunnel drives

GS wind tunnel apparatus

. **wind tunnel drives**

RT ∞ drives

∞ fans

mechanical drives

plasma generators

pressure chambers

vacuum chambers

wind tunnel models

GS models

. **wind tunnel models**

. . powered models

RT aerodynamic configurations

aircraft models

dynamic models

flow visualization

∞ missile simulators

pylon mounting

scale models

semispan models

shadowgraph photography

∞ test equipment

wind tunnel nozzles

GS wind tunnel apparatus

. **wind tunnel nozzles**

RT conical nozzles

convergent-divergent nozzles

divergent nozzles

hypersonic nozzles

∞ nozzles

supersonic nozzles

transonic nozzles

wind tunnel stability tests

GS stability tests

. **wind tunnel stability tests**

RT aerodynamic stability

aircraft stability

missile tests

spacecraft stability

∞ tests

wind tunnel tests

RT aerodynamic characteristics

air data systems

density measurement

flow distribution

pressure measurement

∞ tests

trisonic wind tunnels

water tunnel tests

seasons

windpowered pumps

wind tunnel walls

- GS walls
 - . **wind tunnel walls**
- RT pressure vessels
 - reinforced shells

wind tunnels

DEF Tubelike structures or passages, sometimes continuous, together with their adjuncts, in which high speed movements of air or other gases are produced, as by fans, and within which objects such as engines or aircraft, airfoils, rockets (or models of these objects), are placed to investigate the airflow about them and the aerodynamic forces acting upon them.

- GS test facilities
 - . **wind tunnels**
 - .. blowdown wind tunnels
 - .. combustion wind tunnels
 - .. cryogenic wind tunnels
 - .. hypersonic wind tunnels
 - ... cascade wind tunnels
 - ... hotshot wind tunnels
 - ... plasma jet wind tunnels
 - ... shock tunnels
 - ... hypervelocity wind tunnels
 - ... cascade wind tunnels
 - ... hotshot wind tunnels
 - ... plasma jet wind tunnels
 - ... shock tunnels
 - ... low density wind tunnels
 - ... low speed wind tunnels
 - ... subsonic wind tunnels
 - ... rectangular wind tunnels
 - ... slotted wind tunnels
 - ... supersonic wind tunnels
 - ... transonic wind tunnels
 - ... trisonic wind tunnels
- RT aerodynamics
 - exhaust flow simulation
 - flight simulators
 - gas guns
 - gas streams
 - hypersonic flow
 - spikes (aerodynamic configurations)
 - supersonic flow
 - test chambers
 - ∞ test equipment
 - transonic flow
 - ∞ tunnels

wind turbines

DEF Machines which convert wind energy into electricity.

- GS turbomachinery
 - . turbines
 - .. **wind turbines**
 - ... tip vanes
- RT turbogenerators
 - wind velocity
 - windmills (windpowered machines)
 - windpower utilization
 - windpowered generators

wind vanes

- GS display devices
 - . flow direction indicators
 - .. **wind vanes**
 - measuring instruments
 - . indicating instruments
 - .. flow direction indicators
 - ... **wind vanes**
 - . meteorological instruments
 - .. **wind vanes**
 - vanes
 - . **wind vanes**
- RT anemometers
 - hot-film anemometers

wind variations

- GS variations
 - . **wind variations**
- RT annual variations
 - atmospheric turbulence
 - diurnal variations

wind velocity

- GS rates (per time)
 - . **wind velocity**
 - .. solar wind velocity
 - velocity
 - . **wind velocity**
 - .. solar wind velocity
- RT airspeed
 - anemometers
 - flow measurement
 - Fujita method
 - ground wind
 - hot-film anemometers
 - meteorological parameters
 - sea roughness
 - wind turbines
 - windmills (windpowered machines)
 - windpower utilization
 - windpowered generators

wind velocity measurement

- GS mechanical measurement
 - . velocity measurement
 - .. **wind velocity measurement**
 - . wind measurement
 - .. **wind velocity measurement**
- RT anemometers
 - hot-film anemometers

Wind/GGS spacecraft

(added January 2001)

DEF One of two NASA spacecraft in the Global Geospace Science (GGS) initiative and part of the International Solar Terrestrial Physics (ISTP) program. The main purpose of the Wind spacecraft is to measure the incoming solar wind, magnetic fields, and particles, although early in its mission Wind observed the Earth foreshock region. The spacecraft was launched in November 1994.

- GS artificial satellites
 - . geophysical satellites
 - .. **Wind/GGS spacecraft**
 - . scientific satellites
 - .. **Wind/GGS spacecraft**
- RT Earth magnetosphere
 - gamma rays
 - interplanetary magnetic fields
 - Polar/GGS spacecraft
 - solar corpuscular radiation
 - solar terrestrial interactions
 - solar wind
 - space plasmas

winding

- GS **winding**
 - . filament winding
 - . helical windings
 - . wire winding
- RT cold working
 - leveling
 - metal working
 - spindles
 - spiral wrapping
 - stretching
 - twisting

windmilling

USE **autorotation**

windmills (windpowered machines)

- RT electric generators
 - gears
 - ground wind
- ∞ machinery
 - mechanical drives
- ∞ power transmission
- ∞ pumping
 - wind (meteorology)
 - wind direction
 - wind turbines
 - wind velocity
 - windpower utilization
 - windpowered generators

window atmosphere sounding projectile

USE **WASP sounding rocket**

∞ windows

- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT infrared windows
 - ports (openings)
 - waveguide windows
 - windows (apertures)
 - windows (intervals)

windows (apertures)

- SN (EXCLUDES INTERVALS IN TIME, FREQUENCY, ENERGY AND SO ON)
- RT apertures
 - ∞ barriers
 - curtains
 - doors
 - ducts
 - openings
 - optical materials
 - ports (openings)
 - separators
 - shielding
 - vents
 - ∞ windows
 - windshields

windows (computer programs)

(added July 1993)

- GS interfaces
 - . graphical user interface
 - .. **windows (computer programs)**
- RT computer graphics
 - operating systems (computers)
 - real time operation

windows (intervals)

- SN (EXCLUDES INTERVALS IN SPACE CONTINUUM)
- GS **windows (intervals)**
 - . laser windows
 - . launch windows
- RT bandwidth
 - burning time
 - countdown
 - energy bands
 - flight time
 - testing time
 - time measurement
 - ∞ windows

windpower utilization

- UF *wind energy*
- GS renewable energy
 - . **windpower utilization**
 - utilization
 - . **windpower utilization**
- RT air currents
 - air masses
 - atmospheric circulation
 - clean energy
 - Earth resources
 - ground wind
 - sea breeze
 - vanes
 - wind (meteorology)
 - wind pressure
 - wind turbines
 - wind velocity
 - windmills (windpowered machines)
 - windpowered generators
 - windpowered pumps

windpowered generators

- RT electric generators
- ∞ generators
 - ground wind
 - vanes
 - wind (meteorology)
 - wind direction
 - wind pressure
 - wind turbines
 - wind velocity
 - windmills (windpowered machines)

windpowered pumps

windpower utilization

windpowered pumps

GS pumps
. **windpowered pumps**
RT ponds
∞ pumping
reservoirs
vanes
water
water resources
windmills (windpowered machines)
windpower utilization

winds aloft

GS wind (meteorology)
. **winds aloft**
. . . geostrophic wind
. . . jet streams (meteorology)
RT circumpolar westerlies
sea breeze
vertical air currents

windcreens

USE **windshields**

windshields

UF *windcreens*
RT aircraft compartments
canopies
cockpits
environmental control
locomotives
shielding
windows (apertures)

wines

GS liquids
. potable liquids
. . . beverages
. . . **wines**
RT vineyards

wing camber

GS camber
. **wing camber**
RT cambered wings
conical camber
mission adaptive wings

wing flaps

UF *jet augmented wing flaps*
GS airfoils
. flaps (control surfaces)
. . . **wing flaps**
. . . . leading edge flaps
. . . . leading edge slats
. . . . trailing edge flaps
. . . . vortex flaps
brakes (for arresting motion)
. aerodynamic brakes
. . . **wing flaps**
. . . . leading edge flaps
. . . . leading edge slats
. . . . trailing edge flaps
. . . . vortex flaps
. aircraft brakes
. . . **wing flaps**
. . . . leading edge flaps
. . . . leading edge slats
. . . . trailing edge flaps
. . . . vortex flaps
control surfaces
. flaps (control surfaces)
. . . **wing flaps**
. . . . leading edge flaps
. . . . leading edge slats
. . . . trailing edge flaps
. . . . vortex flaps
drag devices
. aerodynamic brakes
. . . **wing flaps**
. . . . leading edge flaps
. . . . leading edge slats
. . . . trailing edge flaps
. . . . vortex flaps
RT externally blown flaps
jet flaps

split flaps

wing flow method tests

RT flight tests
fluid flow
ground tests
∞ methodology
∞ tests
transonic wind tunnels

wing icing

USE **aircraft icing**

wing loading

GS aerodynamic forces
. **wing loading**
loads (forces)
. dynamic loads
. . . **wing loading**
RT aerodynamic loads
aeroelasticity
edge loading
force distribution
gust loads
leading edge thrust
static loads
sweep effect
vortex flaps

wing nacelle configurations

DEF Aerodynamic configurations involving various arrangements of wings and nacelles (over-the-wing, etc.).
UF *nacelle wing configurations*
GS aerodynamic configurations
. **wing nacelle configurations**
RT ∞ aircraft
airframes
externally blown flaps

wing oscillations

GS oscillations
. airfoil oscillations
. . . **wing oscillations**
. . . . wing rock
RT aerodynamic stability
aeroelastic research wings
flapping
flutter
stable oscillations
undamped oscillations
unsteady aerodynamics
vibration

wing panels

GS panels
. **wing panels**
structural members
. **wing panels**
RT curved panels
rectangular panels
wings

wing planforms

GS planforms
. **wing planforms**
. . . channel wings
. . . infinite span wings
. . . swept forward wings
. . . . trapezoidal wings
. . . sweptback wings
. . . . arrow wings
. . . . delta wings
. . . . trapezoidal wings
. . . variable sweep wings
RT HP-115 aircraft
low aspect ratio wings
monoplanes
oblique wings
rectangular planforms
slender wings
swept wings
swing wings
thrust distribution
unswept wings

wing profiles

GS airfoil profiles
. **wing profiles**
. . . wing span

RT aerodynamic interference
GAW-1 airfoil
GAW-2 airfoil
mission adaptive wings
monoplanes
supercritical wings
swing wings
wings

wing rock

(added October 1997)

DEF A high angle-of-attack, nonlinear, dynamic phenomenon of limited cycle motion predominantly in roll.
GS oscillations
. airfoil oscillations
. . . wing oscillations
. . . . **wing rock**
RT aerodynamic stability
aircraft stability
angle of attack
delta wings
lateral oscillation
leading edges
roll
slender wings

wing roots

RT aerodynamic configurations
aircraft configurations
drooped airfoils
fairings
∞ roots

wing slats

USE **leading edge slats**

wing slots

GS slots
. **wing slots**
RT boundary layer control
leading edge slats
tangential blowing
vortex generators

wing span

GS airfoil profiles
. wing profiles
. . . **wing span**
RT ∞ span
spanwise blowing
wings

wing tanks

GS tanks (containers)
. fuel tanks
. . . **wing tanks**
RT ∞ containers
external store separation
external stores
external tanks
jettison systems
wing-fuselage stores

wing tip vortices

GS vortices
. **wing tip vortices**
RT blade-vortex interaction
flow distortion
horseshoe vortices
rotating fluids

wing tips

GS tips
. **wing tips**
RT airfoil profiles
blade tips
joined wings
wings

wing-body and tail configurations

(added August 1998)

USE **body-wing and tail configurations**

wing-body configurations

(added August 1998)

USE **body-wing configurations**

∞ winged vehicles

SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)

- RT ∞ aircraft
 B-1 aircraft
 drone vehicles
 Firebee 2 target drone aircraft
 gliders
 hang gliders
 hypersonic vehicles
 jet aircraft
 launch vehicles
 leading edge flaps
 man powered aircraft
 missiles
 monoplanes
 recoverable launch vehicles
 recoverable spacecraft
 reentry vehicles
 research aircraft
 rocket vehicles
 short takeoff aircraft
 supercritical wings
 ultralight aircraft
 ∞ vehicles
 vertical takeoff aircraft
 wings
- wing-fuselage stores**
 UF *fuselage-wing stores*
 RT external store separation
 external stores
 fuselages
 nacelles
 pods (external stores)
 protuberances
 ∞ storage
 storage tanks
 tanks (containers)
 weapons
 wing tanks
- wing-in-ground effect vehicles**
(added December 1999)
 DEF Vehicles designed to fly about half their mean chord above the surface, taking advantage of the reduced drag and increased lift caused by ground effect. These vehicles, also known as WIGs or WIGEs, normally operate above a water surface.
 UF *ekranoplanes*
WIG vehicles
 GS ground effect machines
 . **wing-in-ground effect vehicles**
 RT ground effect (aerodynamics)
 surface effect ships
- winglets**
 DEF In aerospace engineering, small nearly vertical, winglike surfaces mounted rearward above the wing tips to reduce drag coefficients at lifting conditions.
 RT drag reduction
 fins
 protuberances
 vortex alleviation
 vortex avoidance
 wings
- wings**
 UF *cantilever wings*
 GS airfoils
 . **wings**
 . . aeroelastic research wings
 . . cambered wings
 . . caret wings
 . . channel wings
 . . cruciform wings
 . . fixed wings
 . . flexible wings
 . . parawings
 . . GAW-1 airfoil
 . . GAW-2 airfoil
 . . joined wings
 . . low aspect ratio wings
 . . . delta wings
 . . . trapezoidal wings
 . . mission adaptive wings
 . . oblique wings
 . . rigid wings
 . . rotary wings
 . . . circulation control rotors
 . . . lifting rotors
- . . . bearingless rotors
 . . . rigid rotors
 . . . tilting rotors
 . . . tip driven rotors
 . . . x wing rotors
 . . slender wings
 . . infinite span wings
 . . supercritical wings
 . . swept wings
 . . . swept forward wings
 trapezoidal wings
 . . . sweptback wings
 arrow wings
 delta wings
 trapezoidal wings
 . . swing wings
 . . thin wings
 . . . infinite span wings
 . . twisted wings
 . . uncambered wings
 . . ring wings
 . . unswept wings
 . . infinite span wings
 . . . rectangular wings
 . . ring wings
 . . variable sweep wings
- RT aircraft construction materials
 aircraft parts
 aircraft structures
 airfoil fences
 airframes
 aspect ratio
 blunt trailing edges
 body-wing and tail configurations
 body-wing configurations
 coatings
 control surfaces
 drooped airfoils
 dual wing configurations
 leading edge flaps
 missile components
 porous boundary layer control
 rotors
 spoilers
 wing panels
 wing profiles
 wing span
 wing tips
 ∞ winged vehicles
 winglets
- winter**
 GS seasons
 . **winter**
 RT autumn
 cold weather
 equinoxes
 pressure ice
 solstices
 spring (season)
 summer
- wire**
 DEF A rod or filament of drawn or rolled metal whose length is great in comparison with the major axis of its cross section.
 GS **wire**
 . electric wire
 . exploding wires
 . guy wires
 RT billets
 cables (ropes)
 ∞ coils
 cordage
 fasteners
 ∞ filaments
 flat conductors
 jumpers
 reinforcement (structures)
 rods
 wiring
- wire bridge circuits**
 GS circuits
 . electric bridges
 . . **wire bridge circuits**
 . . . Wheatstone bridges
 RT electric wire
- exploding wires
- wire cloth**
 UF *wire mesh*
 RT fabrics
 reinforcement (structures)
 ∞ screens
 sieves
- wire grid lenses**
 GS lenses
 . **wire grid lenses**
 reticles
 . **wire grid lenses**
 RT ∞ grids
 lens antennas
 magnetic lenses
 turnstile antennas
- wire mesh*
 USE **wire cloth**
- wire winding**
 GS winding
 . **wire winding**
 RT magnet coils
 wiring
- wireless communication**
 UF *carrier systems*
 GS telecommunication
 . **wireless communication**
 RT aircraft communication
 closed circuit television
 communication satellites
 data links
 data transmission
 digital spacecraft television
 facsimile communication
 Iridium network
 optical communication
 radio telemetry
 signal transmission
 space communication
 spacecraft communication
 telemetry
 voice communication
- wiring**
 SN (PROCESS--AS DISTINGUISHED FROM MATERIAL)
 UF *electric wiring*
wiring systems
 RT bundles
 circuits
 electrical insulation
 flat conductors
 splicing
 transmission lines
 wire
 wire winding
- wiring systems*
 USE **wiring**
- Wisconsin**
 GS nations
 . United States
 . . **Wisconsin**
- WISE (astronomy)*
(added January 2010)
 USE **Wide-field Infrared Survey Explorer**
- Wiswesser notations**
 GS classifications
 . indexes (documentation)
 . . **Wiswesser notations**
 coding
 . **Wiswesser notations**
 RT ∞ chemical compounds
 ∞ chemistry
 identifying
 molecular structure

Wolf-Rayet stars

∞ reference systems

WKB approximation

USE **Wentzel-Kramer-Brillouin method**

wolfram

USE **tungsten**

Wolf-Rayet stars

DEF Very luminous, very hot (as high as 50,000K) stars whose spectra have broad emission lines (mainly He I and He II, which are presumed to originate from material ejected from the stars at very high velocities. Some W-R spectra show emission lines due to carbon CWC stars; others show emission lines due to nitrogen (WN stars). Used for W stars and W-R stars.

UF *W stars*

W-R stars

GS celestial bodies

. stars

. . early stars

. . . hot stars

. . . . **Wolf-Rayet stars**

RT

A stars

astrophysics

B stars

carbon stars

celestial mechanics

ejecta

helium

nitrogen

O stars

stellar envelopes

stellar luminosity

stellar mass ejection

white dwarf stars

wolves

GS animals

. vertebrates

. . mammals

. . . **wolves**

RT

dogs

women

USE **females**

wood

GS **wood**

. cork (materials)

. plywood

RT

balsa

cellulose

Masonite (trademark)

organic materials

paper (material)

plants (botany)

slivers

trees (plants)

wooden structures

wooden structures

RT plywood

∞ structures

wood

wool

SN (LIMITED TO ANIMAL FIBERS)

GS fabrics

. **wool**

fibers

. **wool**

RT

felts

hair

keratins

organic materials

sheep

yarns

word processing

DEF The use of a computer, often with a CRT under full-screen control, to facilitate the recording, storage, editing, updating, and organization of information in the form of words, especially sentential information.

RT computer techniques

data processing

office automation

words (language)

words (language)

RT

abbreviations

consonants (speech)

conversation

English language

grammars

languages

messages

orthography

phonemes

phonemics

phonetics

semantics

sentences

speech

terminology

terms

thesauri

verbal communication

voice communication

vowels

word processing

work

GS

work

. physical work

RT

∞ energy

heat

horsepower

kinetic energy

occupation

physical factors

work capacity

RT

hyperkinesia

orbital workers

physical fitness

physical work

workloads (psychophysiology)

work functions

UF *Schottky effect*

RT electron emission

∞ functions

ionization potentials

perveance

photoelectric emission

Schottky diodes

thermionic emission

work hardening

GS hardening (materials)

. **work hardening**

. . strain hardening

RT

cold hardening

mechanical twinning

metal working

peening

shot peening

work softening

work softening

DEF The phenomena of a drop in the yield strength of a metal when it has been strained or cold worked at low temperature and subsequently strained at an elevated temperature to cause the dislocations to become unstable.

GS softening

. **work softening**

RT

microstructure

plastic deformation

work hardening

Workhorse helicopter

USE **CH-21 helicopter**

working fluids

DEF Fluids (gas or liquid) used as the medium for the transfer of energy from one part of a system to another.

RT consumables (spacecraft)

ferrofluids

fluid power

fluid transmission lines

∞ fluids

high temperature fluids

hydraulic fluids

jet condensers

phase change materials

sulfur hexafluoride

transmission fluids

workloads (psychophysiology)

RT

fatigue (biology)

human performance

mental performance

physical work

psychomotor performance

psychophysiology

stress (psychology)

work capacity

work-rest cycle

GS

cycles

. **work-rest cycle**

RT

fatigue (biology)

relaxation (physiology)

workstations

GS

stations

. **workstations**

. . crew workstations

. . . crew experiment stations

. . . crew observation stations

RT

human factors engineering

man machine systems

productivity

UNIX (operating system)

world

USE **Earth (planet)**

world data centers

RT

∞ centers

∞ data

data retrieval

data storage

International Geophysical Year

libraries

transoceanic systems

World Meteorological Organization

GS

organizations

. **World Meteorological**

Organization

RT

international cooperation

meteorology

United Nations

World Weather Watch

USE **meteorological services**

World Wide Web

(added July 1995)

UF *WWW*

GS

networks

. communication networks

. . internets

. . . **World Wide Web**

. computer networks

. . internets

. . . **World Wide Web**

RT

computer conferencing

electronic bulletin boards

electronic commerce

information transfer

Java (programming language)

protocol (computers)

web services

websites

worms

GS

animals

. invertebrates

. . **worms**

. . . flatworms

RT

infestation

larvae

Rotifera

wound healing

GS

healing

. **wound healing**

RT

injuries

woven composites

(added November 1992)

GS

composite materials

. fiber composites

- . . **woven composites**
- RT braided composites
- carbon fiber reinforced plastics
- epoxy matrix composites
- fabrics
- glass fiber reinforced plastics
- graphite-epoxy composites
- reinforcing fibers
- three dimensional composites
- weaving
- W-R stars*
- USE **Wolf-Rayet stars**
- Wrangell Mountains (AK)**
- GS landforms
- . mountains
- . . **Wrangell Mountains (AK)**
- RT Alaska
- ∞ **wrap**
- SN (USE OF A MORE SPECIFIC TERM IS RECOMMENDED--CONSULT THE TERMS LISTED BELOW)
- RT composite wrapping
- packaging
- wraparound contact solar cells*
- USE **solar cells**
- wreckage**
- RT accident investigation
- accidents
- crashes
- sabotage
- spacecraft breakup
- wrenches**
- GS tools
- . **wrenches**
- wrinkling**
- GS **wrinkling**
- . flange wrinkling
- RT buckling
- deformation
- distortion
- kinking
- ∞ ridges
- wrist**
- GS anatomy
- . musculoskeletal system
- . . joints (anatomy)
- . . . **wrist**
- RT arm (anatomy)
- hand (anatomy)
- wrought alloys**
- GS alloys
- . **wrought alloys**
- RT Rene 41
- Rene 63
- Rene 77
- Waspaloy
- WU-2 aircraft*
- USE **U-2 aircraft**
- wurtzite**
- GS chalcogenides
- . sulfides
- . . inorganic sulfides
- . . . zinc sulfides
- **wurtzite**
- minerals
- . **wurtzite**
- sulfur compounds
- . sulfides
- . . inorganic sulfides
- . . . zinc sulfides
- **wurtzite**
- zinc compounds
- . zinc sulfides
- . . **wurtzite**
- WWW*
- USE **World Wide Web**
- WWW (meteorology)*
- USE **meteorological services**
- Wyoming**
- GS nations
- . United States
- . . **Wyoming**
- RT Bighorn Mountains (MT-WY)
- Black Hills (SD-WY)
- Wind River Range (WY)
- Yellowstone National Park (ID-MT-WY)

X

X band
USE **superhigh frequencies**

X mesons

GS particles
 . elementary particles
 . . bosons
 . . . mesons
 meson resonance
 **X mesons**
 . . fermions
 . . . meson resonance
 **X mesons**
 . . hadrons
 . . . mesons
 meson resonance
 **X mesons**
 . nuclear particles
 . . bosons
 . . . mesons
 meson resonance
 **X mesons**
 resonance
 . meson resonance
 . . **X mesons**

x ray absorption

GS energy absorption
 . radiation absorption
 . . electromagnetic absorption
 . . . **x ray absorption**

RT ∞ absorption
 electron spectroscopy
 x ray detectors

x ray analysis

SN (EXCLUDES X RAY STRESS ANALYSIS)
 GS **x ray analysis**
 . Laue method
 . . x ray spectroscopy

RT ∞ analyzing
 chemical analysis
 crystallography
 defects
 fluoroscopy
 lattice parameters
 ∞ materials tests
 microanalysis
 microbeams
 radiography
 radiology
 stereochemistry
 tomography

x ray apparatus

GS medical equipment
 . **x ray apparatus**
 . . lixiscopes
 . . . x ray tubes

RT ∞ equipment
 radiography
 x ray detectors

x ray astronomy

GS astronomy
 . **x ray astronomy**

RT Constellation-X
 cosmic x rays
 Exosat satellite
 gamma ray astronomy
 gamma ray bursts
 Ginga satellite
 Granat satellite
 grazing incidence telescopes
 HEAO 4
 lixiscopes
 radiography
 ROSAT mission
 SAS-3
 Tenma satellite
 Uhuru satellite
 ultraviolet telescopes
 X Ray Astrophysics Facility
 x ray binaries
 x ray detectors
 x ray sources
 x ray stars

XMM-Newton telescope

X Ray Astrophysics Facility

DEF Free-flying x ray observatory that is shuttle-launched, maintainable in orbit, and retrievable. Used for Advanced X Ray Astrophysics Facility and AXAF.

UF *Advanced X Ray Astrophysics Facility*
 AXAF
Chandra X Ray Astrophysics Facility

GS artificial satellites
 . scientific satellites
 . . astronomical satellites
 . . . **X Ray Astrophysics Facility**
 observatories
 . astronomical observatories
 . . astronomical satellites
 . . . **X Ray Astrophysics Facility**
 payloads
 . Space Shuttle payloads
 . . **X Ray Astrophysics Facility**
 telescopes
 . spaceborne telescopes
 . . **X Ray Astrophysics Facility**
 . x ray telescopes
 . . **X Ray Astrophysics Facility**

RT astrophysics
 ∞ facilities
 spaceborne astronomy
 x ray astronomy
 XMM-Newton telescope

x ray binaries

DEF Bright galactic x ray sources consisting of a compact star (neutron star or black hole) accreting matter from a close companion star.

GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 **x ray binaries**
 . . x ray stars
 . . . **x ray binaries**
 x ray sources
 . x ray stars
 . . **x ray binaries**

RT accretion disks
 astrophysics
 black holes (astronomy)
 companion stars
 cosmic x rays
 eclipsing binary stars
 neutron stars
 stellar mass accretion
 x ray astronomy
 x rays

x ray density measurement

GS density measurement
 . **x ray density measurement**

RT flux density

x ray detectors

(added April 1992)
 GS measuring instruments
 . radiation measuring instruments
 . . actinometers
 . . . **x ray detectors**

RT bolometers
 infrared detectors
 multi-anode microchannel arrays
 photodiodes
 photometers
 radiometers
 ultraviolet detectors
 x ray absorption
 x ray apparatus
 x ray astronomy
 x ray spectroscopy
 x ray telescopes
 x rays

x ray diffraction

GS diffraction
 . **x ray diffraction**

RT crystallography
 electron diffraction
 Laue method
 metallography

radiography
 x ray optics

x ray fluorescence

GS emission
 . light emission
 . . luminescence
 . . . fluorescence
 **x ray fluorescence**
 . . . photoluminescence
 **x ray fluorescence**

RT radiography

x ray imagery

DEF Reproduction of an object by means of focusing penetrating electromagnetic radiation (wavelengths ranging from 10-5 to 103 angstroms) coming from the object or reflected by the object. Analogous to infrared imagery, radar imagery and microwave imagery using the IR, radar and microwave frequencies.

GS imagery
 . **x ray imagery**

RT imaging techniques
 infrared imagery
 lixiscopes
 microwave imagery
 radar imagery
 radiography

x ray inspection

GS inspection
 . **x ray inspection**

RT nondestructive tests
 radiography
 ∞ tests

x ray irradiation

GS irradiation
 . **x ray irradiation**

x ray lasers

GS stimulated emission devices
 . lasers
 . . **x ray lasers**

RT electron transitions
 laser outputs

X Ray Multi-Mirror Mission
 (added August 2000)

USE **XMM-Newton telescope**

x ray optics

(added January 1994)
 DEF The study and application of x ray properties and phenomena that are similar to the optical characteristics of visible light.

RT geometrical optics
 grazing incidence
 mirrors
 ∞ optics
 x ray diffraction
 x ray telescopes
 x rays

x ray scattering

GS scattering
 . wave scattering
 . . electromagnetic scattering
 . . . **x ray scattering**

RT form factors

x ray sources

GS **x ray sources**
 . x ray stars
 . . soft gamma repeaters
 . . . x ray binaries

RT cooling flows (astrophysics)
 cosmic x rays
 Exosat satellite
 galactic bulge
 gamma ray sources (astronomy)
 magnetars
 ∞ radiation
 ROSAT mission
 spectral counterparts (astronomy)
 x ray astronomy

- x rays
 - . . Constellation-X
 - . . X Ray Astrophysics Facility
 - . . XMM-Newton telescope
- x ray spectra**
 - GS spectra
 - . radiation spectra
 - . . electromagnetic spectra
 - . . . **x ray spectra**
 - RT Ginga satellite
 - North Polar Spur (astronomy)
 - quasars
 - solar spectra
 - stellar spectra
 - Tenma satellite
 - x ray spectrometers
- X ray spectrography*
 - USE **x ray spectroscopy**
- x ray spectrometers**
 - (added October 1996)
 - GS measuring instruments
 - . spectrometers
 - . . **x ray spectrometers**
 - RT spectroscopy
 - x ray spectra
 - x ray telescopes
- X ray spectrometry*
 - USE **x ray spectroscopy**
- X Ray Spectropolarimetry Payload*
 - USE **EXPOS (Spacelab payload)**
- x ray spectroscopy**
 - UF *X ray spectrography*
 - X ray spectrometry*
 - GS spectroscopy
 - . **x ray spectroscopy**
 - x ray analysis
 - . **x ray spectroscopy**
 - RT astronomical spectroscopy
 - coordination number
 - ∞ materials tests
 - molecular spectroscopy
 - radio spectroscopy
 - radiography
 - spectroscopic analysis
 - ultraviolet spectroscopy
 - vacuum spectroscopy
 - x ray detectors
- x ray stars**
 - DEF Stars with strong emission in the x ray portion of the electromagnetic spectrum. Used for extars.
 - UF *extars*
 - GS celestial bodies
 - . stars
 - . . **x ray stars**
 - . . . soft gamma repeaters
 - . . . x ray binaries
 - x ray sources
 - . **x ray stars**
 - . . soft gamma repeaters
 - . . x ray binaries
 - RT emission spectra
 - Ginga satellite
 - neutron stars
 - radiation sources
 - stellar radiation
 - Tenma satellite
 - Uhuru satellite
 - x ray astronomy
 - x ray telescopes
 - x rays
- x ray stress analysis**
 - GS stress analysis
 - . **x ray stress analysis**
 - RT stresses
 - temperature inversions
- x ray stress measurement**
 - GS mechanical measurement
 - . stress measurement
 - . . **x ray stress measurement**
- x ray telescopes**
 - GS telescopes
 - . **x ray telescopes**
- X Ray Timing Explorer**
 - DEF An Explorer satellite planned for late 1993 or 1994 to consist of three experiments: a large area proportional counter, an all sky monitor, and a high energy x ray timing experiment. The package is designed to measure the time variability of x ray sources and broad band spectra.
 - UF *Rossi X Ray Timing Explorer*
 - RXTE (satellite)*
 - GS artificial satellites
 - . scientific satellites
 - . . Explorer satellites
 - . . . **X Ray Timing Explorer**
- x ray tubes**
 - DEF Vacuum tubes designed to produce x rays by accelerating electrons to a high velocity by means of an electrostatic field, then suddenly stopping them by collision with a target.
 - GS medical equipment
 - . x ray apparatus
 - . . **x ray tubes**
 - RT electron tubes
 - radiography
- x rays**
 - DEF Nonnuclear electromagnetic radiation of very short wavelength, lying within the interval of 0. 1 to 100 angstroms (between gamma rays, and ultraviolet radiation).
 - GS electromagnetic radiation
 - . **x rays**
 - . . cosmic x rays
 - . . solar x-rays
 - ionizing radiation
 - . **x rays**
 - . . cosmic x rays
 - . . solar x-rays
 - RT auroras
 - blackout (propagation)
 - bremsstrahlung
 - cosmic rays
 - emission spectra
 - extraterrestrial radiation
 - far ultraviolet radiation
 - gamma rays
 - monochromatic radiation
 - radiography
 - radiology
 - synchrotron radiation
 - system generated electromagnetic pulses
 - x ray binaries
 - x ray detectors
 - x ray optics
 - x ray sources
 - x ray stars
- x wing rotors**
 - DEF A new VTOL concept utilizing the stopped rotor X-wing aircraft.
 - GS airfoils
 - . wings
 - . . rotary wings
 - . . . **x wing rotors**
 - rotating bodies
 - . rotors
 - . . rotary wings
 - . . . **x wing rotors**
 - RT circulation control rotors
 - ∞ rotor blades
- X-1 aircraft**
 - GS Bell aircraft
 - . **X-1 aircraft**
 - monoplanes
- X-1 aircraft**
 - . **X-1 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-1 aircraft**
 - rocket vehicles
 - . rocket planes
 - . . **X-1 aircraft**
 - supersonic aircraft
 - . **X-1 aircraft**
- RT ∞ aircraft
- X-2 aircraft**
 - GS Bell aircraft
 - . **X-2 aircraft**
 - monoplanes
 - . **X-2 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-2 aircraft**
 - rocket vehicles
 - . rocket planes
 - . . **X-2 aircraft**
 - supersonic aircraft
 - . **X-2 aircraft**
 - RT ∞ aircraft
- X-3 aircraft**
 - GS jet aircraft
 - . **X-3 aircraft**
 - McDonnell Douglas aircraft
 - . Douglas aircraft
 - . . **X-3 aircraft**
 - monoplanes
 - . **X-3 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-3 aircraft**
 - supersonic aircraft
 - . **X-3 aircraft**
 - RT ∞ aircraft
- X-5 aircraft**
 - GS Bell aircraft
 - . **X-5 aircraft**
 - jet aircraft
 - . **X-5 aircraft**
 - monoplanes
 - . **X-5 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-5 aircraft**
 - supersonic aircraft
 - . **X-5 aircraft**
 - RT ∞ aircraft
- X-13 aircraft**
 - GS jet aircraft
 - . **X-13 aircraft**
 - monoplanes
 - . **X-13 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-13 aircraft**
 - Ryan aircraft
 - . **X-13 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **X-13 aircraft**
 - RT ∞ aircraft
- X-14 aircraft**
 - GS Bell aircraft
 - . **X-14 aircraft**
 - jet aircraft
 - . **X-14 aircraft**
 - monoplanes
 - . **X-14 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-14 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **X-14 aircraft**
 - RT ∞ aircraft
- X-15 aircraft**
 - GS North American aircraft
 - . **X-15 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-15 aircraft**
 - rocket vehicles

X-17 reentry vehicle

- . rocket planes
 - . . **X-15 aircraft**
 - supersonic aircraft
 - . **X-15 aircraft**
- RT ∞ aircraft
XLR-99 engine

X-17 reentry vehicle

- GS reentry vehicles
- . **X-17 reentry vehicle**
- RT rocket vehicles
solid propellant rocket engines

X-19 aircraft

- GS Curtiss-Wright aircraft
- . **X-19 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-19 aircraft**
 - tandem wing aircraft
 - . **X-19 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **X-19 aircraft**
- RT ∞ aircraft

X-20 aircraft

- UF *Dyna-Soar space glider*
- GS Boeing aircraft
- . **X-20 aircraft**
 - gliders
 - . boostglide vehicles
 - . . **X-20 aircraft**
 - . hypersonic gliders
 - . . **X-20 aircraft**
 - hypersonic vehicles
 - . hypersonic aircraft
 - . . hypersonic gliders
 - . . . **X-20 aircraft**
 - lifting bodies
 - . lifting reentry vehicles
 - . . **X-20 aircraft**
 - maneuverable spacecraft
 - . **X-20 aircraft**
 - reentry vehicles
 - . boostglide vehicles
 - . . **X-20 aircraft**
 - . maneuverable reentry bodies
 - . . lifting reentry vehicles
 - . . . **X-20 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-20 aircraft**
- RT aerospace planes
- ∞ aircraft
- manned spacecraft
- soft landing spacecraft

X-21 aircraft

- GS jet aircraft
- . **X-21 aircraft**
 - monoplanes
 - . **X-21 aircraft**
 - Northrop aircraft
 - . **X-21 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-21 aircraft**
- RT ∞ aircraft
- boundary layer control
- laminar boundary layer

X-21A aircraft

- GS jet aircraft
- . **X-21A aircraft**
 - monoplanes
 - . **X-21A aircraft**
 - Northrop aircraft
 - . **X-21A aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-21A aircraft**
- RT ∞ aircraft
- laminar flow

X-22 aircraft

- GS Bell aircraft
- . **X-22 aircraft**
 - research vehicles
 - . research aircraft

- . . **X-22 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **X-22 aircraft**
- RT ∞ aircraft
- tandem wing aircraft
- tilt wing aircraft

X-22A aircraft

- GS research vehicles
- . research aircraft
 - . . **X-22A aircraft**
 - tandem wing aircraft
 - . **X-22A aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **X-22A aircraft**
- RT ∞ aircraft

X-24 aircraft

- GS lifting bodies
- . lifting reentry vehicles
 - . . **X-24 aircraft**
 - reentry vehicles
 - . maneuverable reentry bodies
 - . . lifting reentry vehicles
 - . . . **X-24 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-24 aircraft**
- RT ∞ aircraft

X-29 aircraft

- RT ∞ aircraft
- swept forward wings

X-30 vehicle

- GS aerospace vehicles
- . aerospace planes
 - . . **X-30 vehicle**
 - hypersonic vehicles
 - . **X-30 vehicle**
 - maneuverable spacecraft
 - . aerospace planes
 - . . **X-30 vehicle**
 - reentry vehicles
 - . recoverable spacecraft
 - . reusable spacecraft
 - . . aerospace planes
 - . . . **X-30 vehicle**
 - research vehicles
 - . **X-30 vehicle**
 - soft landing spacecraft
 - . aerospace planes
 - . . **X-30 vehicle**
- RT National Aerospace Plane Program
- single stage to orbit vehicles
- ∞ spacecraft
- transatmospheric vehicles

X-31 aircraft

- (added June 1994)
- DEF A research aircraft (single-engine, delta-wing/canard configuration) designed to demonstrate enhanced fighter maneuverability (EFM) and post-stall controllability through the use of thrust vector control at very high angle-of-attack.
- GS jet aircraft
- . **X-31 aircraft**
 - monoplanes
 - . **X-31 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-31 aircraft**
- RT ∞ aircraft
- aircraft maneuvers
- canard configurations
- fighter aircraft
- thrust vector control

X-32 aircraft

- (added October 1998)
- DEF Experimental supersonic strike fighter developed to be configured as a conventional or short takeoff/vertical landing vehicle. Developed as part of the Joint Strike Fighter (JSF) program.
- GS Boeing aircraft
- . **X-32 aircraft**
 - jet aircraft

- . **X-32 aircraft**
- research vehicles
- . research aircraft
- . . **X-32 aircraft**
- supersonic aircraft
- . **X-32 aircraft**
- V/STOL aircraft
- . **X-32 aircraft**

X-33 reusable launch vehicle

- (added January 1996)
- GS launch vehicles
- . reusable launch vehicles
 - . . **X-33 reusable launch vehicle**
- RT liquid propellant rocket engines
- recoverable launch vehicles
- reusable spacecraft
- VentureStar launch vehicle

X-34 reusable launch vehicle

- (added January 1996)
- GS launch vehicles
- . reusable launch vehicles
 - . . **X-34 reusable launch vehicle**
- RT air launching
- Boeing 747 aircraft
- liquid propellant rocket engines
- recoverable launch vehicles
- reusable spacecraft

X-35 aircraft

- (added October 1998)
- DEF Experimental strike fighter incorporating a vertical lift fan for short takeoff/vertical landing capability. Developed as part of the Joint Strike Fighter (JSF) program.
- GS jet aircraft
- . **X-35 aircraft**
 - Lockheed aircraft
 - . **X-35 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-35 aircraft**
 - V/STOL aircraft
 - . **X-35 aircraft**

X-36 aircraft

- (added March 1996)
- GS McDonnell Douglas aircraft
- . **X-36 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-36 aircraft**
 - tailless aircraft
 - . **X-36 aircraft**
- RT ∞ aircraft
- B-2 aircraft
- flight test vehicles

X-37 vehicle

- (added March 2000)
- DEF NASA/Boeing experimental space plane developed to demonstrate airframe, propulsion, and operations technologies for reduced-cost reusable launch vehicles. The unpiloted X-37 can be carried into orbit by the Space Shuttle or launched by an expendable rocket, and flies in both orbital and reentry environments, operating at speeds up to 25 times the speed of sound.
- GS aerospace vehicles
- . aerospace planes
 - . . **X-37 vehicle**
 - hypersonic vehicles
 - . **X-37 vehicle**
 - maneuverable spacecraft
 - . aerospace planes
 - . . **X-37 vehicle**
 - reentry vehicles
 - . recoverable spacecraft
 - . reusable spacecraft
 - . . aerospace planes
 - . . . **X-37 vehicle**
 - research vehicles
 - . **X-37 vehicle**
 - soft landing spacecraft
 - . aerospace planes
 - . . **X-37 vehicle**
- RT reusable launch vehicles
- ∞ spacecraft

- X-40A vehicle
- X-38 crew return vehicle**
(added December 1996)
- GS recovery vehicles
 - . **X-38 crew return vehicle**
 - RT Assured Crew Return Vehicle
 - escape capsules
 - lifeboats
 - rescue operations
 - return to Earth space flight
 - space stations
- X-40A vehicle**
(added September 2001)
- DEF NASA/Boeing 80-percent scale model demonstrator of the X-37 pilotless space plane, intended to evaluate systems and technologies to be used in future reusable space or launch vehicles.
- GS aerospace vehicles
 - . aerospace planes
 - . . **X-40A vehicle**
 - maneuverable spacecraft
 - . aerospace planes
 - . . **X-40A vehicle**
 - reentry vehicles
 - . recoverable spacecraft
 - . . reusable spacecraft
 - . . . aerospace planes
 - **X-40A vehicle**
 - research vehicles
 - . **X-40A vehicle**
 - soft landing spacecraft
 - . aerospace planes
 - . . **X-40A vehicle**
 - RT reusable launch vehicles
 - X-37 vehicle
- X-43 vehicle**
(added September 1999)
- DEF The experimental research vehicle of the NASA Hyper-X program designed to flight validate key propulsion and related technologies for air-breathing hypersonic aircraft.
- GS aerospace vehicles
 - . **X-43 vehicle**
 - hypersonic vehicles
 - . **X-43 vehicle**
 - research vehicles
 - . **X-43 vehicle**
 - RT hypersonic flight
 - Pegasus air-launched booster
 - supersonic combustion ramjet engines
- X-45 aircraft**
(added February 2003)
- DEF An unmanned combat air vehicle (UCAV) demonstrator developed to test the use of such aircraft in enemy air-defense suppression and other strike missions. The vehicle was developed as part of a joint DARPA/U.S. Air Force/Boeing program.
- GS pilotless aircraft
 - . **X-45 aircraft**
 - research vehicles
 - . research aircraft
 - . . **X-45 aircraft**
 - tailless aircraft
 - . **X-45 aircraft**
 - RT Boeing aircraft
 - ∞ military aircraft
 - stealth technology
- X-248 engine**
- UF *Altair engine*
 - GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **X-248 engine**
 - RT Blue Scout rocket vehicle
 - Scout launch vehicle
 - vanguard 2 launch vehicle
- X-254 engine**
- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **X-254 engine**
- RT Antares rocket vehicle
Blue Scout rocket vehicle
Scout launch vehicle
- X-258 engines**
- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **X-258 engines**
 - X-258-B1 engine
 - RT Scout launch vehicle
- X-258-B1 engine**
- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . X-258 engines
 - **X-258-B1 engine**
- X-259 engine**
- GS engines
 - . rocket engines
 - . . solid propellant rocket engines
 - . . . **X-259 engine**
 - RT Scout launch vehicle
- X-405 engine**
- GS engines
 - . rocket engines
 - . . booster rocket engines
 - . . . **X-405 engine**
 - . . liquid propellant rocket engines
 - . . . **X-405 engine**
 - RT Vanguard project
- xanthic acids**
- GS acids
 - . **xanthic acids**
 - RT organic liquids
- xanthines**
- GS fungicides
 - . **xanthines**
 - . . caffeine
 - . . guanines
 - . . uric acid
 - nitrogen compounds
 - . **xanthines**
 - . . caffeine
 - . . guanines
 - . . uric acid
 - organic compounds
 - . cyclic compounds
 - . . heterocyclic compounds
 - . . . purines
 - **xanthines**
 - caffeine
 - guanines
 - uric acid
- XB-47 aircraft*
- USE **B-47 aircraft**
- XB-70 aircraft*
- USE **B-70 aircraft**
- XBQM-180A aircraft*
- USE **VATOL aircraft**
- XC-142 aircraft**
- UF *C-142 aircraft*
 - GS Fairchild-Hiller aircraft
 - . **XC-142 aircraft**
 - jet aircraft
 - . **XC-142 aircraft**
 - Ling-Temco-Vought aircraft
 - . **XC-142 aircraft**
 - monoplanes
 - . **XC-142 aircraft**
 - Ryan aircraft
 - . **XC-142 aircraft**
 - tilt wing aircraft
 - . **XC-142 aircraft**
 - transport aircraft
 - . **XC-142 aircraft**
 - V/STOL aircraft
 - . vertical takeoff aircraft
 - . . **XC-142 aircraft**
 - RT ∞ aircraft
- turboprop engines
- xenon**
- GS chemical elements
 - . rare gases
 - . . **xenon**
 - . . . xenon isotopes
 - xenon 129
 - xenon 133
 - xenon 135
 - gases
 - . rare gases
 - . . **xenon**
 - . . . xenon isotopes
 - xenon 129
 - xenon 133
 - xenon 135
- xenon 129**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . xenon isotopes
 - **xenon 129**
 - rare gases
 - xenon
 - xenon isotopes
 - **xenon 129**
 - gases
 - . rare gases
 - . . xenon
 - . . . xenon isotopes
 - **xenon 129**
- xenon 133**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **xenon 133**
 - xenon isotopes
 - **xenon 133**
 - rare gases
 - xenon
 - xenon isotopes
 - **xenon 133**
 - gases
 - . rare gases
 - . . xenon
 - . . . xenon isotopes
 - **xenon 133**
- xenon 135**
- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **xenon 135**
 - xenon isotopes
 - **xenon 135**
 - rare gases
 - xenon
 - xenon isotopes
 - **xenon 135**
 - gases
 - . rare gases
 - . . xenon
 - . . . xenon isotopes
 - **xenon 135**
- xenon chloride lasers**
- DEF Rare gas-halide lasers using XeCl as the active material.
- GS stimulated emission devices
 - . lasers
 - . . gas lasers
 - . . . rare gas-halide lasers
 - **xenon chloride lasers**
 - RT electron transitions
 - excimer lasers
 - laser materials
 - laser outputs
 - ultraviolet lasers
- xenon compounds**
- RT ∞ chemical compounds

xenon fluoride lasers

∞ rare gas compounds

xenon fluoride lasers

DEF Lasers using XeF as the active material.

GS stimulated emission devices
. lasers
. gas lasers
. rare gas-halide lasers
. . . . **xenon fluoride lasers**
RT electron transitions
excimer lasers
laser materials
laser outputs

xenon isotopes

GS chemical elements
. nuclides
. isotopes
. . . . **xenon isotopes**
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
. rare gases
. xenon
. . . . **xenon isotopes**
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135
gases
. rare gases
. xenon
. . . . **xenon isotopes**
. . . . xenon 129
. . . . xenon 133
. . . . xenon 135

xenon lamps

GS lighting equipment
. luminaires
. . . **xenon lamps**
RT arc lamps
flash lamps
infrared radiation
mercury lamps

xerogels

(added July 1997)
GS gels
. **xerogels**
RT aerogels
porous materials
silica gel
silicon dioxide
sol-gel processes

xerography

GS imagery
. reproduction (copying)
. . . **xerography**
RT electrostatic charge
photographs
photography

XH-51 helicopter

UF *aerogyro helicopters*
CL-595 helicopter
H-51 helicopter
Lockheed 186 helicopter
Lockheed CL-595 helicopter
GS Lockheed aircraft
. **XH-51 helicopter**
research vehicles
. research aircraft
. . . **XH-51 helicopter**
V/STOL aircraft
. rotary wing aircraft
. helicopters
. . . rigid rotor helicopters
. . . . **XH-51 helicopter**

xi hyperons

GS particles
. elementary particles
. bosons
. mesons
. . . hyperons
. . . . **xi hyperons**
. . . **xi hyperons**
. fermions

. . . baryons
. . . . hyperons
. **xi hyperons**
. hadrons
. baryons
. . . hyperons
. . . . **xi hyperons**
. mesons
. . . hyperons
. . . . **xi hyperons**
. nuclear particles
. bosons
. mesons
. . . hyperons
. . . . **xi hyperons**
. . . **xi hyperons**

XJ-34-WE-32 engine
USE **J-34 engine**

XJ-79-GE-1 engine
USE **J-79 engine**

XLR-99 engine

GS engines
. rocket engines
. liquid propellant rocket engines
. . . **XLR-99 engine**
RT X-15 aircraft

XM-6 squib
USE **squibs**

XM-8 squib
USE **squibs**

XM-33 engine

UF *TX-33-39 engine*
GS engines
. rocket engines
. solid propellant rocket engines
. . . **XM-33 engine**
RT Blue Scout rocket vehicle
EXOS sounding rocket
Little Joe 2 launch vehicle
polaris missiles
Scout launch vehicle
TX-354 engine

XMM (telescope)
(added August 2000)
USE **XMM-Newton telescope**

XMM-Newton telescope

(added August 2000)
DEF Spaceborne x-ray telescope, launched in December 1999, providing simultaneous, high-throughput non-dispersive spectroscopic imaging (EPIC instrument), medium-resolution dispersive spectroscopy (Reflection Grating Spectrometer), and optical/UV imaging and timing from a co-aligned instrument (Optical Monitor).

UF *X Ray Multi-Mirror Mission*
XMM (telescope)
GS artificial satellites
. ESA satellites
. . . **XMM-Newton telescope**
. scientific satellites
. . . astronomical satellites
. . . . **XMM-Newton telescope**
ESA spacecraft
. ESA satellites
. . . **XMM-Newton telescope**
observatories
. astronomical observatories
. . . astronomical satellites
. . . . **XMM-Newton telescope**
telescopes
. spaceborne telescopes
. . . **XMM-Newton telescope**
. x ray telescopes
. . . **XMM-Newton telescope**
RT x ray astronomy
X Ray Astrophysics Facility

XV-3 aircraft

UF *V-3 aircraft*
GS Bell aircraft
. **XV-3 aircraft**

V/STOL aircraft
. **XV-3 aircraft**
RT ∞ aircraft
tilting rotors

XV-4 aircraft

UF *Hummingbird aircraft*
Lockheed XV-4A aircraft
V-4 aircraft
VZ-10 aircraft
GS jet aircraft
. **XV-4 aircraft**
Lockheed aircraft
. **XV-4 aircraft**
monoplanes
. **XV-4 aircraft**
research vehicles
. research aircraft
. . . **XV-4 aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . . **XV-4 aircraft**
RT ∞ aircraft

XV-5 aircraft

UF *V-5 aircraft*
VZ-11 aircraft
XV-5A aircraft
GS fan in wing aircraft
. **XV-5 aircraft**
jet aircraft
. **XV-5 aircraft**
monoplanes
. **XV-5 aircraft**
research vehicles
. research aircraft
. . . **XV-5 aircraft**
Ryan aircraft
. **XV-5 aircraft**
V/STOL aircraft
. **XV-5 aircraft**
RT ∞ aircraft

XV-5A aircraft
USE **XV-5 aircraft**

XV-6A aircraft
USE **P-1127 aircraft**

XV-8A aircraft

GS research vehicles
. research aircraft
. . . **XV-8A aircraft**
Ryan aircraft
. **XV-8A aircraft**
utility aircraft
. **XV-8A aircraft**
V/STOL aircraft
. **XV-8A aircraft**
RT ∞ aircraft
flexible wings

XV-9A aircraft

UF *V-9 aircraft*
GS Hughes aircraft
. **XV-9A aircraft**
jet aircraft
. **XV-9A aircraft**
research vehicles
. research aircraft
. . . **XV-9A aircraft**
V/STOL aircraft
. rotary wing aircraft
. . . helicopters
. . . . military helicopters
. **XV-9A aircraft**
RT ∞ aircraft
tip driven rotors

XV-11A aircraft

GS research vehicles
. research aircraft
. . . **XV-11A aircraft**
V/STOL aircraft
. vertical takeoff aircraft
. . . **XV-11A aircraft**
RT ∞ aircraft
lift fans

shrouded propellers

XV-15 aircraft

DEF Experimental model of a tilt-rotor aircraft built by Bell Aircraft Company.

GS Bell aircraft

. **XV-15 aircraft**

V/STOL aircraft

. rotary wing aircraft

. . tilt rotor aircraft

. . . **XV-15 aircraft**

RT ∞ aircraft

helicopters

Tilt Rotor Research Aircraft Program

x-y plotters

GS recording instruments

. plotters

. . **x-y plotters**

RT digital to analog converters

xylene

DEF A mixture of Carbon 8 aromatic hydrocarbons.

GS organic compounds

. hydrocarbons

. . **xylene**

RT toluene

xylose

GS organic compounds

. carbohydrates

. . sugars

. . . monosaccharides

. . . . pentose

. **xylose**

Y

YAG (*garnet*)

USE **yttrium-aluminum garnet**

YAG lasers

GS electronic equipment
 . solid state devices
 . . solid state lasers
 . . . **YAG lasers**
 stimulated emission devices
 . lasers
 . . solid state lasers
 . . . **YAG lasers**

RT laser heating
 laser materials
 laser outputs
 yttrium-aluminum garnet

Yagi antennas

DEF Directional antennas used on some types of radar and radio equipment consisting of an array of elemental, single wire dipole antennas and reflectors.

GS antennas
 . directional antennas
 . . **Yagi antennas**
 arrays
 . antenna arrays
 . . linear arrays
 . . . endfire arrays
 **Yagi antennas**

RT antenna design
 dipole antennas
 directors (antenna elements)
 parasitic elements (antennas)
 waveguide antennas

Yak 40 aircraft

GS general aviation aircraft
 . **Yak 40 aircraft**
 jet aircraft
 . **Yak 40 aircraft**
 passenger aircraft
 . **Yak 40 aircraft**
 Yakovlev aircraft
 . **Yak 40 aircraft**

RT ∞ aircraft

YAK aircraft

USE **Yakovlev aircraft**

Yakovlev aircraft

(*added September 1995*)
 UF **YAK aircraft**
 GS **Yakovlev aircraft**
 . Yak 40 aircraft

RT ∞ aircraft

Yang-Mills fields

DEF Types of fields based upon Yang-Mills theory.

RT electromagnetic fields
 field theory (physics)
 gauge theory
 gravitational fields
 perturbation theory
 Yang-Mills theory

Yang-Mills theory

DEF Mathematical idea for describing interactions among elementary particles which is based on the idea of gauge invariance under a non Abelian group. Used for Casimir energy.

RT field theory (physics)
 gauge theory
 perturbation theory
 space-time functions
 statistical analysis
 supergravity
 theoretical physics
 ∞ theories
 Yang-Mills fields

yarns

RT cordage
 cotton
 fibers
 ∞ rovings
 strands
 wool

YAV-8B aircraft

USE **Harrier aircraft**

yaw

UF *damping in yaw*
fish-tailing
yawmeters

GS attitude (inclination)
 . **yaw**

RT aerodynamic stability
 coning motion
 directional control
 directional stability
 lateral oscillation
 ∞ motion
 pitch (inclination)
 roll
 rotation
 sideslip
 skidding
 turning flight
 yawing moments

yawing moments

DEF Moments that tend to rotate aircraft, airfoils, rockets, or spacecraft about a vertical axis.

GS moments
 . stability derivatives
 . . **yawing moments**

RT aerodynamic coefficients
 lateral oscillation
 moments of inertia
 pitching moments
 rolling moments
 torque
 yaw

yawmeters

USE **attitude indicators**
yaw

Y-Ba-Cu-O superconductors

USE **YBCO superconductors**

YBCO superconductors

(*added September 1992*)

UF *Y-Ba-Cu-O superconductors*

GS chalcogenides
 . oxides
 . . metal oxides
 . . . mixed oxides
 **YBCO superconductors**
 conductors
 . superconductors (materials)
 . . high temperature superconductors
 . . . **YBCO superconductors**

RT barium oxides
 ceramics
 cermets
 copper oxides
 cuprates
 low temperature physics
 superconducting films
 superconductivity
 thin films
 yttrium oxides

YC-14 aircraft

GS transport aircraft
 . cargo aircraft
 . . **YC-14 aircraft**

RT ∞ aircraft
 Boeing aircraft
 ∞ military aircraft

YC-15 aircraft

USE **C-15 aircraft**

YC-123 aircraft

USE **C-123 aircraft**

yeast

GS plants (botany)
 . fungi
 . . **yeast**

RT ∞ food

Yellowstone National Park (ID-MT-WY)

GS land
 . parks
 . . national parks
 . . . **Yellowstone National Park (ID-MT-WY)**

RT Idaho
 Montana
 Wyoming

Yemen

GS nations
 . **Yemen**

RT Asia

YF-12 aircraft

GS attack aircraft
 . fighter aircraft
 . . **YF-12 aircraft**

RT ∞ aircraft
 aircraft design
 ∞ interceptors
 jet aircraft
 ∞ military aircraft
 reconnaissance aircraft
 research aircraft

YF-16 aircraft

USE **F-16 aircraft**

YF-17 aircraft

USE **F-17 aircraft**

YF-22 aircraft

USE **F-22 aircraft**

YF-102 aircraft

USE **F-102 aircraft**

YHU-1 helicopter

USE **UH-1 helicopter**

yield

RT losses
 output

yield point

UF *damage threshold*
Luder bands

GS mechanical properties
 . plastic properties
 . . **yield point**

RT microyield strength
 Tresca flow

yield strength

DEF The stress at which a material exhibits a specific limiting deviation from the proportionality of stress to strain. This deviation is expressed in terms of strain.

GS mechanical properties
 . **yield strength**
 . . load carrying capacity
 . . microyield strength

RT ductile-brittle transition
 elastic properties
 fracture strength
 high strength
 J integral
 plastic deformation
 ∞ strength
 stresses
 stress-strain diagrams
 stress-strain relationships
 temperature inversions

YIG (*garnet*)

USE **yttrium-iron garnet**

YJ73 turbojet engine
USE **J-73 engine**

YJ-73-GE-3 engine
USE **J-73 engine**

YJ-79 engine
USE **J-79 engine**

YJ-85 engine
USE **J-85 engine**

YJ-93 engine
USE **J-93 engine**

YJ-93-GE-3 engine
USE **J-93 engine**

YLF lasers

- (added August 1990)
- UF *yttrium lithium fluoride lasers*
- GS electronic equipment
 - . solid state devices
 - . . . semiconductor devices
 - . . . semiconductor lasers
 - **YLF lasers**
 - . . . solid state lasers
 - . . . **YLF lasers**
- stimulated emission devices
 - . lasers
 - . . semiconductor lasers
 - . . . **YLF lasers**
 - . . . solid state lasers
 - . . . **YLF lasers**
- RT infrared lasers

YLR-91-AJ-1 engine

- GS engines
 - . rocket engines
 - . . liquid propellant rocket engines
 - . . . **YLR-91-AJ-1 engine**
- RT Titan ICBM

yokes

- RT beam waveguides
- connectors
- couplers
- couples
- deflection
- directional couplers
- ferromagnetic materials
- ∞ joining
- linkages
- magnet coils

Young modulus

USE **modulus of elasticity**

Young-Helmholtz theory

- RT color vision
- photoreceptors
- ∞ theories

youth

- RT adults
- growth
- human beings

yo-yo devices

- RT angular acceleration
- gyroscopic stability
- satellite rotation
- spin
- spin reduction

yrast state

- (added December 2001)
- DEF An energy state in which the energy level of a nucleus is less than that of all other states with the same spin.
- GS level (quantity)
 - . energy levels
 - . . **yrast state**
- RT ground state
- nuclear spin
- nuclei (nuclear physics)

YS-11 aircraft

- UF *Nihon YS-11 aircraft*
- GS jet aircraft
 - . turboprop aircraft

- . . **YS-11 aircraft**
- monoplanes
- . **YS-11 aircraft**
- Nihon aircraft
- . **YS-11 aircraft**
- passenger aircraft
- . **YS-11 aircraft**
- transport aircraft
- . **YS-11 aircraft**

YSZ

USE **yttria-stabilized zirconia**

YT-2 aircraft

USE **T-2 aircraft**

ytterbium

- GS chemical elements
 - . rare earth elements
 - . . **ytterbium**
 - . . . ytterbium isotopes
- metals
 - . rare earth elements
 - . . **ytterbium**
 - . . . ytterbium isotopes

ytterbium compounds

- GS rare earth compounds
 - . **ytterbium compounds**
- RT ∞ chemical compounds
- ∞ metal compounds

ytterbium isotopes

- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **ytterbium isotopes**
 - . rare earth elements
 - . . ytterbium
 - . . . **ytterbium isotopes**
- metals
 - . rare earth elements
 - . . ytterbium
 - . . . **ytterbium isotopes**

yttria-stabilized zirconia

- (added February 1994)
- UF YSZ
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . zirconium oxides
 - **yttria-stabilized zirconia**
- zirconium compounds
 - . zirconium oxides
 - . . **yttria-stabilized zirconia**
- RT ceramics
- thin films
- yttrium oxides

yttrium

- GS chemical elements
 - . rare earth elements
 - . . **yttrium**
 - . . . yttrium isotopes
- metals
 - . rare earth elements
 - . . **yttrium**
 - . . . yttrium isotopes
- transition metals
 - . . **yttrium**
 - . . . yttrium isotopes

yttrium alloys

- GS alloys
 - . **yttrium alloys**
- RT rare earth alloys

yttrium compounds

- GS **yttrium compounds**
 - . yttrium oxides
 - . yttrium-aluminum garnet
 - . yttrium-iron garnet
- RT ∞ chemical compounds
- ∞ Group 3B compounds
- ∞ metal compounds

yttrium isotopes

- GS chemical elements
 - . nuclides

- . . isotopes
- . . . **yttrium isotopes**
- . rare earth elements
- . . yttrium
- . . . **yttrium isotopes**
- metals
 - . rare earth elements
 - . . yttrium
 - . . . **yttrium isotopes**
- transition metals
 - . . yttrium
 - . . . **yttrium isotopes**

yttrium lithium fluoride lasers

USE **YLF lasers**

yttrium oxides

- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **yttrium oxides**
- yttrium compounds
 - . **yttrium oxides**
- RT high temperature superconductors
- YBCO superconductors
- yttria-stabilized zirconia

yttrium-aluminum garnet

- UF *YAG (garnet)*
- GS minerals
 - . garnets
 - . . **yttrium-aluminum garnet**
- silicon compounds
 - . silicates
 - . . garnets
 - . . . **yttrium-aluminum garnet**
- yttrium compounds
 - . **yttrium-aluminum garnet**
- RT ferrites
- magnetostatic amplifiers
- YAG lasers

yttrium-iron garnet

- UF *YIG (garnet)*
- GS minerals
 - . garnets
 - . . **yttrium-iron garnet**
- silicon compounds
 - . silicates
 - . . garnets
 - . . . **yttrium-iron garnet**
- yttrium compounds
 - . **yttrium-iron garnet**
- RT ferrites
- magnetostatic amplifiers
- waveguide tuners

Yugoslavia

- GS nations
 - . **Yugoslavia**
- RT Adriatic Sea
- Bosnia and Herzegovina
- Croatia
- Europe
- Serbska Republic

YUH-1 helicopter

USE **UH-1 helicopter**

YUH-60A helicopter

USE **UH-60A helicopter**

YUH-61A helicopter

USE **UH-61A helicopter**

Yukawa potential

- RT meson-nucleon interactions
- ∞ potential

Yukon aircraft

USE **CL-44 aircraft**

Yukon Territory

- GS nations
 - . Canada
 - . . **Yukon Territory**

Z

Z1 truss structure
(added October 2000)
USE **Integrated Truss Structure Z1**

Z-37 aircraft
UF *Omnipol Z-37 aircraft*
GS monoplanes
 . **Z-37 aircraft**
 utility aircraft
 . **Z-37 aircraft**

Zaire
(added November 1997)
USE **Democratic Republic of Congo**

Zambia
GS nations
 . **Zambia**
RT Africa

Zarya control module
(added November 1998)
DEF Component of the International Space Station providing propulsion, steering, and communications during the early assembly stages of the station; later serving as a docking port and fuel tank. Zarya was built by Russia under contract to the U.S. and is owned by the U.S.
GS modules
 . space station modules
 . . **Zarya control module**
RT International Space Station

zea mays
(added August 2004)
USE **corn**

Zeeman effect
RT ∞ effects
 magnetic fields
 spectroscopy
 spectrum analysis
 Stark effect
 Voigt effect

zeitgebers
(added December 2001)
DEF Environmental cues that help keep circadian and other biological rhythms; includes sunlight, noise, social interactions, and the use of clocks.
GS cues
 . **zeitgebers**
RT activity cycles (biology)
 circadian rhythms
 darkness
 desynchronization (biology)
 phenology
 physiological responses
 rhythm (biology)
 ∞ stimuli
 visual stimuli

Zener diodes
USE **avalanche diodes**

Zener effect
RT barrier layers
 carrier density (solid state)
 ∞ carriers
 ∞ effects
 electric discharges
 field emission

Zenit launch vehicles
(added January 1999)
GS launch vehicles
 . **Zenit launch vehicles**
RT sea launching
 Ukrainian space program

zenith
DEF That point of the celestial sphere vertically overhead. The point 180 deg. from the zenith is called the nadir.
RT antipodes
 apexes
 celestial sphere
 maxima

noon
solar position

zeolites
GS silicon compounds
 . silicates
 . . . **zeolites**
RT ion exchange resins
 minerals

zero angle of attack
GS geometry
 . Euclidean geometry
 . . angles (geometry)
 . . . angle of attack
 **zero angle of attack**

zero crossings
USE **roots of equations**

zero force curves
RT curvature
 ∞ curves
 ∞ force

zero gravity
USE **weightlessness**

zero lift
GS aerodynamic characteristics
 . lift
 . . **zero lift**
 aerodynamic forces
 . lift
 . . **zero lift**
 dynamic characteristics
 . lift
 . . **zero lift**
RT aerodynamic stalling
 boundary layer separation
 distribution (property)

zero point energy
DEF Kinetic energy retained by molecules of a substance at a temperature of absolute zero.
RT absolute zero
 field theory (physics)
 kinetic energy
 thermodynamic properties

zero power reactor 2
GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . heavy water reactors
 **zero power reactor 2**
 . . . zero power reactors
 **zero power reactor 2**
 . nuclear research and test reactors
 . . **zero power reactor 2**

zero power reactor 3
GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . zero power reactors
 **zero power reactor 3**
 . nuclear research and test reactors
 . . **zero power reactor 3**

zero power reactor 6
GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . zero power reactors
 **zero power reactor 6**
 . nuclear research and test reactors
 . . **zero power reactor 6**

zero power reactor 9
GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . zero power reactors
 **zero power reactor 9**
 . nuclear research and test reactors

. . **zero power reactor 9**

zero power reactors
UF *ZPR reactors*
GS nuclear reactors
 . liquid cooled reactors
 . . water cooled reactors
 . . . **zero power reactors**
 zero power reactor 2
 zero power reactor 3
 zero power reactor 6
 zero power reactor 9

zero sound
GS acoustic properties
 . sound intensity
 . . **zero sound**
 rates (per time)
 . flux density
 . . sound intensity
 . . . **zero sound**
RT acoustic attenuation
 acoustics
 anechoic chambers
 reflection
 silencers
 subaudible frequencies

zero sum games
(added October 1998)
GS games
 . **zero sum games**
RT differential games
 Markov processes
 optimal control
 pursuit-evasion games
 saddle points (game theory)

zero-g ACPL (Spacelab)
USE **Atmospheric Cloud Physics Lab (Spacelab)**

Zeta Aurigae star
GS celestial bodies
 . stars
 . . double stars
 . . . binary stars
 eclipsing binary stars
 **Zeta Aurigae star**
RT Auriga constellation

zeta pinch
DEF Type of plasma pinch produced by an electric current applied axially to a plasma cylinder in a controlled fusion reactor.
GS pinch effect
 . plasma pinch
 . . **zeta pinch**
RT controlled fusion
 magnetohydrodynamic stability
 plasma compression
 plasma control
 plasma electrodes
 plasma focus
 Q devices
 rotating plasmas
 screw pinch
 theta pinch

zeta thermonuclear reactor
RT pinch effect
 thermonuclear power generation
 thermonuclear reactions

Zeus missile
USE **Nike-Zeus missile**

Ziegler catalyst
GS catalysts
 . **Ziegler catalyst**
RT polymerization

Zimbabwe
UF *Rhodesia*
GS nations
 . **Zimbabwe**

- RT Africa
- zinc**
- GS chemical elements
- . zinc
 - . . zinc isotopes
 - metals
 - . transition metals
 - . . **zinc**
 - . . . zinc isotopes
- RT heavy metals
- zinc alloys**
- GS alloys
- . **zinc alloys**
- RT bearing alloys
solders
- zinc antimonides**
- GS antimony compounds
- . antimonides
 - . . **zinc antimonides**
 - zinc compounds
 - . **zinc antimonides**
- zinc chlorides**
- DEF Reaction products of hydrochloric acid and zinc; white crystals soluble in water and alcohol and with a melting point of 290 degrees C.
- GS halogen compounds
- . chlorine compounds
 - . . chlorides
 - . . . **zinc chlorides**
 - . halides
 - . . chlorides
 - . . . **zinc chlorides**
 - . . metal halides
 - . . . **zinc chlorides**
 - zinc compounds
 - . **zinc chlorides**
- zinc coatings**
- UF *galvanizing*
- GS coatings
- . metal coatings
 - . . **zinc coatings**
- RT protective coatings
- zinc compounds**
- GS **zinc compounds**
- . zinc antimonides
 - . zinc chlorides
 - . zinc fluorides
 - . zinc oxides
 - . zinc selenides
 - . zinc sulfides
 - . . wurtzite
 - . . zinblend
 - . zinc tellurides
 - . zinc tungstates
- RT ∞ chemical compounds
∞ Group 2B compounds
∞ metal compounds
- zinc fluorides**
- GS halogen compounds
- . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **zinc fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **zinc fluorides**
 - . . metal halides
 - . . . metal fluorides
 - **zinc fluorides**
 - zinc compounds
 - . **zinc fluorides**
- zinc isotopes**
- GS chemical elements
- . nuclides
 - . . isotopes
 - . . . **zinc isotopes**
 - . zinc
 - . . **zinc isotopes**
 - metals
 - . transition metals
- . . zinc
 - . . . **zinc isotopes**
- zinc nickel batteries**
- USE **nickel zinc batteries**
- zinc oxides**
- GS chalcogenides
- . oxides
 - . . metal oxides
 - . . . **zinc oxides**
 - zinc compounds
 - . **zinc oxides**
- zinc selenides**
- GS chalcogenides
- . selenides
 - . . **zinc selenides**
 - selenium compounds
 - . selenides
 - . . **zinc selenides**
 - zinc compounds
 - . **zinc selenides**
- RT Schottky diodes
- zinc silver batteries**
- USE **silver zinc batteries**
- zinc silver oxide batteries**
- USE **silver zinc batteries**
- zinc sulfides**
- GS chalcogenides
- . sulfides
 - . . inorganic sulfides
 - . . . **zinc sulfides**
 - wurtzite
 - zinblend
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . **zinc sulfides**
 - wurtzite
 - zinblend
 - zinc compounds
 - . **zinc sulfides**
 - . . wurtzite
 - . . zinblend
- zinc tellurides**
- GS chalcogenides
- . tellurides
 - . . **zinc tellurides**
 - tellurium compounds
 - . tellurides
 - . . **zinc tellurides**
 - zinc compounds
 - . **zinc tellurides**
- zinc tungstates**
- GS tungsten compounds
- . tungstates
 - . . **zinc tungstates**
 - zinc compounds
 - . **zinc tungstates**
- zinblend**
- DEF Zinc sulfide, ZnS; a cubic crystal. Used for sphalerite.
- UF *sphalerite*
- GS chalcogenides
- . sulfides
 - . . inorganic sulfides
 - . . . zinc sulfides
 - **zinblend**
 - minerals
 - . **zinblend**
 - sulfur compounds
 - . sulfides
 - . . inorganic sulfides
 - . . . zinc sulfides
 - **zinblend**
 - zinc compounds
 - . zinc sulfides
 - . . **zinblend**
- zinc-bromide batteries**
- DEF Electric cells in which during charge, zinc is plated on the anode and bromine is evolved at the cathode. The bromine is transferred to an external chamber for mixing and storing with an organic liquid complexing oil. During discharge, the zinc is oxidized at the anode and the complexed bromine is reduced at the cathode.
- GS electrochemical cells
- . electric batteries
 - . . storage batteries
 - . . . **zinc-bromide batteries**
- RT zinc-chlorine batteries
- zinc-chlorine batteries**
- DEF Candidate electric cells under development for electric vehicles.
- GS electrochemical cells
- . electric batteries
 - . . storage batteries
 - . . . **zinc-chlorine batteries**
- RT zinc-bromide batteries
- zinc-oxygen batteries**
- GS electric generators
- . direct power generators
 - . . primary batteries
 - . . . metal air batteries
 - **zinc-oxygen batteries**
 - electrochemical cells
 - . electric batteries
 - . . primary batteries
 - . . . metal air batteries
 - **zinc-oxygen batteries**
- zippers**
- DEF Slide fasteners consisting of interlockable elements each attached to one of the opposing edges of two tapes and a movable part called a 'slider' that spans the interlockable elements, which when moved in one direction causes the elements one one tape to interlock with the elements on the other tape, and when moved in the opposite direction causes the elements to disengage.
- GS fasteners
- . **zippers**
- RT holders
- Zircaloy 2 (trademark)**
- GS alloys
- . zirconium alloys
 - . . Zircaloys (trademark)
 - . . . **Zircaloy 2 (trademark)**
- Zircaloys (trademark)**
- GS alloys
- . zirconium alloys
 - . . **Zircaloys (trademark)**
 - . . . Zircaloy 2 (trademark)
- RT iron alloys
tin alloys
- zirconates**
- GS zirconium compounds
- . **zirconates**
 - . . barium zirconates
 - . . strontium zirconates
- zirconia*
- USE **zirconium oxides**
- zirconium**
- GS chemical elements
- . **zirconium**
 - . . zirconium isotopes
 - . . . zirconium 95
 - metals
 - . transition metals
 - . . **zirconium**
 - . . . zirconium isotopes
 - zirconium 95
- zirconium 95**
- GS chemical elements
- . nuclides
 - . . isotopes
 - . . . radioactive isotopes
 - **zirconium 95**
 - zirconium isotopes
 - **zirconium 95**
 - . zirconium
 - . . zirconium isotopes

zirconium alloys

- . . . **zirconium 95**
- metals
- . transition metals
- . . zirconium
- . . . zirconium isotopes
- **zirconium 95**

zirconium alloys

- GS alloys
 - . **zirconium alloys**
 - . . Zircalloys (trademark)
 - . . . Zircaloy 2 (trademark)
- RT hafnium alloys
- lithium alloys

zirconium carbides

- GS carbon compounds
 - . carbides
 - . . **zirconium carbides**
- zirconium compounds
- . **zirconium carbides**

zirconium compounds

- GS **zirconium compounds**
 - . zirconates
 - . . barium zirconates
 - . . strontium zirconates
 - . zirconium carbides
 - . zirconium hydrides
 - . zirconium iodides
 - . zirconium nitrides
 - . zirconium oxides
 - . . yttria-stabilized zirconia
 - . zirconium titanates
 - . . lead zirconate titanates
 - . zirconium fluorides
- RT ∞ chemical compounds
- ∞ Group 4B compounds
- ∞ metal compounds

zirconium fluorides

(added April 2004)

- GS halogen compounds
 - . fluorine compounds
 - . . fluorides
 - . . . metal fluorides
 - **zirconium fluorides**
 - . halides
 - . . fluorides
 - . . . metal fluorides
 - **zirconium fluorides**
 - . . metal halides
 - . . . metal fluorides
 - **zirconium fluorides**
- zirconium compounds
- . **zirconium fluorides**

zirconium hydrides

- GS hydrogen compounds
 - . hydrides
 - . . **zirconium hydrides**
- zirconium compounds
- . **zirconium hydrides**

zirconium iodides

- GS halogen compounds
 - . halides
 - . . metal halides
 - . . . **zirconium iodides**
 - . iodine compounds
 - . . iodides
 - . . . **zirconium iodides**
- zirconium compounds
- . **zirconium iodides**

zirconium isotopes

- GS chemical elements
 - . nuclides
 - . . isotopes
 - . . . **zirconium isotopes**
 - zirconium 95
 - . zirconium
 - . . **zirconium isotopes**
 - . . . zirconium 95
- metals
- . transition metals
- . . zirconium
- . . . **zirconium isotopes**

- zirconium 95

zirconium nitrides

- GS nitrogen compounds
 - . nitrides
 - . . metal nitrides
 - . . . **zirconium nitrides**
- zirconium compounds
- . **zirconium nitrides**

zirconium oxides

- UF *zirconia*
- GS chalcogenides
 - . oxides
 - . . metal oxides
 - . . . **zirconium oxides**
 - yttria-stabilized zirconia
- zirconium compounds
- . **zirconium oxides**
- . . yttria-stabilized zirconia

zirconium titanates

- GS titanium compounds
 - . titanates
 - . . **zirconium titanates**
 - . . . lead zirconate titanates
- zirconium compounds
- . **zirconium titanates**
- . . lead zirconate titanates

zodiac

- RT constellations
 - ecliptic
 - Scorpius constellation
 - Scutum constellation

zodiacal dust

- GS celestial bodies
 - . meteoroids
 - . . micrometeoroids
 - . . . meteoroid dust clouds
 - **zodiacal dust**
 - extraterrestrial matter
 - . interstellar matter
 - . . cosmic dust
 - . . . interplanetary dust
 - meteoroid dust clouds
 - **zodiacal dust**
 - media
 - . interplanetary medium
 - . . interplanetary dust
 - . . . meteoroid dust clouds
 - **zodiacal dust**
 - particles
 - . dust
 - . . cosmic dust
 - . . . interplanetary dust
 - meteoroid dust clouds
 - **zodiacal dust**
- RT Explorer satellites
- micrometeorites
- Poynting-Robertson effect
- terrestrial dust belt

zodiacal light

- GS electromagnetic radiation
 - . light (visible radiation)
 - . . **zodiacal light**
 - extraterrestrial radiation
 - . **zodiacal light**
- RT gegenschein
- Helios Project
- micrometeoroids
- night sky
- polarized light
- Poynting-Robertson effect
- sky brightness
- solar radiation
- sunlight

zonal circulation

- USE **zonal flow (meteorology)**

Zonal Earth Energy Budget Experiment

- USE **LZEEBE satellite**

zonal flow (meteorology)

DEF The flow of air along a latitude circle; more specifically, the latitudinal (east or west) of existing flow. Used for zonal circulation.

- UF *zonal circulation*
- GS circulation
 - . atmospheric circulation
 - . . **zonal flow (meteorology)**
- RT air currents
 - annual variations
 - baroclinic instability
 - baroclinic waves
 - circumpolar westerlies
 - climatology
 - intertropical convergent zones
 - jet streams (meteorology)
 - Madden-Julian Oscillation
 - meridional flow
 - meteorology
 - middle atmosphere
 - mixing height
 - planetary waves
 - quasi-biennial oscillation
 - wind (meteorology)
 - wind direction
 - wind profiles

zonal harmonics

- GS analysis (mathematics)
 - . functional analysis
 - . . harmonic analysis
 - . . . **zonal harmonics**
- harmonics
- . **zonal harmonics**

Zond 1 space probe

- GS interplanetary spacecraft
 - . Venus probes
 - . . **Zond 1 space probe**
 - . Zond space probes
 - . . **Zond 1 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - . . **Zond 1 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Venus probes
 - . . . **Zond 1 space probe**
 - . Zond space probes
 - . . **Zond 1 space probe**

Zond 2 space probe

- GS interplanetary spacecraft
 - . Mars probes
 - . . **Zond 2 space probe**
 - . Zond space probes
 - . . **Zond 2 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - . . **Zond 2 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Mars probes
 - . . . **Zond 2 space probe**
 - . Zond space probes
 - . . **Zond 2 space probe**

Zond 3 space probe

- GS interplanetary spacecraft
 - . Venus probes
 - . . **Zond 3 space probe**
 - . Zond space probes
 - . . **Zond 3 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - . . **Zond 3 space probe**
 - unmanned spacecraft
 - . space probes
 - . . Venus probes
 - . . . **Zond 3 space probe**
 - . Zond space probes
 - . . **Zond 3 space probe**

Zond 4 space probe

- GS interplanetary spacecraft
 - . Venus probes
 - . . **Zond 4 space probe**
 - . Zond space probes
 - . . **Zond 4 space probe**
 - Soviet spacecraft
 - . Zond space probes
 - . . **Zond 4 space probe**
 - unmanned spacecraft
 - . space probes

. . Venus probes
 . . . **Zond 4 space probe**
 . Zond space probes
 . . **Zond 4 space probe**

Zond 5 space probe
 GS interplanetary spacecraft
 . Venus probes
 . . **Zond 5 space probe**
 . Zond space probes
 . . **Zond 5 space probe**
 Soviet spacecraft
 . Zond space probes
 . . **Zond 5 space probe**
 unmanned spacecraft
 . space probes
 . . Venus probes
 . . . **Zond 5 space probe**
 . Zond space probes
 . . **Zond 5 space probe**

Zond 6 space probe
 GS interplanetary spacecraft
 . Venus probes
 . . **Zond 6 space probe**
 . Zond space probes
 . . **Zond 6 space probe**
 Soviet spacecraft
 . Zond space probes
 . . **Zond 6 space probe**
 unmanned spacecraft
 . space probes
 . . Venus probes
 . . . **Zond 6 space probe**
 . Zond space probes
 . . **Zond 6 space probe**

Zond 7 space probe
 GS interplanetary spacecraft
 . Venus probes
 . . **Zond 7 space probe**
 . Zond space probes
 . . **Zond 7 space probe**
 Soviet spacecraft
 . Zond space probes
 . . **Zond 7 space probe**
 unmanned spacecraft
 . space probes
 . . Venus probes
 . . . **Zond 7 space probe**
 . Zond space probes
 . . **Zond 7 space probe**

Zond 8 space probe
 GS interplanetary spacecraft
 . Venus probes
 . . **Zond 8 space probe**
 . Zond space probes
 . . **Zond 8 space probe**
 Soviet spacecraft
 . Zond space probes
 . . **Zond 8 space probe**
 unmanned spacecraft
 . space probes
 . . Venus probes
 . . . **Zond 8 space probe**
 . Zond space probes
 . . **Zond 8 space probe**

Zond space probes
 GS interplanetary spacecraft
 . **Zond space probes**
 . . Zond 1 space probe
 . . Zond 2 space probe
 . . Zond 3 space probe
 . . Zond 4 space probe
 . . Zond 5 space probe
 . . Zond 6 space probe
 . . Zond 7 space probe
 . . Zond 8 space probe
 Soviet spacecraft
 . **Zond space probes**
 . . Zond 1 space probe
 . . Zond 2 space probe
 . . Zond 3 space probe
 . . Zond 4 space probe
 . . Zond 5 space probe
 . . Zond 6 space probe
 . . Zond 7 space probe
 . . Zond 8 space probe

unmanned spacecraft
 . **Zond space probes**
 . . Zond 1 space probe
 . . Zond 2 space probe
 . . Zond 3 space probe
 . . Zond 4 space probe
 . . Zond 5 space probe
 . . Zond 6 space probe
 . . Zond 7 space probe
 . . Zond 8 space probe
 RT Mars probes

zone melting

UF *zone refining*
 GS phase transformations
 . freezing
 . . **zone melting**
 . melting
 . . **zone melting**
 RT arc melting
 crystallization
 float zones
 purification
 refining
 ∞ separation
 ultrapure metals
 vacuum melting

zone refining

USE **zone melting**

zones

USE **regions**

∞ **zoology**

SN (USE OF A MORE SPECIFIC TERM IS
 RECOMMENDED--CONSULT THE TERMS
 LISTED BELOW)
 RT animals
 botany
 entomology
 ∞ science
 taxonomy

zoom lenses

GS lenses
 . **zoom lenses**
 RT lens design

zooplankton

DEF The aggregate of passively floating or
 drifting animal organisms in aquatic ecosys-
 tems.
 GS animals
 . **zooplankton**
 plankton
 . **zooplankton**
 RT marine biology
 phytoplankton

ZPR reactors

USE **zero power reactors**

Zuni rocket vehicle

GS rocket vehicles
 . single stage rocket vehicles
 . . **Zuni rocket vehicle**
 RT solid propellant rocket engines

Zvezda Service Module

(added June 2000)
 USE **Service Module (ISS)**

zwitterionic compounds

(added October 2001)
 USE **zwitterions**

zwitterions

(added October 2001)
 DEF Ionic compounds that include both
 positive- and negative-charge components but
 are neutral overall.
 UF *dipolar ions*
zwitterionic compounds
 RT amino acids
 ∞ chemical compounds
 ∞ dipoles
 electric dipoles
 polarization characteristics
 polymerization

surfactants

zygotes

(added August 2004)

DEF The fertilized ovum resulting from the
 fusion of a male and female gamete.

GS cells (biology)

. gametocytes

. . eggs

. . . **zygotes**

RT embryos

females

fertility

fertilization

reproduction (biology)

sex

spermatozoa

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| 16. Abstract

The <i>NASA Thesaurus</i> contains the authorized subject terms by which the documents in the NASA Aeronautics and Space Database are indexed and retrieved. The scope of this controlled vocabulary includes not only aerospace engineering, but all supporting areas of engineering and physics, the natural space sciences (astronomy, astrophysics, planetary science), Earth sciences, and to some extent, the biological sciences. <i>Volume 1 – Hierarchical Listing With Definitions</i> contains over 18,300 subject terms, 4,300 definitions, and approximately 4,500 USE cross references. The hierarchical listing presents full hierarchical structure for each term along with related term lists, and can serve as an orthographic authority. <i>Volume 2 – Rotated Term Display</i> is a ready-reference tool which provides approximately 52,000 additional 'access points' to the thesaurus terminology. It contains postable and nonpostable terms found in the hierarchical listing arranged in a KWIC (key-word-in-context) index. | | | | | |
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