with Indexes

National Aeronautics and Space Administration



(NASA-SP-7041(34)) EARTH RESOURCES. A CONTINUING BIBLIOGRAPHY WITH INDEXES, ISSUE 34, JULY 1982 (National Aeronautics and Space Administration) 144 p HC \$10.50

N83-10456

CSCL 05B 00/43 Earth Resource Earth Resources th Resources Eal Resources Earth lesources Earth irces Earth Re

ACCESSION NUMBER RANGES

Accession numbers cited in this Supplement fall within the following ranges.

STAR (N-10000 Series)

N82-16040 - N82-22140

IAA (A-10000 Series)

A82-18840 - A82-28538

This bibliography was prepared by the NASA Scientific and Technical Information Facility operated for the National Aeronautics and Space Administration by PRC Government Information Systems.

EARTH RESOURCES

A CONTINUING BIBLIOGRAPHY WITH INDEXES

Issue 34

A selection of annotated references to unclassified reports and journal articles that were introduced into the NASA scientific and technical information system and announced between April 1 and June 30, 1982 in

- Scientific and Technical Aerospace Reports (STAR)
- International Aerospace Abstracts (IAA).



INTRODUCTION

The technical literature described in this continuing bibliography may be helpful to researchers in numerous disciplines such as agriculture and forestry, geography and cartography, geology and mining, oceanography and fishing, environmental control, and many others. Until recently it was impossible for anyone to examine more than a minute fraction of the Earth's surface continuously. Now vast areas can be observed synoptically, and changes noted in both the Earth's lands and waters, by sensing instrumention on orbiting spacecraft or on aircraft.

This literature survey lists 567 reports, articles, and other documents announced between April 1 and June 30, 1982 in *Scientific and Technical Aerospace Reports (STAR)*, and *International Aerospace Abstracts (IAA)*.

The coverage includes documents related to the identification and evaluation by means of sensors in spacecraft and aircraft of vegetation, minerals, and other natural resources, and the techniques and potentialities of surveying and keeping up-to-date inventories of such riches. It encompasses studies of such natural phenomena as earthquakes, volcanoes, ocean currents, and magnetic fields; and such cultural phenomena as cities, transportation networks, and irrigation systems. Descriptions of the components and use of remote sensing and geophysical instrumentation, their subsystems, observational procedures, signature and analyses and interpretive techniques for gathering data are also included. All reports generated under NASA's Earth Resources Survey Program for the time period covered in this bibliography will also be included. The bibliography does not contain citations to documents dealing mainly with satellites or satellite equipment used in navigation or communication systems, nor with instrumentation not used aboard aerospace vehicles.

The selected items are grouped in nine categories. These are listed in the Table of Contents with notes regarding the scope of each category. These categories were especially chosen for this publication, and differ from those found in *STAR* and *IAA*.

Each entry consists of a standard bibliographic citation accompanied by an abstract. The citations and abstracts are reproduced exactly as they appeared originally in *STAR*, or *IAA*, including the original accession numbers from the respective announcement journals. This procedure, which saves time and money, accounts for the variation in citation appearance.

Under each of the nine categories, the entries are presented in one of two groups that appear in the following order:

IAA entries identified by accession number series A82-10,000 in ascending accession number order:

STAR entries identified by accession number series N82-10,000 in ascending accession number order.

After the abstract section, there are five indexes:

subject, personal author, corporate source, contract number and report/accession number.

AVAILABILITY OF CITED PUBLICATIONS

IAA ENTRIES (A82-10000 Series)

All publications abstracted in this Section are available from the Technical Information Service. American Institute of Aeronautics and Astronautics, Inc. (AIAA), as follows: Paper copies of accessions are available at \$8.00 per document. Microfiche⁽¹⁾ of documents announced in *IAA* are available at the rate of \$4.00 per microfiche on demand, and at the rate of \$1.35 per microfiche for standing orders for all *IAA* microfiche.

Minimum air-mail postage to foreign countries is \$2.50 and all foreign orders are shipped on payment of pro-forma invoices.

All inquiries and requests should be addressed to AlAA Technical Information Service. Please refer to the accession number when requesting publications.

STAR ENTRIES (N82-10000 Series)

One or more sources from which a document announced in *STAR* is available to the public is ordinarily given on the last line of the citation. The most commonly indicated sources and their acronyms or abbreviations are listed below. If the publication is available from a source other than those listed, the publisher and his address will be displayed on the availability line or in combination with the corporate source line.

Avail: NTIS. Sold by the National Technical Information Service. Prices for hard copy (HC) and microfiche (MF) are indicated by a price code preceded by the letters HC or MF in the *STAR* citation. Current values for the price codes are given in the tables on page vii.

Documents on microfiche are designated by a pound sign (#) following the accession number. The pound sign is used without regard to the source or quality of the microfiche.

Initially distributed microfiche under the NTIS SRIM (Selected Research in Microfiche) is available at greatly reduced unit prices. For this service and for information concerning subscription to NASA printed reports, consult the NTIS Subscription Section, Springfield, Va. 22161.

NOTE ON ORDERING DOCUMENTS: When ordering NASA publications (those followed by the * symbol), use the N accession number. NASA patent applications (only the specifications are offered) should be ordered by the US-Patent-Appl-SN number. Non-NASA publications (no asterisk) should be ordered by the AD, PB, or other *report* number shown on the last line of the citation, not by the N accession number. It is also advisable to cite the title and other bibliographic identification.

Avail: SOD (or GPO). Sold by the Superintendent of Documents, U.S. Government Printing Office, in hard copy. The current price and order number are given following the availability line. (NTIS will fill microfiche requests, at the standard \$4.00 price, for those documents identified by a # symbol.)

Avail: NASA Public Document Rooms. Documents so indicated may be examined at or purchased from the National Aeronautics and Space Administration, Public Document Room (Room 126), 600 Independence Ave., S.W., Washington, D.C. 20546. or public document rooms located at each of the NASA research centers. the NASA Space Technology Laboratories, and the NASA Pasadena Office at the Jet Propulsion Laboratory.

⁽¹⁾ A microfiche is a transparent sheet of film. 105 by 148 mm in size containing as many as 60 to 98 pages of information reduced to micro images (not to exceed 26.1 reduction).

- Avail: DOE Depository Libraries. Organizations in U.S. cities and abroad that maintain collections of Department of Energy reports, usually in microfiche form, are listed in *Energy Research Abstracts*. Services available from the DOE and its depositories are described in a booklet, *DOE Technical Information Center Its Functions and Services* (TID-4660), which may be obtained without charge from the DOE Technical Information Center.
- Avail: Univ. Microfilms. Documents so indicated are dissertations selected from *Dissertation Abstracts* and are sold by University Microfilms as xerographic copy (HC) and microfilm. All requests should cite the author and the Order Number as they appear in the citation.
- Avail: USGS. Originals of many reports from the U.S. Geological Survey, which may contain color illustrations, or otherwise may not have the quality of illustrations preserved in the microfiche or facsimile reproduction, may be examined by the public at the libraries of the USGS field offices whose addresses are listed in this introduction. The libraries may be queried concerning the availability of specific documents and the possible utilization of local copying services, such as color reproduction.
- Avail: HMSO. Publications of Her Majesty's Stationery Office are sold in the U.S. by Pendragon House, Inc. (PHI), Redwood City, California. The U.S. price (including a service and mailing charge) is given, or a conversion table may be obtained from PHI.
- Avail: BLL (formerly NLL): British Library Lending Division, Boston Spa, Wetherby, Yorkshire, England. Photocopies available from this organization at the price shown. (If none is given, inquiry should be addressed to the BLL.)
- Avail: Fachinformationszentrum, Karlsruhe. Sold by the Fachinformationszentrum Energie, Physik, Mathematik GMBH, Eggenstein Leopoldshafen, Federal Republic of Germany, at the price shown in deutschmarks (DM).
- Avail: Issuing Activity, or Corporate Author, or no indication of availability. Inquiries as to the availability of these documents should be addressed to the organization shown in the citation as the corporate author of the document.
- Avail: U.S. Patent and Trademark Office. Sold by Commissioner of Patents and Trademarks, U.S. Patent and Trademark Office, at the standard price of 50 cents each, postage free.
- Other availabilities: If the publication is available from a source other than the above, the publisher and his address will be displayed entirely on the availability line or in combination with the corporate author line.

ADDRESSES OF ORGANIZATIONS

American Institute of Aeronautics and Astronautics Technical Information Service 555 West 57th Street, 12th Floor New York, New York 10019 National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161

British Library Lending Division, Boston Spa, Wetherby, Yorkshire, England Pendragon House, Inc. 899 Broadway Avenue Redwood City, California 94063

Commissioner of Patents and Trademarks U.S. Patent and Trademark Office Washington, D.C. 20231 Superintendent of Documents U.S. Government Printing Office Washington, D.C. 20402

Department of Energy Technical Information Center P.O. Box 62 Oak Ridge, Tennessee 37830 University Microfilms A Xerox Company 300 North Zeeb Road Ann Arbor, Michigan 48106

ESA-Information Retrieval Service ESRIN Via Galileo Galilei 00044 Frascati (Rome) Italy

University Microfilms, Ltd. Tylers Green London, England

Fachinformationszentrum Energie, Physik, Mathematik GMBH 7514 Eggenstein Leopoldshafen Federal Republic of Germany

U.S. Geological Survey 1033 General Services Administration Building Washington, D.C. 20242

Her Majesty's Stationery Office P.O. Box 569, S.E. 1 London, England

U.S. Geological Survey 601 E. Cedar Avenue Flagstaff, Arizona 86002

NASA Scientific and Technical Information Facility P.O. Box 8757 B.W.I. Airport, Maryland 21240

U.S. Geological Survey 345 Middlefield Road Menlo Park, California 94025

National Aeronautics and Space Administration Scientific and Technical Information Branch (NST-41) Washington, D.C. 20546

U.S. Geological Survey Bldg. 25, Denver Federal Center Denver, Colorado 80225

NTIS PRICE SCHEDULES

Schedule A STANDARD PAPER COPY PRICE SCHEDULE

(Effective January 1, 1982)

Price	Page Range	North American	Foreign
Code		Price	Price
A01	Microfiche	\$ 4.00	\$ 8.00
A02	001-025	6.00	12.00
A03	026-050	7.50	15.00
A04	051-075	9.00	18.00
A05	076-100	10.50	21.00
A06	101-125	12.00	24.00
A07	126-150	13.50	27.00
A08	151-175	15.00	30.00
A09	176-200	16.50	33.00
A10	201-225	18.00	36.00
A11	226-250	19.50	39.00
A12	251-275	21.00	42.00
A13	276-300	22.50	45.00
A14	301-325	24.00	48.00
A15	326-350	25.50	51.00
A16	351-375	27.00	54.00
A17	376-400	28.50	57.00
A18	401-425	30.00	60.00
A19	426-450	31.50	63.00
A20	451-475	33.00	66.00
A21	476-500	34.50	69.00
A22	501-525	36.00	72.00
A23	526-550	37.50	75.00
A24	551-575	39.00	78.00
A25	576-600	40.50	81.00
	601-up	1/	2/

A99 - Write for quote

- 1/ Add \$1.50 for each additional 25 page increment or portion thereof for 601 pages up.
- $2\prime$ Add \$3.00 for each additional 25 page increment or portion thereof for 601 pages and more.

Schedule E EXCEPTION PRICE SCHEDULE

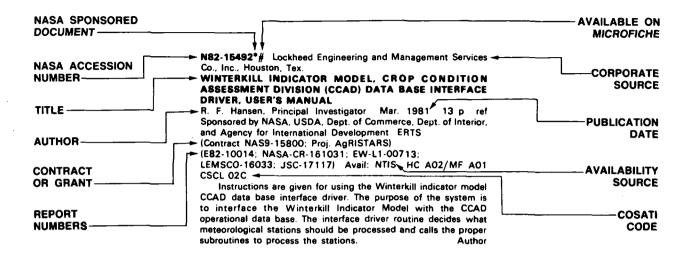
Paper Copy & Microfiche

Price		
Code	Price	Price
E01	\$ 6.50	\$ 13.50
E02	7.50	15.50
E03	9.50	19.50
E04	11.50	23.50
E05	13.50	27.50
E06	15.50	31.50
E07	17.50	35.50
E08	19.50	39.50
E09	21.50	43.50
E10	23.50	47.50
E11	25.50	51.50
E12	28.50	57.50
E13	31.50	63.50
E14	34.50	69.50
E15	37.50	75.50
E16	40.50	81.50
E17	43.50	88.50
E18	46.50	93.50
E19	51.50	102.50
E20	61.50	123.50
E-99 - Write for quote		
N01	30.00 ¹	45.00

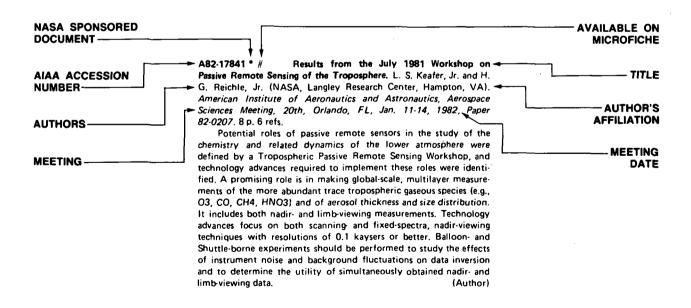
TABLE OF CONTENTS

,	age	
Category 01 Agriculture and Forestry Includes crop forecasts, crop signature analysis, soil identification, disease detection, harvest estimates, range resources, timber inventory, forest fire detection, and wildlife migration patterns.	57	
Category 02 Environmental Changes and Cultural Resources Includes land use analysis, urban and metropolitan studies, environmental impact, air and water pollution, geographic information systems, and geographic analysis.	73	
Category 03 Geodesy and Cartography Includes mapping and topography.	81	
Category 04 Geology and Mineral Resources Includes mineral deposits, petroleum deposits, spectral properties of rocks, geological exploration, and lithology.	89	
Category 05 Oceanography and Marine Resources Includes sea-surface temperature, ocean bottom surveying imagery, drift rates, sea ice and icebergs, sea state, fish location	93	
Category 06 Hydrology and Water Management Includes snow cover and water runoff in rivers and glaciers, saline intrusion, drainage analysis, geomorphology of river basins, land uses, and estuarine studies.	101	
Category 07 Data Processing and Distribution Systems Includes film processing, computer technology, satellite and aircraft hardware, and imagery.	111	
Category 08 Instrumentation and Sensors Includes data acquisition and camera systems and remote sensors.	125	
Category 09 General Includes economic analysis.	137	
Subject Index Personal Author Index		
Contract Number Index		

TYPICAL CITATION AND ABSTRACT FROM STAR



TYPICAL CITATION AND ABSTRACT FROM IAA



EARTH RESOURCES

A Continuing Bibliography (Issue 34)

JULY 1982

01 AGRICULTURE AND FORESTRY

Includes crop forecasts, crop signature analysis, soil identification, disease detection, harvest estimates, range resources, timber inventory, forest fire detection, and wildlife migration patterns.

A82-19529 # Soil moisture determination - Experiments with passive microwave radiometers. P. Meylan, C. Morzier, R. Caloz (Lausanne, Ecole Polytechnique Fédérale, Lausanne, Switzerland), E. Schanda, and Ch. Matzler (Bern, Universität, Berne, Switzerland). In: European Microwave Conference, 10th, Warsaw, Poland, September 8-12, 1980, Proceedings. Sevenoaks, Kent, England, Microwave Exhibitions and Publishers, Ltd., 1981, p. 256-260. 5 refs.

Long term observational programs have been followed in 1977 and 1978 for the determination of the relationship between emissivity and soil moisture on three test sites, representing three soil types. Five radiometers, whose frequencies are centered at 36, 21, 10.5, 4.9 and 1.8 GHz, were used. The interpretation of the measurements follows three ways: (1) analysis of the radiometer response versus scan angle; (2) factorial analysis of correspondences and clustering analysis; and (3) analysis of emissivity variation versus soil moisture content. In this last case a nonlinear function was fitted to the data and could be partially explained. An experiment was also conducted to determine the real penetration depth in a heavy soil.

(Author)

A82-20349 † Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image (Eksperimental'naia otsenka metodov automatizirovannogo deshifrirovaniia sel'skokhoziaistvennykh kul'tur po snimku s MSS 'Fragment'). I. A. Labutina and I. K. Lur'e (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 89-92. In Russian.

Three methods of automated photointerpretation are examined and compared: the minimum distance method, the maximum likelihood method, and cluster analysis. The comparison involved crop identification from a Fragment MSS image of an area between the Don and Khoper rivers. Recommendations on the organization of automated image processing are given.

B.J.

A82-20350 † Automation of the processing of aerial and space images for forest inventory (Avtomatizatsiia protsessa obrabotki aerokosmicheskikh snimkov v tseliakh inventarizatsii lesov). A. S. Alekseev, S. V. Vasil'ev, V. G. Mozalevskii, V. P. Piatkin, V. N. Sedykh, and V. S. Sidorova (Akademiia Nauk SSSR, Vychislitel'nyi Tsentr and Institut Lesa i Drevesiny, Novosibirsk, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 93-100. 6 refs. In Russian.

Various aspects of the automated processing of remotely sensed images for purposes of forest inventory are considered. Particular attention is given to the use of textural features for image classification.

B.J.

A82-20408 Manual and automatic crop identification with airborne radar imagery. B. Brisco and R. Protz (Guelph, University, Guelph, Ontario, Canada). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 101-109. 16 refs. Department of

Supply and Services Contract No. 08SU-01525-7-0198.

Woods, roughland and corn were identified with accuracies approaching or exceeding 90%, when image tone and texture were employed as the key discriminants, in manual and automatic crop discrimination by means of multi-date radar imagery. Hay-pasture and grain fields were, however, consistently confused, leading to identification accuracies of only about 50%. It is found that, while image enhancement prior to supervised classification was useful, increased class confusion resulted from the lack of textural information in the digital classification and its consequent overlapping of tonal distributions for the five investigated classes. For the more accurate identification of hay-pasture and grain fields, it is suggested that imagery be collected during the growing season. At that time, the two crop types exhibit the greatest difference in geometrical and dielectric properties.

A82-20422 * # Simple radiative transfer model for relationships between canopy biomass and reflectance. J. K. Park (Systems and Applied Sciences Corp., Riverdale, MD) and D. W. Deering (NASA, Goddard Space Flight Center, Earth Survey Applications Div., Greenbelt, MD). Applied Optics, vol. 21, Jan. 15, 1982, p. 303-309. 25 refs.

A modified Kubelka-Munk model has been utilized to derive useful equations for the analysis of apparent canopy reflectance. Based on the solution to the model simple working equations were formulated by employing reflectance characteristic parameters. The relationships derived show the asymptotic nature of reflectance data that is typically observed in remote sensing studies of plant biomass. They also establish the range of expected apparent canopy reflectance values for specific plant canopy types. The usefulness of the simplified equations was demonstrated by the exceptionally close fit of the theoretical curves to two separately acquired data sets for alfalfa and shortgrass prairie canopies. (Author)

A82-21026 The Dutch ROVE program. G. P. de Loor, P. Hoogeboom (Centrale Organisatie voor Toegepost-Natuurwetenschappelijk Onderzoek, Physisch Laboratorium TNO, The Hague, Netherlands), and E. P. W. Attema (Delft, Technische Hogeschool, Delft, Netherlands). IEEE Transactions on Geoscience and Remote Sensing, vol. GE-20, Jan. 1982, p. 3-11. 22 refs.

The Netherlands Radar Observation of Vegetation (ROVE) team efforts to employ radar as an all-weather, day and night remote sensing technique for observation and control of crops is described. Experiments involving X-band radar from TV towers, an X-band FM/CW system on rails, and an EMI X-band SLAR are reviewed and ground-based and airborne data collection and data are compared. Calibration angles for ground based observations of vegetation are under study, and a grazing angle of 75 deg has been found necessary for measuring soil moisture from the ground. Resolutions in white, black, and grey have been established for sugar beets, wheat, and potatoes, respectively, using airborne radar. Further programs are under way to define the effects on imaging of climate, season, irrigation, soil properties, soil treatment, sowing procedures, and fertilization.

A82-21028 Microwave radiometry of lands under natural and artificial moistening. A. M. Shutko (Akademiia Nauk SSSR, Institut Radiotekhniki i Elektroniki, Moscow, USSR). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 18-26. 13 refs.

The dielectric properties of soils and soil conditions are

examined for the applications of microwave radiometry to agriculture, hydrogeology, and land reclamation. Fundamental relations are defined between radiation and soil-moisture content, and characteristics of the microwave emissivity of nonuniform moistened ground with either a flat or rough surface are analyzed. The effects of the uniformity or nonuniformity of the soil, of subsoil water, and of daily temperature variations are examined. Accuracy is found to be diminished by the presence of vegetation, and examples of applications of microwave sensing in agricultural fields, for irrigation quality control, for estimating subsoil water, to find areas with excessive drainage, and to determine the hydrologic regime of dry salt lakes are discussed.

M.S.K.

A82-21029 Microwave radiation peculiarities of vegetative covers. A. M. Shutko and A. A. Chukhlantsev (Akademiia Nauk SSSR, Institut Radiotekhniki i Elektroniki, Moscow, USSR). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 27-29.

Theoretical and experimental results for determining the spectral peculiarities of soil-vegetation systems are reported. Vegetation covers were grouped into grain crops, grass and alfalfa, wide-leaf crops such as corn and beets, and bushes and woods. The type of vegetation showed the most influence in the cm band, and the wide-leaf crops were found to display a decrease in emissivity with an increase in wavelength. The total attenuation in vegetative covers was examined, and showed that attenuation is proportional to the water content in vegetation, with a proportionality coefficient which depends on the type of vegetation and its state of growth. A model was developed to take into account the scattering and absorption cross sections, and a formula is presented for the total attenuation in the chosen vegetation model.

A82-21030 Mixture formulas applied in estimation of dielectric and radiative characteristics of soils and grounds at microwave frequencies. A. M. Shutko and E. M. Reutov (Akademiia Nauk SSSR, Institut Radiotekhniki i Elektroniki, Moscow, USSR). IEEE Transactions on Geoscience and Remote Sensing, vol. GE-20, Jan. 1982, p. 29-32. 12 refs.

A82-21031 Investigation of the vegetative covers on ploughed areas by SLAR. A. G. Geller, E. N. Zotova, and M. I. Naumov (Akademiia Nauk SSSR, Institut Radiotekhniki i Elektroniki, Moscow, USSR). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 32-35. 7 refs.

Results of SLAR investigations of crop condition and the correlation of dependencies between the mean intensity of reflected signals and the biometrical parameters of the crops are reported. The experiments were made using K-band SLAR with HH polarization at a grazing angle of 12-24 deg, and corn, sugar beets, and winter wheat were examined in the middle of the growth cycle. Microphotometric techniques were used to process the radar data, and the phytomass and crop moisture content parameters were chosen to describe the crop state. The 80% confidence limits for the regression functions are provided, and differences in the scattered signal intensities from wide-leaf crops are accounted for by differences in surface roughness characteristics. The desired antenna pattern was achieved in sensing angles from 68-72 deg, and the use of dual frequency, dual polarization, and a calibrated radar to improve system efficiency is indicated. M.S.K.

A82-21032 Volumetric effects in cross-polarized airborne radar data. A. J. Blanchard, R. W. Newton, L. Tsang, and B. R. Jean (Texas A & M University, College Station, TX). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 36-41. 14 refs

Experimental results and theoretical models for the sensitivity of radar backscatter return to soil moisture as a function of incident angle and the sensibility of the cross polarized radar return to surface roughness are presented. Additional attention is devoted to establishing the accuracy of cross-polarized radar backscatter measurements by the identification of specific criteria in terms of integrated antenna polarization isolation. NASA scatterometers were used in test runs at 1.6, 4.75, and 13.3 GHz to detect soil moisture. The Kirchhoff scattering theory and the Blanchard and Rouse surface/volume theory were used to test predictions for like-polarized

backscatter as a function of moisture and incident angle. Volume dependent measurements were found to be possible independent of surface effects and incident angle.

M.S.K.

A82-21033 * Crop classification using airborne radar and Landsat data. F. T. Ulaby, R. Y. Li, and K. S. Shanmugan (University of Kansas Center for Research, Inc., Lawrence, KS). IEEE Transactions on Geoscience and Remote Sensing, vol. GE-20, Jan. 1982, p. 42-51. 21 refs. Contract No. NAS9-15421.

NASA 13.3 GHz airborne radar data from a soil moisture measurement analysis is used to investigate the statistical nature of the radar backscattering coefficient for bare ground and three different crop types, and to evaluate the crop classification rates using Landsat data alone or combined with the airborne survey. The scatterometer was a fan-beam Doppler system, VV polarized, and is considered only for 50 deg angles of incidence. A total of 36 fields were covered a week apart by the aircraft and Landsat, and Rayleigh statistics were used in the frequency averaging to eliminate fluctuations due to random fluctuations. Within-field variances were calculated for the Landsat and the radar data and used to design optimum crop classification procedures. The Landsat Band 4 readings were 67% accurate, and an increase in accuracy of 10% was achieved by the addition of the radar data.

M.S.K.

A82-21092 Use of Landsat data for automatic classification and area estimation of sugar-cane plantation in Sao Paulo state, Brazil. F. J. Mendonça (Instituto de Pesquisas Espaciais, São José dos Campos, São Paulo, Brazil). International Journal of Remote Sensing, vol. 2, Oct.-Dec. 1981, p. 361-368. 11 refs.

A sugar-cane inventory study of plantations in Sao Paulo state, Brazil is presented, in which sugar-cane was automatically classified and its area was estimated using an interactive image analysis system (Image-100) and Landsat digital data. Ten segments, 10 x 20 km, were aerially photographed from May 27-June 12, 1978; two Landsat passes were also made in April and July/August, 1978, Crop density, field size, and spatial distribution were all found to influence the spectral characteristics of the study crop. Classification of sugar-cane was found to be most difficult in the dry season (April) and easiest in July/August. The study area covered four Landsat paths: 235, 236, 237, and 238. The percentages of overall correct classification for the fourth paths ranged from 79,56 percent for path 238 to 95.59 percent for path 237. A difference of only 12.57 percent was encountered between sugar-cane estimates using Landsat data and those which used data from the Institute for Agricultural Economy.

A82-21093 The estimation of the surface moisture of a vegetated soil using aerial infrared photography. P. J. Curran (Reading, University, Reading, Berks., England). *International Journal of Remote Sensing*, vol. 2, Oct.-Dec. 1981, p. 369-378. 12 refs. Natural Environment Research Council Grant No. GR3/4076.

A remote sensing method for estimating the surface soil moisture of a soil with an incomplete vegetation cover is discussed. It has been shown that when the percentage cover of leaves and nongreen vegetation are known and constant, and the effect of shadow is minimal, the near infrared bidirectional reflectance from the vegetation canopy is negatively related to surface soil moisture. The near infrared bidirectional reflectance, surface soil moisture, and vegetation cover were measured at ten heathland sites on 18 different dates. It was found that the Y axis intercept of a regression between ground-based measurements of near infrared bidirectional reflectance (Y) and the percentage of green vegetation cover (X) was linearly related to surface soil moisture. This relationship between soil moisture and canopy reflectance was used to estimate the surface soil moisture of vegetated heathland in five flights of black and white infrared aerial photography. The resulting estimates had an accuracy of + or - 18.4% at the 95% confidence level.

A82-22142 An airphoto key for major tropical crops. W. R. Philipson and T. Liang (Cornell University, Ithaca, NY). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Feb. 1982, p. 223-233. 15 refs.

A key is presented for identifying selected major crops of the tropics through stereoscopic analysis of medium-scale (1:10,000 to 1:30,000) panchromatic aerial photographs. The development of the

key is based on representative photographs of crops as they occur throughout the tropics. The key recognizes certain field, management, and crop features which are frequently associated with crop occurrence. It is pointed out that positive crop identification normally requires ground verification. Attention has been given to crops of sugar cane, coffee, bananas, pineapple, rice, corn, tobacco, rubber, coconut, and cacao.

G.R.

A82-22144 Multispectral photographic remote sensing of green vegetation biomass and productivity. P. J. Curran (Reading, University, Reading, Berks., England). Photogrammetric Engineering and Remote Sensing, vol. 48, Feb. 1982, p. 243-250. 13 refs. Natural Environment Research Council Grant No. GR/3/1481.

An investigation was conducted with the objective to demonstrate the importance of productivity to the relationship between green biomass and a bidirectional reflectance ratio. Using bidirectional reflectance data derived photographically from 22 sets of near vertical aerial photography and 56 sets of oblique ground photography, it was determined that the amount of bidirectional reflectance ratio variance accounted for by green biomass could be increased by around 6 percent with the addition of productivity. On a pasture site with low green biomass but high productivity, the bidirectional reflectance ratio was higher than for a high green biomass pasture site with lower productivity.

G.R.

A82-24961 Influence of illumination and viewing geometry and atmospheric composition on the 'tasseled cap' transformation of Landsat MSS data. J. V. Dave (IBM Scientific Center, Palo Alto, CA). Remote Sensing of Environment, vol. 11, Mar. 1981, p. 37-55. 15 refs.

Various characteristics of a simulated tasseled cap (representing the spectral-temporal characteristics of wheat fields, as observed by the Landsat MSS sensors) are investigated as a function of the viewing and illumination geometry parameters, and atmospheric composition. Measured spectral reflectances of ten wheat fields in various growth stages and the satellite-level radiances, computed after taking into account all orders of scattering, are used in this investigation. It is shown that the procedure for normalizing the measured radiances by the cosine of the solar zenith angle is a less accurate approximation, and that the characteristics of the tasseled cap both in the greenness-brightness and yellowness-brightness hyperplanes are significantly affected by the geometric as well as the atmospheric parameters. (Author)

A82-24963 * HCMM detection of high soil moisture areas. J. L. Heilman (South Dakota State University, Brookings, SD; Texas A & M University, College Station, TX) and D. G. Moore (South Dakota State University, Brookings, SD). Remote Sensing of Environment, vol. 11, Mar. 1981, p. 73-76. Contract No. NASS-24206.

It is noted that one objective of NASA's Heat Capacity Mapping Mission (HCMM) is to evaluate the feasibility of using HCMM data to assess soil moisture effects by observing temperatures near the maximum and minimum of the diurnal temperature cycle. The satellite, which carries a two-channel radiometer (0.5-1.1 and 10.5-12.5 microns) gathers data at 1:30 P.M. and 2:30 A.M. local time at midlatitudes, with a repeat cycle of 5 or 16 days depending on latitude. The spatial resolutions are 0.5 x 0.5 km at nadir for the visible channel and 0.6 x 0.6 km at nadir for the thermal infrared channel. An example is presented here of HCMM detection of a region of high soil moisture.

A82-25457 Assessing mesquite-grass vegetation condition from Landsat. K. C. McDaniel (New Mexico State University, Las Cruces, NM) and R. H. Haas (U.S. Geological Survey, EROS Data Center, Sioux Falls, SD). Photogrammetric Engineering and Remote Sensing, vol. 48, Mar. 1982, p. 441-450. 24 refs. Research supported by the E. Paul and Helen Buck Waggoner Foundation.

Regression analyses with Landsat MSS data and vegetation data collected on four dates from six study sites show the two vegetation index models, TVI 6 and GVI, to be highly correlated with such vegetation parameters associated with growing vegetation as green cover, green yield, and plant moisture content. This is seen as an indication of the possibility of vegetation condition quantitative measurement with Landsat MSS data. Because it is shown that land

01 AGRICULTURE AND FORESTRY

management practices do not seriously affect the relationship of Landsat MSS models with rangeland vegetation parameters obtained from a common vegetation-soil system, the stratifying of relatively uniform vegetation soil systems on Landsat imagery appears to be a useful first step in the vegetation survey use of Landsat MSS data.

O.C.

A82-26577 † The spectral reflectance of certain soils (Spektral'naia otrazhatel'naia sposobnost' nekotorykh pochv). P. P. Fedchenko and K. la. Kondrat'ev. Leningrad, Gidrometeoizdat, 1981, 232 p. 121 refs. In Russian.

The principal factors affecting the reflectance properties of soils are investigated. Methods are proposed for aircraft and laboratory measurements of the spectral luminance factors of soils. Spectrometers currently in use for studying the reflectance properties of natural topographic features are described. It is shown that the theory of statistical pattern recognition makes possible soil mapping on the basis of reflection spectra.

C.R.

A82-26842 * Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification. G. D. Badhwar (NASA, Johnson Space Center, Houston, TX), J. G. Carnes, and W. W. Austin (Lockheed Engineering and Management Services Co., Inc., Houston, TX). Remote Sensing of Environment, vol. 12, Mar. 1982, p. 57-79, 15 refs.

A physical model is presented, which has been derived from multitemporal-multispectral data acquired by Landsat satellites to describe the behavior and new features that are crop specific. A feasibility study over 40 sites was performed to classify the segment pixels into those of corn, soybeans, and others using the new features and a linear classifier. Results agree well with other existing methods, and it is shown the multitemporal-multispectral scanner data can be transformed into two parameters that are closely related to the target of interest and thus can be used in classification. The approach is less time intensive than other techniques and requires labeling of only pure pixels.

D.L.G.

A82-27393 † Evaluation of the state of crops from satellite data (Otsenka sostoianiia sel'skokhoziaistvennykh kul'tur po sputnikovym dannym). G. I. Borisoglebskii and V. V. Kozoderov (Gosudarstvennyi Nauchno-Issledovatel'skii Tsentr Izucheniia Prirodnykh Resursov, USSR). Meteorologiia i Gidrologiia, Mar. 1982, p. 94-101. In Russian.

The paper examines the possibility of evaluating the dynamics of crop development from remote sensing images. Results are presented on the determination of the structure of agricultural lands and the state of winter crops in the Kherson territory of the USSR from medium-resolution satellite images.

A82-27397 Remote sensing of the structure of taiga landscapes (Distantsionnaia indikatsiia struktury taezhnykh landshaftov). Edited by V. V. Kuzmichev. Novosibirsk, Izdatel'stvo Nauka, 1981, 248 p. In Russian.

Papers are presented on the use of remote sensing to obtain information on the relationships between forests and other elements of the natural environment: soils, relief, the mineralogical composition of rocks, subsurface water, and animal habitats. Particular attention is given to such topics as the mapping of the post-fire stages of the formation of forests, the remote sensing of the dynamics of cedar forests in Siberia, the use of anthropogenic features in landscape studies (with Lake Baikal taken as an example), the use of remote sensing to study bird populations, and the relationship between taiga landscapes and geological structures.

A82-27586 * # Stochastic models of cover class dynamics. T. H. Barringer (Hunter College, New York, NY; Pennsylvania, University, Philadelphia, PA) and V. B. Robinson (Hunter College, New York, NY). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 125-144. 84 refs. Grant No. NsG-5325

Investigations related to satellite remote sensing of vegetation have been concerned with questions of signature identification and

extension, cover inventory accuracy, and change detection and monitoring. Attention is given to models of ecological succession, present directions in successional modeling and analysis, nondynamic spatial models, issues in the analysis of spatial data, and aspects of spatial modeling. Issues in time-series analysis are considered along with dynamic spatial models, and problems of model specification and identification.

G.R.

A82-27588 # Data base requirements in support of crop models. A. B. Park (General Electric Co., Lanham, MD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 165-174.

Problems regarding the data base design can be approached in at least two ways. For the design of a 'local' model, both the crop and its environment are confined to the research location, and there is no need to consider the spatial distribution complexity problem. However, in the case of the design of a 'global' model, it is necessary to account for the variability of both the crop and the environment in all possible geographic locations. During the development and test of the model, it is normally attempted to simplify this problem by using the 'homologue' approach. Requirements regarding the input of agronomic data are considered, taking into account the crop area, the cropping pattern, the crop calendar, crop varieties, yield, water culture, fertilizer, plant pests, soil, the meteorological station, and the terrain model. Meteorological input data requirements are also discussed.

G.R.

A82-27601 # Multiresource inventory methods pilot test. R. T.' Pelletier (U.S. Department of Agriculture, Forest Service, Washington, DC). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 339-355. 6 refs.

The test is being conducted by the Forest Service as an advanced demonstration of Landsat technology to supplement current methods of conducting recurrent inventories over large areas. It will test, validate, and, if deemed successful by the Forest Service, transfer new remote sensing capability to the inventory and planning process; this will offer new efficiencies benefiting resource managers and planners. The pilot test will be administered over a three-year period and will support major efforts in two geographical areas. C.R.

A82-27617 # Dew and vapor pressure as complicating factors in the interpretation of spectral radiance from crops. P. J. Pinter, Jr. and R. D. Jackson (U.S. Water Conservation Laboratory, Phoenix, AZ). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 547-554. 8 refs.

Ground-based radiometers, utilizing relatively wide-band spectral filters similar to those of present and anticipated satellites, are being used extensively to develop fundamental relationships between agricultural targets and their spectral characteristics. In the present investigation some of the unique operational characteristics of a hand-held 4-band radiometer are utilized to examine the effect of dew on the spectral characteristics of wheat and to study the influence of atmospheric vapor pressure on the spectral quality of radiance measured over soil and alfalfa canopy targets. It is found possible to detect and quantify the presence of dew on crops by monitoring the depression in a spectrally-based vegetation index. The timing of spectral data acquisition is a critical factor, because complications regarding the interpretation of data can arise in connection with the presence of dew on crop canopies.

G.R.

A82-27621 # A timely and accurate potato acreage estimate from Landsat - Results of a demonstration. R. A. Ryerson, R. J. Brown (Canada Centre for Remote Sensing, Ottawa, Canada), J.-L. Tambay, L. A. Murphy (Statistics Canada, Ottawa, Canada), and B. McLaughlin (Statistics Canada, Truro, Nova Scotia, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, Ml, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 587-597. 10 refs.

The current statistical data collection system for obtaining crop area estimates is considered. The area for which an estimate was required is located in the upper St. John Valley in New Brunswick, Canada. The 1980 ground sample and data collection is considered along with the analysis of remotely sensed data, taking into account procedures to improve estimates and the generation of the 1980 estimate based on Landsat data. A highly accurate potato area estimate for the three major potato producing counties of New Brunswick was obtained.

G.R.

A82-27622 # Landsat feature enhancement - Or, can we separate vegetation from soil. J. E. Colwell (Michigan, Environmental Research Institute, Ann Arbor, MI). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 599-621. 12 refs.

Two separate procedures are presented for enhancing certain features in Landsat data. One procedure is designed to be helpful in assessing soil features in situations where the soil is partially covered by variable amounts of green vegetation. This procedure results in the calculation of a parameter called 'Projected Soil Brightness'. The other procedure is designed to be an aid in interpreting separate soil and vegetation effects in areas with partial cover of nongreen vegetation. This procedure results in the calculation of parameters called 'Normalized Vegetation Shadow Measure' and 'Corrected Soil Brightness Measure'.

A82-27624 # Scene analysis for wildland fire-fuel characteristics in a Mediterranean climate. M. J. Cosentino, C. E. Woodcock, and J. Franklin (California, University, Santa Barbara, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 635-646. 9 refs.

During the dry summer and fall seasons, wildfires are a threat to homes, lives, property, and natural resources in California. A computer program called FIREMOD, which will be used to predict fire spread rate and intensity, is currently being developed. A description is presented of the findings of a research project undertaken to evaluate the potential of using remotely sensed and collateral data in a geographic information system framework to provide maps of chaparral vegetation characteristics for input as a fuels database in the FIREMOD computer model. It is found that Landsat spectral data can be combined with a synthesized texture channel in an unsupervised classification procedure to provide a physiognomic vegetation classification which includes density distinctions. These vegetation classes are useful for fire spread simulation models because they contain meaningful distinctions related to fire behavior. G.R.

A82-27643 # A vegetation response model applied to range inventory and monitoring using Landsat MSS data. F. R. Honey and I. J. Tapley (Commonwealth Scientific and Industrial Research Organization, Div. of Land Resources Management, Perth, Australia). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 823-837, 7 refs.

A model describing the response of vegetation to rainfall from the standpoint of corresponding changes in reflectance, as measured by the Landsat MSS system, is presented. The main assumptions of the model are (1) that there is an exponential increase of fresh plant cells from such sources of new growth as seeds or buds, and (2) that the growth rates of the new cells is larger than their decay rate, so that some maximum is reached before the rate of production from the diminishing number of sources is less than the rate of decay. Because the shape of the response function curve will be independent of the means of measuring vegetation density and condition, curves from ground-collected biomass data should match those derived from Landsat vegetation indices. Results from data collected in Western Australia for three vegetation communities and plotted according to the model indicate that data must be collected intensively at the time of the peak.

O.C.

A82-27644 # Forest change detection. J. E. Colwell (Michigan Environmental Research Institute, Ann Arbor, MI) and F. P. Weber (U.S. Forest Service, Houston, TX). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 839-852.

The U.S. Forest Service has a requirement to make periodic assessments of the renewable resources of the United States. This investigation was designed to examine the utility of Landsat data for assessing changes in renewable resources. Change was analyzed for a partially forested scene in Kershaw County, South Carolina based on Landsat data separated by two years in time. A variety of change detection procedures were investigated, including image analysis and two kinds of digital (automated) procedures. The most fundamental conclusion of this study is that the type of change detection procedure implemented can significantly affect the estimates of amount of change.

A82-27645 * # Soybean canopy reflectance as a function of view and illumination geometry. K. J. Ranson, V. C. Vanderbilt, L. L. Biehl, B. F. Robinson, and M. E. Bauer (Purdue University, West Lafayette, IN). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 853-865. 16 refs. Contract No. NAS9-15466.

Reflectances were calculated from measurements at four wavelength bands through eight view azimuth and seven view zenith directions, for various solar zenith and azimuth angles over portions of three days, in an experimental characterization of a soybean field by means of its reflectances and physical and agronomic attributes. Results indicate that the distribution of reflectance from a soybean field is a function of the solar illumination and viewing geometry, wavelength, and row direction, as well as the state of canopy development. Shadows between rows were found to affect visible wavelength band reflectance to a greater extent than near-IR reflectance. A model describing reflectance variation as a function of projected solar and viewing angles is proposed, which approximates the visible wavelength band reflectance variations of a canopy with a well-defined row structure.

O.C.

A82-27646 # The influence of illumination and viewing geometry on the reflectance factor of agricultural targets. K. Staenz (Zürich, Universität, Zurich, Switzerland), F. J. Ahern, and R. J. Brown (Canada Centre for Remote Sensing, Ottawa, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 867-882. 25 refs.

The influence of illumination and viewing geometry on the reflectance factor of agricultural targets is investigated. Bare soil, small grains, and broadleaf crops are examined, and the reflectance factor of all three ground cover types shows significant variations with viewing angle. The reflectance factor increases when viewing away from the sun, and decreases when viewing toward the sun, although the effect is not usually symmetric about nadir. Curves showing the typical variation of reflectance factor in the thematic mapper bands as a function of viewing angle about their nadir are presented, and in general, the reflectance is a quasi-linear function of view angle for soil, but shows significant curvature for crops. D.L.G.

A82-27647 # Digital analysis of spatial and spectral features from airborne MSS of a forested region. P. M. Teillet, D. G. Goodenough, B. Guindon (Canada Centre for Remote Sensing, Ottawa, Canada), J.-F. Meunier, and K. Dickinson (INTERA Environmental Consultants, Ltd., Ottawa, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 883-903. 7 refs.

Forthcoming satellite imaging sensors will have increased spectral resolution and different spectral bandpasses compared to the current Landsat MSS. In order to assess improvements in information extraction anticipated from the use of these sensors, eleven-channel aircraft MSS data were acquired over a rugged forest site, located at

Gun Lake near Bralorne, British Columbia. The aircraft MSS data set was rectified to the UTM projection while taking topography into account by means of a digital elevation map. Spatial features were generated using a variety of texture measures. Feature selection and classification were performed to investigate how well forest types can be distinguished and damaged stands can be detected using spatial and/or spectral features.

B.J.

A82-27656 # The potential of remote sensing to monitor soil erosion on cropland. P. R. Stephens and J. Cihlar (Canada Centre for Remote Sensing, Applications Div., Ottawa, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 985-995. 18 refs.

Multitemporal satellite-borne multispectral scanner and thematic mapper digital data are assessed, following an erosion survey, by relating changes in farm crop rotation to changes in erosion rates according to the Universal Soil Loss Equation (USLE). Of the Landsat 2 and simulated Landsat-D and SPOT-1 data studied, SPOT-1 was evaluated to be the most accurate, with 94% classification accuracy for the case of spring imagery. SPOT-1 and Landsat-D summer imagery achieved the high relationship values of 0.97 and 0.95, respectively, between near-IR reflectance/red reflectance and the USLE C factor. While forest and cropland mapping accuracies were on the order of 90-97% for satellite digital data, pasture mapping accuracies were as low as 59-79%. Visual interpretation of medium-scale aerial photography should therefore be more accurate than satellite MSS data in the classification of spring pastures.

A82-27662 * # Evaluation of large area crop estimation techniques. M. L. Amis, R. K. Lennington, M. V. Martin, W. G. McGuire, and S. S. Shen (Lockheed Engineering and Management Services Co., Inc., Houston, TX). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1047-1056. 9 refs. Contract No. NAS9-15800.

The performance of the USDAs EDITOR system is evaluated. The system processes Landsat imagery and estimates crop hectarage for large areas based on a regression estimator developed on a sample with known ground truth. It is found that use of multitemporal data over unitemporal significantly improves the hectarage estimates, and a 15% reduction in the r-squared of the regression occurs when independent and jackhrifed test sets are used to evaluate the performance of the estimator. When an alternative clustering algorithm, CLASSY, is substituted for the current EDITOR method, estimator performance is improved with reduced need for analyst decisions. It is recommended that the CLASSY clustering algorithm and some form of jackknifing be implemented on EDITOR. D.L.G.

A82-27663 # Potential utility of thematic mapper data in estimating crop areas. R. Sigman and M. Craig (U.S. Department of Agriculture, Economics and Statistics Service, Washington, DC). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings, Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1057-1064. 5 refs.

This paper predicts potential improvements offered by thematic mapper data over multispectral scanner data when utilized in regression estimation of crop areas. A study comparing Landsat data and simulated thematic mapper data is described. Quantitative measures of potential improvements in crop-area estimates of corn, soybeans, and dense woodlands are calculated, and the sensor characteristics causing these improvements are determined. (Author)

A82-27664 # Automatic and semi-automatic classification of Landsat agricultural crops. J. D. Tubbs (Arkansas, University, Fayetteville, AR). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1065-1074, 10 refs.

One of the mathematical functions proposed by Crisp and Malila

ERIM-152400-5-T) Avail: NTIS HC A05/MF A01 CSCL 02C

The computer software necessary to perform two research labeling procedures is described and documented. The first labeling technique identifies spring small grain fields based on similarity of growing season and temporal spectral patterns of development in LANDSAT data. The second technique further labels these fields as either wheat, barley or unknown spring grain, based on their spectral position in Tasseled Cap Greenness-Brightness space for a given day around the dough stage of wheat. The subroutines which carry out the steps of the procedure are coded in PREFOR, a preprocessed FORTRAN. The subroutines were designed to fit into the U.S. Corn/Soybeam baseline procedure software developed for use in the AgRISTARS Program. Documentation of the subroutines are provided in an appendix. Author

N82-16455# Colorado State Univ., Fort Collins. Dept. of

Forest and Wood Sciences.

THERMAL VEGETATION CANOPY MODEL STUDIES Final Report, 1 Oct. 1978 - 1 Feb. 1980

James A. Smith, K. Jon Ranson, Duong Nguyen, and Lewis E. Link (Army Engineer Waterways Experiment Station, Vicksburg, Miss.) Aug. 1981 221 p refs

(Contract DACW39-77-C-0073; DA Proj. 4A7-62730-AT-42) (AD-A106422; WES/TR/EL-81-6) HC A10/MF A01 CSCL 17/5 Avail:

This is the final report in a series. Overall objectives of this project are concerned with developing comprehensive optical and thermal signature data bases, the development and evaluation of optical and thermal canopy radiation models, and the interpretation of these measurements. Previous technical reports in this series have described optical and thermal measurements obtained over a coniferous site (Pinus contorta) in Leadville, Colorado. This earlier data set served as a test bed for the development and initial evaluation of first, individual components, that is, needle and leaves, thermal models, and then a composite canopy terrain model.

N82-17746# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

THE SEVERITY OF THE BRAZILIAN FREEZE OF JULY 1981, AS MONITORED BY SATELLITE

Michael Allan Fortune Sep. 1981 20 p refs (INPE-2231-RPE/399) Avail: NTIS HC A02/MF A01

The location and intensity of freezing temperature during very cold nights ('geadas') in Brazil is discussed using satellite infrared television image data. The data are needed to lay the groundwork for a short-term freeze forecast model, which is to be developed before winter 1982. A cold snap occurred on 20-22 July 1981, which destroyed a large part of the future coffee, sugar and other harvest is documented. The photographs of enhanced satellite images document the widespread occurrence of subfreezing temperature in the states of Parana, Sao Paulo, Mato Grosso do Sul, and Minas Gerais. These sub-tropical areas are located north of the region which usually experiences frost, and thus damage to agriculture was particularly extensive. The synoptic factor responsible for the cold was a wandering cold-core cut-off low in the upper air, and not a strong cold front. The data contained in the photographs, when combined with the meteorological observations also presented will be valuable in developing a prediction model for the occurrence of 'geadas'.

R.J.F.

N82-19607*#. Lockheed Engineering and Management Services

Co., Inc., Houston, Tex. WHEAT STRESS INDICATOR MODEL, CROP CONDITION ASSESSMENT DIVISION (CCAD) DATA BASE INTERFACE DRIVER, USER'S MANUAL

R. F. Hansen, Principal Investigator Feb. 1981 15 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10031; NASA-CR-161032; EW-L1-00711;

LEMSCO-16034; JSC-17114) Avail: NTIS HC A02/MF A01 CSCL 02C

The use of the wheat stress indicator model CCAD data base interface driver is described. The purpose of this system is to interface the wheat stress indicator model with the CCAD operational data base. The interface driver routine decides what meteorological stations should be processed and calls the proper subroutines to process the stations.

N82-19608*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AGRISTARS: INTERIM CATALOG GROUND DATA SUMMARY, DATA ACQUISITION YEAR 1979

H. M. Doyle and V. L. Cook, Principal Investigators Feb. 1981 32 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development

(Contract NAS9-15800; Proj. Agristars)

(E82-10032; NASA-CR-161033; MU-L1-04055;

LEMSCO-16207; JSC-17119) Avail: NTIS HC A03/MF A01 CSCL 02C

To honor numerous requests for information about data holdings, and to facilitate the requirements specifications process, a series of interim catalogs are being developed. The 1979 data acquisition year is covered in this volume with subsequent years to follow under different covers. This catalog lists by state those sample segment numbers for which aircraft data has been acquired and/or field inventory products produced.

N82-19610*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

RECOMMENDED DATA SETS, CORN SEGMENTS AND SPRING WHEAT SEGMENTS, FOR USE IN PROGRAM DEVELOPMENT

Willa W. Austin, Principal Investigator Apr. 1981 27 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10034; NASA-CR-161034; SR-L1-0409;

LEMSCO-15708; JSC-17137) Avail: NTIS HC A03/MF A01 CSCL 02C

The sets of Large Area Crop Inventory Experiment sites, crop year 1978, which are recommended for use in the development and evaluation of classification techniques based on LANDSAT spectral data are presented. For each site, the following exists: (1) accuracy assessment digitized ground truth; (2) a minimum of 5 percent of the scene ground truth identified as corn or spring wheat; and (3) at least four acquisitions of acceptable data quality during the growing season of the crop of interest. The recommended data sets consist of 41 corn/ soybean sites and 17 spring wheat sites. Author

N82-19614*# National Aeronautics and Space Administration. Lyndon B. Johnson Space Center, Houston, Tex.

AGRISTARS: FOREIGN COMMODITY PRODUCTION FORECASTING. MINUTES OF THE ANNUAL FORMAL PROJECT MANAGER'S REVIEW, INCLUDING PRE-LIMINARY TECHNICAL REVIEW REPORTS OF FY80 **EXPERIMENTS**

24 Sep. 1980 191 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development

(Proj. AgRISTARS)

(E82-10039; NASA-TM-84050; FC-JO-00502; JSC-16823) Avail: NTIS HC A09/MF A01 CSCL 02C

The U.S./Canada wheat/barley exploratory experiment is discussed with emphasis on labeling, machine processing using P1A, and the crop calendar. Classification and the simulated aggregation test used in the U.S. com/soybean exploratory experiment are also considered. Topics covered regarding the foreign commodity production forecasting project include: (1) the acquisition, handling, and processing of both U.S. and foreign agricultural data, as well as meteorological data. The accuracy assessment methodology, multicrop sampling and aggregation technology development, frame development, the yield project interface, and classification for area estimation are also A.R.H.

N82-19615*# Florida Univ., Gainesville. Inst. of Food and Agricultural Sciences.

USE OF THERMAL INERTIA DETERMINED BY HCMM TO PREDICT NOCTURNAL COLD PRONE AREAS IN FLORIDA Quarterly Report, 16 Mar. - 15 Jun. 1981

L. H. Allen, Jr., Principal Investigator, Ellen Chen, J. D. Martsolf, and P. H. Jones 15 Jun. 1981 36 p refs Original contains color imagery. Original imagery may be purchased from NASA Goddard Space Flight Center, (Code 601), Greenbelt, Md. 20771. Domestic users send orders to 'Attn: National Space Science Data Center', non-domestic users send orders to 'Attn: World

Data Center A for Rockets and Satellites'. HCMM (Contract NAS5-26453) (E82-10040; NASA-CR-164917; QR-1) Avail: NTIS HC A03/MF A01 CSCL 04B

The HCMM transparency scenes for the available winter of 1978-1979 were evaluated; scenes were identified on processed magnetic tapes; other remote sensing information was identified; and a soil heat flux model with variable-depth thermal profile was developed. The Image 100 system was used to compare HCMM and GOES transparent images of surface thermal patterns. Excellent correspondence of patterns was found, with HCMM giving the greater resolution. One image shows details of thermal patterns in Florida that are attributable to difference in near surface water contents. The wide range of surface temperatures attributable to surface thermal inertia that exist in the relatively flat Florida topography is demonstrated.

N82-19628*# Department of Agriculture, Houston, Tex. AGRISTARS: SOIL MOISTURE/EARLY WARNING AND CROP CONDITION ASSESSMENT. INTERFACE CONTROL DOCUMENT

Nov. 1980 13 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Proj. AgRISTARS)

(E82-10053; NASA-CR-161028; MU-JO-0101; JSC-16842)

Avail: NTIS HC A02/MF A01 CSCL 02C

The interactions and support functions required between the early warning/crop condition assessment (EW/CCA) project and soil moisture (SM) project are defined. The EW Project aims to develop, test and evaluate techniques and procedures for adapting remote sensing technology to provide early warning of events and the timely assessment of those factors which affect the quality and quantity of production of economically important crops. Those techniques to augment and reinforce the current assessment activities are to be developed to improve the definition of the relationship between the plant(s) and its environment. This assessment and evaluation will certainly include the need for soil moisture measurement and estimation. The SM Project aims to develop, test, and evaluate techniques and procedures to measure or predict soil moisture in the root zone using both contact and remote sensors. A.R.H.

N82-19629*# Department of Agriculture, Houston, Tex. AGRISTARS: YIELD MODEL DEVELOPMENT/SOIL MOISTURE. INTERFACE CONTROL DOCUMENT

Nov. 1980 12 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Proj. AgRISTARS)

(E82-10054; NASA-CR-161029; MU-JO-0100; JSC-16841) Avail: NTIS HC A02/MF A01 CSCL 02C

The interactions and support functions required between the crop Yield Model Development (YMD) Project and Soil Moisture (SM) Project are defined. The requirements for YMD support of SM and vice-versa are outlined. Specific tasks in support of these interfaces are defined for development of support functions. J.D.H.

N82-19630*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AGRISTARS: EARLY WARNING AND CROP CONDITION ASSESSMENT. PATCH IMAGE PROCESSOR USER'S

M. J. Nieves, Principal Investigator Sep. 1980 12 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS) (E82-10055; NASA-CR-161038; EW-LO-00707;

LEMSCO-15692; JSC-16833) Avail: NTIS HC A02/MF A01 CSCL 02C

The Patch Image Processor extracts patches in various size (32x32, 64x64, 128x128, and 256x256 pixels) from full-frame Landsat imagery data. With the patches that are extracted, a patch image mosaic is created in the image processing system, IMDACS, format.

N82-19631*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AGRISTARS: FOREIGN COMMODITY PRODUCTION

FORECASTING. CORN/SOYBEAN DECISION LOGIC DEVELOPMENT AND TESTING

C. L. Dailey and K. M. Abotteen, Principal Investigators Oct. 1980 81 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10056; NASA-CR-161024; FC-LO-00480;

LEMSCO-14811; JSC-16380) Avail: NTIS HC A05/MF A01 CSCL 02C

The development and testing of an analysis procedure which was developed to improve the consistency and objectively of crop identification using LANDSAT data is described. The procedure was developed to identify corn and soybean crops in the U.S. corn belt region. The procedure consists of a series of decision points arranged in a tree-like structure, the branches of which lead an analyst to crop labels. The specific decision logic is designed to maximize the objectively of the identification process and to promote the possibility of future automation. Significant results are summarized.

N82-19632*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AGRICULTURAL SOIL MOISTURE EXPERIMENT, COLBY, KANSAS 1978: MEASURED AND PREDICTED HYDROLOG-ICAL PROPERTIES OF THE SOIL

L. M. Arya, Principal Investigator Oct. 1980 46 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10057; NASA-CR-161025; SM-LO-00463;

LEMSCO-14307; JSC-16366) Avail: NTIS HC A03/MF A01 CSCL 02C

Predictive procedures for developing soil hydrologic properties (i.e., relationships of soil water pressure and hydraulic conductivity to soil water content) are presented. Three models of the soil water pressure-water content relationship and one model of the hydraulic conductivity-water content relationship are discussed. Input requirements for the models are indicated, and computational procedures are outlined. Computed hydrologic properties for Keith silt loam, a soil typer near Colby, Kansas, on which the 1978 Agricultural Soil Moisture Experiment was conducted, are presented. A comparison of computed results with experimental data in the dry range shows that analytical models utilizing a few basic hydrophysical parameters can produce satisfactory data for large-scale applications. Author

N82-19633*# Department of Agriculture, Houston, Tex. Conservation Service.

TAXONOMIC CLASSIFICATION OF WORLD MAP UNITS IN CROP PRODUCING AREAS OF ARGENTINA AND BRAZIL WITH REPRESENTATIVE US SOIL SERIES AND MAJOR LAND RESOURCE AREAS IN WHICH THEY OCCUR

Horace F. Huckle, Principal Investigator Oct. 1980 42 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Proj. AgRISTARS)

(E82-10058; NASA-CR-161021; SR-U0-00497; JSC-16824) Avail: NTIS HC A03/MF A01 CSCL 02C

The most probable current U.S. taxonomic classification of the soils estimated to dominate world soil map units (WSM)) in selected crop producing states of Argentina and Brazil are presented. Representative U.S. soil series the units are given. The map units occurring in each state are listed with areal extent and major U.S. land resource areas in which similar soils most probably occur. Soil series sampled in LARS Technical Report 111579 and major land resource areas in which they occur with corresponding similar WSM units at the taxonomic subgroup levels are given.

N82-19634*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

PRELIMINARY EVALUATION OF SPECTRAL, NORMAL AND METEOROLOGICAL CROP STAGE ESTIMATION AP-**PROACHES**

R. B. Cate, J. A. Artley, P. C. Doraiswamy, T. Hodges, M. C. Kinsler, D. E. Phinney, and M. L. Sestak, Principal Investigators Oct. 1980 74 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10059; NASA-CR-161023; SR-LO-04002; LEMSCO-14640; JSC-16830) Avail: NTIS HC A04/MF A01 CSCL 02C

Several of the projects in the AgRISTARS program require crop phenology information, including classification, acreage and yield estimation, and detection of episodal events. This study evaluates several crop calendar estimation techniques for their potential use in the program. The techniques, although generic in approach, were developed and tested on spring wheat data collected in 1978. There are three basic approaches to crop stage estimation: historical averages for an area (normal crop calendars), agrometeorological modeling of known crop-weather relationships agrometeorological (agromet) crop calendars, and interpretation of spectral signatures (spectral crop calendars). In all, 10 combinations of planting and biostage estimation models were evaluated. Dates of stage occurrence are estimated with biases between -4 and +4 days while root mean square errors range from 10 to 15 days. Results are inconclusive as to the superiority of any of the models and further evaluation of the models with the 1979 data set is recommended.

N82-19635*# Environmental Research Inst. of Michigan, Ann Arbor. Infrared and Optics Div.

NOTES FOR BRAZIL SAMPLING FRAME EVALUATION TRIP Technical Report, 1 - 19 Feb. 1981

Robert Horvath, Principal Investigator and David R. Hicks, comp. Aug. 1981 32 p ref Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior and Agency for International Development ERTS

(Contract NAS9-15476; Proj. AgRISTARS)

(E82-10060; NASA-CR-167420; SR-E1-04138;

ERIM-152400-7-T) Avail: NTIS HC A03/MF A01 CSCL

Field notes describing a trip conducted in Brazil are presented. This trip was conducted for the purpose of evaluating a sample frame developed using LANDSAT full frame images by the USDA Economic and Statistics Service for the eventual purpose of cropland production estimation with LANDSAT by the Foreign Commodity Production Forecasting Project of the AgRISTARS program. Six areas were analyzed on the basis of land use, crop land in corn and soybean, field size and soil type. The analysis indicated generally successful use of LANDSAT images for purposes of remote large area land use stratification. Author

N82-19636*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

SEGMENT-LEVEL EVALUATION OF THE SIMULATED AGGREGATION TEST: US CORN AND SOYBEAN EXPLOR-ATORY EXPERIMENT

S. A. Davidson, Principal Investigator Oct. 1980 26 p refs Sponsored by NASA, USDA, Dept. of Commerce, of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10061; NASA-CR-161022; FC-LO-00493;

LEMSCO-15116; JSC-16820) Avail: NTIS HC A03/MF A01 CSCL 02C

An evaluation of the corn and soybean proportion-estimation accuracy and dot labeling accuracy of the Simulated Aggregation Test, U.S. Corn and Soybean Exploratory Experiment, is presented. These results are in turn compared with the corn and soybean proportion-estimation accuracy and dot labeling accuracy of the Classification Procedures Verification Test. Author

N82-19639# Instituto de Pesquisas Espaciais. Sao Jose dos

UTILIZATION OF AEROCHROME 2443 FILM FOR IDENTIFI-CATION AND ESTIMATING WHEAT GROWING AREAS Francisco Jose Mendonca, Angela Maria DeLima, Antonio Teraldi Tardin, Armando P. Dossantos, Dall Arthur Cottrell, David C. L. Lee, Fernando C. S. Maia, Liane A. M. Lucht, Mauricio A. Moreira, and Rene Antonio Novaes Aug. 1981 10 p refs In PORTUGUESE; ENGLISH summary Submitted for publication (INPE-2197-PRE/006) Avail: NTIS HC A02/MF A01

To identify and estimate wheat area using remote sensing techniques, aerial photographs were taken using KODAK Aerochrome 2443, at Soledade, Cruz Alta, and Santa Angelo in the state of Rio Grande do Sul, the photographs were interpreted manually and maps indicating areas for wheat, barley, idle land, flowed land, pasture land, nature vegetation, reforestation and others were prepared for each segment.

N82-19640# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

METHOD OF INTERPRETATION OF REMOTE SENSING DATA AND APPLICATIONS TO VEGETATION

Joao Roberto dos Santos, Pedro Hernandez Filho, and Yosio Edemir Shimabukuro Aug. 1981 54 p refs In PORTUGUESE; ENGLISH summary

(INPE-2215-MD/010) Avail: NTIS HC A03/MF A01

The material provided for remote sensing training course on vegetation is presented. Studies using remote sensing products for characterization and mapping, inventory or management problems in forestry were reviewed in the literature. The methodology of visual or automatic interpretation of those most commonly used LANDSAT data products in forestry studies is described. Case studies in natural or reforested vegetation, which were carried out in INPE, are included with the basic informa-

N82-19715# Tennessee Valley Authority, Norris. Office of Natural Resources

REMOTE SENSING OF SULFUR DIOXIDE EFFECTS ON VEGETATION. VOLUME 1: SUMMARY Final Report, 1976 - 1980

C. Daniel Sapp Washington EPA Jul. 1981 33 p 2 Vol. (PB82-115122: TVA/ONR/ARP-81/5-Vol-1; EPA-600/7-81-113) Avail: NTIS HC A03/MF A01 CSCL

Three techniques for detecting and mapping sulfur dioxide (SO2) effects on the foliage of sensitive crops and trees near large, coal fired power plants were tested. These techniques used are spectroradiometry, photometric analysis of aerial photographs, and computer analysis of airborne multispectral scanner data. Airborne multispectral scanner data covering affected soybean fields were analyzed using three computer assisted procedures. GRA

N82-19716# Tennessee Valley Authority, Norris. Office of Natural Resources

REMOTE SENSING OF SULFUR DIOXIDE EFFECTS ON VEGETATION. VOLUME 2: DATA Final Report, 1976 -1980

C. Daniel Sapp Washington EPA Jul. 1981 284 p refs

(PB82-115130; TVA/ONR/ARP-81/6-Vol-2;

EPA-600/7-81-114) Avail: NTIS HC A13/MF A01 CSCL 06F

Techniques for detecting and mapping sulfur dioxide (SO2) effects on foliage of sensitive crops and trees near large coal fired power plants were calculated. The techniques are: laboratory spectroradiometry field spectroradiometry; interpretation and analysis of aerial photographs; analysis of multispectral scanner data.

N82-20590* Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

EVALUATION OF A SEGMENT-BASED LANDSAT FULL-FRAME APPROACH TO CORP AREA ESTIMATION

M. E. Bauer, Principal Investigator, M. M. Hixson, and S. M. Davis 23 Jun. 1981 22 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15466; Proj. AgRISTARS)

(E82-10067; NASA-CR-167400; NAS 1.26:167400;

FC-P1-04121; LARS-062381) Avail: NTIS HC A02/MF A01 CSCL 02C

As the registration of LANDSAT full frames enters the realm of current technology, sampling methods should be examined which utilize other than the segment data used for LACIE. The effect of separating the functions of sampling for training and sampling for area estimation. The frame selected for analysis was acquired over north central lowa on August 9, 1978. A stratification of he full-frame was defined. Training data came from segments within the frame. Two classification and estimation procedures were compared: statistics developed on one segment were used to classify that segment, and pooled statistics from the segments were used to classify a systematic sample of pixels. Comparisons to USDA/ESCS estimates illustrate that the full-frame sampling approach can provide accurate and precise area estimates.

N82-20591*# Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

EFFECTS OF NITROGEN NUTRITION ON THE GROWTH, YIELD AND REFLECTANCE CHARACTERISTICS OF CORN CANOPIES

M. E. Bauer, Principal Investigator, G. Walburg, and C. S. T. Daughtry May 1981 22 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15466; Proj. AgRISTARS)

(E82-10068; NASA-CR-165090; NAS 1.26:165090;

SR-P1-04044; LARS-030381) Avail: NTIS HC A02/MF A01 CSCL 02C

Spectral and agronomic measurements were collected from corn (Zea mays L.) canopies under four nitrogen treatment levels (0, 67, 134, and 202 kg/ha) on 11 dates during 1978 and 12 dates during 1979. Data were analyzed to determine the relationship between the spectral responses of canopies and their argonomic characteristics as well as the spectral separability of the four treatments. Red reflectance was increased, while the near infrared reflectance was decreased for canopies under nitrogen deprivation. Spectral differences between treatments were seen throughout each growing season. The near infrared/red reflectance ratio increased spectral treatment differences over those shown by single band reflectance measures. Of the spectral variables examined, the near infrared/red reflectance ratio most effectively separated the treatments. Differences in spectral response between treatments were attributed to varying soil cover. leaf area index, and leaf pigmentation values, all of which changed

N82-20594*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil)

SURVEY OF THE CANE-GROWING AREA OF THE STATE OF SAO PAULO USING LANDSAT DATA, SAFRA YEAR 1979/80, VOLUME 2 [LEVANTAMENTO JA AREA CANAV-IEIRA DO ESTADO DE SAO PAULO, UTILIZANDO DADOS DO LANDSAT AND SAFRA 1979/80, VOLUME 2]

Nelson deJesusParada, Principal Investigator, Francisco Jose Mendonca, David Chung Liang Lee, Antonio Tebaldi Tardin, Yosio Edemir Shimabukuro, Sherry Chou Chen, Liane Antunes Maciel Lucht, Mauricio Alves Moreira, Angela Maria de Lima, and Fernando Celso Soares Maia Mar. 1981 63 p In PORTUGUESE **ERTS**

(E82-10071; NASA-CR-165093; NAS 1.26:165093; INPE-2021-RPE/288) Avail: NTIS HC A04/MF A01

Maps indicating areas of sugar cane cultivation in the state of Sao Paulo, Brazil are presented.

N82-20597*# Texas A&M Univ., College Station. Sensing Center.

DRYLAND PASTURE AND CROP CONDITIONS AS SEEN BY HCMM Final Report, Jan. 1978 - Jan. 1981

J. C. Harlan, Principal Investigator, W. D. Rosenthal, and B. J. Blanchard Apr. 1981 8 p refs Sponsored by NASA HCMM (E82-10074; NASA-CR-165096; NAS 1.26:165096) Avail: NTIS HC A02/MF A01 CSCL 08F

The antecedent precipitation index (API) was related to surface temperatures as measured from the NASA C-130 and HCMM thermal data. Significant results from the aircraft flight in May 1978, include: (1) canopy temperature were measured accurately remotely; (2) pasture surface temperatures were related to pasture and wheat soil moisture conditions; (3) no relationship was developed with that data set between wheat yield and thermal infrared data due to a lack of moisture stress during the measurement period; and (4) lake surface temperatures were useful in normalizing the thermal IR data. Results from HCMM also suggested a relationship between thermal IR data and antecedent precipitation index. While HCMM was adequate in detecting relative soil moisture differences, the overpass timing was infrequent and prevented detailed analysis of the API/thermal relationship. A.R.H.

N82-20600*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

ELEVATION OF A CANE-GROWING AREA OF THE STATE OF SAO PAULO USING LANDSAT DATA [LEVANTAMENTO DA AREA CANAVIEIRA DO ESTADO DE SAO PAULO,

01 AGRICULTURE AND FORESTRY

UTLIZANDO DADOS DO LANDSAT ANO SAFRA: 1979/

Nelson deJesusParada, Principal Investigator, Francisco Jose Mendonca, David C. Liang Lee, Antonio Tebaldi Tardin, Yosio Edemir Shimabukuro, Sherry Chou Chen, Liane A. M. Lucht, Mauricio A. Moreira, Angela M. deLima, and Fernando C. S. Maia Aug. 1981 10 p refs In PORTUGUESE; ENGLISH summary Sponsored by NASA ERTS

(E82-10077; NASA-CR-168398; NAS 1.26:168399;

INPE-2199-RPE/007) Avail: NTIS HC A02/MF A01 CSCL 02C

Images at a scale of 1:250.000 were visually interpreted for identification and area estimates of sugar cane plantations in Sao Paulo. The basic criteria for crop identification were the spectral characteristics of channels 5 and 7 and their temporal variations observed from different LANDSAT passes. Using this technique, it was possible to map the sugar cane areas as well as the sugar cane already harvested. An area of 801,950 hectares was estimated within the study area. The confidence interval of correct classification ranged from 87.11% to 94.71%.

N82-20601*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

RELATION OF THE ACTIVITIES OF THE IPDF/INPE PROJECT (REFORESTATION SUBPROJECT) DURING THE YEAR 1979 [REALTORIO DAS ATIVIDADES DO PROJETO IBDF/INPE (SUBPROJETO REFLORESTAMENTO) DUR-ANTE O ANO DE 179]

Nelson deJesusParada, Principal Investigator, Pedro Hernandez Filho, Yosio Edemir Shimabukuro, Jose Simeao deMedeiros, Carlito Chefer deSantana, and Eduardo Carlos Mignone Alves Aug. 1981 10 p in PORTUGUESE: ENGLISH summary Presented at the 11th Congr. Brasileiro de Engenharia Agricola, Brazil, 22-25 Jun. 1981 Sponsored by NASA ERTS

(E82-10078; NASA-CR-168399; NAS 1.26:168399;

INPE-2196-RPE/005) Avail: NTIS HC A02/MF A01 CSCL

The state of Mato Grosso do Sul was selected as the study area to define the recognizable classes of Eucalyptus spp. and Pinus spp. by visual and automatic analyses. For visual analysis, a preliminary interpretation key and a legend of 6 groups were derived. Based on these six groups, three final classes were defined for analysis: (1) area prepared for reforestation; (2) area reforested with Eucalyptus spp.; and (3) area reforested with Pinus spp. For automatic interpretation the area along the highway from Ribas do Rio Pardo to Agua Clara was classified into the following classes: eucalytus, bare soil, plowed soil, pine and 'cerrado'. The results of visual analysis show that 67% of the reforested farms have relative differences in area estimate below 5%, 22%, between 5% and 10%; and 11% between 10% and 20%. The reforested eucalyptus area is 17 times greater than the area of reforested pine. Automatic classification of eucalyptus ranged from 73.03% to 92.30% in the training areas.

N82-20602*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

SYSTEM OF FORECASTING AGRICULTURAL CROPS USING SATELLITE OBSERVATIONS OF EARTH ISISTEMA DE PREVISAO DE SAFRAS AERICOLAS UTILIZANDO SATELITES DE OBSERVACAO DA TERRA]

Nelson deJesusParada, Principal Investigator, Rene Antonio Novaes, Derli M. Silva, Luiz Gylvan Meira Filho, Mucio R. Dias, Oscar P. Dias, Jr., and Fausto C. deAlmeida Jul. 1981 In PORTUGUESE; ENGLISH summary Sponsored by NASA **ERTS**

(E82-10079; NASA-CR-168400; NAS 1.26:168400; INPE-2163-RPE/381) Avail: NTIS HC A03/MF A01 CSCL

02C A preliminary description of a crop forecasting system is presented. Ground and satellite observation are the main sources

of data collection. N82-20609*# Pennsylvania State Univ., University Park. Dept.

of Agricultural Engineering.

[FREEZE PREDICTION MODEL] Final Report

C. Terry Morrow In Florida Univ. Appl. of Satellite Frost Forecast Technol. to Other Parts of the U.S., Phase 2 Nov. 1981 25 p refs (For primary document see N82-20607 11-43)

Avail: NTIS HC A12/MF A01 CSCL 02C

Measurements of wind speed, net irradiation, and of air, soil, and dew point temperatures in an orchard at the Rock

Springs Agricultural Research Center, as well as topographical and climatological data and a description of the major apple growing regions of Pennsylvania were supplied to the University of Florida for use in running the P-model, freeze prediction program. Results show that the P-model appears to have considerable applicability to conditions in Pennsylvania. Even though modifications may have to be made for use in the fruit growing regions, there are advantages for fruit growers with the model in its present form.

N82-20613*# Michigan State Univ., East Lansing. Dept. of Entomology.

APPLICABILITY OF SATELLITE FREEZE FORECASTING AND COLD CLIMATE MAPPING TO THE OTHER PARTS OF THE UNITED STATES Final Report

In Florida Univ. Appl. of Satellite Frost Forecast Technol. to Other Parts of the U.S., Phase 2 Nov. 1981 59 p refs Original contains color illustrations (For primary document see N82-20607 11-43)

Avail: NTIS HC A12/MF A01 CSCL 04B

Tasks performed to determine the value of using GOES satellite thermal imagery to enhance fruit crop production in Michigan are described. An overview is presented of the system developed for image processing and thermal image and surface environmental data bases prepared to assess the physical models developed in Florida. These data bases were used to identify correlations between satellite apparent temperatures patterns and Earth surface factors. Significant freeze events in 1981 and the physical models used to provide a perspective on how Florida models can be applied in the context of the Michigan environment are discussed. A.R.H.

N82-21635*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

REGISTRATION VERIFICATION OF SEA/AR FIELDS

Willa W. Austin and Lyle Lautenschlager, Principal Investigators Jun. 1981 42 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development

(Contract NAS9-15800; Proj. AgRISTARS) (E82-10083; NASA-CR-161059; JSC-17251;

NAS 1.26:161059; EW-L1-04101; LEMSCO-16204) Avail: NTIS HC A03/MF A01 CSCL 02C

A method of field registration verification for 20 SEA/AR sites for the 1979 crop year is evaluated. Field delineations for the sites were entered into the data base, and their registration verified using single channel gray scale computer printout maps of LANDSAT data taken over the site. JDH

N82-21636*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

GROUND REGISTRATION OF DATA FROM AN AIRBORNE SCATTEROMETER

John C. Richter Jun. 1981 27 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10084; NASA-CR-161058; JSC-17296;

NAS 1.26:161058; SM-L1-04091; LEMSCO-16340) Avail: NTIS HC A03/MF A01 CSCL 02C

A portion of the data for the agricultural soil moisture experiment, conducted near Colby, Kansas, was collected from four scatterometers mounted on an aircraft. A method is outlined for locating the scatterometer footprints with respect to a ground-based coordinate system. The method requires the airplane's flight parameters along with aerial photography acquired simultaneously with the scatterometer data. Listings of the programs used in the registration process are included. A.R.H.

N82-21639*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex

AGRISTARS: FOREIGN COMMODITY PRODUCTION FORECASTING. PROJECT TEST REPORTS DOCUMENT,

J. T. Waggoner and D. E. Phinney, Principal Investigators Jun. 1981 56 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development

(Contract NAS9-15800; Proj. AgRISTARS) (E82-10087; NASA-CR-161063; NAS 1.26:161063; FC-L1-00718-Vol-1; JSC-17155-Vol-1; LEMSCO-16851-Vol-1) Avail: NTIS HC A04/MF A01 CSCL 02C

Foreign Commodity Production Forecasting testing activities through June 1981 are documented. A log of test reports is presented. Standard documentation sets are included for each test. The documentation elements presented in each set are summarized.

N82-21640* # Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

US CORN AND SOYBEANS EXPLORATORY EXPERIMENT J. G. Carnes, Principal Investigator Jun. 1981 29 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10088; NASA-CR-161057; NAS 1.26:161057;

FC-L1-04073; JSC-17129; LEMSCO-16315) Avail: NTIS HC A03/MF A01 CSCL 02C

The results from the U.S. corn/soybeans exploratory experiment which was completed during FY 1980 are summarized. The experiment consisted of two parts: the classification procedures verification test and the simulated aggregation test. Evaluations of labeling, proportion estimation, and aggregation procedures are presented. J D H

N82-21644*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AS-BUILT DESIGN SPECIFICATION FOR THE CLASFYG **PROGRAM**

C. L. Horton, Principal Investigator Jun. 1981 129 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10092; NASA-CR-161067; NAS 1.26:161067;

SR-L1-00304; JSC-17369; LEMSCO-16649) Avail: NTIS HC A07/MF A01 CSCL 02C

This program produces a file with a Universal-formatted header and data records in a nonstandard format. Trajectory coefficients are calculated from 5 to 8 acquisitions of radiance values in the training field corresponding to an agricultural product. These coefficients are then used to calculate a time of emergence and corresponding trajectory coefficients for each pixel in the test field. The time of emergence, two of the coefficients, and the sigma value for each pixel are written to the file.

N82-21645* # Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

PROJECT COMMUNICATIONS/DOCUMENTATION STAN-DARDS MANUAL

J. T. Waggoner, Principal Investigators and D. E. Phinney Jun. 1981 32 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development FRTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10093; NASA-CR-161055; NAS 1.26:161055;

FC-L1-00714; JSC-17141; LEMSCO-16850) Avail: NTIS HC A03/MF A01 CSCL 02C

The standards apply to the identification and description of remote sensing technical crop estimation analysis procedures. Standard working terminology for technical project and programmatic communications among and between FCPF project technologists and managers as well as with other AgRISTARS projects and program management is established. Basic reference material for FCPF project technologists is provided. The material presented can be used as introductory training material for new technical personnel.

N82-21647*# Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

SOYBEAN CANOPY REFLECTANCE AS INFLUENCED BY **CULTURAL PRACTICES**

M. E. Bauer, Principal Investigator, J. C. Kollenkark, and C. S. T. Daughtry Mar. 1981 46 p refs Sponsored by NASA, USDA. Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15466: Proj. AgRISTARS) (E82-10105: NASA-CR-167456; NAS 1.26:167456;

SR-P1-04038; LARS-021781) Avail: NTIS HC A03/MF A01 CSCL 02C

Experiments were conducted at West Lafayette, Indiana in 1978 and 1979 to study the reflectance factor of soybean canopies

as affected by differences in row width, population, planting date, cultivar and soil type. Reflectance factor data were acquired throughout the growing season with a LANDSAT-band radiometer. Agronomic data included plant height, leaf area index, development stage, total fresh and dry biomass, percent soil cover, and grain yield. The results indicate that row width, planting date, and cultivar influence the percent soil cover, leaf area index, and biomass present, which are in turn related to the multispectral reflectance. Additionally, the reflectance data were quite sensitive to the onset of senescence. Soil color and moisture were found to be important factors influencing the reflectance in single LANDSAT bands, but the near infrared/red reflectance ratio and the greeness transformation were less sensitive than the single bands to the soil background present.

N82-21648*# Nebraska Univ., Lincoln. Dept. of Biology.
A GRADIENT MODEL OF VEGETATION AND CLIMATE UTILIZING NOAA SATELLITE IMAGERY. PHASE 1: TEXAS

David Greegor and Jim Norwine, Principal Investigators (Texas A & M Univ.) Aug. 1981 65 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Proj. AgRISTARS)

(E82-10107; NASA-CR-167454; NAS 1.26:167454;

FC-J1-04176; JSC-17435) Avail: NTIS HC A04/MF A01 CSCL 02C

A climatological model/variable termed the sponge (a measure of moisture availability based on daily temperature maxima and minima, and precipitation) was tested for potential biogeographic, ecological, and agro-climatological applications. Results, depicted in tabular and graphic form, suggest that, as generalized climatic index, sponge is particularly appropriate for large-area and global vegetation monitoring. The feasibility of utilizing NOAA/AVHRR data for vegetation classification was investigated and a vegetation gradient model that utilizes sponge and AVHRR data was initiated. Along an east-west Texas gradient, vegetation, sponge, and AVHRR pixel data (channels 1 and 2) were obtained for 12 locations. The normalized difference values for the AVHRR data when plotted against vegetation characteristics (biomass, net productivity, leaf area) and sponge values along the Texas gradient suggest that a multivariate gradient model incorporating AVHRR and sponge data may indeed be useful in global vegetation stratification and monitoring.

N82-21649*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex

SAN JUAN NATIONAL FOREST LAND MANAGEMENT PLANNING SUPPORT SYSTEM (LMPSS) REQUIREMENTS **DEFINITION** Final Report

Lee F. Werth, Principal Investigator Sep. 1981 41 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10108; NASA-CR-167448; NAS 1.26:167448;

RR-L1-04146; JSC-17422; LEMSCO-17163) Avail: NTIS

HC A03/MF A01 CSCL 02F

The role of remote sensing data as it relates to a threecomponent land management planning system (geographic information, data base management, and planning model) can be understood only when user requirements are known. Personnel at the San Juan National Forest in southwestern Colorado were interviewed to determine data needs for managing and monitoring timber, rangelands, wildlife, fisheries, soils, water, geology and recreation facilities. While all the information required for land management planning cannot be obtained using remote sensing techniques, valuable information can be provided for the geographic information system. A wide range of sensors such as small and large format cameras, synthetic aperture radar, and LANDSAT data should be utilized. Because of the detail and accuracy required, high altitude color infrared photography should serve as the baseline data base and be supplemented and updated with data from the other sensors.

N82-21650*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AN EVALUATION OF ISOCLS AND CLASSY CLUSTERING ALGORITHMS FOR FOREST CLASSIFICATION NORTHERN IDAHO

Lee F. Werth, Principal Investigator Sep. 1981 21 p refs

Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10109; NASA-CR-167447; NAS 1.26:167447;

RRI-L1-04143; JSC-17418; LEMSCO-17154) Avail: NTIS HC A02/MF A01 CSCL 02F

Both the iterative self-organizing clustering system (ISOCLS) and the CLASSY algorithms were applied to forest and nonforest classes for one 1:24,000 quadrangle map of northern Idaho and the classification and mapping accuracies were evaluated with 1:30,000 color infrared aerial photography. Confusion matrices for the two clustering algorithms were generated and studied to determine which is most applicable to forest and rangeland inventories in future projects. In an unsupervised mode, ISOCLS requires many trial-and-error runs to find the proper parameters to separate desired information classes. CLASSY tells more in a single run concerning the classes that can be separated, shows more promise for forest stratification than ISOCLS, and shows more promise for consistency. One major drawback to CLASSY is that important forest and range classes that are smaller than a minimum cluster size will be combined with other classes. The algorithm requires so much computer storage that only data sets as small as a quadrangle can be used at one A.R.H.

N82-21651*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

TRANSITION YEAR LABELING ERROR CHARACTERIZA-**TION STUDY Final Report**

N. James Clinton, Principal Investigators Oct. 1980 81 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800: Proj. AgRISTARS) (E82-10111: NASA-CR-160887: NAS 1.26:160887:

RC-LO-00479: LEMSCO-14056)

NTIS

HC A05/MF A01 CSCL 05B

Labeling errors made in the large area crop inventory experiment transition year estimates by Earth Observation Division image analysts are identified and quantified. The analysis was made from a subset of blind sites in six U.S. Great Plains states (Oklahoma, Kansas, Montana, Minnesota, North and South Dakota). The image interpretation basically was well done, resulting in a total omission error rate of 24 percent and a comission error rate of 4 percent. The largest amount of error was caused by factors beyond the control of the analysts who were following the interpretation procedures. The odd signatures, the largest error cause group, occurred mostly in areas of moisture abnormality. Multicrop labeling was tabulated showing the distribution of labeling for all crops.

N82-21652*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.
WHEAT STRESS INDICATOR MODEL, EARLY WARNING

(EW) DATA BASE INTERFACE DRIVER, USER'S MANUAL R. F. Hansen, Principal Investigator Nov. 1981 15 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS) (E82-10115; NASA-CR-167480; NAS 1.26:167480;

JSC-17793; EW-L1-00732; LEMSCO-17179)

Avail: HC A02/MF A01 CSCL 02C

Detailed instructions on the use of the wheat stress indicator model, early warning (EW) data base interface driver are given. The purpose of this system is to interface the wheat stress indicator model with the EW operational data base. The interface driver routine decides what meteorological stations data should be processed and calls the proper subroutines to process the stations data.

Department of Agriculture, Washington, D.C. N82-21653*# AGRISTARS: AGRICULTURE AND RESOURCES IN-VENTORY SURVEYS THROUGH AEROSPACE REMOTE SENSING. ENUMERATOR'S MANUAL, 1981 GROUND DATA SURVEY

Jan. 1981 88 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development **ERTS**

(Proj. AgRISTARS)

(E82-10116: NASA-CR-167434; NAS 1.26:167434;

FC-J1-04108: JSC-16860) Avail: NTIS HC A05/MF A01 CSCL 05B

General information and administrative instructions are provided for individuals gathering ground truth data to support research and development techniques for estimating crop acreage and production by remote sensing by satellite. Procedures are given for personal safety with regards to organophosphorus insecticides, for conducting interviews for periodic observations. for coding the crops identified and their growth stages, and for selecting sites for placing rain gages. Forms are included for those citizens agreeing to monitor the gages and record the rainfall. Segment selection is also considered. ARH

N82-21654*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

DEVELOPMENT OF ROTATION SAMPLE DESIGNS FOR THE ESTIMATION OF CROP ACREAGES

T. G. Lycthuan-Lee, Principal Investigator Sep. 1981 126 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10117; NASA-CR-167438; NAS 1.26:167438;

FC-LI-04153; JSC-17427; LEMSCO-15409) HC A07/MF A01 CSCL 02C

The idea behind the use of rotation sample designs is that the variation of the crop acreage of a particular sample unit from year to year is usually less than the variation of crop acreage between units within a particular year. The estimation theory is based on an additive mixed analysis of variance model with years as fixed effects, (a sub t), and sample units as a variable factor. The rotation patterns are decided upon according to: (1) the number of sample units in the design each year; (2) the number of units retained in the following years; and (3) the number of years to complete the rotation pattern. Different analytic formulae for the variance of (a sub t) and the variance comparisons in using a complete survey of the rotation pat-

N82-21655*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

SAMPLE SELECTION IN FOREIGN SIMILARITY REGIONS FOR MULTICROP EXPERIMENTS

J. T. Malin, Principal Investigator Aug. 1981 44 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800: Proj. AgRISTARS) (E82-10118: NASA-CR-167439: NAS 1.26:167439:

FC-L1-04120; JSC-17401; LEMSCO-16663) Avail: NTIS HC A03/MF A01 CSCL 02C

The selection of sample segments in the U.S. foreign similarity regions for development of proportion estimation procedures and error modeling for Argentina, Australia, Brazil, and USSR in AgRISTARS is described. Each sample was chosen to be similar in crop mix to the corresponding indicator region sample. Data sets, methods of selection, and resulting samples are discussed.

N82-21657*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

A LOOK AT THE COMMONLY USED LANDSAT VEGETA-TION INDICES

G. E. Miller, Principal Investigator Oct. 1981 37 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development, ERTS

(Contract NAS9-15800: Proj. AgRISTARS) (E82-10123: NASA-CR-167474: NAS 1.26:167474:

EW-L1-04134; JSC-17413; LEMSCO-16844) Avail: NTIS HC A03/MF A01 CSCL 02C

The origins, development, and logic of the indices are discussed. The relationships of the indices to ground-based measurements of vegetation are highlighted. An effort was made to preserve the order in which the various indices appeared in the literature in order to historically trace their underlying concepts.

N82-21658*# Environmental Research Inst. of Michigan, Ann

THE 1981 ARGENTINA GROUND DATA COLLECTION

Robert Horvath, Robert N. Colwell, Principal Investigators, David Hicks, Buzz Sellman, Edwin Sheffner, Gene Thomas, and Byron Wood Oct. 1981 100 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for

International Development Prepared in cooperation with California Univ., Berkeley Original contains imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. 57198. ERTS

(Contracts NAS9-15476; NAS9-14565; Proj. AgRISTARS) (E82-10127; NASA-CR-167451; NAS 1,26:167451; SR-E1-04174: ERIM-152400-12-T) NTIS

HC A05/MF A01 CSCL 05B

Over 600 fields in the corn, soybean and wheat growing regions of the Argentine pampa were categorized by crop or cover type and ancillary data including crop calendars, historical crop production statistics and certain cropping practices were also gathered. A summary of the field work undertaken is included along with a country overview, a chronology of field trip planning and field work events, and the field work inventory of selected sample segments. LANDSAT images were annotated and used as the field work base and several hundred ground and aerial photographs were taken. These items along with segment descriptions are presented. Meetings were held with officials of the State Secretariat of Agriculture (SEAG) and the National Commission on Space Investigations (CNIE), and their support to the program are described.

N82-21661*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

SONORA EXPLORATORY STUDY FOR THE DETECTION OF WHEAT-LEAF RUST

R. W. Payne, Principal Investigator Nov. 1980 43 p refs **FRTS**

(Contract NAS9-15800)

(E82-10133; NASA-CR-161051; JSC-16956;

NAS 1.26:161051; LEMSCO-15604) Avail: NTIS HC A03/MF A01 CSCL 02C

The applicability of LANDSAT remote sensing technology to the detection of a wheat-leaf-rust epidemic in Sonora, Mexico, during 1977 was investigated. LANDSAT data acquired during crop years 1975-76 and 1976-77 were clustered, classified, and analyzed in order to detect agricultural changes. Analysis of 1977 data indicates a significant proportion of the identified wheat is stressed (potentially rust-infected). Additional analyses show a significant increase in fallowing during the year, as well as a substantial decrease in reservoir levels in the Sonora agricultural region. Ground observations are required to substantiate these analyses. The possibility exists that heat-rust is not LANDSAT detectable and that the clusters identified as containing stressed signatures represent different varieties of wheat or perhaps nonwheat crops. A.R.H.

N82-21668* Pennsylvania State Univ., University Park. Office for Remote Sensing of Earth Resources

DELINEATION OF SOIL TEMPERATURE REGIMES FROM **HCMM DATA Quarterly Report**

Rick L. Day and Gary W. Petersen, Principal Investigators 31 Dec. 1981 3 p HCMM

(E82-10141; NASA-CR-168526; NAS 1.26:168526) Avail: NTIS HC A02/MF A01 CSCL 08M

Evaluation of LANDSAT and Heat Capacity Mapping Mission (HCMM) data as input into National Cooperative Soil Survey is discussed. Signature classification techniques were applied to 13 May 76 LANDSAT data. LANDSAT data was overlaid with HCMM data, revealing registration problems caused by a shortage of control points in LANDSAT data, and the WARP program developed to improve registration accuracy. Initial images for control point selection were produced using digital terrain elevation data. Statistical procedures for evaluating data classification and to describe spatial distribution of surface temperature and its correlation with soil surface conditions were investigated.

N82-21670*# Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

SPECTRAL-AGRONOMIC RELATIONSHIPS OF CORN, SOYBEAN AND WHEAT CANOPIES

M. E. Bauer, Principal Investigator, C. S. T. Daughtry, and V. C. Vanderbilt Oct. 1981 19 p refs Presented at the Intern. Colloq on Signatures of Remotely Sensed Objects, Avignon, France, 8-11 Sep. 1981 Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15466; Proj. AgRISTARS)

(E82-10143; NASA-CR-167510; NAS 1.26:167510; SR-PI-04187; LARS-091281) Avail: NTIS HC A02/MF A01 CSCL 20F

During the past six years several thousand reflectance spectra of corn, soybean, and wheat canopies were acquired and analyzed. The relationships of biophysical variables, including leaf area index, percent soil cover, chlorophyll and water content, to the visible and infrared reflectance of canopies are described. The effects on reflectance of cultural, environmental, and stress factors such as planting data, seeding rate, row spacing, cultivar, soil type and nitrogen fertilization are also examined. The conclusions are that several key agronomic variables including leaf area index, development stage and degree of stress are strongly related to spectral reflectance and that it should be possible to estimate these descriptions of crop condition from satellite acquired multispectral data.

N82-21671*# Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

SIMULATED RESPONSE OF A MULTISPECTRAL SCANNER OVER WHEAT AS A FUNCTION OF WAVELENGTH AND VIEW/ILLUMINATION DIRECTION

M. E. Bauer, Principal Investigator, V. C. Vanderbilt, B. F. Robinson, L. L. Biehl, and A. S. Vanderbilt Nov. 1981 14 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15466; Proj. AgRISTARS)

(E82-10144; NASA-CR-167505; NAS 1.26:167505;

SR-P1-04202; LARS-071580) Avail: NTIS HC A02/MF A01 CSCL 02C

The reflectance response with view angle of wheat, was analyzed. The analyses, which assumes there are no atmospheric effects, and otherwise simulates the response of a multispectral scanner, is based upon spectra taken continuously in wavelength from 0.45 to 2.4 micrometers at more than 1200 view/illumination directions using an Exotech model 20C spectra radiometer. Data were acquired six meters above four wheat canopies, each at a different growth stage. The analysis shows that the canopy reflective response is a pronounced function of illumination angle, scanner view angle and wavelength. The variation is greater at low solar elevations compared to high solar elevations.

A.R.H.

N82-21672*# Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

VARIABILITY OF REFLECTANCE MEASUREMENTS WITH SENSOR ALTITUDE AND CANOPY TYPE

C. S. T. Daughtry, V. C. Vanderbilt, and V. J. Pollara Nov. 1981 24 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15466; Proj. AgRISTARS)

(E82-10145; NASA-CR-167509; NAS 1.26:167509;

SR-P1-04191; LARS-111481) Avail: NTIS HC A02/MF A01 CSCL 20F

Data were acquired on canopies of mature corn planted in 76 cm rows, mature soybeans planted in 96 cm rows with 71 percent soil cover, and mature soybeans planed in 76 cm rows with 100 percent soil cover. A LANDSAT band radiometer with a 15 degree field of view was used at ten altitudes ranging from 0.2 m to 10 m above the canopy. At each altitude. measurements were taken at 15 cm intervals also a 2.0 m transect perpendicular to the crop row direction. Reflectance data were plotted as a function of altitude and horizontal position to verify that the variance of measurements at low altitudes was attributable to row effects which disappear at higher altitudes where the sensor integrate across several rows. The coefficient of variation of reflectance decreased exponentially as the sensor was elevated. Systematic sampling (at odd multiples of 0.5 times the row spacing interval) required fewer measurements than simple random sampling over row crop canopies.

N82-21673*# Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

DETERMINATION OF THE OPTIMAL LEVEL FOR COMBINING AREA AND YIELD ESTIMATES

Marvin E. Bauer, Principal Investigator, M. M. Hixson, and C. D. Jobusch 12 Oct. 1981 70 p. Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15466; Proj. AgRISTARS)

(E82-10146; NASA-CR-168531; NAS 1.26:168531; FC-P1-04197; LARS-101281) Avail: NTIS HC A04/MF A01 CSCL 02C

Several levels of obtaining both area and yield estimates of corn and soybeans in Iowa were considered: county, refined strata, refined/split strata, crop reporting district, and state. Using the CCEA model form and smoothed weather data, regression coefficients at each level were derived to compute yield and its variance. Variances were also computed with stratum level. The variance of the yield estimates was largest at the state and smallest at the county level for both crops. The refined strata had somewhat larger variances than those associated with the refined/split strata and CRD. For production estimates, the difference in standard deviations among levels was not large for corn, but for soybeans the standard deviation at the state level was more than 50% greater than for the other levels. The refined strata had the smallest standard deviations. The county level was not considered in evaluation of production estimates due to lack of county area variances.

N82-21676*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AGRISTARS: SUPPORTING RESEARCH. CLASSIFICATION OF CORN: BADHWAR PROFILE SIMILARITY TECHNIQUE

Willa W. Austin, Principal Investigator Aug. 1981 46 p refs Sponsored by NASA, USDA, Dept. of Commerce. Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800: Proj. AuRISTARS)

(E82-10150; NASA-CR-167409; JSC-17113;

NAS 1.26:167409; SR-L1-04049; LEMSCO-16035) Avail: NTIS HC A03/MF A01 CSCL 02C

The same software programs used to classify spring wheat are applied to the classification of corn in 26 segments in the corn belt. Numerical results of the acreage estimation are given. Potential problem areas defined in an earlier application are examined.

A.R.H.

N82-21681*# Florida Univ., Gainesville. Inst. of Food and Agricultural Sciences.

USE OF THERMAL INERTIA DETERMINED BY HCMM TO PREDICT NOCTURNAL COLD PRONE AREAS IN FLORIDA Quarterly Report, 16 Jun. - 15 Sep. 1981

L. H. Allen, Jr., Principal Investigator, Ellen Chen, J. D. Martsolf, and P. H. Jones 15 Sep. 1981 23 p ref Original contains imagery. Original imagery may be purchased from NASA Goddard Spore Flight Center, (code 601), Greenbelt, Md. 20771. Domestic users send orders to 'Attn: National Space Science Data Center'; non-domestic users send orders to 'Attn: World Data Center A for Rockets and Satellites'. HCMM

(Contract NAS5-26453)

(E82-10157; NASA-CR-164927; NAS 1.26:164927; QR-2) Avail: NTIS HC A02/MF A01 CSCL 08F

Transparencies, prints, and computer compatible tapes of temperature differential and thermal inertia for the winter of 1978 to 1979 were obtained. Thermal inertial differences in the South Florida depicted include: drained organic soils of the Everglades agricultural area, undrained organic soils of the managed water conservation areas of the South Florida water management district, the urbanized area around Miami, Lake Okeechobee, and the mineral soil west of the Everglades agricultural area. The range of wetlands and uplands conditions within the Suwanee River basin was also identified. It is shown that the combination of wetlands uplands surface features of Florida yield a wide range of surface temperatures related to wetness of the surface features.

N82-21682*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AGRISTARS: SUPPORTING RESEARCH. US CROP CALENDARS IN SUPPORT OF THE EARLY WARNING PROJECT

T. Hodges, Principal Investigator Jul. 1981 134 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10158; NASA-CR-167417; JSC-17402;

NAS 1.26:167417; SR-L1-04122; LEMSCO-14674) Avail: NTIS HC A07/MF A01 CSCL 05B

The crop calendars produced for the Large Area Crop Inventory

Experiment (LACIE) and crop calendar samples for Colorado, Iowa, Kansas, Minnesota, Montana, Nebraska, North Dakota, South Dakota, and Texas are presented. These calendars are based on weekly crop reporting district level observations of the percentage of various crops at several growth stages. A sample of the statistical treatments of the weekly data is provided. Four to five years of 50-percent dates for stages on a crop reporting district level for Arkansas, Iowa, Kentucky, Louisiana, Michigan, Mississippi, Ohio and Wisconsin are also given.

02

ENVIRONMENTAL CHANGES AND CULTURAL RESOURCES

Includes land use analysis, urban and metropolitan studies, environmental impact, air and water pollution, geographic information systems, and geographic analysis.

A82-19177 Satellite observed cloud patterns associated with excessive precipitation outbreaks. J. D. Clark, A. J. Lindner, R. Borneman, and R. E. Bell (NOAA, National Environmental Satellite Service, Camp Springs, MD). In: Conference on Weather Forecasting and Analysis, 8th, Denver, CO, June 10-13, 1980, Preprints.

Boston, MA, American Meteorological Society, 1980, p. 463-473. 12 refs.

A description is provided of three convective system types in terms of cloud patterns, structure, and life cycle. If these systems move slowly, they are capable of producing excessive precipitation. Other convective occurrences also produce excessive precipitation, but are not as strongly associated with upper level cloud patterns which are easily identifiable in infrared satellite imagery. Each of the three convective types discussed has particular rain producing characteristics which are relevant to the forecasting of excessive precipitation. Synoptic type I systems tend to occur in the summer and early fall. Type II systems are most commonly observed in the spring and fall. Type III systems are generally observed over the eastern two thirds of the nation, but may be found in other areas as well.

G.R.

A82-19179 Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis. A. R. Thomas (NOAA, National Meteorological Center, Washington, DC) and J. Kerlin (USAF, Offutt AFB, NE). In: Conference on Weather Forecasting and Analysis, 8th, Denver, CO, June 10-13, 1980, Preprints.

Boston, MA, American Meteorological Society, 1980, p. 488-495. 6 refs.

The goals and applications of World Weather Watch (WWW) quality control procedures for meteorological data collection and recording are explored. The total systems concept possesses provisions for monitoring and quality control in telecommunication of data and data storage at meteorological centers. Radiosonde, rocketsonde, aircraft, and weather balloon observations are mentioned as part of the exponentially growing sources of mesoscale. synoptic, and asynoptic data where errors can occur in instruments, readings, corrections, signal processing, coding, and transmission. Checking procedures to maintain quality are outlined, and real-time and non-real-time data control are described, noting that the bulletins arrive from international sources. Future applications are indicated to concentrate on ecology, world food production, defense, energy use, and basic comfort and safety, in a climate of growing fiscal constraints. M.S.K.

A82-19826 † Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 (Tsvetovye kharakteristiki pokrovov zemli po rezul'tatam spektrometrirovaniia s orbital'noi nauchnoi stantsii 'Saliut-4'). L. I. Kiselevskii, B. I. Beliaev, A. A. Kovalev, and V. E. Pliuta (Akademiia Nauk Belorussioi SSR, Institut Fiziki, Minsk, Belorussian SSR). Akademiia Nauk BSSR, Doklady, vol. 26, no. 1, 1982, p. 21-24. 11 refs. In Russian.

Salyut-4 spectroscopy data were used to determine color characteristics for various types of underlying surfaces, including desert, vegetation, and water. The quantitative relationship of these color characteristics and Mancell's color-perception system is investigated, and the influence of the porthole on the colors of the underlying surfaces is analyzed.

B.J.

A82-20226 The use of the airborne lidar system 'ALEX F 1' for aerosol tracing in the lower troposphere. P. Mörl, M. E. Reinhardt, W. Renger, and R. Schellhase (Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt, Institut für Physik der

Atmosphäre, Oberpfaffenhofen, West Germany). Beiträge zur Physik der Atmosphäre, vol. 54, no. 4, 1981, p. 403-410. 9 refs. Research supported by the Bundesministerium für Forschung und Technologie.

The characteristics and performance of the airborne lidar system ALEX F 1 are described, noting its potential applications on spacecraft. The laser is fixed to a downward looking telescope, which gathers backscattered light for detection by a silicon photodiode, which begins the IR and photomultiplier count. A sample rate of 100 MHz on one channel corresponds to a 1.5 m resolution, with the data recorded on magnetic tape. The strength of the lidar signal is related to a color scale, with different values of the backscatter coefficient yielding different color tones. Examples are provided for the mesoscale measurement of the aerosol in the Po Valley, for the regional scale by imaging the Rhine Valley at a scale of 50 km, and a 5 km small scale aerosol from a point source. The use of multiwavelength laser systems for detecting invisible clouds which mask the results of remote sensing methods is indicated.

M.S.K.

A82-20339 † Landscape mapping and physical-geographical classification of the eastern part of the Chechen-Ingush, ASSR using space imagery (Landshaftnoe kartografirovanie i fizikogeograficheskoe raionirovanie vostochoi chasti Checheno-Ingushskoi ASSR po kosmicheskim snimkam). Iu. I. Kondratova and A. E. Fedina (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 13-18. In Russian.

A82-20999 Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis. W. G. Cobourn, J. Djukic-Husar, R. B. Husar, and S. Kohli (Washington University, St. Louis, MO). (U.S. Environmental Protection Agency, Electric Power Research Institute, and U.S. National Park Service, Symposium on Plumes and Visibility: Measurements and Model Components, Grand Canyon, AZ, Nov. 10-14, 1980.) Atmospheric Environment, vol. 15, no. 12, 1981, p. 2565-2571. 17 refs. U.S. Environmental Protection Agency Grant No. R-806606-02.

An airborne in-situ particulate sulfur monitor based on the FPD principle is developed and tested. The lower detection limit for particulate sulfur is 1 ppb (4 micrograms SO4 per cu m), with a time response to 90% of s.gnal at 5 s. FPD zero drift caused by changes in pressure, humidity and other environmental factors is compensated for by including an automatic zeroing cycle so that the zero signal can be monitored with the sulfur signal. An accuracy of + or - 30% is attained, and an examination of field data indicates that plume profiles of particulate sulfur and sulfuric acid can be measured with good detail with vertical profiles of good quality.

D.L.G.

A82-21217 Ionospheric troughs in Antarctica. J. R. Dudeney, M. J. Jarvis, R. I. Kressman, M. Pinnock, A. S. Rodger, and K. H. Wright (British Antarctic Survey, Cambridge, England). *Nature*, vol. 295, Jan. 28, 1982, p. 307, 308. 22 refs.

The first observations of the dynamics of both the mid-latitude and high-latitude troughs made by the Advanced Ionospheric Sounder (AIS) at Halley Station, Antarctica (76 deg S, 27 deg W; invariant lat. 61 deg) are reported. This experiment is part of a major international project to study the sub-auroral ionosphere and its associations with the magnetosphere. The analysis provides an accurate quantitative description of the latitudinal movements of these features and the first results delineating the orientation of the poleward edge of the mid-latitude trough. These results show that the AIS has a much greater potential for monitoring large scale ionospheric structures and for tracking their motions than more conventional radio wave experiments. (Author)

A82-21386 Airborne lidar measurements of smoke plume distribution, vertical transmission, and particle size. E. E. Uthe, B. M. Morley, and N. B. Nielsen (SRI International Atmospheric Science Center, Menlo Park, CA). Applied Optics, vol. 21, Feb. 1, 1982, p. 460-463. 12 refs. Research supported by SRI International.

Observations were made of a dense smoke plume downwind from a forest fire using the ALPHA-1 two-wavelength downward-looking airborne lidar system. Facsimile displays were derived which depict plume dimensions, boundary layer height, and underlying

terrain elevations. Results show significantly greater plume attenuation at 0.53-micron wavelengths than at 1.06-micron wavelengths, which indicates about 0.1-micron mean particle diameters, or the presence of gaseous constituents that absorb the visible radiation.

D.L.G.

A82-21432 Measurement of atmospheric emission using a balloon-borne cryogenic Fourier spectrometer. H. Sakai, T. C. Li (Massachusetts, University, Amherst, MA), J. Pritchard (Idealab, Inc., Franklin, MA), F. J. Murcray, F. H. Murcray, J. Williams (Denver, University, Denver, CO), and G. Vanasse (USAF, Geophysics Laboratory, Bedford, MA). In: International Conference on Fourier Transform Infrared Spectroscopy, Columbia, SC, June 8-12, 1981, Proceedings. Bellingham, WA, Society of Photo-Optical Instrumentation Engineers, 1981, p. 196-198. AF Project 2310; AF Task 2310G1.

In the lower atmosphere, the tropopause, and the stratosphere, the infrared emission radiance level directly relates to temperature and concentration of the molecules responsible for the emission. An experiment was conducted to obtain high precision data on altitude profiles of various atmospheric parameters by measuring the infrared emission spectrum of the atmosphere from a balloon-borne platform. The balloon flight took place on October 8, 1980. A spectrum was recovered from interferogram data taken at an altitude of approximately 5000 m. The maximum optical path difference was approximately 4 cm, producing a corresponding resolution of 0.12 per cm. The data indicate excellent sensitivity for detecting weak spectral lines.

A82-22143 A comparison between aerial photography and Landsat for computer land-cover mapping. B. K. Quirk and F. L. Scarpace (Wisconsin, University, Madison, WI). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Feb. 1982, p. 235-240. 18 refs. NOAA-sponsored research.

In a number of applications, Landsat imagery resolution was found to be inadequate to meet mapping needs. An analysis of aerial photographs has, therefore, been considered to obtain required land-cover information. The considered investigation attempts to evaluate the potential of such an analysis on the basis of a comparison made between land-cover information provided from several sensors for an urbanizing area around Green Bay, Wisconsin. Land-cover information is important as an input to hydrologic models. Land-cover estimates from the computer analysis of Landsat and digitized aerial photography are compared to manual photointerpretations of black-and-white infrared and color infrared aerial photographs of the area within the watershed. It was found that computer analysis of a color infrared photograph provided more accurate land-cover estimates than Landsat when compared to a manual photointerpretation of an urban watershed. G.R.

A82-24958 A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs. J. Fuhrer, K. H. Erismann, H. J. Keller, and A. Favre (Bern, Universität, Berne, Switzerland). *Remote Sensing of Environment*, vol. 11, Mar. 1981, p. 1-8. 22 refs. Swiss National Science Foundation Grant No. 3.209.77.

Aerial color-infrared photographs of two Swiss cities (Bern and Lausanne) were taken to evaluate the potential use of automatic image analysis for the discrimination of urban tree species and their different vitalities. A TV-based hardware system under full software control measured five different functions at each of the 63 possible intensity levels at red (600 nm), green (550 nm), blue (470 nm), and white illumination. Eighty-three parameters per tree were derived from the corresponding intensity distributions describing tone and texture. Classification by supervised learning was carried out using stepwise discriminant analysis. The overall classification error for the discrimination of four deciduous tree species (horse chestnut, Norway maple, large-leaved lime, and London plane) was 4.9%. A higher error rate (6.2%) was found for the discrimination of five classes, namely healthy trees of the above mentioned four species and damaged horse chestnut trees. The practicability of the proposed system is discussed.

A82-24962 The Canadian north - Utility of remote sensing for environmental monitoring. B. Dey (Howard University, Washing-

ton, DC) and J. H. Richards (Saskatchewan, University, Saskatoon, Canada). *Remote Sensing of Environment*, vol. 11, Mar. 1981, p. 57-72. 31 refs.

Activities related to resource exploration have a great potential for causing environmental change and damage. In connection with a growing interest in northern mineral resources, environmental monitoring of the Canadian north has become important. Monitoring is undertaken so as to distinguish and record dynamic events such as weather, floods, forest fires, and ice break-up, as well as longer-term changes which may affect water quality, vegetation, and wildlife habitat. An investigation concerning the feasibility of remote sensing for environmental monitoring is conducted. It is found that the use of aircraft in remote sensing is becoming increasingly expensive, while the aircraft platform itself may be considered inadequate. In distinction, small-scale satellite imagery is relatively inexpensive, and the regularity and areal extent of satellite coverage is not in doubt. Inherent potentials will be more nearly realized with the aid of new techniques and satellites.

G.R.

A82-25140 Building and road extraction from aerial photographs. M. Tavakoli (Shiraz University, Shiraz, Iran) and A. Rosenfeld (Maryland, University, College Park, MD). *IEEE Transactions on Systems, Man, and Cybernetics*, vol. SMC-12, Jan.-Feb. 1982, p. 84-91. 10 refs. Grant No. DAAG53-76-C-0138. DARPA Order 3206.

A method of extracting features such as buildings and roads from high-resolution aerial photographs is described. The approach involves several successive stages of grouping of edge segments. Straight line segments are fitted to sets of edge pixels; compatibilities between pairs of these segments, based on gray level and geometric information, are computed; and the segments are then grouped into building-like and road-like groupings based on these compatibilities. Examples of the results obtained using this approach are given, and some variations on the initial stages of the process are also investigated. (Author)

A82-25149 Mid-latitude summertime measurements of stratospheric NO2. J. B. Kerr, C. T. McElroy, and W. F. J. Evans (Department of the Environment, Atmospheric Environment Service, Downsview, Ontario, Canada). Canadian Journal of Physics, vol. 60, Feb. 1982, p. 196-200. 11 refs.

Measurements of the vertical distribution of stratospheric nitrogen dioxide made on Stratoprobe balloon flights in August from Yorkton, Saskatchewan are presented. The vertical profiles were calculated by the inversion of measurements of absorption at wavelengths of 437.7, 444.8 and 450.0 nm as a function of solar zenith angle during sunrise and sunset. Four pairs of observations were obtained which show variations in NO2 levels with 15% at all heights, demonstrating the reliability of the measurement and analysis methods. The average NO2 concentration at sunset is found to increase from about 0.3 ppbv at 10 km to 10 ppbv at 35 km, and at sunrise to increase from 0.2 to 5 ppbv.

A82-25452 * Analysis of two Seasat synthetic aperture radar images of an urban scene. M. L. Bryan (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Mar. 1982, p. 393-398. 19 refs. Contract No. NAS7-100.

Because the Seasat satellite is not polar-orbiting, the look-directions of its SAR radar on the basic ascending and descending orbits were neither in the same direction, orthogonal to, nor opposite to, one another. This calls for a technique by means of which to identify those features within a given geographic region which were imaged from two directions by Seasat SAR and are sensitive to radar orientation. It is demonstrated that images from the two orbits with different look directions can be registered and subtracted from one another, with the resulting difference image highlighting those features that are direction-sensitive. Although this depends on a precise registration the subtraction technique is straightforward once such registration has been obtained.

A82-26329 An investigation of the ozone plume from a small city. C. W. Spicer, D. W. Joseph, and P. R. Sticksel (Battelle Columbus Laboratories, Columbus, OH). Air Pollution Control

Association, Journal, vol. 32, Mar. 1982, p. 278-281. 6 refs. U.S. Environmental Protection Agency Contract No. 68-02-2439.

The results of upwind and downwind flights around a large and small city (population less than 100,000) to determine if the small city contributed to downwind O3 pollution are reported. The flights were around St. Louis, MO and Springfield, IL on summer days. A small increase was noted downwind from Springfield, along with O3 precursors. Significant differences were observed on one occasion, and were found to correspond with atmospheric conditions conducive to photochemical formation of O3.

A82-26403 A regional air quality model for the Kwinana industrial area of Western Australia. F. H. Kamst and T. J. Lyons (Murdoch University, Murdoch, Australia). Atmospheric Environment, vol. 16, no. 3, 1982, p. 401-412. 30 refs.

The Kwinana industrial area lies 32 km south of the city of Perth, Western Australia. Since this area represents the major concentration of heavy industry near Perth, it is essential to have a clear understanding of its present and future impact on the regional air quality. A description is presented of the development of a regional air dispersion model wherein the initial development has been limited to the stable atmosphere. The model was used to predict SO2 concentrations in the Kwinana area during the night of August 1-2, 1978, between 2300 and 0445 h. The obtained results are presented in graphs. Attention is given to a sensitivity analysis, the determination of the input parameters to the model and a comparison of model results with photographs.

G.R.

A82-26621 * # The NASA participation in the 1980 EPA PEPE/NEROS field measurements program. E. Remsberg and R. Bendura (NASA, Langley Research Center, Hampton, VA). American Meteorological Society, Joint Conference on Applications of Air Pollution Meteorology, 3rd, San Antonio, TX, Jan. 11-15, 1982, Paper, 4 p.

The Persistent Elevated Pollution Episode (PEPE)/Northeast Regional Oxidant Study (NEROS) Project consisted of a series of field measurements sponsored by the EPA during July and August, 1980. NASA participation in the Project had several purposes: (1) use remote sensing to help determine mixed layer height and ozone profiles regionally; and (2) provide opportunity for development, testing and evaluation of several NASA 'emerging' airborne remote sensing systems. NASA also provided information on the hazy pollution episodes throughout the summer of 1980 with satellite imagery. This paper describes findings on atmospheric aerosols, ozone profile and ozone column and discusses the instruments (airborne and ground-based sensors) and techniques used to obtain the relevant data. Associated archived data is also discussed. C.D.

A82-26700 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978. R. J. Reed and K. D. Jaffe (Washington, University, Seattle, WA). Monthly Weather Review, vol. 109, Dec. 1981, p. 2527-2534. 12 refs. NOAA-supported research; NSF Grant No. ATM-81-03697.

The behavior of convection during the Greater Atlantic Tropical Experiment period is compared with data from the summer of 1978, the initial operation summer of Meteosat-1. IR imagery from Meteosat-1 taken at 4-hr intervals from July 1-Sept. 30 covered 3 deg squares. The GATE data was for 1974, and similarities between the two years included explosive convective processes over land in the afternoon over elevated terrain, a weak or absent diurnal cycle near Dakar, a noontime maximum in the south of the region offshore, a peak near midnight SE of Dakar, and weak diurnal variations in some ocean regions. The existence of a large diurnal cycle in an eastern Atlantic region downstream from a land area with a large diurnal variation indicated a possible connection between land and oceanic convection.

A82-26721 Photogrammetry from aircraft side camera movies - Winter MONEX. C. Warner (Virginia, University, Charlottesville, VA). Journal of Applied Meteorology, vol. 20, Dec. 1981, p. 1516-1526. 14 refs. NSF Grants No. ATM-79-00233; No. ATM-80-12214.

Side-looking cloud movie photogrammetry during the MONEX winter flights over the South China Sea in 1979 is described. The

films were made along the line of flight parallel to the cloud movement at heights ascertained from meteorological stations. Theoretical underpinnings to the method of calculation of cloud height using the technique are provided. Examples are given for photogrammetry of fractus, humilis, mediocris, congestus, and cumulonimbus clouds, along with height and width measurements. A method is outlined for measuring the cloud density in a field by use of a cardboard cutout against a projection of the recorded images, and density measurements are noted to have a factor of 2 uncertainty.

M.S.K.

A82-26844 Humidity measurement by infrared thermometry. S. B. Idso (U.S. Water Conservation Laboratory, Phoenix, AZ). Remote Sensing of Environment, vol. 12, Mar. 1982, p. 87-91. 12 refs.

A promising new approach to the remote sensing of plant water stress involves the evaluation of an index that is dependent upon air temperature and vapor pressure, in addition to the basic foliage temperature. The air temperature measurement is already being made by an appropriate sensor incorporated into some infrared thermometers; but the vapor pressure measurement has required a second instrument. This paper describes a technique for obtaining the vapor pressure measurement by viewing the cloudless sky directly overhead with the infrared thermometer itself, thus doing away with the need for a second instrument in the remote field assessment of plant water stress by infrared thermometry. (Author)

A82-26980 * Low-latitude cloudiness and climate feedback-Comparative estimates from satellite data. R. D. Cess (National Center for Atmospheric Research, Boulder, CO; New York, State University, Stony Brook, NY), B. P. Briegleb (National Center for Atmospheric Research, Boulder, CO), and M. S. Lian (New York, State University, Stony Brook, NY). Journal of the Atmospheric Sciences, vol. 39, Jan. 1982, p. 53-59. 19 refs. NSF Grant No. CME-79-09065; Contract No. NAS1-16444.

Three studies of the relative albedo to the IR components of cloud amount feedback are reviewed, and an approach to the seasonal variability in low-level cloud numbers is presented. Comparisons are made and uncertainties calculated for the predictions of cloud amounts from satellite data sets for outgoing IR flux. IR data is used directly for a linear regression analysis and seasonal and latitudinal variations are considered in terms of monthly-annual means for particular latitude zones. Investigations of NOAA-NESS satellite data revealed that cirrus clouds are transparent in the 10.5-12.5 microns range and cloud albedos decrease at wavelengths greater than 0.7 micron, which suggests a possibility of cloud-sky and clear-sky albedo comparisons at 0.5-0.7 micron. The inclusion of Rayleigh scattering and atmospheric water vapor absorption of sunlight is recommended to test the effects on observed contracts.

M.S.K.

A82-27040 # Detection of natural disasters via Meteosat. A. Robson, J. Morgan (ESA, European Space Operations Centre, Darmstadt, West Germany), R. W. Herschy (Department of the Environment, Water Data Unit, Reading, England), and J. Zschau (Kiel, Neue Universität, Kiel, West Germany). ESA Bulletin, no. 29, Feb. 1982, p. 10-18.

The operations, characteristics, and data distribution capabilities of the Meteosat 1 and 2 spacecraft which, due to separate system malfunctions, perform the mission capabilities of one satellite, are described. The GEO-situated satellites generate images in the visible and with two channels in the IR, at 11 and 6 microns. Sightings are made of hurricanes, cyclones, extratropical depressions, droughts, and floods, with whole-earth images being produced every 30 min. Raw images are received at the European Space Operations Center in Darmstadt, processed, and then sent back through the satellite to a dozen digital and over 200 analog user stations. Data Collection Platforms on board the spacecraft broadcast collected images at scheduled time intervals, when interrogated, or during an alert status when immediate information is required. Further applications to detect storm surges and earthquake activity are outlined. M.S.K.

A82-27627 # Analysis of a discrete-time linear model for geothermal flux reconnaissance from two or three aircraft infrared

measurements. J. L. Farah (Universidad Nacional Autónoma de México, Mexico City, Mexico). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 663-670. 10 refs.

Attention is given to a model of the earth's surface temperature which is fully based on work reported by Jaeger (1953), extensions of this work, and applications to remote-sensing problems in geology. The present investigation has the objective to perform a mathematical analysis of linearizations of these models. The basic equations are considered along with a model for g, questions of model linearization, direct and inverse relationships, and practical numerical considerations. The use of the linear model in producing maps of thermal inertia and/or of geothermal flux as viewed in the investigation, appears to yield a powerful tool for applications, mainly because at least in the case of the three-flight problem, one can take full advantage of the Fast-Fourier-Transform algorithms and of only three one-dimensional tables.

G.R.

A82-27650 # Detection of volcanic ash fall area from Landsat MSS CCT data - Eruption of Mt. Ontake in 1979. S. Kishi and S. Yazaki (National Research Center for Disaster Prevention, Sakura, Ibaraki, Japan). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 919-928. 7 refs.

Results are presented from a digital analysis study, conducted to detect the volcanic ash fall area from the October 1979 eruption of Mt. Ontake in Japan, using Landsat MSS imagery taken a few days before and after the event. The value difference of Bands 4 and 7 was found to be the most useful in detecting the ash fall area, which was covered by a layer more than 1 mm thick.

O.C.

A82-27657 # Detailed land use classification based on multitemporal Landsat-MSS-data. J. Lichtenegger (Zürich, Universität, Zurich, Switzerland) and K. Seidel (Zürich, Eidgenössische Technische Hochschule, Zurich, Switzerland). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 997-1005. 6 refs. Research supported by the Swiss National Science Foundation.

Use of the 'time dimension' is shown to improve the classification result in contrast to single frame analyses. Several Landsat multispectral scanner frames are registered by means of cross correlation and then superimposed on each other to form a multitemporal data set. These data are analyzed for detailed land use categories by a supervised classification algorithm. An example for the enhancement of the classification accuracy with a quantitative ground truth comparison is given. Finally data compression is performed by principal components analysis as a preprocessing procedure prior to conventional visual interpretation. A color representation of the main components demonstrates up to seven clearly distinguishable land use categories.

A82-27661 # Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/. M. Knapp and B. Koscec (Industroprojekt, Zagreb, Yugoslavia). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1039-1046.

A82-27665 * # Land cover classification accuracy as a function of sensor spatial resolution. B. L. Markham (NASA, Goddard Space Flight Center, Earth Survey Applications Div., Greenbelt, MD) and J. R. G. Townshend (NASA, Goddard Space Flight Center, Earth Survey Applications Div., Greenbelt, MD; Reading, University, Reading, Berks., England). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1075-1090, 12 refs.

The benefits obtained from sensor systems for monitoring earth resources will depend on the application and interpretation methods used. A frequently used analysis method is supervised per-pixel multispectral classification with a typical application being land cover classification. An investigation is conducted to evaluate the effect of spatial resolution on the ability to classify land cover types with per-pixel digital image classification techniques. Attention is also given to the documentation of changes in scene noise and the percentage of boundary pixels as a function of spatial resolution, in order to improve the understanding of the interrelationship between classification accuracy and spatial resolution. It is found that scene noise varies considerably between land cover categories. Changes in scene noise with coarsening resolution occur at different rates for different categories.

A82-27670 # Phenomena modelling of remotely sensed data by image rationing. J. Iisaka (IBM Japan, Ltd., Tokyo, Japan), N. Yoshimura, Y. Yasuda, and Y. Emori (Chiba University, Chiba, Japan). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1127-1140.

Phenomena modelling represents a useful approach to extract objective information from remotely sensed data in cases in which the resolution size is larger than the object. The concept of phenomena modelling has been applied to soil mapping, taking into account an elimination of the vegetation factor by an image rationing procedure. The considered study is concerned with an attempt to utilize phenomena modelling for an interpretation of information regarding the metropolitan area of Tokyo. Attention is given to problems regarding the detection of roughness features in the metropolitan area, aspects of modelling for the estimation of building height, the conduction of an experiment, a two-feature model for building height estimation, and a three-feature model for the building height estimation.

A82-27690 # Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images. A. Benitez, R. Sánchez, and R. Vital (Ministry of Agriculture and Hydraulic Resources, Mexico City, Mexico). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1353-1362. 6 refs.

A82-27696 # Assessment of change in Bangladesh coastal regions. M. A. H. Pramanik (Bangladesh Space Research and Remote Sensing Organization, Dacca, Bangladesh), F. C. Polcyn, and N. E. G. Roller (Michigan, Environmental Research Institute, Ann Arbor, MI). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1425-1434. Research supported by the Food and Agriculture Organization.

A study was conducted with the objective to determine whether a net gain or loss of land occurred along the coastline of Bangladesh between 1972 and 1979. The information provided by the study is to furnish a basis for a prediction regarding the new land which will be formed in the future. It is hoped, that based on this quantitative assessment, it may be possible to define steps to accelerate the process of land formation and to stabilize any gains. Questions of methodology are examined, taking into account aspects of preprocessing, problems of categorization, questions of registration, change detection, and the output products.

G.R.

A82-27701 # Utilisation of remote sensing in resources identification and land use in India - An integrated approach. R. K. Katti, M. G. Sardar, T. V. Pavate, and P. Venkatachalam (Indian Institute of Technology, Bombay, India). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1487-1497.

In this paper, remotely sensed data from Landsat-I in the form of imagery, computer compatible tape (CCT) outputs, aerial photo-

graphs and topographic maps are used for forestry and terrain evaluation in geotechnical engineering appraisal. The study shows that it is possible to develop an integrated classification system encompassing forest resources evaluation and terrain evaluation for engineering uses in particular, and agriculture development and geological aspects in general. Thus the integrated approach helps in reducing repetitiveness of sampling on the one hand, and on the other facilitates the development of thematic maps in a more rational way. The approach concerns an understanding of the physical and chemical properties of deposits, and their relation to the surface features observed in remotely sensed data in the form of CCT digital output and imagery. Genetic and morphological factors are taken into account in the analysis. (Author)

A82-27704 # Remote SO2 emission measurements with correlation spectrometers from volcanoes. L. Daubner, J. Davies, M. Millan (Barringer Research, Ltd., Toronto, Canada), and R. Stoiber (Dartmouth College, Hanover, NH). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings, Volume 3. Ann Arbor, MI. Environmental Research Institute of Michigan, 1981, p. 1519-1526. 17 refs.

The way in which correlation spectrometers can be used in monitoring emissions of SO2 from volcanoes as an indicator of volcanic activity is described. It is shown that volcanic gas geochemistry can provide indications of increasing magmatic contributions to eruption. Mass flows of SO2 at Mount Etna are found to correlate well with a model of magma movement within the conduit system proposed by Wadge (1977). A table giving the specifications of a correlation spectrometer is included.

A82-28133 † The atlas 'Geographical Results of Spaceborne Multispectral Experiments' (Atlas 'Geograficheskie rezul'taty mnogozonal'nykh kosmicheskikh eksperimentov'). Iu, F. Knizhnikov and V. I. Kravtsova. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodezija i Aerofotos'emka, no. 1, 1982, p. 37-41. In Russian.

A82-28152 * Model studies of laser absorption computed tomography for remote air pollution measurement. D. C. Wolfe, Jr. and R. L. Byer (Stanford University, Stanford, CA). Applied Optics, vol. 21, Apr. 1, 1982, p. 1165-1178. 41 refs. Grant No. NsG-2289; Contract No. F4920-77-C-0092.

Model studies of the potential of laser absorption-computed tomography are presented which demonstrate the possibility of sensitive remote atmospheric pollutant measurements, over kilometer-sized areas, with two-dimensional resolution, at modest laser source powers. An analysis of this tomographic reconstruction process as a function of measurement SNR, laser power, range, and system geometry, shows that the system is able to yield twodimensional maps of pollutant concentrations at ranges and resolutions superior to those attainable with existing, direct-detection laser radars. O.C.

A82-28295 * # Precipitation measurements from space -Workshop summary 28 April-1 May 1981, Greenbelt, MD. D. Atlas and O. W. Thiele (NASA, Goddard Space Flight Center, Laboratory for Atmospheric Sciences, Greenbelt, MD). American Meteorological Society, Bulletin, vol. 63, Jan. 1982, p. 59-63. 6 refs.

The goals and methods for global precipitation measurements from space are examined. Records currently exist only for visible and IR scans of cloud properties, and are applied from GEO for detecting diurnal variations in precipitation. Microwave radiometry is noted to be a suitable method for supplementing the visible and IR data for measuring stratiform oceanic precipitation, and when used at up to 3 microns can detect areas, if not amounts, of precipitation from GEO. Applications of radar altimeters are proposed in terms of modifications to the Seasat-type 2.2 cm radar, the use of surface target attentuation radar, of frequency agile rain radar, or of adaptive pointing radar. Soil moisture sensing is available with passive microwave radiometry in the 20-50 cm bands, or active sensing in the 5-8 cm bands. The utilization of GARP ground truth data is explored, along with statistical methods for treating the data samples.

N82-16443*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

REMOTE SENSING DATA APPLIED TO LAND-USE SURVEY AT THE PARAIBA VALLEY

Nelson deJesusParada, Principal Investigator, Magda Adelaide Lombardo, Evlyn Marcia Leao DeMoraesNovo, Madalena Niero, and Celina Foresti May 1981 10 p refs Presented at the 7th Intern. Symp. on Machine Process. of Remotely Sensed Data, West Lafayette, Ind., 23-26 Jun. 1981 Sponsored by NASA **ERTS**

(E82-10025: NASA-CR-164812: INPE-2081-RPE/315) Avail: NTIS HC A02/MF A01 CSCL 08B

The Paraiba Valley (state of Sao Paulo) was selected as the test site in a study to develop a methodology for land-use survey and to determine the land-use modification rates using data of LANDSAT system. Both visual and automatic interpretation methods were employed to analyze seven land-use classes. They are: urban area, industrial area, bare soil, cultivated area, pastureland, reforestation and natural vegetation. By means of visual interpretation little spectral differences among those classes were observed. The automatic classification of LANDSAT MSS data using maximum likelihood algorithm shows a 39% average error of omission and a 3.4% error of commission for the seven classes. The classification results were under the influences of the complexity of land-uses in the study area, the large spectral variations of analyzed classes and the low resolution of LANDSAT Author

N82-16613# National Oceanic and Atmospheric Administration. Silver Spring, Md. Air Resources Labs.

DEMONSTRATION OF A LONG-RANGE ATMOSPHERIC TRACER SYSTEM USING PERFLUOROCARBONS

Gilbert J. Ferber, Kosta Telegadas, Jerome L. Heffter, C. Ray Dickson, Russell N. Dietz, and Philip W. Krey Apr. 1981 84 p

(Contract DE-AI01-80EV-10081)

(PB82-106246; NOAA-TM-ERL-ARL-101; NOAA-81080301) Avail: NTIS HC A05/MF A01 CSCL 13B

Regional-scale tracer experiments are needed to validate atmospheric dispersion aspects of air pollution models. The capability of a new system, using perfluorocarbon tracers (PFTs), for long-range dispersion experiments at reasonable cost was demonstrated in two experiments. Two PFTs (C7F14 and C8F16) were released simultaneously with SF6 and two heavy methanes. The PFT system provides automatic sequential samplers and rapid. inexpensive analyses down to 2 parts per 10 to the + 15th power of air. PFT concentrations were measured 600 km away, up to three days after release. Performance of the PFT system was excellent and a consistent set of tracer data was obtained.

N82-17562*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

CHARACTERIZING USER REQUIREMENTS FOR FUTURE LAND OBSERVING SATELLITES

J. L. Barker, P. J. Cressy, C. C. Schnetzler, and V. V. Salomonson Dec. 1981 56 p refs (NASA-TM-83867) Avail: NTIS HC A04/MF A01 CSCL

05B

The objective procedure was developed for identifying probable sensor and mission characteristics for an operational satellite land observing system. Requirements were systematically compiled, quantified and scored by type of use, from surveys of federal, state, local and private communities. Incremental percent increases in expected value of data were estimated for critical system improvements. Comparisons with costs permitted selection of a probable sensor system, from a set of 11 options, with the following characteristics: 30 meter spatial resolution in 5 bands and 15 meters in 1 band, spectral bands nominally at Thematic Mapper (TM) bands 1 through 6 positions, and 2 day data turn around for receipt of imagery. Improvements are suggested for both the form of questions and the procedures for analysis of future surveys in order to provide a more quantitatively precise definition of sensor and mission requirements.

N82-18772*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

MULTIDIMENSIONAL ASPECTS: OZONE, TEMPERATURE AND TRANSPORT

In its The Stratosphere 1981 Jan. 1982 99 p

Avail: NTIS HC A22/MF A01 CSCL 04A

The capability for obtaining four-dimensional data on stratospheric structure, dynamics, and zone is discussed. Progress in the development of multidimensional models of the stratosphere is reported. The discussion of multidimensional aspects of the stratosphere is divided into four major sections: observations, analysis and interpretation, modeling, and transport of trace species.

T.M.

N82-18808*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, Md.

CLIMATE OBSERVING SYSTEM STUDIES: AN ELEMENT OF THE NASA CLIMATE RESEARCH PROGRAM: WORK-SHOP REPORT

Sep. 1980 154 p refs

(NASA-TM-84040) Avail: NTIS HC A08/MF A01 CSCL 048

Plans for NASA's efforts in climatology were discussed. Targets for a comprehensive observing system for the early 1990's were considered. A program to provide useful data in the near and mid-term, and a program to provide for a feasibility assessment of instruments and methods for the development of a long-term system were discussed. Climate parameters that cannot be measured from space were identified. Long-term calibration, intercomparison, standards, and ground truth were discussed.

R.J.F.

N82-19256# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

GENERAL CONFIGURATION AND INTERNAL DISPOSITION OF EQUIPMENT IN A SATELLITE FOR COLLECTING ENVIRONMENTAL DATA

Carlos deOliveira Lino and Aydano Barreto Carleial Oct. 1981 32 p refs In PORTUGUESE; ENGLISH summary Presented at 33d Ann. Meeting of SBPC, Salvador, 81-5 Jul. 1981 (INPE-2240-PRE/026) Avail: NTIS HC A03/MF A01

The general configuration of an experimental satellite for reception and retransmission to the Earth of environmental data is described. The data originates from small automatic Earth stations equipped with sensors and capable of operating in remote locations. The interrelationships among the equipment blocks constituting the satellite and between these and the outside medium, which were used in the search for an adequate disposition for the equipment blocks are presented. The proposed internal and external disposition for the blocks is presented in drawings. Some mechanical quantities (position of the center of mass, moments of inertia) resulting from the mass distribution inherent to the chosen configuration, are calculated.

N82-19601* Michigan Energy and Resource Research Association. Detroit.

RESOURCEFUL DECISIONS: LANDSAT IN MICHIGAN
Todd Anuskiewicz, Principal Investigator and Roy Meador [1982]
29 p Sponsored by NASA Original contains color imagery.
Original photography may be purchased from the EROS Data
Center, Sioux Falls, S.D. 57198. ERTS

(E82-10037; NASA-CR-164771) Avail: SOD HC CSCL 05B The capabilities of LANDSAT and the continuous advantages the satellite offers in remote sensing are reviewed. The processing and application of data from the satellite to the study of resource and environmental needs in Michigan highlighted include: land use: classification of trophic states in lakes and the monitoring of water quality; prospecting for oil, gas, minerals, and water; identifying wetlands, wildlife habitats, and recreation areas; forest management; routing power lines; transportation planning; and surveying the Great Lakes Basin. The work of the Environmental Research Institute of Michigan in solving modern sensor technological problems and in gathering ground truth is reported as well as activities available through the University of Michigan remote sensing program.

A.R.H.

N82-19609*# Mississippi State Univ., Mississippi State.
APPLICATION OF REMOTE SENSING TO STATE AND
REGIONAL PROBLEMS Semiannual Progress Report, 1 Nov.
1980 - 30 Apr. 1981

W. Frank Miller, John S. Powers, Jon R. Clark, Jimmy L. Solomon, and Sidney G. Williams, Principal Investigators 30 Apr. 1981 106 p refs ERTS

(Grant NGL-25-001-054)

(E82-10033; NA SA - CR - 164746; SA PR - 15) A vail: NTIS HC A06/MF A01 CSCL 05B

The methods and procedures used, accomplishments, current status, and future plans are discussed for each of the following applications of LANDSAT in Mississippi: (1) land use planning in Lowndes County; (2) strip mine inventory and reclamation; (3) white-tailed deer habitat evaluation; (4) remote sensing data analysis support systems; (5) discrimination of unique forest habitats in potential lignite areas; (6) changes in gravel operations; and (7) determining freshwater wetlands for inventory and monitoring. The documentation of all existing software and the integration of the image analysis and data base software into a single package are now considered very high priority items.

A.R.H.

N82-19641# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

METHODOLOGY OF THE INTERPRETATION OF REMOTE SENSING DATA AND APPLICATIONS IN PEDOLOGY

Mario Valerio Filho, Jose Carlos Neves Epiphanio, and Antonio Roberto Formaggio Aug. 1981 55 p refs In PORTUGUESE; ENGLISH summary

(INPE-2211-MD/008) Avail: NTIS HC A03/MF A01

A global view of photointerpretation techniques in soil survey is presented. Photopedologic methods are described which served as a base for the systematic approach to orbital data interpretation for soil survey. Several pedology research projects in Brazil are described.

A.R.H.

N82-19740# Cologne Univ. (West Germany). Inst. fuer Geophysik und Meteorologie.

ATLAS OF THE GLOBAL DISTRIBUTION OF THE TOTAL OZONE CONCENTRATION ACCORDING TO SATELLITE MEASUREMENTS [ATLAS DER GLOBALVERTEILUNG DES GESAMTOZONBETRAGES NACH SATELLITENMESSUNGEN (APRIL 1970-MAY 1972)]

Anver Ghazi 1980 47 p refs In GERMAN

(Mitt-28: ISSN-0069-5882) Avail: NTIS HC A03/MF A01
An atlas of interdisciplinair research on the many different aspects of ozone research is presented. Maps were drawn from backscatter ultraviolet satellite observations. Data are compiled on global distribution of the total ozone layer.

E.A.K.

N82-20588*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

THE UTILIZATION OF ORBITAL IMAGES AS AN ADEQUATE FORM OF CONTROL OF PRESERVED AREAS [UTILIZACAO DE IMAGENS ORBITAIS, COMO FORMA ADEQUADA NO CONTROLE DE AREAS DE PRESERVACAO]

Nelson deJesusParada, Principal Investigator and Joao Roberto dosSantos May 1981 14 p refs In PORTUGUESE; ENGLISH summary Sponsored by NASA; submitted for publication ERTS

(E82-10065; NASA-CR-165087; NAS 1.26:165087; INPE-2064-RPE/306) Avail: NTIS HC A02/MF A01 CSCL 08B

The synoptic view and the repetitive acquisition of LANDSAT imagery provide precise information, in real-time, for monitoring preserved areas based on spectral, temporal and spatial properties. The purpose of this study was to monitor, with the use of multispectral imagery, the systematic annual burning, which causes the degradation of ecosystems in the National Park of Araguaia. LANDSAT imagery of channel 5 (0.6 a 0.7 microns) and 7 (0.8 a 1.1 microns), at the scale of 1:250.000, were used to identify and delimit vegetation units and burned area, based on photointerpretation parameter of tonality. The results show that the gallery forest can be discriminated from the seasonally flooded campo cerrado, and that 4,14% of the study area was burned. Conclusions point out that the LANDSAT images can be used for the implementation of environmental protection in national parks.

N82-20592*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

AMAZONAS PROJECT: APPLICATION OF REMOTE SENSING TECHNIQUES FOR THE INTEGRATED SURVEY

OF NATURAL RESOURCES IN AMAZONAS [PROJETO AMAZONAS APLICACAO DAS TECNICAS DE SENSORIAM-ENTO REMOTO PARA LEVANTAMENTO INTEGRADO DOS RECURSOS NATURAIS DO AMAZONAS]

Nelson deJesusParada, Principal Investigator Mar. 1981 95 p refs In PORTUGUESE Sponsored by NASA ERTS (E82-10069; NASA-CR-165091; NAS 1.26:165091; INPE-2019-NTE/166) Avail: NTIS HC A05/MF A01 CSCL 08F

The use of LANDSAT multispectral scanner and return beam vidicon imagery for surveying the natural resources of the Brazilian Amazonas is described. Purposes of the Amazonas development project are summarized. The application of LANDSAT imagery to identification of vegetation coverage and soil use, identification of soil types, geomorphology, and geology and highway planning is discussed. An evaluation of the worth of LANDSAT imagery in mapping the region is presented. Maps generated by the project are included.

N82-20593*# Canada Centre for Remote Sensing, Ottawa (Ontario)

HEAT CAPACITY MAPPING MISSION (HCMM): INTERPRETATION OF IMAGERY OVER CANADA Final Report

Josef Cihlar, Principal Investigator and R. G. Dixon Aug. 1981 72 p refs Sponsored by NASA Original contains imagery. Original imagery may be purchased from NASA Goddard Space Flight Center. (code 601), Greenbelt, Md. 20771. Domestic users send order to 'Attn: National Space Science Data Center'; non-domestic users send orders to 'Attn: World Data Center A for Rockets and Satellites'. HCMM

(E82-10070: NASA-CR-165092; NAS 1.26:165092) Avail: NTIS HC A04/MF A01 CSCL 05B

Visual analysis of HCMM images acquired over two sites in Canada and supporting aircraft and ground data obtained at a smaller subsite in Alberta show that nightime surface temperature distribution is primarily related to the near-surface air temperature; the effects of topography, wind, and land cover were low or indirect through air temperature. Surface cover and large altitudinal differences were important parameters influencing daytime apparent temperature values. A quantitative analysis of the relationship between the antecedent precipitation index and the satellite thermal IR measurements did not yield statistically significant correlation coefficients, but the correlations had a definite temporal trend which could be related to the increasing uniformity of vegetation cover. The large pixel size (resulting in a mixture of cover types and soil/canopy temperatures measured by the satellite) and high cloud cover frequency found in images covering both Canadian sites and northern U.S. were considered the main deficiencies of the thermal satellite data.

N82-20595*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

LAND USE IN THE PARAIBA VALLEY THROUGH RE-MOTELY SENSED DATA [USO DA TERRA NO VALE DO PARAIBA ATRAVES DE DADOS DE SENSORIAMENTO REMOTO RELATORIO FINAL]

Nelson deJesusParada, Principal Investigator, Magda Adelaide Lombardo, Evlyn Marcia Leao deMoraes Novo, Madalena Niero, and Celina Foresti Dec. 1980 95 p refs In PORTUGUESE: ENGLISH summary Sponsored by NASA Original contains color imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. 57198. ERTS (E82-10072; NASA-CR-165094; NAS 1.26:165094;

INPE-1972-RPE/278) Avail: NTIS HC A05/MF A01 CSCL 08B

A methodology for land use survey was developed and land use modification rates were determined using LANDSAT imagery of the Paraiba Valley (state of Sao Paulo). Both visual and automatic interpretation methods were employed to analyze seven land use classes: urban area, industrial area, bare soil, cultivated area, pastureland, reforestation and natural vegetation. By means of visual interpretation, little spectral differences are observed among those classes. The automatic classification of LANDSAT MSS data using maximum likelihood algorithm shows a 39% average error of omission and a 3.4% error of inclusion for the seven classes. The complexity of land uses in the study area, the large spectral variations of analyzed classes, and the low resolution of LANDSAT data influenced the classification results.

N82-20615*# Florida Univ., Gainesville. Dept. of Fruit Crops.
A SATELLITE FROST FORECASTING SYSTEM FOR FLORIDA Final Report

J. David Martsolf *In its* Appl. of Satellite Frost Forecast Technol. to Other Parts of the U.S., Phase 2 Nov. 1981 42 p refs Presented at the Workshop on Appl. of Weather Data to Agr. and Forest Prod., Anaheim, Calif., 30-31 Mar. 1981; sponsored by American Meteorological Soc. and NSF

Avail: NTIS HC A12/MF A01 CSCL 04B

Since the first of two minicomputers that are the main components of the satellite frost forecast system was delivered in 1977, the system has evolved appreciably. A geostationary operational environmental satellite (GEOS) system provides the satellite data. The freeze of January 12-14, 1981, was documented with increasing interest in potential of such systems. Satellite data is now acquired digitally rather than by redigitizing the GOES-Tap transmissions. Data acquisition is now automated, i.e., the computers are programmed to operate the system with little, if any, operator intervention.

A.R.H.

N82-20776 Bundesgesundheitsamt, Berlin (West Germany). Inst. fuer Wasser-, Boden- und Lufthygiene.

OPTIMAL NETWORK DENSITY FOR ATMOSPHERIC RECORDING [OPTIMALE NETZDICHTE FUER ATMOSPHAERISCHE BEOBACHTUNGEN. GRUNDLEGENDE BETRACHTUNGEN IHRER EXISTENZ UND ERMITTLUNG] Walter Fett In Deutscher Wetterdienst Soc. Meteorol. Palatina. 1780-1795 1980 p 167-168 ref In GERMAN; ENGLISH summary

Avail: Issuing Activity

Statistical parameters are derived in a theoretical-statistical manner for space-correlated events. The procedure is applied to the case of heavy precipitation in a long range dense recording network and to cases of air pollution measurements in an urban network.

J.M.S.

N82-20782 Deutsche Forschungs- und Versuchsanstalt fuer Luft- und Raumfahrt, Oberpfaffenhofen (West Germany). Inst. fuer Physik der Atmosphaere.

SOUNDING THE AEROSOL DISTRIBUTION OVER THE UPPER RHINE VALLEY IN THE VALLEY IN THE SPEYER AREA BY MEANS OF LIDAR {SONDIERUNG DER AEROSOLSCHICHTUNG UEBER DEM OBERRHEINGRABEN IN RAUM SPEYER MITTELS FLUGZEUGLIDAR}

P. Moerl, M. E. Reinhardt, W. Renger, and R. Schellhase *In* Deutscher Wetterdienst Soc. Meteorol. Palatina, 1780-1795 1980 p 183-184 refs In GERMAN

Avail: Issuing Activity

The aerosol lidar system on meteorological research airplanes is outlined. The sonde method makes the following observations: (1) soil measurements (smog layers with temperature boundary effects): (2) control of harmful material emission by large industrial complexes: (3) determination of fresh air flow course as an aid in construction planning; (4) precision sounding of smoke plumes; (5) sounding upper layers of clouds; and (6) fine structure and dynamic methods of aerosol stratification.

Transl. by E.A.K.

N82-20802 Freie Univ., Berlin (West Germany). Inst. fuer Meteorologie.

DUST FROM THE SAHARA IN SATELLITE IMAGES [SAHARASTAUB IM SATELLITENBILD]

Ute Katergiannakis In Deutscher Wetterdienst Soc. Meteorol. Palatina, 1780-1795 1980 p 246-248 refs In GERMAN; ENGLISH summary

Avail: Issuing Activity

In satellite images of North Africa and the surrounding seas visibility is often obscured by sand and dust. This cloudiness appears in images of visible targets as a fine, light grey screen, which is probably a cirrostratus cloud. In infrared images sand and dust storms are seldom observed. Images of a dust wall in the inner Sahara desert, a sandstorm over the Mediterranean, and a dust cloud over the Atlantic ocean are shown.

E.A.K.

N82-21667*# Research Triangle Inst., Research Triangle Park,

A STUDY OF MODEL PARAMETERS ASSOCIATED WITH THE URBAN CLIMATE USING HCMM DATA Quarterly

Progress Report

Nov. 1981 5 p HCMM (Contract NAS5-26442)

(E82-10140; NASA-CR-168525; NAS 1.26:168525) Avail: NTIS HC A02/MF A01 CSCL 13B

The use of infrared and visible data from the Heat Capacity Mapping Mission (HCMM) and in situ data to study the intensity of the urban heat island of Saint Louis is described. Analysis of HCMM data shows that an urban heat island exists day and night in all seasons when clear skies prevail. The lower albedo value of the urban region during the day suggests that the higher temperatures are due to more absorption of solar radiation. Preliminary analysis of in situ meteorological data was performed after merging with HCMM data, and surface roughness, the exchange coefficient, and the soil moisture were calculated. J.D.

N82-21683*# Research Triangle Inst., Research Triangle Park, N. C. Geosciences Dept.

A STUDY OF MODEL PARAMETERS ASSOCIATED WITH THE URBAN CLIMATE USING HCMM DATA Quarterly Progress Report

Jul. 1981 7 p HCMM (Contract NAS5-26442)

(E82-10159; NASA-CR-168542; NAS 1.26:168542) Avail: NTIS HC A02/MF A01 CSCL 13B

Infrared and visible data from the Heat Capacity Mapping Mission (HCMM) satellite were used to study the intensity of the urban heat island, commonly defined as the temperature difference between the center of the city and the surrounding suburban and rural regions, as a function of changes in the season and changes in meteorological conditions in order to derive various parameters which may be used in numerical models for urban climate. The analysis was focused on the city of St. Louis: and in situ data from St. Louis was combined with HCMM data in order to derive the various parameters. The HCMM data were mapped onto a Mercator projection map of the city and ground temperatures were established using data corrected for the effects of atmospheric absorption. The corrected and uncorrected HCMM data were compared to determine the magnitude of the error induced by atmospheric effects.

N82-21684*# Research Triangle Inst., Research Triangle Park, N. C. Geosciences Dept.

A STUDY OF MODEL PARAMETERS ASSOCIATED WITH THE URBAN CLIMATE USING HCMM DATA Quarterly Progress Report

Apr. 1981 7 p HCMM

(Contract NAS5-26442)

(E82-10160; NASA-CR-168543; NAS 1.26:168543) Avail: NTIS HC A02/MF A01 CSCL 13B

Progress in the study of the intensity of the urban heat island is reported. The intensity of the heat island is commonly defined as the temperature difference between the center of the city and the surrounding suburban and rural regions. The intensity is considered as a function of changes in the season and changes in meteorological conditions in order to derive various parameters which may be used in numerical models for urban climate. Twelve case studies were selected and CCT's were ordered. In situ data was obtained from sixteen stations scattered about the city of St. Louis. Upper-air meteorological data were obtained and the water vapor and the temperature data were processed. Atmospheric transmissivities were computed for each of the case studies.

N82-21685*# Pennsylvania State Univ., University Park. Dept. of Meteorology.

APPLICATIONS OF HCMM SATELLITE DATA TO THE STUDY OF URBAN HEATING PATTERNS Final Report, Dec. 1977 - Dec. 1980

Toby N. Carlson, Principal Investigator 1 Dec. 1980 71 p refs Original contains imagery. Original imagery may be purchased from NASA Goddard Space Flight Center, (code 601), Greenbelt, Md. 20771. Domestic users send orders to 'Attn: National Space Science Data Center'; non-domestic users send orders to 'Attn: World Data Centr A for Rockets and Satellites'. HCMM (Contract NAS5-24264)

(E82-10161; NASA-CR-168544; NAS 1.26:168544) Avail: NTIS HC A04/MF A01 CSCL 13B

A research' summary is presented and is divided into two major areas, one developmental and the other basic science. In

the first three sub-categories are discussed: image processing techniques, especially the method whereby surface temperature image are converted to images of surface energy budget, moisture availability and thermal inertia; model development; and model verification. Basic science includes the use of a method to further the understanding of the urban heat island and anthropogenic modification of the surface heating, evaporation over vegetated surfaces, and the effect of surface heat flux on plume spread.

T.M.

03 GEODESY AND CARTOGRAPHY

Includes mapping and topography.

A82-20340 † Reconstruction of a present-day landscape map of a central part of Italy using space images (Obnovlenie karty sovremennykh landshaftov tsentral'noi chasti Italii po kosmicheskim snimkam). E. V. Glushko, E. P. Romanova, and K. N. Sukhanova (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 19-26. 7 refs In Russian.

The possibility of reconstructing a landscape map on the basis of space images is demonstrated by the example of a landscape map of a portion of central Italy at a scale of 1:2,000,000. Multispectral scanner data were obtained on October 3, 1980 by the Meteorsatellite Fragment system in the 0.7-0.8 and 0.8-1.1 micron spectral bands for an area of 17,600 sq km. The images were used to produce a map scheme for interpreting the landscapes; this map is also compared with a natural-resources map of the same territory.

B.J.

A82-20407 Mapping in tropical forests - A new approach using the laser APR. H. Arp, J. C. Griesbach (TRANARG CA, Caracas, Venezuela), and J. P. Burns. *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 91-100. 7 refs.

Novel techniques involving the Laser Airborne Profile Recorder (Laser APR) have been developed as a solution to the problem of topographic mapping in dense tropical forests. The narrow laser beam used is able not only to record profiles of the tree canopy, but penetrate through small openings to ground level. Tree heights are then determined by comparing recorded profiles. The system is applied to the mapping of the Rio Caura reservoir site in southern Venezuela, where topographic maps showing 5-10 m contours of the 800 sq km area were completed in five months by means of Laser APR flights at 1.5 km intervals. A special, three-channel Autotape, mounted on a helicopter, was used in photogrammetric control location by trilateration from ground stations to the hovering aircraft. Many Laser APR-derived elevations were identified on the existing, 1:50,000-scale photography used for the mapping. O.C.

A82-21036 Application and experimental verification of an empirical backscattering cross section model for the earth's surface. W. Keydel (Deutsche Forschungs- und Versuchsanstalt für Luft- und Raumfahrt, Institut für Hochfrequenztechnik, Oberpfaffenhofen, West Germany). IEEE Transactions on Geoscience and Remote Sensing, vol. GE-20, Jan. 1982, p. 67-71.

The spectral power density of ground clutter for a radar moving horizontally over the ground is calculated and the results are compared with measured values. An empirical model for the backscattering per unit area is employed to generate values for scattering cross sections from a sea surface. The predictions are found to agree well with 60% grazing angle measurements of the Baltic Sea. The analysis is concluded to hold for incoherent scattering, thereby extending the model's effectiveness into the statistical area.

M.S.K.

A82-21037 On randomly absorbing and scattering surface layers. E. Schanda (Bern, Universität, Berne, Switzerland). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 72-76. 7 refs.

Radar wave scattering from a natural surface modelled as a heterogeneous layer of finite thickness consisting of randomly distributed concentrations and dilutions within a background dielectric is studied. The illumination of the modelled surface with a coherent plane wave yields a coherent and diffuse backscatter, and the dimensions of the fluctuations of the complex index of refraction is described by a delta correlation in the direction perpendicular to the mean surface and by a finitely extended correlation in the plane of the mean surface. A continuous distribution of random absorption and phase irregularities is formulated and consideration is given to albedo and emissivity. The replacement of the planar nature of the model with more realistic

phase and absorption distributions, including the background medium and the natural parameters of the surface layer is indicated.

M.S.K.

A82-21038 A radar signature model for partially coherent scattering from irregular surfaces. E. P. W. Attema, P. J. Van Kats, and L. Krul (Delft, Technische Hogeschool, Delft, Netherlands). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 76-84. 9 refs.

An electromagnetic scattering model for radar surface sensing is presented which accounts for spatial correlation beyond the contour of the illuminated area. Specifically, targets whose sizes of irregularities and radii of curvature are not larger than the radar wavelength and which have sizes which are not much smaller than the scanned area are considered. A two scale surface roughness is examined for small scale irregularities riding on gentle undulations. Particular attention is given to discrepancies between radar backscatter data from airborne scatterometry and from short-range scatterometry. The scattering model is compared with existing sea surface scatterometer data with favorable results.

M.S.K.

A82-22147 Landsat thermal imaging of alpine regions. R. Lougeay (State University, New York, Geneseo, NY). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Feb. 1982, p. 269-273. 15 refs.

Satellite-borne thermal data from Landsat are shown to be of utility in alpine regions. Even the highly degraded Landsat-3 thermal data are shown to contain information which aids in the interpretation of imagery depicting highly glacierized landscapes with extreme topographic texture. Comparison is given between Landsat-3 visible (MSS band 5,600-700 nm) and thermal infrared (MSS band 8, 10,400-12,600 nm) images. Thermal patterns displayed on the Landsat thermal image are compared with ground level observations of radiometric emittance. The thermal data are shown to provide a rendition of topographic texture lacking in other spectral bands of Landsat data. (Author)

A82-25234 † Orbital methods of celestial geodesy (Orbital'nye metody kosmicheskoi geodezii). M. S. Urmaev. Moscow, Izdatel'stvo Nedra, 1981. 256 p. 74 refs. In Russian.

The book presents the state-of-the-art in the mathematical treatment of measurements used in orbital methods of celestial geodesy for the determination of the coordinates of satellite observation points. Basic principles of the use of orbital methods are examined, with attention given to the linearization of the fundamental equations and the solution of the overdetermined system of equations by the least squares method. The theory of the two-body problem is considered as the theoretical basis of the method, and a model of perturbed motion of a satellite is analyzed. The theory and methods of the calculation of the matrixant, a matrix of derivatives of the changing orbital elements with respect to their initial values, are examined in detail, and the numerical integration of the differential equations of motion by the Runge-Kutta, Adams, sequential approximation, Shenks, Bulirsh and Stoer, and Everhart methods is considered. The problem of the coordinate-time coupling of the results of spaceborne photography of the earth and moon by orbital methods is also discussed, and the nature of the measurements of orbital methods is examined in relation to the problem of observability.

A82-26012 A structural synthesis of Brazil, based on the study of major lineaments derived from remote sensing imagery interpretation. O. P. G. Braun (Companhia de Pesquisa de Recursos Minerais, Rio de Janeiro, Brazil). *Photogrammetria*, vol. 37, Feb. 1982, p. 77-108. 11 refs. Translation. Research sponsored by the Companhia de Pesquisa de Recursos Minerais.

A structural synthesis of the Brazil topography is presented, based on SAR imagery from Landsat and SLAR data. Lineaments are divided into straight or curved alignments of discontinuous linear and congruent elements, and linear features extending several hundred kilometers. Manifestations of fracture zones are reviewed, including quartz bands, intercrossed faults, and volcanic rock dykes. The extended lineaments are noted to originate from fault zones with high angle planes, and main zones are distinguished in terms of post-Bambui activity and diastrophism-originated faults. Tectonic

03 GEODESY AND CARTOGRAPHY

interpretations are given of the structural differences between the western and eastern parts of the country. Landsat topographic data was gathered on band 7 and phytophysiognomic properties on band 5.

M.S.K.

A82-26048 Area determination by means of the method of finite elements (Flächenbestimmung mit der Methode der Finiten Elemente). G. Melykuti (Budapesti Muszaki Egyetem, Budapest, Hungary). Bildmessung und Luftbildwesen, vol. 50, Mar. 1, 1982, p. 49-58. In German. Research supported by the Alexander von Humboldt-Stiftung.

The method of finite elements provides very suitable approaches to take into consideration topographical characteristics and particularities in a mathematical description of the surface of the earth. The mathematical foundations of this method are discussed. The considered surface is a two-dimensional scalar field. The values of the scalar field and certain field characteristics are known at a finite number of points. Questions regarding the given relationships can be solved by differential geometry. The area can be determined with the aid of a differential equation and various boundary conditions. Approaches for solving the involved problems are discussed. An approximate solution can be obtained on the basis of the principle of the Ritz method by making use of a finite element procedure. This approach provides appropriate possibilities for taking into consideration the various boundary conditions.

G.R.

A82-26266 * Harmonic structure of Pc 3-4 pulsations. K. Takahashi and R. L. McPherron (California, University, Los Angeles, CA). Journal of Geophysical Research, vol. 87, Mar. 1, 1982, p. 1504-1516. 49 refs. Grant No. NGL-05-007-004; Contract No. N00014-75-C-0396.

Power spectra of magnetic pulsations observed at synchronous orbit by the ATS 6 satellite often show several spectral peaks simultaneously. Such pulsations, called harmonic events because of the nearly constant separation between successive peaks, are continuously observed in the dayside in the Pc 3-4 frequency range (6.6-100 mHz). The harmonic events are seen clearly only in the east-west magnetic field component. The spectral peaks are regularly spaced with a typical minimum separation of 14 mHz in the morning gradually decreasing to 10 mHz in the afternoon. In the dynamic spectra of harmonic events, the fundamental mode is usually absent. In addition, the relative amplitudes of the higher harmonics depend on the magnetic latitude. These observed features can be explained by a standing Alfven wave consisting of many discrete harmonic frequencies. A statistical analysis of power spectra demonstrates that at least 10-30% of Pc 3 pulsations can be classified as harmonic events. For a selected event on August 7, 1975, the plasma mass density at the synchronous orbit is estimated to be 3-8 hydrogen mass/cu cm. (Author)

A82-26843 Cliff and slope topography of part of the Grand Canyon, Arizona as characterized on a Seasat radar image. G. L. Berlin, G. C. Schaber, R. C. Kozak, and P. Chavez, Jr. (U.S. Geological Survey, Flagstaff, AZ). Remote Sensing of Environment, vol. 12, Mar. 1982, p. 81-85.

A82-27507 † Investigation of the earth on the basis of space photographic data (Issledovanie planety zemlia po materialam kosmicheskoi fotoinformatsii). V. D. Bol'shakov. In: Scientific lectures on aviation and astronautics 1980.

Moscow, Izdatel'stvo Nauka, 1981, p. 57-66. In Russian.

The remote sensing of the earth's surface using the Zond and Salyut spacecraft is discussed, with particular emphasis on the use of space data for small-scale mapping and the revision of existing maps. The significance of color and multispectral photography for the remote sensing of earth resources is considered, and results on the study of the earth's figure from its planetary photographs are presented. Attention is also given to the development of efficient and automated operational systems of complex and thematic interpretation.

B.J.

A82-27584 # Airborne laser systems use in terrain mapping.
L. E. Link and J. G. Collins (U.S. Army, Engineer Waterways

Experiment Station, Vicksburg, MS). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 95-110. 21 refs.

Perhaps the most significant recent advancements in measurement technology have resulted from the invention of the laser. As early as the mid-1960's, lasers were being placed in aircraft to examine their applicability to terrain mapping. The emerging new mapping technique has the potential to dramatically improve the capability to map topographic features and to provide quantitative environmental quality data that was previously impractical to acquire over large areas. Airborne laser mapping systems have two major components. A laser altimeter accurately measures the distance from the aircraft to a reflecting surface. Simultaneously, the positioning system records the location and orientation of the aircraft. Attention is given to details of laser system operation, positioning system operation, the status of available airborne systems, and airborne laser systems applications.

A82-27611 # Application of side-looking color infrared photography for structure detection in subtle topography. J. Aghassy (Pittsburgh, University, Pittsburgh, PA) and Z. Berger (Exxon Production Research Co., Houston, TX). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 491-497. 7 refs.

Examples are cited from a pilot study evaluating surface-form relationships in subtle topographies. Sequential photography taken from 150 m, 300 m, and 500 m above ground level at varying distances from the rims surrounding certain geological structures illustrates that the optimal height coupled with the optimal distance can unveil important stream and slope elements that aid in identifying structures. In addition, a comparison between color photography and Side-Looking Color Infrared (SLCIR) shows that in regular color photography, the close elements of topography are clear whereas the more remote ones are masked by haze in spite of filtering devices. In color IR, the effect of haze on distant elements is much less pronounced, and the details of successive parallel ridges are more clearly visible. SLCIR photos provide valuable insight into the normal evolutionary erosional process of surface expression and drainage components generated above different geological structures, thereby aiding in the verification of anomalies observed in Landsat imagery. C.R.

A82-27615 # Topographic mapping using Landsat data. G. D. Lodwick (Calgary, University, Calgary, Alberta, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 527-534.

The reported work developed from a major research project recently completed, which resulted in the development of a comprehensive computer system to identify and monitor ecological changes in multitemporal Landsat data. The project involved investigation of a study area in the upper Hunter Valley of New South Wales, Australia. A sequence of seven images taken in 1976 was analyzed. The method of cartographic adjustment was to model the surface of each image using complete cubic polynomials, spatially resected onto 21 ground control points. Attention is given to the prediction of site slope and the refinement of slope prediction. For this research project, data interpretation is concerned with evaluating the principal components and their scores. This involves broad observation throughout the study area, as well as specific observation at 25 sample sites using scores from all seven Landsat images. G.R.

A82-27631 * # Wide area, coarse resolution imaging with satellite-borne synthetic aperture radars in low-earth and geosynchronous orbits. K. Tomiyasu (GE Valley Forge Space Center, Philadelphia, PA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p.701-709. 9 refs. Contract No. NAS1-15657.

03 GEODESY AND CARTOGRAPHY

The LEOSAR (low-earth-orbit synthetic aperture radar) can map around the earth, while the GEOSAR (geosynchronous synthetic aperture radar) can map a large global area bounded in both longitudinal and latitudinal ranges. This paper presents the mapping capabilities and power requirements of both LEOSAR and GEOSAR. For a low-earth-orbit SAR, images of swath widths of the order of 700 km are possible with 100-m resolution and 300 watts of average transmitter power at 9375 MHz. From a SAR in a 50-deg inclined geosynchronous circular orbit, the contiguous United States can be imaged in about 6.4 hours with 100-m resolution, 345 watts of average transmitter power, and a data rate of 6 megabits/sec at 2450 MHz.

B.J.

A82-27632 * # A shuttle scanning laser altimeter for topographic mapping. M. Kobrick and C. Elachi (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 711-714.

The shuttle scanning laser altimeter is an instrument, currently under development at JPL, capable of producing a three-dimensional elevation map of the topography along a wide swath beneath a spaceborne platform. Operating on the same principle as radar (broadcast of a short pulse of radiation and timing the reception of an echo) the very narrow beamwidths and high pulse rates of modern lasers would allow a significant breakthrough in the areal resolution capability of altimeters. Specifically, the copper vapor laser currently available and planned for use would provide 50 meter horizontal and 3 meter vertical resolution over a 10 kilometer continuous swath or, in a snapshot mode, a 50 kilometer square area. (Author)

A82-28134 † Analytic methods of geodetic referencing of nontopographic images (Analiticheskie metody geodezicheskoi priviazki netopograficheskikh izobrazhenii). V. I. Akovetskii, Iu. N. Korneev, and A. S. Sergeev. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 41-49. 6 refs. In Russian.

The paper examines the mathematical details of an analytic method for determining coordinates on the earth's surface from nontopographic images; the method can be used to solve a number of topographic and thematic problems. The method implemented on the Riad computer, has been experimentally verified and shown good results. The algorithm for solving a given problem consists of two independent elements: the solution of the direct photogrammetric intersection problem, and the solution of the inverse problem. B.J.

A82-28138 † Possibilities of using experience gained from the thematic mapping of the moon in studies of earth resources by remote sensing methods (O vozmozhnostiakh ispol'zovaniia opyta tematicheskogo kartografirovaniia luny pri issledovanii prirodnykh resursov zemli distantsionnymi metodami). N. N. Evsiukov, I. lu. Levitskii, and 1. G. Chervanev. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana. Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 66-72. 9 refs. In Russian.

Kharkov University has a facility that specializes in the mapping of the lunar surface on the basis of the photometric processing of photographic images; the facility incorporates automated processing of remote sensing images and mathematical techniques of cartographic analysis. This paper examines the possibility of applying techniques developed at this facility to the remote sensing and mapping of earth resources. Particular attention is given to the potential usefulness of a two-parameter map of the lunar surface.

B.J

A82-28139 † Potential use of space photographs obtained from the manned orbital station Salyut-5 in order to compile a set of small-scale thematic maps of mountain and piedmont regions of Central Asia (Vozmozhnosti ispol'zovaniia kosmicheskikh snimkov, poluchennykh s orbital'noi pilotiruemoi stantsii 'Saliut-5', dlia

sostavleniia kompleksa melkomasshtabnykh tematicheskikh kartskhem gornykh i predgornykh raionov Srednei Azii). G. G. Bakai and E. M. Nikolaeva. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 72-76. In Russian.

N82-17599 Cotorado State Univ., Fort Collins. REGIONAL PROPERTIES OF ANGULAR REFLECTANCE MODELS Ph.D. Thesis

John Michael Davis 1981 215 p

Avail: Univ. Microfilms Order No. 8126427

The inference of the reflected flux density from satellite radiance measurements requires a knowledge of the angular properties of the reflected radiance field. The angular dependence and the spatial variability of the radiance fields reflected from 30 regional atmospheric scenes were examined. The reflected radiance data set was collected from a high altitude aircraft during the Summer Monsoon Experiment using a unique multi-detector instrument which permitted an instantaneous sampling of the radiance fields from twelve angular veiwing coordinates. All of the scenes display sufficient anisotropy to conclude that neglecting the angular variation of the reflected radiances would lead to significant errors (10-100%) in the inferred flux density. Radiances over the relatively isotropic scenes converge to their regional mean values on a spatial scale which is small compared to that of the total region. Dissert. Abstr.

N82-17708*# Jet Propulsion Lab., California Inst. of Tech., Pasadena

SESSION III OF THE VLBI/LASER INTERCOMPARISON TASK OF THE NASA CRUSTAL DYNAMICS PROJECT

Henry Fliegel 1 Nov. 1981 50 p refs

(Contract NAS7-100)

(NASA-CR-168427; JPL-Pub-81-96) Avail: NTIS HC A03/MF A01 CSCL 08E

Baseline vector measurements are reported for a line crossing most of the state of California from Quincy to Mt. Otay near the Mexican border. They were obtained to compare three space geodetic techniques: very long baseline interferometry, satellite laser ranging, and Doppler satellite tracking.

A.R.H.

N82-17711# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

PARTICLE PRECIPITATION AND ATMOSPHERIC X-AND GAMMA-RAYS IN THE SOUTH ATLANTIC MAGNETIC ANOMALY BY BALLOON EXPERIMENTS Progress Report, 1968 - 1981

Jose Marques daCosta Jun. 1981 10 p refs Presented at the 1st Aeronomy Workshop Brazil-Argentina. Foz do Iguacu, Brazil. 18-20 Jul. 1981 Sponsored in part by the Fundo Nacional de Desenvolvimento Científico e Technologico - FNDCT (INPE-2119-RPE/343) Avail: NTIS HC A02/MF A01

Particle precipitation from the Van Allen belts into the atmosphere of the South Atlantic magnetic anomaly region, were observed with balloon-borne instrumentation. Balloons carrying onboard charged particle and X-and gamma ray detectors formed by plastic scintillators were used. Measurements of bremsstrahlung X-rays and low energy gamma rays as well as the charged particles themselves were made at the altitude of the stratospheric balloons, and simultaneous measurements of the geomagnetic variations were made by rapid run ground magnetometers. S.L.

N82-17714*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, Md.

SOME NEW METHODS IN GEOMAGNETIC FIELD MODELING APPLIED TO THE 1960 - 1980 EPOCH

R. A. Langel, R. H. Estes (Business and Technological Systems, Seabrook, Md.), and G. H. Mead Dec. 1981 42 p refs Submitted for publication

(NASA-TM-83868) Avail: NTIS HC A03/MF A01 CSCL 08N

The utilization of satellite and surface data together permitted the incorporation of a solution for the anomaly field at each observatory. The residuals of the observatory measurements to such models is commensurate with the actual measurement accuracy. Incorporation of the anomaly estimation enabled the inclusion of stable time derivatives of the spherical harmonic coefficients up to the third derivative. A spherical harmonic model

is derived with degree and order 13 in its constant and first time derivative terms, six in its second derivative terms and four in its third derivative terms.

N82-17715*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

SATELLITE AND SURFACE GEOPHYSICAL EXPRESSION OF ANOMALOUS CRUSTAL STRUCTURE IN KENTUCKY AND TENNESSEE

M. A. Mayhew (BTS, Inc.), H. H. Thomas, and P. J. Wasilewski Jul. 1981 29 p refs

(NASA-TM-82163) Avail: NTIS HC A03/MF A01 CSCL 08N

An equivalent layer magnetization model is discussed. Inversion of long wavelength satellite magnetic anomaly data indicates a very magnetic source region centered in south central Kentucky. Refraction profiles suggest that the source of the gravity anomaly is a large mass of rock occupying much of the crustal thickness. The outline of the source delineated by gravity contours is also discernible in aeromagnetic anomaly patterns. The mafic plutonic complex, and several lines of evidence are consistent with a rift association. The body is, however, clearly related to the inferred position of the Grenville Front. It is bounded on the north by the fault zones of the 38th Parallel Lineament. It is suggested that such magnetization levels are achieved with magnetic mineralogies produced by normal oxidation and metamorphic processes and enhanced by viscous build-up, especially in mafic rocks of alkaline character.

N82-18930# Defense Mapping Agency Aerospace Center, St. Louis. Mo.

MATRIX DATA ANALYSIS: COLOR/B AND W CODING IS NOT ALWAYS ENOUGH Interim Report, 1976 - 1981 Marshall B. Faintich 1981 6 p refs

(AD-A108406) Avail: NTIS HC A02/MF A01 CSCL 09/2 The Defense Mapping Agency produces digital data bases that describe the physical appearance of the surface of the Earth. These data bases include, but are not limited to, terrain elevation, culture including landscape characteristics, and vertical features. This data is collected from digitized source maps, from optically or digitally correlated stereopairs of photographic imagery, and from digital multi-spectral sensor data. A dramatic impact has been made in the ability to analyze these digital data bases by applying state-of-the-art digital image technology processing and display concepts. These include a variety of color and/or black and white displays of not only intensity/color coded matrix data, but also image processed data using specialized convolution filters, texture discrimination, and special color representation techniques. In addition, computer generated imagery from these data bases serve as a final analysis tool. Author (GRA)

N82-18931# Defense Mapping Agency Aerospace Center, St.

PROFILING SENSITIVITY TO IMAGE QUALITY Final Report

Dennis E. Moellman Oct. 1981 21 p refs

(AD-A108405) Avail: NTIS HC A02/MF A01 CSCL 09/2

This paper reports results from a study conducted by the Defense Mapping Agency (DMA) to determine the sensitivity of terrain profiling accuracy to input image quality. The study was accomplished by building a set of stereo test models over a test site; exercising those test models with current instruments; reducing the resultant profile data and comparing the results to existing ground control for the test site. The test models were produced from a single model by repeated steps of photographic enlargement, reduction and resolution degradation. The resultant 25 test models represented all combinations of five specific image scales and resolutions. The instruments were operated in both manual and automatic correlation modes. As a consequence the results portray the interdependence of profile accuracy with both scale and resolution as well as the effects of both manual and automatic profiling. The results also provide insight into the behavior of automatic correlation when approaching and exceeding the instrument's theoretical minimum resolution threshold. Author (GRA)

N82-19603 Deutsches Geodaetisches Forschungsinstitut, Munich (West Germany).

HELMUT WOLF: ON THE OCCASION OF HIS-70TH BIRTHDAY [HELMUT WOLF ZUM 70. GEBURTSTAG]

Verlag der Bayerischen Akademie der Wissenschaften 1980 45 p refs In GERMAN Presented at Bonn, 2 May 1980 (Ser-E-18; ISSN-0065-5341; ISBN-3-7696-9663-8) Copyright. Avail: Issuing Activity

The life and accomplishments of Helmut Wolf, and his contribution to theoretical geodesy are described. A collection of publications and lectures in the geodetic sciences is presented. Wolf's contribution to the development of geodestic surveys and to the mathematical and stochastic model of photogrammetry are outlined. Transl. by E.A.K.

N82-19604 Deutsches Geodaetisches Forschungsinstitut, Munich (West Germany).

DEVELOPMENTS IN GEODESY WITHIN THE SCOPE OF HELMUT WOLF'S WORK [DIE ENTWICKLUNG DER ERDMESSUNG IN SPIEGEL DES WERKES HELMUT WOLFS

Helmut Moritz In its Helmut Wolf: On the Occasion of his 70th Birthday 1980 p 5-12 In GERMAN

Avail: Issuing Activity

Twenty years of progress in geodetic surveys, the use of artificial satellites and their practical applications are described. Gravimetric methods, astrogeodetic methods, statistical procedures in the physical geodesy, and geodetic problems in geodynamics are discussed. It is found that in the geometric reference system of deep geodynamic observations the axis of rotation of the Earth is a fundamental direction of reference which changes, whether it is in the universe or on terrestrial bodies.

N82-19605 Deutsches Geodaetisches Forschungsinstitut, Munich (West Germany).

MATHEMATICAL AND STOCHASTIC MODELS IN PHOTO-GRAMMETRY RELATING TO HELMUT WOLF'S WORK [DAS MATHEMATISCHE UND STOCHASTISCHE MODELL DER PHOTOGRAMMETRIE MIT BEZUG AUF DAS WERK **HELMUT WOLFS**

Hellmut Schmid In its Helmut Wolf: On the Occasion of his 70th Birthday 1980 p 13-27 In GERMAN

Avail: Issuing Activity

The development of a mathematical model which is applied to interpret the measured variables and random variables with their characteristic random noise is discussed. It is posited that for typical geometric problems, as well as for geodetic and photogrammetric tasks it is possible to analyze specific geometrically established solvent algorithms quantitatively and qualitatively. Such a computing method is often advantageous, especially because it can be applied to practical engineering.

N82-19616*# Business and Technological Systems, Inc., Seabrook, Md.

EQUIVALENT SOURCE MODELING OF THE MAIN FIELD USING MAGSAT DATA Quarterly Report, 1 Apr. - 30 Jun. 1981

11 Aug. 1981 4 p ERTS

(Contract NAS5-26047)

(E82-10041;

NASA-CR-164918; QR-6) Avail: NTIS

HC A02/MF A01 CSCL 08G

Magsat dipole solution models were obtained with both 32 deg and 21 deg resolution based on a data set extending over 4 months. Time dependence was modeled using first time derivatives for the dipole magnetization vector components. This doubles the n total number of parameters in the solution. The solutions displayed a very slow convergence in time derivatives although at each iteration the conversion of the dipole parameters to spherical harmonic coefficients showed close agreement with the MGST (12/80) spherical harmonic model to degree 13 in the constant terms and 8 in the secular variation terms. The program error in the option to simultaneously estimate observatory anomaly biases was found and corrected. A 32 deg resolution dipole model was generated using the selected magnetic observatory data from 1960-1977 used in the GSFC (9/80) spherical harmonic model. A.R.H.

N82-19618*# Brown Univ., Providence, R. I. Dept. of Geological

ELECTROMAGNETIC DEEP-PROBING (100-1000 KMS) OF THE EARTH'S INTERIOR FROM ARTIFICIAL SATELLITES:

CONSTRAINTS ON THE REGIONAL EMPLACEMENT OF CRUSTAL RESOURCES. Quarterly Progress Report, 30 Jun. - 30 Sep. 1981

John F. Hermance, Principal Investigator 30 Sep. 1981 9 p refs ERTS

(Contract NAS5-26138)

(E82-10043; NASA-CR-164920; QPR-5) Avail: NTIS HC A02/MF A01 CSCL 08G

An algorithm was developed to address the problem of electromagnetic coupling of ionospheric current systems to both a homogeneous Earth having finite conductivity, and to an Earth having gross lateral variations in its conductivity structure, e.g., the ocean-land interface. Typical results from the model simulation for ionospheric currents flowing parallel to a representative geologic discontinuity are shown. Although the total magnetic field component at the satellite altitude is an order of magnitude smaller than at the Earth's surface (because of cancellation effects from the source current), the anomalous behavior of the satellite observations as the vehicle passes over the geologic contact is relatively more important pronounced. The results discriminate among gross lithospheric structures because of difference in electrical conductivity.

A.R.H.

N82-19619*# Brown Univ., Providence, R. I.

ELECTROMÄGNETIC DEEP-PROBING (100-1000 KMS) OF THE EARTH'S INTERIOR FROM ARTIFICIAL SATELLITES: CONSTRAINTS ON THE REGIONAL EMPLACEMENT OF CRUSTAL RESOURCES Quarterly Progress Report, 31 Mar. 1980 - 30 Jun. 1981

John F. Hermance, Principal Investigator 30 Sep. 1981 5 p.

(Contract NAS5-26138)

(E82-10044; NASA-CR-164921; QPR-4) Avail: NTIS HC A02/MF A01 CSCL 08G

Efforts continue in the development of a computer program for looking at the coupling of finite-dimensional source fields with a laterally heterogeneous Earth. An algorithm is also being developed for calculating a time-varying reference field using ground-based magnetic observatory data. It was discovered that ground-based standard magnetic observation is not as so available for the time of the MAGSAT mission as might be expected. Attempts are being made to determine the exact times and observatories from which data are available.

A.R.H.

N82-19620*# Business and Technological Systems, Inc., Seabrook, Md.

MAGSAT SCIENCE INVESTIGATIONS Quarterly Report, 1 Jun. - 30 Aug. 1981

30 Aug. 1981 4 p ERTS

30 Aug. 1981 4 p ERTS (Contract NAS5-26328)

(E82-10045; NASA-CR-164922; QR-4) Avail: NTIS HC A02/MF A01 CSCL 08G

The optimal source spacing for the computer delta-B data set was determined from the intermediate attitude tapes. A U.S. magnetization map based on this result is in preparation. Computed delta-B from the fine-attitude tapes is unexpectedly noisy: the reason for this is being sought.

A.R.H.

N82-19625*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

STUDIES RELATED TO MAGSAT Progress Report, period ending Sep. 1981

David P. Stern, Principal Investigator 30 Sep. 1981 21 p

(E82-10050; NASA-TM-84129) Avail: NTIS HC A02/MF A01 CSCL 08G

The westward drift of the geomagnetic field was analyzed using models from Magsat which include secular variation. Two approaches were utilized. A straightforward covariance method gave large drift rates (0.25 degr./yr and up) and suggested that the drift was larger in the Southern Hemisphere than in the Northern, and was small near the poles. The drawback was a rather large noise level superimposed on a small signal. The other approach followed the method of A.D. Richmond and obtained drifts of the order of 0.1 deg/yr. The use of Magsat to study the Backus effect is explored. Particular attention is drawn to the comparison with resuls of general inverse

N82-19626*# Phoenix Corp., McLean, Va.
IMPROVED DEFINITION OF CRUSTAL ANOMALIES FOR

MAGSAT DATA Quarterly Report

25 Mar. 1981 11 p ERTS

(Contract NAS5-25882)

(E82-10051: NASA-CR-164928; QR-6) Avail: NTIS HC A02/MF A01 CSCL 08G

A scheme was developed for separating the portions of the magnetic field measured by the Magsat 1 satellite that arise from internal and external sources. To test this method, a set of sample coefficients were used to compute the field values along a simulated satellite orbit. This data was then used to try to recover the original coefficients. Matrix inversion and recursive feast squares methods were used to solve for the input coefficients. The accuracy of the two methods are compared.

M.G.

NTIS

N82-19648# Deutsches Geodaetisches Forschungsinstitut, Munich (West Germany).

THE DIAGNOSIS SETTLEMENT 1980 OF THE GERMAN MAIN TRIANGULATION NETWORK. PART 2: TRAJECTORIES [DIE DIAGNOSEAUSGLEICHUNG 1980 DES DEUTSCHEN HAUPTDREICKSNETZES. 2: STRECKEN] Rudolf Schmidt Frankfurt am Main Verlag des Instituts fuer Angewandte Geodaesie 1981 501 p refs In GERMAN (SER-B-253-Mitt-159-Pt-2; ISSN-0071-9196) Avail: NTIS HC A22/MF A01

Diagnostic balancing in triangulation networks was investigated. The purpose of defining the network for diagnostic balancing is to reduce the balance of the edge effect. The computer program is based on observations of the geographic coordinates system. The following tasks were performed: compilation of results from end to end measurements: execution of end to end measurements in the triangulation network; reduction of field length; and, calculation of end to end measurements.

E.A.K.

N82-19731*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

INFORMATION THEORY LATERAL DENSITY DISTRIBU-TION FOR EARTH INFERRED FROM GLOBAL GRAVITY FIELD

David Parry Rubincam Oct. 1981 64 p refs Submitted for publication

(NASA-TM-83825) Avail: NTIS HC A04/MF A01 CSCL OBN

Information Theory Inference, better known as the Maximum Entropy Method, was used to infer the lateral density distribution inside the Earth. The approach assumed that the Earth consists of indistinguishable Maxwell-Boltzmann particles populating infinitesimal volume elements, and followed the standard methods of statistical mechanics (maximizing the entropy function). The GEM 10B spherical harmonic gravity field coefficients, complete to degree and order 36, were used as constraints on the lateral density distribution. The spherically symmetric part of the density distribution was assumed to be known. The lateral density variation was assumed to be small compared to the spherically symmetric part. The resulting information theory density distribution for the cases of no crust removed, 30 km of compensated crust removed. and 30 km of uncompensated crust removed all gave broad density anomalies extending deep into the mantle, but with the density contrasts being the greatest towards the surface (typically + or 0.004 g cm 3 in the first two cases and + or - 0.04 g cm 3 in the third). None of the density distributions resemble classical organized convection cells. The information theory approach may have use in choosing Standard Earth Models, but, the inclusion of seismic data into the approach appears difficult.

N82-19732*# Woods Hole Oceanographic Institution, Mass. GRAVITY AND GEOID ANOMALIES OF THE PHILIPPINE SEA: EVIDENCE ON THE DEPTH OF COMPENSATION FOR THE NEGATIVE RESIDUAL WATER DEPTH ANOMALY

Carl Bowin [1982] 27 p refs

(Grant NAG5-18)

(NASA-CR-168639; WHOI-4931) Avail:

HC A03/MF A01 CSCL 08G

A negative free-air gravity anomaly which occurs in the central part of the Philippine Sea was examined to determine the distribution and nature of possible regional mass excesses or deficiencies. Geoid anomalies from GEOS-3 observation were positive. A negative residual geoid anomaly consistent with the area of negative free-air gravity anomalies were found. Theoretical

gravity-topography and geoid-topography admittance functions indicated that high density mantle at about 60 km dept could account for the magnitudes of the gravity and residual geoid anomaly and the 1 km residual water depth anomaly in the Philippine Sea. The negative residual depth anomaly may be compensated for by excess density in the uppermost mantle, but the residual geoid and regional free-air gravity anomalies and a slow surface wave velocity structure might result from low-density warm upper mantle material lying beneath the zone of high-density uppermost mantle. From a horizontal disk approximation, the depth of the low-density warm mantle was estimated to be on the order of 200 km.

M.D.K.

N82-20580# Bayerische Akademie der Wissenschaften, Munich (West Germany).

SOME CRITERIA FOR THE ACCURACY AND THE RELIABILITY OF NETWORKS

Hans Pelzer In its Contrib. from the Federal Rep. of Ger. to the 17th Gen. Assembly of Intern. Union of Geodesy and Geophys. 1980 p 55-67 refs

Avail: NTIS HC A06/MF A01

Design criteria for optimizing the quality of a geodetic network, taking both the functional and the stochastic model of the network into account, are derived. An effective global accuracy criterion is shown to be obtainable from the maximum eigenvalue of the cofactor matrix of the vector of points coordinates. The essential eigenvectors of the same matrix are identified as indicators for functions with maximum variance. A reliability criterion can be obtained by means of a reliability parameter constructed by gross error testing of each observation. To this end a nomogram is made available.

Author (ESA)

N82-20581# Bayerische Akademie der Wissenschaften, Munich (West Germany).

EXPERIMENTS IN SATELLITE DOPPLER CONTROL POSITIONING AT SEA

Guenter Seeber, Delf Egge, and Hans Werner Schenke In its Contrib. from the Federal Rep. of Ger. to the 17th Gen. Assembly of Intern. Union of Geodesy and Geophys. 1980 p 69-80 refs Sponsored by Bundesministerium fuer Forschung- und Technologie and Deutsche Forschungsgeimschaft

Avail: NTIS HC A06/MF A01

Experiments on the application of the transit satellite system, which utilizes Doppler control positioning, for an extension of classical continental geodetic networks beyong the shore lines are described. The experiments were conducted in the North Sea area and deal with: (1) fixed point positioning on a platform; (2) positioning of a moored buoy; (3) positioning of a drifting buoy. The evaluation indicates that for fixed or stationary motion conditions no accuracy decrease occurs provided an accumulated solution is made. For nonstationary motion one has to resort to position fixes with single satellite passes so that no accumulated increase of precision can be obtained. Experiments to assess the inherent accuracy of the Doppler satellite method in a single pass solution are presently underway. Author (ESA)

N82-20583# Bayerische Akademie der Wissenschaften, Munich (West Germany).

RECENT RESULTS OF GEOID DETERMINATION BY COMBINATION TECHNIQUES IN THE NORTH SEA TEST AREA

Hans-Georg Wenzel In its Contrib. from the Federal Rep. of Ger. to the 17th Gen. Assembly of Intern. Union of Geodesy and Geophys. 1980 p 95-121 refs Sponsored by Deutsche Forschungsgeimschaft

Avail: NTIS HC A06/MF A01

Gravity anomalies, GEOS 3 satellite altimetry and astrogeodetic vertical deflections were used to determine gravimetric, altimetric and astrogeodetic geoids in the North Sea test area. The agreement between these independent geoids is below the 1 m level and no sea surface topography could be detected. Simple averaging techniques, and stokes and least square collocations are used to determine combined geoids with an accuracy believed to be below the 0.5 m level. Author (ESA)

N82-20585*# Wisconsin Univ., Madison.
INVESTIGATION OF ANTARCTIC CRUST AND UPPER
MANTLE USING MAGSAT AND OTHER GEOPHYSICAL

DATA Quarterly Progress Report

C. R. Bentley, Principal Investigator 9 Sep. 1981 2 p refs ERTS

(Contract NAS5-25977)

(E82-10062; NASA-CR-165084; NAS 1.26:165084; QPR-6) Avail: NTIS HC A02/MF A01 CSCL 08G

Progress in processing and analysis of Investigator B MAGSAT data is reported. Data processing tasks required prior to data analysis, including translation and reformatting of tapes and development of computer routines, were performed. A scalar anomaly map of Antarctica is near completion. Data analysis included a qualitative correlation of NASA's 4/81 scalar map of Antarctica with other geopotential data and correlation of POGO and continental scale gravity data with MAGSAT data. A magnetic high was found to exist over the Ross Embayment.

N82-20589*# Analytic Sciences Corp., Reading, Mass.
[MAGSAT ANOMALY PROFILES OF THE EASTERN INDIAN
OCEAN] Quarterly Progress Report, 1 Apr. - 30 Jun. 1981
Richard V. Sailor, Principal Investigator and Andrew R. Lazarewicz
15 Aug. 1981 21 p refs ERTS

(Contract NAS5-26424)

(E82-10066; NASA-CR-165088; NAS 1.26:165088; PR-1325-2) Avail: NTIS HC A02/MF A01 CSCL 05B

Ground tracks from SEASAT were used in an effort to develop qualititative relationships between the gravity field and MAGSAT magnetic anomalies in the eastern Indian Ocean. Investigation of data quality led to analyses of the average value (over 80 vector data points, or approximately 36 km intervals) and of the standard deviation of this average, as a mean of identifying noisy portions of the data. It was discovered that the plots of the average value minus the individual (measured) point value are most useful for identifying noisy areas and data spikes. Spectrum analysis using edited (spikes removed) data show that the noise floor is less than 1 nT and the slope of the spectrum in the region of wavelengths between 1200 km and 250 km is approximately -3. Consequently the estimated resolution limit improved from approximately 360 km to approximately 250 km.

N82-20598*# Liverpool Univ. (England).

SPHERICAL HARMONIC REPRESENTATION OF THE MAIN GEOMAGNETIC FIELD FOR WORLD CHARTING AND INVESTIGATIONS OF SOME FUNDAMENTAL PROBLEMS OF PHYSICS AND GEOPHYSICS Progress Report

D. R. Barraclough, R. Hide, B. R. Leaton, F. J. Lowes, S. R. C. Malin, and R. L. Wilson, Principal Investigators 1 Oct. 1981 8 p refs Sponsored by NASA ERTS (E82-10075: NASA-CR-165097; NAS 1.26:165097) Avail:

(E82-10075; NASA-CR-165097; NAS 1.26:165097) Avail: NTIS HC A02/MF A01 CSCL 08G

Quiet-day data from MAGSAT were examined for effects which might test the validity of Maxwell's equations. Both external and toroidal fields which might represent a violation of the equations appear to exist, well within the associated errors. The external field might be associated with the ring current, and varies of a time-scale of one day or less. Its orientation is parallel to the geomagetic dipole. The toriodal field can be confused with an orientation in error (in yaw). It the toroidal field really exists, its can be related to either ionospheric currents, or to toroidal fields in the Earth's core in accordance with Einstein's unified field theory, or to both.

N82-21475% Canada Centre for Remote Sensing, Ottawa (Ontario).

RELIEF EFFECTS AND THE USE OF TERRAIN MODELS IN SAR IMAGE PROCESSING

B. Guindon, P. M. Teillet, D. G. Goodenough, K. Dickinson (INTERA Environmental Consultants, Calgary, Canada), and J. F. Meunier (INTERA Environmental Consultants, Calgary, Canada) In ESA SAR Image Quality Jun. 1981 p 89-92 refs

Avail: NTIS HC A05/MF A01; ESA, Paris FF 55 (US \$12)

The use of digital terrain models in Canada to overcome the effects of topographic relief on geometric and radiometric fidelity of SAR imagery is discussed. Digital elevation models (DEM) can reduce, to 15 m, errors incurred in overlaying multipass SAR imagery of mountainous terrain. Neglect of topography can result in errors of hundreds of meters. Shadow or layover problem areas can be identified using DEM's.

Author (ESA)

N82-21659*# Paris VI Univ. (France).

PRELIMINARY MODELS OF THE CORE FIELD Progress
Report

Jean-Louis LeMouel, Principal Investigator, Armand Galdeano, and Joel Ducruix 1 Aug. 1981 5 p Sponsored by NASA ERTS

(E82-10129; NASA-CR-168513; NAS 1.26:168513) Avail: NTIS HC A02/MF A01 CSCL 05B

Using the CHROFIN tapes containing MAGSAT data for the month of December, two spherical harmonic models were prepared. One of these models was specially designed to study the Bangui anomaly region. For this region an attempt was made to downward continue the data and to compare it with the existing ground level map.

M.G.

N82-21674*# Wisconsin Univ., Madison.

INVESTIGATION OF ANTARCTIC CRUST AND UPPER MANTLE USING MAGSAT AND OTHER GEOPHYSICAL DATA Quarterly Status and Technical Progress Report

C. R. Bentley, Principal Investigator 30 Nov. 1981 6 p. refs. ERTS

(Contract NAS5-25977)

(E82-10147; NASA-CR-168532; NAS 1.26:168532; QTPR-7) Avail: NTIS HC A02/MF A01 CSCL 08G

The isolation of the crustal magnetic anomaly field is discussed. Slowly spatially varying ring current fields were modeled as a least squares fit to each MAGSAT pass over Antarctica. Selection criteria were applied to data from 3000 MAGSAT passes to remove field aligned currents, yielding 87 data sets used to construct a scalar magnetic anomaly map for regions south of 55 S latitude. Internal tests performed on MAGSAT data and omparisons with the POGO map indicated that the general anomaly features are of crustal origin. The sources of anomalies generated in continental and in oceanic regions are discussed. Correlations were found between crustal magnetic anomalies and known geologic features over West and East Antarctica and over the surrounding oceanic regions.

N82-21675*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

COMPARISON OF STORM-TIME CHANGES OF GEOMAGNETIC FIELD AT GROUND AND AT MAGSAT ALTITUDES Progress Report

Rajaram Purushottam Kane and Nalin Babulal Trivedi Dec. 1981 15 p refs Sponsored by NASA ERTS

(E82-10148: NASA-CR-168533; NAS 1.26:168533) Avail: NTIS HC A02/MF A01 CSCL 08G

Computations concerning variations of the geomagnetic field at MAGSAT altitudes were investigated. Using MAGSAT data for the X, Y, and Z components of the geomagnetic field, a computer conversion to yield the H component was performed. Two methods of determining delta H normalized to a constant geocentric distance R sub 0 = 6800 were investigated, and the utility of elta H at times of magnetic storms was considered. Delta H at a geographical latitude of 0 at dawn and dusk, the standard Dst, and K sub p histograms were plotted and compared. Magnetic anomalies are considered. Examination of data from the majority of the 400 passes of MAGSAT considered show a reasonable delta H versus latitude variation. Discrepancies in values are discussed.

N82-21679*# Brown Univ., Providence, R. I. Dept. of Geological Sciences.

ELECTROMAGNETIC DEEP-PROBING (100-1000 KMS) OF THE EARTH'S INTERIOR FROM ARTIFICIAL SATELLITES: CONSTRAINTS ON THE REGIONAL EMPLACEMENT OF CRUSTAL RESOURCES Quarterly Progress Report, 30 Sep. - 31 Dec. 1981

John F. Hermance, Principal Investigator 31 Dec. 1981 16 p. refs ERTS

(Contract NAS5-26138)

(E82-10155: NASA-CR-168540: NAS 1.26:168540: QPR-6) Avail: NTIS HC A02/MF A01 CSCL 08G

Model simulations show that induction in a spherical Earth by distant magnetospheric sources can contribute magnetic field fluctuations at MAGSAT altitudes which are 30 to 40 percent of the external field amplitudes. When the characteristic dimensions (e.g. depth of penetration, etc) of a particular situations are small compared with the Earth's radius, the Earth can be approximated by a plane horizontal half space. In this case,

electromagnetic energy is reflected with close to 100 percent efficiency from the Earth's surface. This implies that the total horizontal field is twice the source field when the source is above the satellite, but is reduced to values which are much smaller than the source field when the source is below the satellite. This latter effect tends to enhance the signature of gross electrical discontinuities in the lithosphere when observed at satellite altitudes.

A.R.H.

N82-21686*# Colorado Univ., Boulder. Dept. of Astrogeophysics

INVESTIGATION OF GEOMAGNETIC FIELD FORECASTING AND FLUID DYNAMICS OF THE CORE Quarterly Status Technical Progress Report, 1 Jul. - 30 Sep. 1981

Edward R. Benton, Principal Investigator 1 Oct. 1981 14 p. FRTS

(Contract NAS5-25957)

(E82-10162; NASA-CR-168545; NAS 1.26:168545; QSTPR-7) Avail: NTIS HC A02/MF A01 CSCL 08G

The magnetic determination of the depth of the core-mantle boundary using MAGSAT data is discussed. Refinements to the approach of using the pole-strength of Earth to evaluate the radius of the Earth's core-mantle boundary are reported. The downward extrapolation through the electrically conducting mantle was reviewed. Estimates of an upper bound for the time required for Earth's liquid core to overturn completely are presented. High order analytic approximations to the unsigned magnetic flux crossing the Earth's surface are also presented.

N82-21689# Army Engineer Topographic Labs., Fort Belvoir, Va.

A DIGITAL TECHNIQUE FOR CONSTRUCTING VARIABLE-WIDTH LINES

Richard L. Rosenthal Mar. 1982 10 p (AD-A110287; ETL-RO31) Avail: NTIS HC A02/MF A01 CSCL 08/2

This paper describes a digital technique for constructing variable-width cartographic lines. Specifically, an algorithm is developed for generating symbolized lines using multiply-stoked centerline data. Algorithmic development considers three factors: cartographic principles, inherent problems with existing algorithms, and hardware constraints imposed by specific output devices including the Defense Mapping Agency's Laser Platemaker. Software developed from the algorithm uses simple trigonometric functions and may be implemented in applications using vector data with vector or raster plotters. Author (GRA)

N82-21690# Defense Mapping Agency Aerospace Center, St. Louis, Mo.

EXPERIENCES WITH DIGITAL TERRAIN ELEVATION DATA CONTOURING PROGRAMS Interim Report

Philip K. Alderman 26 Jan. 1982 12 p refs

(AD-A110280) Avail: NTIS HC A02/MF A01 CSCL 08/2
The DMA digital terrain elevation data base has been expanding steadily since its inception. With increasing coverage there has been a greater opportunity to apply this data, including the automatic derivation of contours from digital elevation data for aerospace charts.

N82-21697# Royal Aircraft Establishment, Farnborough (England).

COMPUTER BASED TECHNIQUE FOR CONVERTING A CONTOUR MAP INTO AN EQUISPACED GRID OF POINTS

P. A. Roberts London HMSO Sep. 1980 68 p (RAE-TR-80110; RAE-Space-586; BR77598) Avail: NTIS HC A04/MF A01

The purpose of the grid representation is to enable the map data to be handled more easily in a computer. Contours are assumed to represent some physical quantity and thus the variable represented by the contour height is a single valued function of the map coordinates. It is also assumed that the variable is smooth and continuous. The technique has applications in image processing where it may be necessary to compare (by ratioing) an image and a contour map. A grid representation is also an essential prerequisite for degrading the spatial resolution of a contour map by convolution, thus enabling contour maps having different resolutions to be compared at a common resolution. The interpolation algorithms and the reasons for their use are described in detail. Operations are described which may be

required to be performed on a grid; those of expanding (or contracting) the number of data points in the grid, and the construction of cross sections. Listings of all programs, written in ANSI FORTRAN V are given.

N82-21796*# Massachusetts Inst. of Tech., Cambridge. Dept. of Earth and Planetary Sciences.

APPLICATIONS TO EARTH PHYSICS: VERY-LONG-

Technical Report, 1 Apr. 1974 - 15 Mar. 1982
Charles C. Counselman, III and Irwin I. Shapiro Apr. 1982
197 p refs
(Control NCR 22 000 939)

(Contract NGR-22-009-839) (NASA-CR-168743; NAS 1.26:168743) HC A09/MF A01 CSCL 08G Avail: NTIS

A range of very long baseline interferometry experiments applied to Earth physics are covered.

04 GEOLOGY AND MINERAL RESOURCES

Includes mineral deposits, petroleum deposits, spectral properties of rocks, geological exploration, and lithology.

A82-20338 † Analysis of space imagery to compile a geomorphological map of the world (Analiz kosmicheskikh snimkov dlia sostavleniia geomorfologicheskoi karty mira). N. V. Bashenina and N. N. Tal'skaia (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 5-12. 10 refs. In Russian.

The paper presents and examines portions of a geomorphological map of the earth, with a scale of 1:15,000,000, compiled on the basis of space imagery and photomosaics. The use of space photographs has made it possible to delineate the general morphostructural plan of large areas of continents and the natural patterns of morphostructures.

A82-20341 † The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the Mediterranean fold belt (K voprosu o sootnoshenii seismichnosti s lineamentami Anatoliisko-Kavkazsko-Iranskogo segmenta Sredizemnomorskogo poiasa). T. L. Korovina (Akademiia Nauk SSSR, Institut Kosmicheskikh Issledovanii, Moscow, USSR) and A. S. Karakhanian (Akademiia Nauk Armianskoi SSR, Institut Geologicheskikh Nauk, Yerevan, Armenian SSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 27-34. 15 refs. In Russian.

A comparison of remotely sensed data from Meteor, Soyuz, and Salyut data with statistical data on seismic activity made it possible to determine the regional and superregional lineaments that control seismic activity in the Anatolian-Caucasian-Iranian segment of the Mediterranean fold belt. The junctions of the lineaments considered are the seismic foci of intense earthquake zones. The general relationship obtained here can be used as an additional criterion for the forecasting of earthquakes.

A82-20342 † Structural analysis of the basement of the East European platform by remote sensing methods (Analiz struktur fundamenta Vostochno-Evropeiskoi platformy distantsionnymi metodami). D. V. Lopatin (Akademiia Nauk SSSR, Institut Geologii i Geokhronologii Dokembriia, Leningrad, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 35-40. 13 refs. In Russian.

It is shown that the interpretation of aerial and space imagery and geomorphological analysis can assist in the identification of Precambrian basement structures under sedimentary cover in Eastern Europe. The existence of early Archaen mobile zones dividing the platform into three large geoblocks was confirmed. In addition, early Proterozoic Rapakivi granitoid massifs were found to be volcano-plutonic structures of central type.

B.J.

A82-25453 Dip determinations in photogeology. M. Ricci. Photogrammetric Engineering and Remote Sensing, vol. 48, Mar. 1982, p. 407-414. 21 refs.

A photogeological dip determination method which is free of conceptual error and, in addition, is both rapid and accurate, is presented. The method is based on (1) parallax difference measurements and (2) the use of a trigonometric formula which incorporates perspective correction, and is shown capable of determining dip angles independently of the position and orientation of the photographic inclined bed images for the entire range of angle values. Comparisons are presented of the present method's results with those of previously published methods.

A82-26013 The Pampean Plain studied with Landsat images. P. Pasotti and C. A. Canoba (Rosario, Universidad Nacional, Rosario, Argentina). *Photogrammetria*, vol. 37, Feb. 1982, p. 109-130. 31 refs.

Topographical charts, aerial photographs, and Landsat imagery from bands 5 and 7 were employed for a visual investigation of the

tectonics in the Pampean Plain in the Sante Fe Province of Argentina. Satellite imagery was examined by magnifying glass inspection, and a mosaic of photographs was built to portray the low flooded zones. The last hydrographic network of the Pleistocene age was identified, and is formed of many parallel and straight depressions running SW-NE from the western mountains. A smooth sinusoidal flexure with a large radius of curvature generating one depressed and two uplifted subregions comprise the tectonic movements, and hydrographic studies are indicated to determine the characteristics of geofracture dividing the pampas. Additional color composites using different combinations of bands 4-7 were explored for information on lineaments, valleys, and the depressed zones.

M.S.K.

A82-26014 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/. A. Bahmad (Service Régional de la Géologie, Midelt, Morocco), H. Chariai (Service Régional de la Géologie, Midelt, Morocco), A. Djerrari, A. El Kochri (Paris VI, Université, Paris, France), E. A. Hilali (Direction de la Géologie, Rabat, Morocco), D. Ratz, A. L. G. Tamain (Paris XI, Université, Orsay, Essonne, France), and T. Saqalli (Société de Sel de Mohammedia, Mohammedia, Morocco). Photogrammetria, vol. 37, Feb. 1982, p. 131-150. 38 refs.

The use of Landsat generated imagery as the first step in geological research of the Moroccan High Atlas is reviewed. Initial examination of photographs results in the construction of structural and lineaments maps. Comparisons with existing geological maps yield further, structural and fractural charts. Little cloud cover was observed on the high summits, and the detection of anticlines, synclines, and continuous and discontinuous faults is discussed. A parallelism was found between the direction of the faults and the lengthening of the folded regions, indicating subvertical tectonic faults. The distribution of alkaline magmatism is outlined, having settled in the upper Jurassic to early Cretaceous periods, and dense wefts are taken as further evidence that the faults tend toward the vertical with greater depth.

M.S.K.

A82-26015 Relationship of hydrothermal phenomena within the Leinster Granite to crustal fractures delineated from Landsat imagery. P. M. Brück (University College, Cork, Ireland) and P. J. O'Connor (Geological Survey of Ireland, Dublin, Ireland). Photogrammetria, vol. 37, Feb. 1982, p. 151-159. 16 refs.

Landsat imagery was combined with existing geologic maps of the Leinster Granite in SE Ireland to develop a model of hydrothermal processes in the area and detect the fracture zones. Observed linears were interpreted as fractures, and satellite imagery allowed the discernment of hydrothermal alteration zones, occurrences of spodume and red-feldspar pegmatites, and explosion breccias. Pb-Zn mineralization sites displayed a spatial association with a transverse fracture system, with galena and sphalerite the main ores in veins with thicknesses ranging from a few meters to a few cm. Hydrothermal processes which may have led to the formation of the Leinster Granite are detailed, along with a suggestion that fractures occuring late in the cooling granite's history formed channels for circulating ground waters.

A82-26016 Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India. M. N. Qureshy (Department of Science and Technology, New Delhi, India). *Photogrammetria*, vol. 37, Feb. 1982, p. 161-184. 35 refs.

Linear zones correlated with surface geology, geophysical data, and Landsat data for parts of India are reviewed, along with mappings of magnetic and gravitational anomalies correlated with the tectonic framework of the subcontinent. Reactivation tendencies were observed in a megalineament in west central India, and is taken as evidence of continued activity of global tectonic forces. Linears were detected to cluster around regions of a gravitational high, and the recurrence of particular mineral-bearing lineaments with successive phases of activity is suggested. The use of Landsat data in conjunction with photogeological studies at the surface is considered as useful for determining surface features which originate in processes in the mantle.

M.S.K.

A82-26017 One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precam-

04 GEOLOGY AND MINERAL RESOURCES

brian metamorphics of Singhbhum, eastern India. A. N. Sarkar (Geological Survey of India, Map Div., Calcutta, India) and D. K. Chakraborti (Geological Survey of India, Agartala, India). *Photogrammetria*, vol. 37, Feb. 1982, p. 185-201. 27 refs.

A stratigraphic/tectonic analysis of the Singhbhum district in India, aided by imagery from Landsat I, is presented. Analyses of the rocks found in the area are reviewed, with particular attention to the potential existence of an Iron Ore and a Singhbhum Group of rocks of different geologic ages delineating northern metamorphic rocks and southern older rocks, with the southern rocks actually part of the same stratigraphic group as the northern rocks. An observed shear zone running E-W is concluded not to demarcate two different metamorphic belts, and deformation actually occurred during the orogenesis which ended in an ENE-WSW diagonal sinistral shearing in the western part of the district.

A82-26604 * Ore deposits in Africa and their relation to the underlying mantle. H.-S. Liu (NASA, Goddard Space Flight Center, Greenbelt, MD). Modern Geology, vol. 8, no. 1, 1981, p. 23-36. 70 refs.

African magmatism is largely related to the tensional stress regimes of the crust which are induced by the hotter upwelling mantle rocks. These mantle rocks may provide emanating forces and thermal energy for the upward movements of primary ore bodies with fluid inclusions in the tensional stress regimes of the crust. In this paper, the Goddard Earth Gravity Model is used to calculate a detailed subcrustal stress system exerted by mantle convection under Africa. The resulting system is found to be correlated with the African metallogenic provinces. Recognition of the full spectrum of ore deposits in Africa that may be associated with the hotter upwelling mantle rocks has provided an independent evidence to support the hypothesis of mantle-derived heat source for ore deposits.

A82-27466 t Application of aerial and space photographic data in the study of subsurface water and tectonic structures (Primenenie materialov aerokosmicheskikh s'emok v issledovanii podzemnykh vod i tektonicheskikh struktur). E. Radai. In: Aerospace methods for the study of water resources and their pollution.

Leningrad, Gidrometeoizdat, 1981, p. 70-76. In

Russian

The paper examines the use of aerial and space photography data to create a network for monitoring subsurface water in karst areas of the Danube region. The interpretation of space remote sensing images has made it possible to obtain new data on the geological structure of a basin in the area as well as to detect tectonic structures in two massifs.

B.J.

A82-27600 * # A data base of geologic field spectra. A. B. Kahle, A. F. H. Goetz, H. N. Paley, R. E. Alley, and E. A. Abbott (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 329-337. NASA-supported research.

It is noted that field samples measured in the laboratory do not always present an accurate picture of the ground surface sensed by airborne or spaceborne instruments because of the heterogeneous nature of most surfaces and because samples are disturbed and surface characteristics changed by collection and handling. The development of new remote sensing instruments relies on the analysis of surface materials in their natural state. The existence of thousands of Portable Field Reflectance Spectrometer (PFRS) spectra has necessitated a single, all-inclusive data base that permits greatly simplified searching and sorting procedures and facilitates further statistical analyses. The data base developed at JPL for cataloging geologic field spectra is discussed.

A82-27612 # Automatic linear recognition and analysis using computer program LIRA. D. H. Coupland and R. K. Vincent (Geospectra Corp., Ann Arbor, MI). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI,

Environmental Research Institute of Michigan, 1981, p. 499-508.

Computer program LIRA will automatically recognize and map linear features in digital images. Input to the program is a magnetic tape containing the image to be analyzed; output is a list of linears found and a linear plot which overlays the original image. LIRA does not replace the human interpreter, but speeds his work and provides an objective criterion for interpreting linear features in tonal images. Linears recognized by LIRA map major faults, lithologic boundaries, drainage and erosional patterns, and other features of geologic interest. In Landsat frame La Ronge (northern Saskatchewan), linear recognition maps produced by LIRA show a detailed relationship to published geologic maps. Significant variations in linear density and azimuthal distribution are seen between major geologic regions.

(Author)

A82-27635 # Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources. J. Stix (Los Alamos National Laboratory, Los Alamos, NM). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 735-750. 43 refs.

Seasat synthetic aperture radar (SAR) satellite imagery was used to interpret the structural framework and, indirectly, the geothermal potential of an area in Western Nebraska. Lineaments were mapped from the imagery and then compared to known structure. It was found that Seasat does record surface manifestations of subtle basement structures, particularly faulting. Furthermore, four areas with geothermal potential were delineated using Seasat and other data. It is stressed that more subsurface geology and geophysical data are needed before a final evaluation of the geothermal potential can be made. Seasat imagery is a useful reconnaissance exploration tool in the interpretation of regional structure within areas of little topographic relief. (Author)

A82-27672 # Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale. C. M. Marino, G. Miglio, E. Zini (Milano, Università, Milan, Italy), and P. M. Rossi (CNR, Centro di Studio per la Stratigrafia e Petrografia delle Alpi Centrali, Milan, Italy). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1153-1162.

This paper describes a study on the integration of Landsat, geological and geophysical data over a large test-site in the western portion of Northern Apennines Range. In this framework particular attention was devoted to the use of hydrographic network as a new parameter to be considered in the process of temporal classification of linear phenomena. Moreover reference is made to the regional contribution of geophysical data mainly to test the validity of some hypotheses arisen from the analysis of satellite images. (Author)

A82-27694 # Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data. P. W. Mausel, R. C. Howe, and K. Lulla (Indiana State University, Terre Haute, IN). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1397-1409. 7 refs.

A82-27695 # Airborne remote sensing in east Greenland.

J.-C. Favard (Centre National d'Etudes Spatiales, Toulouse, France),

J. F. Scanvic (Bureau de Recherches Géologiques et Minières,
Orléans, France), A. L. Friedman (Christian Rovsing A/S, Herlev,
Denmark), and T. Thyrsted (Gronlands Geologiske Undersogelse,
Copenhagen, Denmark). In: International Symposium on Remote
Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981,
Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1411-1424.

A joint French-Danish investigation was conducted with the objective to study the feasibility of an employment of multispectra observation techniques in geological research projects. A region in east Greenland was selected as a test site in connection with a

number of advantages provided by the involved area. These advantages are related to a wind range of geological environments, a wide variety of mineralization types, and limitations with respect to vegetation and secondary cover. Three test areas were studied. Two multispectral scanners were employed in the investigation, including one instrument for the visible and near-infrared spectral region, and another instrument used as thermal scanner. Flight altitudes at 2,500 m and 5,000 m above ground were used. The obtained data are found to make a meaningful contribution to mining prospection, because they provide mapping precision or define original prospection aims.

A82-27705 # Applications of aircraft and satellite data for the study of archaeology and environment - Mekong Delta, Vietnam. A. Lind (Vermont, University, Burlington, VT). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1529-1537.

An account is given of the way in which Landsat data have been used in conjunction with aerial photography to study and map the imprints of early hydraulic civilizations and the pattern of geomorphic changes of a dynamic delta environment. It is noted that many studies have demonstrated the applicability of remote sensing data to the investigation of fluvial and coastal environments. Data of this type are applied here to reconstructing geomorphic conditions in the Trans-Bassac, a plain bounded by the Bassac River and the Gulf of Thailand. Landsat is shown to provide a broader perspective of the canals previously discerned by aerial photography and to give clues to extensions of these canals.

A82-28136 † Ring structures in the earth's crust, and their significance for geology and methods for their investigation (Kol'tsevye struktury zemnoi kory, ikh znachenie dlia geologii i metody izucheniia). A. E. Mikhailov. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 55-59. In Russian.

The use of satellite remote-sensing techniques to study ring structures is considered. The occurrence of ring structures on Soviet territory is discussed, and the volcano-plutonic mechanism for the formation of such structures is examined. Recommendations on the use of remote sensing techniques for the further study of these structures are given.

N82-16442*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

REPORT ON A SHORT COURSE IN REMOTE SENSING AND THE GEOLOGICAL APPLICATIONS OF LANDSAT MSS IMAGERY AT INPE

Nelson deJesusParada, Principal Investigator and Kampta Persaud (Geological Survey Dept. (Guyana)) Oct. 1980 48 p refs. Sponsored by NASA ERTS

(E82-10024: NASA-CR-164813; INPE-1923-RPE/249) Avail: NTIS HC A03/MF A01 CSCL 05B

Training in the theory of remote sensing in Brazil involves studying the principles of electromagnetic radiation and the instrumentation used to measure the radiation characteristics of a body. The overall LANDSAT system is considered with emphasis on the multispectral band scanner and Brazil's participation in the LANDSAT Program. Geologic information from MSS imagery is at a regional scale, and three basic types are available: rock and soil, geologic structures, and landforms. Discrimination between alluvium and sedimentary or crystalline bedrock, and between units in thick sedimentary sequences is best, primarily because of topographic expressions and vegetation differences. Discrimination between crystalline rock types is poor. Folds and fractures are the best displayed geologic features and are recognizable by topographic expressions, drainage patterns, and rock or vegetational tonal patterns. Landforms are easily discriminated by their familiar shapes and patterns. The IMAGE-100 computer has the ability to extract thematic information and to enhance the image.

N82-16446*# Stanford Univ., Calif. Remote Sensing Lab.
INTEGRATION OF LANDSAT WITH GEOLOGY AND

04 GEOLOGY AND MINERAL RESOURCES

AIRBORNE GEOPHYSICS INTO AN OPERATIONAL MINERAL EXPLORATION SYSTEM Final Report, Jun. 1978 - Dec. 1980

R. J. P. Lyon and M. F. Crawford, Principal Investigators Mar. 1981 270 p refs Prepared for JPL, Pasadena, Calif. Original contains imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. .57198. ERTS (Contract JPL-955047)

(E82-10028; NASA-CR-164433) Avail: NTIS HC A12/MF A01 CSCL 08G

Digital data, gamma-ray spectrometry and aeromagnetic data were digitally combined and analyzed for the Bearlodge area (northeastern Wyoming) where potential resources of thorium and rare earths occur. The combined LANDSAT-geophysical data set revealed several geologic structures that were not evident in a single data set for the study area. Both qualitative and quantitative methods of analysis were performed on the combined data sets. Qualitative analysis of the data was done on a computer controlled, interactive color TV display system by overlaying the various data sets in different colors. In the Bearlodge area, this analysis revealed a pair of northwest-southeast tranding lineaments in the LANDSAT image which appeared to truncate a zone of high radioactivity. An elliptical feature formed by drainages is found. An intense thorium-gamma ray anomaly which coincides with thorium-rare earth mineralization, occurs inside this elliptical feature.

N82-19624*# lowa Univ., lowa City. Dept. of Geology. USE OF MAGSAT ANOMALY DATA FOR CRUSTAL STRUCTURE AND MINERAL RESOURCES IN THE US MIDCONTINENT Quarterly Report, period ending 30 Sep. 1981

Robert S. Carmichael, Principal Investigator 28 Sep. 1981 10 p Original contains color illustrations ERTS (Contract NAS5-26425)

(E82-10049; NASA-CR-164926; QR-3) Avail: NTIS HC A02/MF A01 CSCL 08G

Magnetic profiles on individual satellites tracks were examined to identify bad (nonterrestrially-based) data points r profiles. Anomaly profiles for the same satellite track, but at different passes were compared for parallel tracks and for tracks that cross. The selected and processed data were plotted and contoured to develop a preliminary magnetic anomaly map. The map is similar in general morphology to NASA's Magsat global scalar anomaly map, but has more detail which is related to crustal properties. Efforts have begun to interpret the satellite magnetic anomalies in terms of crustal character. The correlation of magnetics with crustal petrology may have a much larger tectonic implication. Th possibility of there being an ultramafic lower crust along one zone as a consequence of a continental collision/subduction which helped form the midcontinent craton in Precambrian times is being investigated.

A.R.H.

N82-19642# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

METHODOLOGY OF THE INTERPRETATION OF REMOTE SENSING DATA AND APPLICATIONS IN GEOMORPHOLOGY

Tania Maria Sausen and Evlyn Marcia Leao deM. Novo Aug. 1981 42 p refs in PORTUGUESE; ENGLISH summary (INPE-2209-MD/007) Avail: NTIS HC A03/MF A01

Remote sensing techniques not only permit the acquisition, in a short time, of a large volume of information about phenomena occurring at the Earth's surface, but also provide a constant flux of data showing variations in spatial distribution patterns, which is of value in predicting and controlling geomorphological events. The use of aerial panchromatic, color, and multispectral photography is discussed as well as the interpretation of radar and thermal infrared imagery. Methods for interpreting multispectral imagery from LANDSAT are examined.

A.R.H.

N82-20596*# Consiglio Nazionale delle Ricerche, Milan (Italy). HEAT CAPACITY MAPPING MISSION (HCMM) PROGRAM: STUDY OF GEOLOGICAL STRUCTURE OF SICILY AND OTHER ITALIAN AREAS Final Report

Roberto Cassinis, Giovanni Lechi, Principal Investigators, Eugenio Zilioli, Alberto Marini, Pietro A. Brivio, and Nicola Tosi Aug. 1981 34 p refs Sponsored by NASA Original contains imagery. Original imagery may be purchased from NASA Goddard Space Flight Center, (code 601), Greenbelt, Md. 20771. Domestic

04 GEOLOGY AND MINERAL RESOURCES

users send orders to 'Attn: National Space Science Data Center'; non-domestic users send orders to 'Attn: World Data Center A for Rockets and Satellites'. HCMM

(E82-10073; NASA-CR-165095; NAS 1.26:165095) Avail: NTIS HC A03/MF A01 CSCL 05B

The usefulness of thermal inertia mapping in discriminating geolithological units was investigated using Sardinia and the Gulf of Orosei as test sites. Software designed for LANDSAT data were modified and improved for HCMM tapes. A first attempt was made to compare the geological cross section, the topography, the IR radiance, and the thermal inertia along selected profiles of the test site. Thermal inertia profiles appear smoothed in comparison with the thermal radiance. The lowest apparent thermal inertia (ATI) was found on granitic and basaltic outcrops where their image is of sufficient extent, while ATI is higher on carbonatic and dolomitic or moist deposits. Almost every fault is marked by a jump of ATI, the interval being sometimes of the order of one pixel. This seems to demonstrate the ability of ATI to detect contacts or tectonically disturbed zones with a good resolution. It seems more difficult to measure the differences in ATI between homogeneous materials having different lithology. Ground surveys conducted and a simulation model of diurnal temperatures of rocks having different thermal inertia are discussed. A.R.H.

N82-20599*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

STUDY PROJECT OF INTRUSIVE ROCKS: STATES OF ESPIRITO SANTO AND RIO DE JANEIRO, SOUTH AND EAST OF MINAS GERAIS AND SOUTHEAST OF THE STATE OF SAO PAULO [PROJETO ESTUDO DAS ROCHAS INTRUSIVAS: ESTADOS DO ESPIRITO SANTO E DU RIO DE JANEIRO, PARTES SUL E LESTE DE MINAS GERAIS E SUDESTE DO ESTADO DE SAO PAULO]

Nelson deJesusParada, Principal Investigator, Athos Ribeiro dosSantos, Celio Eustaquio dos Anjos, Marx Prestes Barbos, and Paulo Veneziani Jul. 1981 19 p refs In PORTUGUESE: ENGLISH summary Presented at the 3rd Simposio Regional de Geol.. Curitiba, Brazil, 12-15 Nov. 1981 Sponsored by NASA FRTS

(E82-10076: NASA-CR-168397: NAS 1.26:168397: INPE-2190-RPE/002) Avail: NTIS HC A02/MF A01 CSCL 08B

The feasibility of mapping intrusive rocks in polycyclic and polymetamorphic areas using the logic method for photointerpretation of LANDSAT and radar imagery was investigated. The resolution, scale and spectral characteristics of the imagery were considered. Spectral characteristics of the intrusive rock units mapped using image 100 were investigated. It was determined that identification of acidic and basic intrusive bodies and determination of their relationships with principal structural directions using the logic method was feasible. Tectonic compartments were subdivided into units according to their predominant lithographic types, ignoring stratigraphy. The principal directions of various foliations, faults, megafolds, and fractural systems were defined. Delineation of the boundaries of intrusive bodies mapped using the spectral characteristics of Image 100 imagery ws determined to be more accurate than visual analysis. A 1:500,000 scale map of intrusions in the areas studied was generated.

N82-21662*# Stanford Univ., Calif. Dept. of Geology.
HCMM: SOIL MOISTURE IN RELATION TO GEOLOGIC
STRUCTURE AND LITHOLOGY, NORTHERN CALIFORNIA
Final Report

Ernest I. Rich, Principal Investigator May 1981 26 p Original contains imagery. Original imagery may be purchased from NASA Goddard Space Flight Center, (code 601), Greenbelt, Md. 20771. Domestic users send orders to 'Attn: National Space Science Data Center'; non-domestic users send orders to 'Attn: World Data Center A for Rockets and Satellites'. HCMM (Contract NAS5-24479)

(E82-10135; NASA-CR-168518; NAS 1.26:168518) Avail: NTIS HC A03/MF A01 CSCL 08G

Heat capacity mapping mission images of about 80,000 sq km in northern California were qualitatively evaluated for usefulness in regional geologic investigations of structure and lithology. The thermal characteristics recorded vary among the several geomorphic provinces and depend chiefly on the topographic expression and vegetation cover. Identification of rock types, or groups of rock types, was most successfully carried

out within the semiarid parts of the region; however, extensive features, such as faults, folds and volcanic fields could be delineated. Comparisons of seasonally obtained HCMM images are of limited value except in semiarid regions.

N82-21664*# Geological Survey, Denver, Colo. Petrophysics and Remote Sensing.

APPLICATION OF HCMM DATA TO REGIONAL GEOLOGIC ANALYSIS FOR MINERAL AND ENERGY RESOURCE EVALUATION Progress Report, Jun. Aug. 1981

EVALUATION Progress Report, Jun. - Aug. 1981Kenneth Watson, Principal Investigator and Susanne H-Miller Aug. 1981 4 p Sponsored by NASA HCMM

(E82-10137; NASA-CR-168522; NAS 1.26:168522) Avail: NTIS HC A02/MF A01 CSCL 08G

Experimentation with several potentially promising techniques led to the selection of a fairly simple scheme for registration of data from the HCMM using an affine transformation. A method based solely on remote sensing was developed to estimate those meteorological effects which are required for thermal inertia mapping. It assumes that the atmospheric fluxes are spatially invariant and that the solar, sky and sensible heat fluxes can be approximated by a simple mathematical form. Coefficients are determined from least squares method by fitting observational data to the thermal model.

N82-21677*# Iowa Univ., Iowa City. Dept. of Geology. USE OF MAGSAT ANOMALY DATA FOR CRUSTAL STRUCTURE AND MINERAL RESOURCES IN THE US MIDCONTINENT Quarterly Report, period ending 30 Jun. 1981

Robert S. Carmichael, Principal Investigator 30 Jun. 1981 4 p FRTS

(Contract NAS5-26425)

(E82-10152; NASA-CR-168537; NAS 1.26:168537; QR-2) Avail: NTIS HC A02/MF A01 CSCL 08G

While the preliminary magnetic anomaly map for the centra midcontinent is only in the hand-drawn stage, it agrees in broad aspects with the preliminary global MAGSAT map provided by NASA. Because of data evaluation and finer scale averaging, there are more detailed features which hold promise for eventual geological/crustal interpretation. Some current analysis is directed at examining whether a map data feature such as an elongated anomaly or trend, which seems parallel to satellite data tracks, is likely of crustal origin or is an artifact of the data set. A.R.H.

05 OCEANOGRAPHY AND MARINE RESOURCES

Includes sea-surface temperature, ocean bottom surveying imagery, drift rates, sea ice and icebergs, sea state, fish location.

A82-19139 Analyses of the Eastern Pacific without ship PAPA data. J. Spagnol, M. Horita, and P. Haering (Department of the Environment, Pacific Weather Centre, Vancouver, Canada). In: Conference on Weather Forecasting and Analysis, 8th, Denver, CO, June 10-13, 1980, Preprints.

Boston, MA, American Meteorological Society, 1980, p. 150-155.

Two cases (Oct. 21-22 and Oct. 25-26, 1979) were chosen to illustrate the effect of poor numerical analyses and the ability of improving them using the resources available at the Pacific Weather Centre. It was found that without adequate alternative data sources the loss of Ocean Station PAPA data can have a detrimental effect on the Canadian Meteorological Centre (CMC) objective analysis over the Eastern Pacific. In periods of intense weather activity, without the anchoring effect of this data the uncorrected errors in the analyses may propagate westward to the coast causing the rejection of valid coastal radiosonde observations. However, the Pacific Weather Centre regional analyses can complement the CMC national analyses and partly offset the expected data void created by the loss of Ocean Station PAPA data in 1981.

A82-19560 # Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard Bhaskara. O. P. N. Calla, G. Raju, S. S. Rana, and S. Balasubramanian (Indian Space Research Organization, Space Applications Centre, Ahmedabad, India). In: European Microwave Conference, 10th, Warsaw, Poland, September 8-12, 1980, Proceedings.

Sevenoaks, Kent, England, Microwave Exhibitions and Publishers.

Sevendaks, Kent, England, Microwave Exhibitions and Publishers, Ltd., 1981, p. 588-599.

A82-20344 † The use of Meteor-satellite image data in oceanography (Opyt ispol'zovaniia videoinformatsii s ISZ 'Meteor' dlia issledovaniia iavlenii v okeane). A. S. Kaz'min and V. E. Skliarov (Akademiia Nauk SSSR, Institut Okeanologii, Moscow, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 48-57. 13 refs. In Russian.

A82-20445 * # Influence of dissolved organic materials on turbid water optical properties and remote-sensing reflectance. W. G. Witte, C. H. Whitlock, R. C. Harriss, J. W. Usry, L. R. Poole, W. M. Houghton, W. D. Morris, and E. A. Gurganus (NASA, Langley Research Center, Hampton, VA). Journal of Geophysical Research, vol. 87, Jan. 20, 1982, p. 441-446. 18 refs.

The effects of dissolved organic materials on turbid-water optical properties are assessed, by means of field measurements and laboratory simulations in which upwelled reflectance, attenuation, absorption, and backscatter spectral properties at wavelengths from 450 to 800 nm are examined in relation to water chemistry. The data show that dissolved organic materials decrease upwelled reflectance from turbid waters, and that the decrease in reflectance is a nonlinear function of concentration with the largest gradients at low carbon concentrations, depending on wavelength. Upwelled reflectance is found to be highly correlated with two backscatter-absorption parameters used in some optical models, which are nonlinear with dissolved organic material concentration change.

O.C.

A82-20447 * # Structure and variability of the Alboran Sea frontal system. R. E. Cheney (NASA, Goddard Space Flight Center, Greenbelt, MD) and R. A. Doblar (U.S. Navy, Naval Ocean Research and Development Activity, Bay St. Louis, MS). *Journal of Geophysical Research*, vol. 87, Jan. 20, 1982, p. 585-594. 8 refs. Navy-sponsored research.

A distinct oceanic front coinciding with the jet of incoming North Atlantic water, and an associated anticyclonic gyre in the

western half of the basin, were observed during a ship and aircraft survey of the physical characteristics of the Alboran Sea in the western Mediterranean in October 1977. The front was confined to the upper 200 m and was a continuous feature, extending from the Strait of Gibraltar 500 km eastward to the prime meridian. It is noted that in ten days between two surveys, the center of the gyre shifted 50 km westward. This variability of the anticyclonic gyre may correspond to changes of North Atlantic inflow strength, as inferred by local wind and the average atmospheric pressure over the western Mediterranean.

O.C.

A82-21917 * SASS measurements of the Ku-band radar signature of the ocean. L. C. Schroeder, W. L. Grantham (NASA, Langley Research Center, Hampton, VA), J. L. Mitchell, and J. L. Sweet (Kentron Technical Center, Hampton, VA). *IEEE Journal of Oceanic Engineering*, vol. OE-7, Jan. 1982, p. 3-14. 13 refs.

SeaSat-A Satellite Scatterometer (SASS) measurements of normalized radar cross section (NRCS) have been merged with high quality surface-wind fields based on in situ, to create a large data base of NRCS-wind signature data. These data are compared to the existing NRCS-wind model used by the SASS to infer winds. Falso-color maps of SASS NRCS and ocean winds from multiple orbits show important synoptic trends. (Author)

A82-21921 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere. A. M. Shutko and A. G. Grankov (Akademiia Nauk SSSR, Institut Radiotekhniki i Elektroniki, Moscow, USSR). *IEEE Journal of Oceanic Engineering*, vol. OE-7, Jan. 1982, p. 40-43. 10 refs.

The use of multifrequency radiometers to determine certain emission properties of the sea surface is considered, as is the dependence of the radiometer on wind speed, atmospheric water vapor content, and liquid water content in clouds. Attention is given to the sea state influence on the radiative characteristics of the ocean-atmosphere system and to calibrating the data of range measurement. Also considered is the problem of choosing those spectral bands which provide optimum accuracy for determining geophysical parameters with due regard to the spectral peculiarities of the functional relationships between the radiophysical and geophysical parameters and their uncertainties. Data are presented on an experiment for determining different hydrometeorological conditions and estimating the accuracy of applied retrieval procedures.

C.R.

A82-24061 * The Seasat low rate data processing system. J. W. Brown, J. C. Klose, and M. L. MacMedan (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). In: Oceans '80; International Forum on Ocean Engineering in the '80s, Seattle, WA, September 8-10, 1980, Conference Record.

New York, Institute of Electrical and Electronics Engineers, Inc., 1980, p. 518-526, 6 refs. Contract No. NAS7-100.

The development of the algorithms for data processing and distribution, the circuitry, and the performance of the Seasat low rate data processing system are reviewed. The system controls data from the radar altimeter, scatterometer, microwave radiometer, and the visible and IR radiometer for independent transmission of each instrument's readings. The downlink operates at 25 kb/sec, and a yearlong program of geophysical evaluation proceeded shortly after launch, allowing on-line engineering evaluation and alteration of the control algorithms in the system. Some data is preformatted for immediate distribution and storage in archival quality. A catalog and abstracts are provided to users allowing a RAM search from remote terminals for historical conditions. Procedures for verifying and altering the algorithms are detailed.

M.S.K.

A82-24063 * Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry. R. Hofer and E. G. Njoku (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). In: Oceans '80; International Forum on Ocean Engineering in the '80s, Seattle, WA, September 8-10, 1980, Conference Record.

New York, Institute of Electrical and Electronics Engineers, Inc., 1980, p. 531-534. Re-

05 OCEANOGRAPHY AND MARINE RESOURCES

search supported by the National Academy of Sciences; Contract No. NAS7-100.

The Scanning Multichannel Microwave Radiometer aboard both the Seasat and Nimbus-7 satellites was designed to estimate sea surface temperature (SST) and wind speed (WS) over an extended range of atmospheric conditions. The retrieval technique is described briefly, and it is demonstrated in a case study that the instrument design goals (SST:1.5 C; WS:2 m/s) appear to be feasible. (Author)

A82-24822 Workshop on the application of existing satellite data to the study of ocean surface energetics, 19-21 November 1980, University of Wisconsin-Madison. C. Gautier (Wisconsin, University, Madison, WI) and D. McConnell (NOAA, National Climate Program Office, Rockville, MD). American Meteorological Society, Bulletin, vol. 62, Dec. 1981, p. 1679-1689.

A82-27091 * # Topex orbit sustenance maneuver design. J. A. Kechichian (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). American Institute of Aeronautics and Astronautics, Aerospace Sciences Meeting, 20th, Orlando, FL, Jan. 11-14, 1982, Paper 82-0202. 15 p. 6 refs. NASA-supported research.

A trade-off analysis between maneuver period, execution errors, and orbit determination uncertainties is carried out for the Ocean Topography Experiment spacecraft for a given nodal equatorial constraint. Semimajor axis and eccentricity are controlled with minimum impulse using the linear theory of optimal transfer between close coplanar near-circular orbits. Ellipses of equal minimum and average maneuver periods are presented in the (3 execution error, 3 orbit determination uncertainty) space for different nodal equatorial constraints enabling the determination of the appropriate combination of execution errors and orbit determination uncertainties that guarantees a mission required minimum maneuver period for a given nodal deadband. (Author)

A82-27596 * # Optimal spatial filtering and transfer function for SAR ocean wave spectra. A. D. Goldfinger, R. C. Beal, and D. G. Tilley (Johns Hopkins University, Laurel, MD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981,

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 291-297. 5 refs. NASA-supported research; Contract No. NOAA-MO-A01-78-00-4330.

The Seasat Synthetic Aperture Radar (SAR) has proved to be an instrument of great utility in the sensing of ocean conditions on a global scale. An analysis of oceanographic and atmospheric aspects of Seasat data has shown that the features observed in the imagery are linked to ocean phenomena such as storm sources and their resulting swell systems. However, there remains one central problem which has not been satisfactorily solved to date. This problem is related to the accurate measurement of wind-generated ocean wave spectra. Investigations addressing this problem are currently being conducted. The problem has two parts, including the accurate measurement of the image spectra and the inference of actual surface wave spectra from these measurements. A description is presented of the progress made towards solving the first part of the problem, taking into account a digital rather than optical computation of the image transforms. G.R.

A82-27602 # Integrated sensor system for collection of wave data applied to coastal engineering design. D. E. Lichy, T. L. Miloser, and D. W. Berg (U.S. Army, Coastal Engineering Research Center, Fort Belvoir, VA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 357-365. 11 refs.

Ocean wave climate is a primary consideration in the design of coastal structures. Wave data are a major parameter for use in longshore current and transport mathematical models. During October and November 1980, more than 30 organizations took part in the 56-day Atlantic Remote Sensing Land Ocean Experiment (ARSLOE) near Duck, North Carolina. A total of 47 wave measuring devices, in situ to remote sensing, were tested. This paper discusses the various considerations involved in designing an integrated system for the collection of ocean wave data, along with the limitations and

advantages of the systems tested during ARSLOE and other field experiments. B.J.

A82-27608 # The first ESA remote sensing satellite system ERS-1. G. Duchossois and C. Honvalut (ESA, Directorate of Application Programmes, Paris and Toulouse, France). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 461-477.

The mission objectives of the ESA remote sensing satellite system ERS-1 is to develop applications related to a better knowledge of ocean parameters and sea-state conditions and to increase scientific understanding of coastal zones and global ocean processes. In particular, offshore activities, ship routing, physical oceanography and glaciology, climate research, and marine biology will be benefited. The main payload will consist of a C-band active microwave instrumentation, and ocean color monitor, and a radar altimeter. Launched by Ariane 2 or 3, the system will use the Multimission Platform developed in the framework of the French national SPOT program. The requirements and constraints for the ERS-1 mission include coverage, instrument duty cycles, stations network, processing levels/products, and ground segment concept. The development program is described. ERS-1 will be both an experimental and an operational system.

A82-27619 # Comparisons of laser profilometer sea ice roughness statistics with surface truthed data and SLAR imagery. M. E. Kirby and J. T. Sutton (INTERA Environmental Consultants, Ltd., Ottawa, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 563-575, 6 refs.

In connection with programs related to the exploration and development of sources of petroleum in remote offshore regions of the high Arctic, the presence of sea ice has usually a significant effect on the activities involved in the implementation of such a program. In anticipation of year-round operations, models have been developed which calculate the predicted performance levels of ships and drill rigs under various design characteristics and ice conditions. These models are very dependent on historical ridge data sets. The method most widely used in the acquisition of ice ridge statistics involves the analysis of laser profilometer data. However, a detailed validation test of the laser profilometer method has not been conducted. The present investigation has the objective to compare airborne laser profilometer data of sea ice with measurements taken on the ice. A close positive correlation between radar brightness and ridge density could be observed. G.R.

A82-27620 # A method for the retrieval of phytoplankton and suspended sediment concentrations from remote measurements of water colour. S. Tassan (Commission of the European Communities, Joint Research Centre, Ispra, Italy). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 577-586. 19 refs.

A82-27640 # High precision radiometric temperature measurements of the ocean surface. K. Peacock, R. F. Gasparovic, and L. D. Tubbs (Johns Hopkins University, Laurel, MD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981,

p. 793-802.

Characteristics of a unique imaging radiometer used to make measurements over areas of the North Atlantic at infrared wavelengths are described. Examples are presented of the surface temperature spatial variation, the radiometric temperature variation with viewing angle, atmospheric effects, influence of scattered clouds, and the wavenumber variance spectrum. The radiometric environment typically encountered is discussed. It is shown that the capabilities of the radiometer permit the obtaining of precise radiance data for estimating corrections necessary for extracting accurate sea surface temperatures.

D.L.G.

A82-27674 # A formation process of an oceanic vortex analyzed by multi-temporal remote sensing. Y. Hatakeyama (Asia Air Survey Co., Ltd., Tokyo, Japan), S. Tanaka (Remote Sensing Technology Center of Japan, Tokyo, Japan), and T. Nishimura (Tokyo Science University, Noda, Japan). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1173-1186. 6 refs.

Investigations of the flow characteristics in the coastal seas of Japan are required in connection with water-quality problems related to rapid urbanization or industrialization. The present study is concerned with an observation of the dynamic aspects of an interaction between the Kuroshio current and coastal water in October 1979, after Typhoon-20 had passed through Japan. The observational data were obtained with the aid of a multitemporal remote sensing method. A vortex at the mouth of Suruga Bay was detected on the basis of the fluid-mechanical interpretation of the data. Attention is given to the marine background of the site, an analysis of temporal static aspects of the vortex with the aid of Landsat data, the analysis of dynamic vortex processes, and approaches for observing a vortex with the aid of remote-sensing data.

G.R.

A82-27684 # Response of the marine community to satellite-derived oceanic information. N. J. Hooper (Metrics, Inc., Atlanta, GA) and J. W. Sherman, III (NOAA, National Earth Satellite Service, Washington, DC). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1285-1295. 8 refs.

The present investigation has the objective to merge the marine data requirements identified at the NOAA Workshop on Oceanic Remote Sensing with those reflected by the response of the marine community to the National Oceanic Satellite System (NOSS) Conference Worksheets. The result of such an effort provides a summary of the civil marine community's oceanic remote sensing data requirements as they are currently understood. Oceanic remote sensing had been defined as being restricted to the use of electromagnetic energy to observe or measure properties of the ocean while remotely located from that portion of the ocean being observed.

G.R.

A82-28031 # Estimation of sea surface temperature from remote sensing in the 3.7 micron window region. T. Takashima and Y. Takayama (Meteorological Research Institute, Tsukuba, Ibaraki, Japan). Meteorological Society of Japan, Journal, vol. 59, Dec. 1981, p. 876-891. 16 refs.

Temperature measurement deviation in satellite remote sensing during day and night is considered. Atmospheric gases are taken as absorbent constituents and aerosols as scatterers in an atmosphereocean model. The solar input is chosen at 1.94 cal/min at the surface, and a standard atmosphere is assumed. Optical thickness calculations for the 3.7 micron band include the effects of water vapor lines and continua, the collision-induced N2 band near 4 microns, and mixed gases. The atmosphere is characterized by nine layers, each with 14 homogeneous sublayers. Optical thicknesses are calculated over the 9 layers, averaged and weighted by the NOAA-6 filter response. The refractive index is also calculated, and the surface is treated as a specular reflector. Except for sun glint, deviations in observed to measured temperatures were less in the day than at night, Greater than 50 deg differences were detected in the specular direction, and were correctable by simulation. The surface wind speeds are required in order to correct for sun glint. M.S.K.

A82-28135 † Polarimetric method for the remote sensing of oil slicks on the sea surface (Poliarizatsionnyi metod distantsionnoi indikatsii plenok nefti na poverkhnosti moria). A. A. Buznikov and G. A. Lakhtanov. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 50-54. 10 refs. In Russian.

The polarimetric method for the remote sensing of oil slicks on the sea surface is described, and some previous studies using this method are briefly reviewed. Particular attention is given to the use

05 OCEANOGRAPHY AND MARINE RESOURCES

of lidar polarimeters, and results of single-channel polarimetric studies of pollution in the Caspian Sea are discussed.

B.J.

A82-28145 † The use of data from satellite-borne microwave scanning radiometers for the automated compilation of operational maps of ice cover for the Arctic Ocean (Ispol'zovanie dannykh sputnikovykh skaniruiushchikh SVCh radiometrov dlia avtomatizirovannogo sostavleniia operativnykh kart ledianogo pokrova Severnogo Ledovitogo Okeana). V. V. Bogorodskii, N. D. Liubovnyi, and P. A. Nikitin. (Vsesoiuznaia Konferentsiia problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 108-111. In Russian.

N82-16331# Mitre Corp., Bedford, Mass. COHERENT SCATTER OF MICROWAVES FROM MODERATELY ROUGH SURFACES

M. M. Weiner and G. A. Robertshaw Aug. 1981 33 p refs (Contract F19628-81-C-0001; AF Proj. 4290) (AD-A106133; MTR-8299) Avail: NTIS HC A03/MF A01 CSCL 20/14

An improved model is reported for the effect of surface roughness on coherent scatter of microwaves from moderately rough terrain and sea surfaces. This model gives agreement with microwave and acoustical experimental data for surface height standard deviations as much as 400% larger than for a widely accepted model discussed by Beckmann and other investigators. The improved agreement with data is achieved by assuming a symmetrical exponential probability density of the surface height random variable. This model lends itself to an interesting physical interpretation of the stochastic process associated with the surface profile.

Author (GRA)

N82-16683*# National Aeronautics and Space Administration. Wallops Flight Center, Wallops Island, Va.

NOSS ALTIMETER ALGORITHM SPECIFICATIONS

D. W. Hancock, R. G. Forsythe, and J. D. McMillan (Washington Analytical Services Center, Pocomoke City, Md.) Jan. 1982 112 p refs

(NASA-RP-1083) Avail: NTIS HC A06/MF A01 CSCL 08C A description of all algorithms required for altimeter processing is given. Each description includes title, description, inputs/outputs, general algebraic sequences and data volume. All required input/output data files are described and the computer resources required for the entire altimeter processing system were estimated. The majority of the data processing requirements for any radar altimeter of the Seasat-1 type are scoped. Additions and deletions could be made for the specific altimeter products required by other projects.

T.M.

N82-16697# SRI International Corp., Menlo Park, Calif.
AN EXPERIMENTAL PROGRAM TO PROVIDE REMOTE
MEASUREMENT AND ANALYSIS OF OCEAN WAVES, SEA
LEVEL WINDS AND BALANCED PRESSURE IN SUPPORT
OF SEASAT-A Final Report

J. W. Maresca, Jr., R. M. Endlich, C. T. Carlson, and D. E. Wolf Feb. 1981 50 p. refs

(Contract NA79SA-C-00738; SRI Proj. 8808)

(PB81-246035; NOAA-81071410)

Avail: NTIS

HC A03/MF A01 CSCL 08C

Wide Aperture Research Facility (WARF) HF skywave radar and Seasat-A measurements of rms wave height and wind direction were compared for 17 July and 3 October 1978. Estimates of rms wave height were made during the 2 October period from skywave radar data recorded directly below the satellite. Sea level balanced pressure fields were computed from the Seasat-A satellite scatterometer (SASS) derived wind field on both days and compared to the National Weather Service (NWS) surface pressure charts.

N82-17561*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, Md.

AN OPTICAL MODEL FOR THE MICROWAVE PROPERTIES OF SEA ICE

P. Gloersen and J. K. Larabee Nov. 1981 28 p refs Submitted for publication (NASA-TM-83865) Avail: NTIS HC A03/MF A01 CSCL

081.

05 OCEANOGRAPHY AND MARINE RESOURCES

The complex refractive index of sea ice is modeled and used to predict the microwave signatures of various sea ice types. Results are shown to correspond well with the observed values of the complex index inferred from dielectic constant and dielectric loss measurements performed in the field, and with observed microwave signatures of sea ice. The success of this modeling procedure vis a vis modeling of the dielectric properties of sea ice constituents used earlier by several others is explained. Multiple layer radiative transfer calculations are used to predict the microwave properties of first-year sea ice with and without snow, and multiyear sea ice.

N82-17563*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, Md.

SATELLITE-DERIVED ICE DATA SETS NO. 1: ANTARCTIC MONTHLY AVERAGE MICROWAVE BRIGHTNESS TEMPERATURES AND SEA-ICE CONCENTRATIONS, 1973 - 1976 H. J. Zwally Nov. 1981 35 p refs Submitted for publication (NASA-TM-83812) Avail: NTIS HC A03/MF A01 CSCL ORI

A summary data set concerning 4 years of Antarctic sea-ice conditions was created and is available on magnetic tape. The data were derived from electrically scanning microwave radiometer brightness temperatures and were mapped into a polar stereographic grid enclosing the 50 deg S latitude circle. The grid size varies from about 32 by 32 sq km at the poles to about 28 by 28 sq km at 50 deg S. The microwave brightness temperatures of Antarctic sea ice are predominantly characteristic of first-year ice with an emissivity of 0.92 at 19 GHz frequency. Sea ice concentrations were calculated from the brightness temperature data for each grid element with an algorithm that uses an emissivity value of 0.92 and an ice physical temperature estimate from climatological surface air temperatures. Monthly, multiyear monthly, and yearly maps of brightness temperatures and sea ice concentrations were created for the 4 years, except for 7 months for which useable data were insufficient. Author

N82-17566# Research Inst. of National Defence, Stockholm (Sweden).

REMOTE SENSING TECHNIQUES SUITABLE FOR EXPLORATION AND NAVIGATION IN AND UNDER SEA ICE

Ragnar Thoren 1981 44 p refs Presented at Intern. Colloq. of the Intern. Soc. of Photogrammetry and Remote Sensing on Spectral Signatures of Objects in Remote Sensing, Avignon, France, 8-11 Sep., 1981

(FOA-Rept-Vol-15-No-2; FOA-B-60002-M7;

ISBN-91-7056-057-9) Avail: NTIS HC A03/MF A01; Research Inst. of National Defence, Stockholm Kr 9

The performance of advanced satellite navigation used aboard Swedish and Soviet icebreakers is reported. It is shown that the ships' position was obtained with very high precision in spite of frequent fog. Further development of remote sensing satellite systems for ocean monitoring, the development of LORAN C into an expanded and improved aid to navigation, and the importance of visual ice reconnaissance in combination with optical viewing systems in arctic waters are also addressed. Developments in underwater technology, including hydroacoustics, hydrooptics, laser depth sounding, underwater communication, and subsea exploratory drilling are included. J.M.S.

N82-17567# Office of Naval Research, Pasadena, Calif. ARABIAN SEA PROJECT OF 1980: COMPOSITES OF INFRARED IMAGES

Ben J. Cagle and Robert Whritner Aug. 1981 67 p (AD-A107910: ORNWEST-81-5) Avail: NTIS HC A04/MF A01 CSCL 08/1

A technique was developed for determining the mesoscale features of the Arabian Sea, and reported on in ONRWEST Report 81-3. A method for assembling composites of images in mosaic form is presented. Enhanced images are presented with surface interpretations for the spring and fall transition periods related to the Northeast and Southwest Monsoons, respectively.

Author (GRA)

N82-17798*# Old Dominion Univ., Norfolk, Va. Dept. of Oceanography.
THE RELATIONSHIP AMONG SEA SURFACE ROUGHNESS

THE RELATIONSHIP AMONG SEA SURFACE ROUGHNESS VARIATIONS, OCEANOGRAPHIC ANALYSES, AND AIRBORNE REMOTE SENSING ANALYSES Final Report, 16 May - 31 Oct. 1981

George F. Oertel and Terry L. Wade Dec. 1981 252 p refs (Grant NAG1-189)

(NASA-CR-168444; TR-81-2) Avail: NTIS HC A12/MF A01 CSCL 08C

The synthetic aperture radar (SAR) was studied to determine whether it could image large scale estuaries and oceanic features such as fronts and to explain the electromagnetic interaction between SAR and the individual surface front features. Fronts were observed to occur at the entrance to the Chesapeake Bay. The airborne measurements consisted of data collection by SAR onboard an F-4 aircraft and real aperture side looking radar (SLAR) in Mohawk aircraft. A total of 89 transects were flown. Surface roughness and color as well as temperature and salinity were evaluated. Cross-frontal surveys were made. Frontal shear and convergence flow were obtained. Surface active organic materials, it was indicated, are present at the air-sea interface. In all, 2000 analyses were conducted to characterize the spatial and temporal variabilities associated with water mass boundaries.

N82-17802# European Space Agency, Paris (France). SEA STATE MEASUREMENT WITH A TWO FREQUENCY SCATTEROMETER (THEORY)

Michael Kleintz Dec. 1981 177 p refs Transl into ENGLISH of "Seegangsbestimmung mit dem Zweifrequenz-Scatterometer (Theoretische Grundlagen)" Rept. DFVLR-FB-80-32 Oberpfaffenhofen, West Germany, May 1980 Original report in GERMAN previously announced as N81-22675

(ESA-TT-710; DFVLR-FB-80-32) Avail: NTIS HC A09/MF A01; DFVLR, Cologne DM 31.20

In the context of the Spacelab program, sea state measurements with a two frequency scatterometer are considered. A system analysis of two frequency scatterometry, especially signal analysis for stationary and airborne (aircraft: satellite) measurements, is presented, and an unambiguous method for wind direction determination is given. A statistical model of sea state, based on the frequency spectrum of the water wave height distribution, is used. The radar echo from the sea surface is characterized for a monochromatic ouptut signal. An autocorrelation function is developed, and application in consideration of the Doppler spectrum of the sea surface reflectance function is shown.

Author (ESA)

N82-17803# National Oceanic and Atmospheric Administration, Rockville, Md. Ocean Technology and Engineering Services. ERROR ANALYSIS OF PULSE LOCATION ESTIMATES FOR SIMULATED BATHYMETRIC LIDAR RETURNS

Gary C. Guenther and Robert W. L. Thomas Jul. 1981 59 p refs Prepared in cooperation with EG and G Washington Analytical Services Center, Inc., Rockville, Md.

(PB82-109448: NOAA-TR-OTES-1; NOAA-81081101) Avail: NTIS HC A04/MF A01 CSCL 08J

A Poisson count simulator is used to generate precision and offset results for the estimated temporal location of quantum limited laser pulses. Pulse sizes, shapes, and charge integration times are varied over appropriate ranges. A number of location estimators including variations on peak, centroid, and threshold detectors are examined. Comparisons with experimental results are presented. Hardware and software design parameters of an airborne lidar hydrography system are discussed.

N82-17805# National Bureau of Standards, Boulder, Colo. Wave Propagation Lab.

RECOVERING OCEAN WAVEHEIGHT FROM HF RADAR SEA ECHOES DISTORTED BY IMPERFECT IONOSPHERIC REFLECTION

T. M. Georges, J. W. Maresca, C. T. Carlson, J. P. Riley, R. M. Jones, and D. E. Westover May 1981 156 p refs (PB82-113283; NOAA-TM-ERL-WPL-73; NOAA-81081901) Avail: NTIS HC A08/MF A01 CSCL 08C

A real-time signal processing package to collect high-quality sea-echo Doppler spectra under many different ionospheric conditions found in nature was developed. Graphical displays and objective quality indices help the radar operator sort undistorted spectra from those distorted by imperfect ionospheric reflection, so that ocean wave height can be reliably estimated while the data are being collected. The package can be used either off-line on archival data or for on-line adaptive processing of radar data as part of an ocean-scanning strategy.

Author (GRA)

N82-18660*# Jet Propulsion Lab., California Inst. of Tech., Pasadena.

SEASAT DATA UTILIZATION PROJECT Final Report

G. H. Born, D. N. Held, D. B. Lame, R. G. Lipes, D. R. Montgomery, P. J. Rygh, and J. F. Scott 30 Sep. 1981 62 p refs (NASA-CR-168557; Rept-622-233) Avail: NTIS HC A04/MF A01 CSCL 05B

During the three months of orbital operations, the satellite returned data from the world's oceans. Dozens of tropical storms, hurricanes and typhoons were observed, and two planned major intensive surface truth experiments were conducted. The utility of the Seasat-A microwave sensors as oceanographic tools was determined. Sensor and geophysical evaluations are discussed, including surface observations, and evaluation summaries of an altimeter, a scatterometer, a scanning multichannel microwave radiometer, a synthetic aperture radar, and a visible and infrared radiometer.

N82-18844# Office of Technology Assessment, Washington, D. C.

TECHNOLOGY AND OCEANOGRAPHY: AN ASSESSMENT OF FEDERAL TECHNOLOGIES FOR OCEANOGRAPHIC RESEARCH AND MONITORING

Jun. 1981 27 p

(OTA-O-142) Avail: NTIS HC A03/MF A01

The status of technologies used to collect data about the ocean and to conduct experiments in the ocean is addressed. Problems and opportunities are analyzed and the Federal agencies and programs charged with conducting oceanic studies and providing the necessary management and hardware systems are examined. Selected national programs directed toward conserving and managing marine fishery resources, developing an oceanographic satellite system investigating the geology and possible resource potential of the continental margins beneath the deep ocean, and developing a climate prediction capability are analyzed.

N82-19435# Washington Univ., Seattle. Polar Science Center

SEA ICE MOVEMENTS FROM SYNTHETIC APERTURE RADAR Final Report, 1 Apr. 1979 - 30 Jun. 1981

David A. Rothrock and Alan S. Thorndike 1 Dec. 1981 84 p refs

(Contract N00014-79-C-0418; NR Proj. 307-428)

(AD-A109002) Avail: NTIS HC A05/MF A01 CSCL 08/12 The spatial structure of the sea ice velocity field determines ridging, open water production and ice stress. The velocity has been measured roughly every 2 km along an 865 km track from SEASAT synthetic aperture radar. The movement shows individual pieces as large as 100 km. The spatial autocorrelation function of velocity has been estimated from these data and FGGE and AIDJEX buoy data, and has a length scale of roughly 1000 km. A model of the movement of a set of pieces shows the large uncertainty in opening and ridging estimated from velocities measured at only three points.

N82-19704# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil)

PRELIMINARY RESULTS OF A STUDY OF MAPPING THERMAL DISCHARGE IN THE OCEAN, USING REMOTE SENSING DATA

Merritt Raymond Stevenson, Carlos Alberto Steffen, and Hector Manual Inostroza Villagra Sep. 1981 23 p refs In PORTU-GUESE; ENGLISH summary Presented at 33d Ann. Meeting of SBPC, Salvador, 8-15 Jul. 1981

(INPE-2229-PRE/021) Avail: NTIS HC A02/MF A01

The spatial and temporal variations of the sea surface temperature, utilizing data obtained from sea surface, aircraft and satellite platforms were studied. The objective of the study is the evaluation and mapping of small scale variations in the sea surface temperature, caused by the thermal discharge from a nuclear power plant at Angra dos Reis, Brazil. Evaluation of data from ANGRA 01, the first experiment made on December 19, 1980, showed the surface temperature to be quite isothermal. Temperature from the aircraft and satellite radiometers were about 0.6 C and 5.0 C cooler, respectively, than the temperatures measured from the boat. These thermal offsets are readily accounted for by differences in emissivities of the sea surface and the intervening water vapor in the lower atmosphere. Author

05 OCEANOGRAPHY AND MARINE RESOURCES

N82-19756 British Library Lending Div., Boston Spa (England). CLASSIFICATION OF THE FIELDS OF ANOMALY IN MONTHLY WATER TEMPERATURE OF THE NORTH ATLANTIC DURING THE COLD HALF-YEAR

R. M. Vilfand 27 Jul. 1981 6 p refs Transl. into ENGLISH from Gidromet. Nauch.-Issled. Tsentr. SSSR (USSR), v. 231, 1980 p 123-126

(BLL-Trans-1509-(9022.552)) Avail: British Library Lending Div., Boston Spa, Engl.

The use of the thermal characteristics of ocean surface in making long-term forecasts is examined. Fields of anomaly in the mean monthly water temperature of the North Atlantic were classified and analyzed.

N82-19778# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil)

CONVERGENCE ZONES IN THE SOUTH ATLANTIC AND THEIR INFLUENCE ON THE PRECIPITATION REGIME IN NORTHEASTERN BRAZIL M.S. Thesis [ZONAS DE CONVERGENCIA NO ATLANTICO SUL E SUAS INFLUENCIAS NO REGIME DE PRECIPITACAO NO NORDESTE DO BRASIL]

Lucimar Luciano deOliveira Jan. 1982 125 p refs In PORTUGUESE; ENGLISH summary

(INPE-2307-TDL/074) Avail: NTIS HC A06/MF A01

The relationship between the convergence zones in the South Atlantic and the rainfall variability on Northeast Brazil was studied. Radiosonde data from the Posto Oceanografico da Ilha da Trindade, wind charts from the National Meteorological Center, USA, precipitation data of selected coastal stations and satellite imagery were utilized. Monthly and half-yearly brightness charts were constructed from such satellite imagery between the parallels of 10 degrees N and 55 degrees S and the meridians of 010 degrees E and 080 degrees W, for a dry and a rainy year. The results reveal that dry years correspond to the permanence of the Spring pattern of interaction between the intertropical convergence zone and the South Atlantic convergence zones, the Bolivian high (in 200 mb) being more developed: in such dry years a stronger and more regular Walker circulation seems to be present.

N82-19781*# National Aeronautics and Space Administration.
Goddard Space Flight Center. Greenbelt, Md.

ESTIMATING OCEAN-AIR HEAT FLUXES DURING COLD AIR OUTBREAKS BY SATELLITE

Shu-Hsien Chou and David Atlas Nov. 1981 52 p refs Submitted for publication Original contains color illustrations (NA SA-TM-83854) Avail: NTIS HC A04/MF A01 CSCL 04B

Nomograms of mean column heating due to surface sensible and latent heat fluxes were developed. Mean sensible heating of the cloud free region is related to the cloud free path (CFP. the distance from the shore to the first cloud formation) and the difference between land air and sea surface temperatures, theta sub 1 and theta sub 0, respectively. Mean latent heating is related to the CFP and the difference between land air and sea surface humidities q sub 1 and q sub 0 respectively. Results are also applicable to any path within the cloud free region. Corresponding heat fluxes may be obtained by multiplying the mean heating by the mean wind speed in the boundary layer. The sensible heating estimated by the present method is found to be in good agreement with that computed from the bulk transfer formula. The sensitivity of the solutions to the variations in the initial coastal soundings and large scale subsidence is also investigated. The results are not sensitive to divergence but are affected by the initial lapse rate of potential temperature; the greater the stability, the smaller the heating, other things being equal. Unless one knows the lapse rate at the shore, this requires another independent measurement. For this purpose the downwind slope of the square of the boundary layer height is used, the mean value of which is also directly proportional to the mean sensible heating. The height of the boundary layer should be measurable by future spaceborn lidar systems.

N82-19796# Florida State Univ., Tallahassee. Dept. of Meteorology.

COASTAL UPWELLING ECOSYSTEMS ANALYSIS. ATLAS OF THE JOINT I AIRCRAFT WINDS FOR THE 500 FOOT LEVEL Final Report

D. W. Stuart, A. I. Watson, and W. P. Duval Jun. 1981 73 p refs

05 OCEANOGRAPHY AND MARINE RESOURCES

(Grant NSF OCE-77-27735) (P882-114703: NSF/IDOE-81-44: FSU-MET-STU-81/2: NSF/IDOE/CUEA/TR-39) Avail: NTIS HC A04/MF A01 CSCL

Maps of winds at 500 ft are presented for 17 individual flights and for 3 mean wind regimes using aircraft data gathered during daytime flights made in February-March 1974 as part of JOINT I. The total wind field is shown by maps of the streamlines and isotachs while the north-south component is shown by maps of isotachs and averaged offshore and alongshore profiles. GRA

N82-19801*# National Aeronautics and Space Administration, Washington, D. C.

NASA OCEANIC PROCESSES PROGRAM, FISCAL YEAR 1981 Annual Report

Mar. 1982 132 p refs (NASA-TM-84467) Avail: NTIS HC A07/MF A01 CSCL 08C

Summaries are included for Nimbus 7, Seasat, TIROS-N, Altimetry, Color Radiometry, in situ data collection systems, Synthetic Aperture Radar (SAR)/Open Ocean, SAR/Sea Ice, Scatterometry, National Oceanic Satellite System, Free Flying Imaging Radar Experiment, TIROS-N/Scatterometer and/or ocean color scanner, and Ocean Topography Experiment. Summaries of individual research projects sponsored by the Ocean Processes Program are given. Twelve investigations for which contracting services are provided by NOAA are included.

N82-19802# Electronics Research Lab., Adelaide (Australia). AN AERIAL SURVEY OF WATER TURBIDITY AND LASER DEPTH SOUNDING PERFORMANCE ALONG THE QUEENS-LAND COAST

D. M. Phillips and R. H. Abbot Apr. 1981 29 p refs (AD-A109050; ERL-0192-TR) Avail: NTIS HC A03/MF A01 CSCL 08/10

The performance of the WRELADS laser airborne depth sounder has been assessed in North Queensland coastal waters from Townsville to Torres Strait. This was achieved by recording water turbidity and maximum sounding depth in the aircraft along the flight path. The parameter used in the aerial survey as a measure of water turbidity was related to beam attenuation coefficient measured from a boat in a joint aircraft and boat trial. Data relating the statistical distribution of turbidity to water depth were obtained and compared with the observed performance characteristic in order to indicate the proportion of Queensland coastal waters suitable for sounding with an airborne laser sounder. Author (GRA)

N82-19805# Ecole Nationale Superieure des Mines, Valbonne Centre de Teledetection et d'Analyse des Milieux

THE TOCIND EXPERIMENT Final Report [EXPERIENCE TOCIND]

L. Wald Paris ESA Jul. 1981 21 p refs In FRENCH Sponsored in cooperation with CNES (Contract ESA-4423/80/F-FC(SC))

(CTAMN/81/R/10; ESA-CR(P)-1479) Avail: NTIS HC A02/MF A01

The relation between surface isotherms and current is discussed. Predicting surface current from satellite thermographs is investigated. Ship measurements of Indian Ocean currents are compared with Meteosat images. Extensive cloud cover makes it impossible to compare results. Results from a horizontal heat advection model agree closely with measurements. Author (ESA)

N82-20823*# California Univ., La Jolla. Inst. of Marine Resources

SHIP AND SATELLITE BIO-OPTICAL RESEARCH IN THE **CALIFORNIA BIGHT**

Raymond C. Smith and Karen S. Baker [1982] 23 p refs (Grant NsG-1641)

(NASA-CR-168681; NAS 1.26:168681) HC A02/MF A01 CSCL 08A

Mesoscale biological patterns and processes in productive coastal waters were studied. The physical and biological processes leading to chlorophyll variability were investigated. The ecological and evolutionary significance of this variability, and its relation to the prediction of fish recruitment and marine mammal distributions was studied. Seasonal primary productivity (using chlorophyll as an indication of phytoplankton biomass) for the

entire Southern California Bight region was assessed. Complementary and contemporaneous ship and satellite (Nimbus 7-CZCS) bio-optical data from the Southern California Bight and surrounding waters were obtained and analyzed. These data were also utilized for the development of multi-platform sampling strategies and the optimization of algorithms for the estimation of phytoplankton biomass and primary production from satellite imagery.

N82-20824# National Research Inst. for Oceanology, Stellenbosch (South Africa). Physical Oceanography Div.

INTERACTION BETWEEN THE AGULHAS CURRENT AND THE SUBTROPICAL CONVERGENCE

J. R. E. Lutjenarms Feb. 1981 42 p refs Presented at the 4th Natl. Oceanographic Symp., Cape Town, 10-13 Jul. 1979 (CSIR-RR-384) Avail: NTIS HC A03/MF A01

The Agulhas Current which loses its essential character as a western boundary current south of South Africa is discussed. This ocean area is known as an area of dramatic dynamical variability. To investigate this variability, and the mechanisms responsible, a number of satellite products covering a period of over two years were studied. A number of dynamical phenomena were observed and are described. These include the genesis and growth of sheer edge eddies on the landward border of the current, the nature and location of the Agulhas retroflection region, the formation of Agulhas rings in the south-east Atlantic Ocean, and the nature and variability of planetary waves in the subtropical convergence. The possible interaction between these features of the circulation is discussed in so far as the limited data allow this, and a conceptual image of the macroscale current dynamics in the area is presented.

N82-20827# Naval Research Lab., Washington, D. C. Aerospace Systems Div.

SURFACE WAVE STATISTICS AND SPECTRA DURING HIGH SEA STATE CONDITIONS IN THE NORTH ATLAN-

C. R. McClain, D. T. Chen, and W. D. Hart 30 Dec. 1981 33 p refs

(RR0320841: WF59553000)

NRL-MR-4722) (AD-A109832: Avail:

NTIS HC A03/MF A01 CSCL 08/3

Surface wave data collected using an airborne laser profilometer during high sea state conditions are analyzed to produce statistical cumulants up to the fifth order and power spectra. Theoretically, the third cumulant, skewness, is directly proportional to the wind-wave significant slope. This relationship is supported by wind-wave tank data, but little field data of this kind is available in the literature. Also, it has been suggested that if skewness can be derived from radar altimeter data, the significant slope would be computed and together with another altimeter product, the rms wave height, the wave spectra can be estimated using the Wallops Spectral Model (WSM). The results of this study indicate that the skewness relationship is valid for wind-wave dominated seas but as the swell contribution to rms wave height increases, the combined wave field skewness monotonically decreases below the predicted value. The WSM yields excellent reproductions of the wind-wave spectra even in multiple-peaked seas providing that the model inputs are properly determined for the wind-wave subfield. Finally the altimeter-WSM scheme should work reasonably well when the seas are wind-wave dominated provided that the altimeter can accurately measure skewness. More research on intermediate and swell dominated conditions is recommended. Author (GRA)

N82-21469# Deutsche Forschungs- und Versuchsanstalt fuer Luft- und Raumfahrt, Oberpfaffenhofen (West Germany).

TWO-DIMENSIONAL POWER SPECTRA OF SEASAT SAR **IMAGERY**

H. Seichter In ESA SAR Image Quality Jun. 1981 p 55-58

Avail: NTIS HC A05/MF A01; ESA, Paris FF 55 (US \$12)

A least complication attempt was made to produce ocean wave power spectra of SEASAT SAR imagery. Two-dimensional power spectra of ocean SAR imagery with a pixel spacing of 12.5 m or multiples of it and side lengths of 1.6 km to 25.6 km were produced and converted to photo products. The most favorable sizes are dependent on wave properties. Author (ESA)

05 OCEANOGRAPHY AND MARINE RESOURCES

N82-21691# Naval Surface Weapons Center, Dahlgren, Va. SOME ALTIMETRIC SIGNATURES FROM SEASAT OVER THE MID-PACIFIC SEAMOUNT RANGE Final Report Bernd Zondek Oct. 1981 10 p ref (AD-A110419: NSWC/TR-81-440) Avail: NTIS HC A02/MF A01 CSCL 08/10
Altimetric signatures from SEASAT tracks in the mid-Pacific seamount range reveal that some seamount signatures are not correlated with features in the reference bathymetry. GRA

Page Intentionally Left Blank

06 HYDROLOGY AND WATER MANAGEMENT

Includes snow cover and water runoff in rivers and glaciers, saline intrusion, drainage analysis, geomorphology of river basins, land uses, and estuarine studies.

A82-19559 # Microwave radiation from a natural snow field.
M. Tiuri and H. Schultz (Helsinki University of Technology, Esbo, Finland). In: European Microwave Conference, 10th, Warsaw, Poland, September 8-12, 1980, Proceedings.
Sevenoaks, Kent, England, Microwave Exhibitions and Publishers,

Ltd., 1981, p. 574-578, 5 refs.

The brightness temperature of a natural snow field in Finland has been studied theoretically and experimentally at 5, 12 and 37 GHz for satellite remote sensing applications. A snow model consisting of ice spheres covered by a water shell has been used in theoretical calculations taking into account scattering and absorption. The brightness temperature of a natural snow field as a function of view angle has been measured from a tower in 1978 and 1979. The measured brightness temperature curves can be fitted with calculated ones by assuming reasonable values for the wetness and the particle size of snow. Experimental results also show that relatively small changes in the snow conditions cause large changes in the brightness temperature. (Author)

A82-19831 † A Photometric method for depth determination by aerial photography (O fotometricheskom sposobe opredeleniia glubin po aerofotosnimku). E. S. Zubchenko and V. D. Kondiurin. *Geodeziia i Kartografiia*, Nov. 1981, p. 47-49. In Russian.

A modified photometric method for the determination of water depth based on an exponential approximation of the dependence of the brightness recorded by an aerial photograph on the depth is presented. The formulas employed calculate depth from measurements of the luminous flux having passed through the image, as well as the optical density of the image, so that it is not necessary to measure signals on portions of the photograph with optically infinite depths. Evaluation of the accuracy of the photometric method by comparison with results of sonic depth sounder measurements for a coastal region has shown it to be accurate to within 0.25 m rms for depths between 0.5 and 11.8 m, representing a significant improvement in accuracy. The method is thus recommended for use in bottom relief mapping in coastal shelf regions.

A.L.W.

A82-20343 † Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography (Izuchenie dinamiki regional'nogo podzemnogo stoka basseina Aral'skogo moria s ispol'zovaniem s'emki iz kosmosa). N. S. Semina (Vsesoiuznyi Nauchno-Issledovatel'skii Institut Gidrogeologii Inzhenernoi Geologii, Moscow, USSR). Issledovanie Zemli iz Kosmosa, Nov.-Dec. 1981, p. 41-47. 6 refs. In Russian.

A82-21922 Optical properties of snow. S. G. Warren (Cooperative Institute for Research in Environmental Sciences, Boulder, CO). Reviews of Geophysics and Space Physics, vol. 20, Feb. 1982, p. 67-89. 99 refs. NSF Grant No. ATM-80-24641.

The reflection, absorption and transmission of light in the solar and infrared regions by snow are reviewed in light of the importance of optical properties in radiation budget and remote sensing studies. Measurements of snow albedo, bidirectional reflectance, flux extinction and intensity extinction are discussed, and the development of modeling of snow optical properties is outlined. Consideration is then given to the effects of snow grain size, liquid water content and impurities on snow albedo, and to spectrally integrated and spectral flux extinction in the transmission of light through snow. The dependence of snow and spectrally integrated planetary albedos on sun angle is examined, and effects of cloud cover are noted. A complete description of the bidirectional reflectance of snow is presented for use in satellite measurements, and the azimuthally

averaged reflectance is supplied for flux calculations. Attention is also given to the thermal infrared emissivity and brightness temperature properties of snow and to the remote sensing of snow parameters based on solar infrared and microwave spectra. A.L.W.

A82-22145 Use of GOES and TIROS/NOAA satellite data for snow-cover mapping. T. M. Lillesand, D. E. Meisner, A. LaMois Downs, and R. L. Deuell (Minnesota, University, St. Paul, MN). (American Society of Photogrammetry, Annual Convention, Washington, DC, Feb. 22-27, 1981.) Photogrammetric Engineering and Remote Sensing, vol. 48, Feb. 1982, p. 251-259. 14 refs. Research supported by the University of Minnesota; Grant No. NOAA-NA-80AAD0019

Using Minnesota as a test area, a study was conducted to evaluate the imaging characteristics of snow in open agricultural areas, under heavily forested conditions, and in zones of transition between the two cover types. Both GOES and NOAA/TIROS data were enalyzed and both visual and digital data analysis techniques were employed. Satellite and ground-based snow survey data were compared for the winters of 1978-79 and 1979-80. Attention is given to aspects of data acquisition, visual image interpretation, and digital data analysis. It was found that visual interpretation of snow extent in nonforested regions would provide very useful input to the snow mapping techniques currently used in Minnesota. The satellite data provide an improved portrayal of the spatial distribution of snow when used in conjunction with ground data. GOES images were found to be more useful than TIROS/NOAA images.

A82-22873 The use of satellite data in rainfall monitoring. E. C. Barrett (Bristol, University, Bristol, England) and D. W. Martin (Madison, University, Madison, WI). London and New York, Academic Press, 1981, 350 p. 310 refs. \$57.

Applications, limitations, and prospectives for future improvements in satellite data gathering for rainfall hydrometeorology are examined. Basic parameters of rainfall amenable to satellite observation are reviewed, along with existing satellites and systems for rainfall observations. Specific attention is given to observation methods such as preliminary studies, cloud-indexing, life-histories, bi-spectral and cloud model methods, rainfall detection from visible and IR images, and properties of microwave radiation in the atmosphere. Satellite rainfall monitoring applications are explored in terms of rainfall inventories on macro- and mesoscales, and for use in hydrology, for studying floods, droughts, and plagues, and for monitoring crop growth and production. Finally, future prospects are discussed for active microwave systems and integrated and international programs for rainfall monitoring.

M.S.K.

A82-24959 Change detection in the Peace-Athabasca Delta using digital Landsat data. G. M. Wickware (Canada Centre for Inland Waters, Burlington, Ontario, Canada) and P. J. Howarth (McMaster University, Hamilton, Ontario, Canada). Remote Sensing of Environment, vol. 11, Mar. 1981, p. 9-25. 21 refs. Research supported by Parks Canada and Natural Sciences and Engineering Research Council of Canada.

The extensive Peace-Athabasca Delta has experienced major changes in water boundaries and vegetation types due to flooding. To determine the feasibility of Landsat digital data to monitor such changes, comparisons of parts of the delta under normal and flooded conditions have been made. The analysis involved supervised classification of the digital data on two dates followed by post-classification change detection. Comparison of the digital analysis results with aerial photography and existing maps showed good classification accuracy, although a considerable number of pixels remained unclassified. Change detection involved registration of the images on the Image 100 monitor followed by class comparison on a pixel-by-pixel basis. This demonstrated not only that changes had occurred, but also the nature of the changes. Evaluation of the original reflectance values for each class helped in the explanation of the known water and vegetational changes. Results of the study indicate that this type of wetland environment can be effectively mapped and changes readily determined using digital Landsat data. Care must be taken, however, in the analysis of statistical information generated on a pixel-by-pixel basis, particularly for linear features where there are frequent boundaries between classes.

(Author)

06 HYDROLOGY AND WATER MANAGEMENT

Δ82-24960 * Spectral reflectance of hydrophytes. R. G. Best, M. E. Wehde, and R. L. Linder (South Dakota State University, Brookings, SD). Remote Sensing of Environment, vol. 11, Mar. 1981, p. 27-35. 9 refs. Research supported by the South Dakota State University, South Dakota Department of Game, Fish and Parks, and U.S. Fish and Wildlife Service; Grant No. NGL-42-003-007.

Identification of hydrophytes will improve the delineation and classification of wetlands on remotely sensed imagery. Spectral reflectance measurements of 10 species of hydrophytes were made with an Exotech radiometer during three phenological stages, flowering and early seed, senescent, and early emergent. Reflectance data were analyzed to determine significant (P not greater than 0.5) differences between species in each of four spectral regions during each phenological stage. Eight species had significantly (P not greater than 0.05) different reflectances during the flower and early seed stage. Among the ten species only one could not be spectrally isolated during at least 1 phenological stage. The results indicate that films sensitive to both visible and infrared spectra (e.g., Ektachrome infrared) should enable recognition of different species of hydro-(Author)

Geotechnical applications of Landsat image A82-26838 analysis of Bhakra Dam Reservoir, India. R. P. Gupta and J. Bodechtel (Zentralstelle für Geo-Photogrammetrie und Fernerkundung, Munich, West Germany). Remote Sensing of Environment, vol. 12, Mar. 1982, p. 3-13. 16 refs.

Repetitive coverages of Landsat MSS images over Bhakra Dam Reservoir, India, are analyzed and processed on an optical-analog processing device for feature enhancement. The investigations are made with respect to the geological-structural set-up of the area. reservoir lake monitoring, and silting hazards in the reservoir, with emphasis on the importance of remote sensing in water resources management. A lineament-tectonic map of the area is prepared, and temporal variations in the lake reservoir are mapped from the images, the accuracy of which can be improved through digital processing. A method for volumetric estimation of stored water from the Landsat data is proposed.

A82-26839 * Remote sensing of salinity in the San Francisco Bay Delta, S. Khorram (California, University, Berkeley, CA; North Carolina State University, Raleigh, NC). Remote Sensing of Environment, vol. 12, Mar. 1982, p. 15-22. 32 refs. Research supported by the University of California; Grant No. NsG-5256.

Landsat multispectral scanner data and color and color infrared photographs acquired from a U-2 aircraft are combined with surface measurements for salinity mapping of the San Fransisco Bay Delta. A regression model is developed between the surface truth data and Landsat digital data for 29 sample sites, and is then extended over the entire study area. Results are in general agreement with reported salinity distribution values. It appears to be impossible to establish any quantitative judgement regarding the salinity values by visual interpretation of the imagery within the test site. D.L.G.

Aerospace methods for the study of water resources and their pollution (Aerokosmicheskie metody pri issledovanii vodnykh resursov i ikh zagriazneniia). Edited by V. V. Kupriianov and V. F. Usachev, Leningrad, Gidrometeoizdat (Gosudarstvennyi Gidrologicheskii Institut, Trudy, No. 285, 1981. 152 p. In Russian.

Papers are presented on such topics as the use of satellite remote sensing data to study meltage runoff in mountain basins, the investigation of the dynamics of snow cover, the use of satellite multispectral photography to study snow meltage fronts, and the evaluation of the pollution of snow cover in industrial regions on the basis of remote sensing data. Also considered are the determination of the albedo and brightness coefficients of snow cover, the use of remote sensing to study subsurface water and tectonic structures, the investigation of the thermal pollution of rivers on the basis of infrared aerial photography, remote sensing methods for monitoring water quality, and microwave sensing methods for the investigation of water resources and their pollution.

A82-27458 † The possibilities of microwave remote sensing for the study of water resources and their pollution (Vozmozhnosti mikrovolnovoi distantsionnoi indikatsii dlia izucheniia vodnykh resursov i ikh zagriazneniia). K. la. Kondrat'ev, lu. l. Rabinovich, and

E. M. Shul'gina, In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidro-

meteoizdat, 1981, p. 5-12. 7 refs. In Russian.

The application of microwave remote sensing to the following hydrological tasks is considered: (1) the mapping of water bodies and ice formations on these bodies; (2) the determination of soil moisture; (3) the evaluation of certain types of water-surface pollution; and (4) the sensing of precipitation zones. It is shown that the use of microwave sensing and active radar techniques in hydrological studies will provide important information on the state of the atmosphere and the underlying surfaces.

A82-27459 + Remote-sensing functions in the interpretation of moisture from aerial and space images (Indikatsionnye funktsii pri deshifrirovanii uvlazhnenija po aerokosmicheskim izobrazhenijam). B. V. Vinogradov. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 13-24, 17 refs, In Russian,

A remote-sensing function is a quantitative description of data transformations in the transition from the object under study to the remote image of the object. A remote-sensing function is determined by analytic functional relationships, modulation transfer functions, or statistical analysis. A complete remote-sensing function contains a number of data-transmission units: instrumental, atmospheric, botanical, soil-related, hydrological, and geological. Several different remote-sensing functions are examined, and approximating equations are obtained for geophysical, botanical, soil functions for soil moisture and ground water.

A82-27460 † Remote-sensing determination of the characteristics of hydrological objects (Opredelenie kharakteristik gidrologicheskikh ob'ektov distantsionnym metodom). G. Tovizi. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 25-28. In

Remote sensing studies of water resources in Hungary are described. Most favorable spectral regions have been established for shorelines (0.8-0.9 micron), bottoms (0.45-0.65 micron), geological and tectonic formations (0.6-1.1 micron), and snow and ice cover (0.5-0.7 micron). The use of aerial photography to study water turbidity, silt formation in reservoirs, water flow rate and temperature, and surface pollution of water is discussed. Spectral regions most suitable for the study of these characteristics are indicated. B.J.

A82-27461 t Application of satellite data to analyze and predict meltage runoff in a mountain basin (Primenenie sputnikovoi informatsii dlia rascheta i prognoza talogo stoka v gornom basseine). N. V. Vostriakova. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 29-37, 9 refs. In Russian.

The use of satellite remote sensing images to analyze and predict meltage runoff during spring and summer periods is examined using the basins of the Sayan-Altai river system as an example. The following relationships are examined: (1) the dependence of changes in basin snow cover on the sum of positive values of air temperature; (2) the relationship between the rate of rise of the snow line and the water content during the high-water period; (3) the dependence of runoff volume on the area of snow meltage and the heat influx to the remaining high-water period on the size of the snow-covered area of the basin. The need to use multispectral imagery to study mountain river runoff is emphasized.

A82-27462 † Dynamics of snow cover in mountain regions of the Aral Sea basin, studied using satellite photographs (Dinamika snezhnogo pokrova v gornykh raionakh basseina Aral'skogo Moria po sputnikovym snimkam), M. V. Sitnikova, B. K. Tsarev, and V. Iu. Chernov, In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 38-44. 8 refs. In Russian.

A82-27463 † The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakhstan considered as an example/ (O vozmozhnosti opredeleniia fronta snegotaianiia po mnogozonal'noi informatsii s ISZ 'Meteor' /na primere Kazakhstana/). E. I. Pankratova. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 47-55. 5 refs. In Russian.

Evaluation of snow-cover pollution in industrial regions using satellite TV images (Otsenka zagriaznennosti snezhnogo pokrova promyshlennykh raionov po sputnikovym TV izobrazheniiam). V. N. Vasilenko, V. G. Prokacheva, and Sh. D. Fridman. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 56-63, In Russian.

A subsatellite experiment was conducted in the spring of 1978 to investigate the pollution of snow cover in the Vorkuta industrial center of the USSR; Meteor-satellite TV images were interpreted. In addition, ground-based measurements of albedo, snow height and density, and dust concentrations in the snow cover were carried out along with aerial visual and photographic observations over an area of about 2500 sq km. Preliminary relationships were obtained between albedo, dust density in the snow, and the brightness of the snow cover on satellite images.

A82-27465 † Albedo and brightness coefficients of snow cover (Ob al'bedo i koeffitsientakh iarkosti snezhnogo pokrova). V. F. Usachev, V. A. Mikhailov, and V. G. Prokacheva. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 64-69. In Russian.

Parallel measurements of integral albedo (0.3-2.4 microns) and spectral brightness coefficients (420, 525, 622, and 787 nm) of snow cover were carried out near the city of Monchegorsk during the period of snow meltage. The albedo was measured by the M-60 field albedometer, while the spectral brightness coefficients were measured photoelectrically using a four-channel spectrophotometer. The field measurements (64 series) showed that the relationship between the integral albedo and the spectral brightness coefficients is quasi-linear. The use of satellite TV imagery to determine the brightness of snow cover is considered. B.J.

Survey and mapping of shallow water bodies and the distribution of the river runoff of solids on the basis of multispectral aerial and space photographs (Issledovanie i kartografirovanie melkovodnykh akvatorii i raspredeleniia tverdogo stoka rek po mnogozonal'nym aerokosmicheskim snimkam). Iu. F. Knizhnikov, V. I. Kravtsova, and I. A. Labutina. In: Aerospace methods for the study of water resources and their pollution.

Leningrad, Gidrometeoizdat, 1981, p. 77-84. In Russian

Shallow areas of the northeastern Caspian were mapped using multispectral photographs from Soyuz-22. Geomorphological, bathymetric, relief, bottom-deposit, underwater-vegetation, and underwater-landscape maps were compiled. Attention is also given to general aspects of the use of multispectral photography to study the flow of suspensions carried by rivers into the coastal regions of seas and lakes.

A82-27468 † The use of space photographs for hydrogeological studies of the Baikal region and Mongolia (Ispol'zovanie kosmicheskikh snimkov dlia gidrogeologicheskikh issledovanii raionov Pribaikal'ia i Mongolii). lu. L. Ob'edkov, In: Aerospace methods for the study of water resources and their pollution.

Leningrad, Gidrometeoizdat, 1981, p. 85-96. 10 refs.

In Russian.

The principles of the hydrogeological interpretation of space remote sensing images are discussed, with particular attention given to the determination of the relationship between various hydrogeological objects and landscape elements. A detailed analysis of space photographs makes it possible to determine the locations and boundaries of artesian basins, to characterize the water-conducting and collecting properties of water-containing rocks, and to evaluate subsurface water resources. The proposed method was used to study the hydrogeology of the Baikal region and the western part of central Mongolia.

A82-27469 † The effect of anthropogenic factors on the dynamics of lakes in the plains of Central Asia /studied on the basis of space photographs/ (Vliianie antropogennykh faktorov na dinamiku ravninnykh ozer Srednei Azii /po materialam kosmicheskikh

06 HYDROLOGY AND WATER MANAGEMENT

s'emok/). A. M. Nikitin and Iu. N. Lesnik. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 97-102. 5 refs. In Russian.

A82-27470 † Primary processing of and possibilities of using data from the meteorological satellite TIROS-N (Pervichnaia obrabotka i vazmozhnosti ispol'zovaniia dannykh meteorologicheskogo sputnika 'Tairos-N'). Sh. Kyevskii and V. Tollinger. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p. 103-107. In Russian.

Results of the primary processing of images of Czechoslovakia obtained with TIROS-N are presented. Geometric and radiative correction in three spectral intervals was used along with quantization and synthesis of images in conditional colors. The applicability of these data to hydrology is examined.

Monitoring of the thermal pollution of natural channels of water using infrared aerial photography (Obsledovanie teplovogo zagriazneniia estestvennykh vodotokov s ispol'zovaniem infrakrasnoi aeros'emki). D. Domokosh. In: Aerospace methods for the study of water resources and their pollution.

Leningrad, Gidrometeoizdat, 1981, p. 108-113. In Russian.

It is proposed that infrared and aerial photography techniques be used to study river pollution resulting from power-plant emissions. As an illustration of the method, aerial photography in the visible (0.38-0.76 micron) and near IR (2.0-5.0 microns) was used to study the pollution of a section of the Danube in Hungary. A pollution distribution map of a 10-km section of the river was obtained (including the propagation of thermal waters only along the left bank). Stereophotogrammetry was used to determine the flow velocity.

A82-27472 † Investigation of silting and currents in Lake Balaton by use of hydraulic models and aerial and space photographs (Issledovanie zaileniia i techenii oz. Balaton s primeneniem gidravlicheskikh modelei i aerokosmicheskikh snimkov). L. Goda. In: Aerospace methods for the study of water resources and their pollution. Leningrad, Gidrometeoizdat, 1981, p.

114-119. In Russian.

A82-27473 † Interpretation of multispectral aerial photographs of Lake Müggelsee (Deshifrirovanie mnogozonal'nykh aerofotosnimkov oz. Miugel'zee). E. lung, In: Aerospace methods for the study of water resources and their pollution.

Leningrad, Gidrometeoizdat, 1981, p. 120-122. In Russian.

Spectrometric studies of the water composition of Lake Müggelsee (Spektrometricheskie issledovanija sostava vod oz. Miugel'zee). D. Slavik. In: Aerospace methods for the study of water resources and their pollution.

Leningrad, Gidrometeoizdat, 198, p. 123-126. In Russian.

A hand-held spectrometer operating in the 335-1150 nm range was used to study the reflectance of water samples from Lake Müggelsee. The reflectance in this spectral range was studied as a function of the concentration of sediments in the water. The influence of suspensions of peat, green algae, and blue-green algae on the reflectance of the water is examined.

A82-27475 † Noncontact methods for the quality control of water resources (Nekontaktnye metody kontrolia kachestva vod). lu. V. Zavolokin, L. A. Shliakhova, V. I. Rodzin, and V. A. Kriul'kov. In: Aerospace methods for the study of water resources and their Leningrad, Gidrometeoizdat, 1981, p. pollution. 127-134. 17 refs. In Russian.

Remote sensing methods for the operational quality control of water resources are described. Results of remote measurements of the physical and chemical properties of water bodies and water mineralization are presented. The recording, storage, and processing of the remote sensing data using television systems and analog/digital conversion techniques are considered. The development of a general model for the remote monitoring of water resources is discussed. B.J.

A82-27476 † Analog devices for the processing of aerial and space images for the study of water resources (Analogovye ustroistva

06 HYDROLOGY AND WATER MANAGEMENT

dlia obrabotki aerokosmicheskikh fotoizobrazhenii pri izuchenii vodnykh resursov). V. A. Mikhailov and V. F. Usachev. In: Aerospace methods for the study of water resources and their pollution.

Leningrad, Gidrometeoizdat, 1981, p. 135-140. In Russian.

The paper examines the use of analog devices for the interpretation of remote sensing images, particularly, the delineation of contours of varying optical density and the determination of their areas. The application of such devices in the study of water resources is considered, and the incorporation of such devices in systems for the automated processing of remote sensing images is examined. B.J.

A82-27592 * # Spatial reasoning in remotely sensed data. J. Campbell, R. W. Ehrich, D. Elliott, R. M. Haralick, and S. Wang (Virginia Polytechnic Institute and State University, Blacksburg, VA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 223-235. Contract No. NAS5-26276.

Photointerpreters employ a variety of implicit spatial models to provide interpretations from remotely sensed aerial or satellite imagery. In this paper one application is illustrated: how ridges and valleys can be automatically interpreted from Landsat imagery of a mountainous area, and how a relative elevation terrain model can be constructed from this interpretation. How to examine valleys for the possible presence of streams or rivers is shown, and how a spatial relational model can be set up to make a final interpretation of the river drainage network is explored. (Author)

A82-27610 # Inland water quality assessment from Landsat data. D. J. Carpenter (Australian National University, Canberra, Australia). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 483-490.

Landsat MSS data have been successfully applied to the collection of inland water quality data using multiple linear regressions. The data came from seven satellite acquisitions and simultaneous ground surveys of four lakes in the Southern Tablelands region of South East Australia. The linear models developed included the four band spectral radiances and the sun elevation as predictors and accounted for over 90% of the variance of the dependent variables. These were the water quality parameters turbidity and algal pigments. (Author)

A82-27613 # Satellite sensing for extraction of groundwater resources information. S. S. Kumar and S. Thiruvengadachari (National Remote Sensing Agency, Hyderabad, India). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 509-518.

Satellite derived data were used to generate regional level groundwater resources information in the chronically drought affected parts of central and southern India. Two different methodologies were adopted in the two different regions. In the first area, where geomorphology exercises a significant control over groundwater movement and occurrence, this relationship has been utilized to arrive at potential groundwater zones, whereas in Tamilnadu in south India basic resources information in regard to geology, geomorphology, hydrologic land use and soils were extracted and integrated to support a regional groundwater resources evaluation program. The two contrasting methodologies along with the case studies are described. Selection of suitable methodology in any area will depend upon the complexity of control over groundwater required.

A82-27614 # Snow cover monitoring using AVHRR data from TIROS and NOAA satellites. G. Saint, P. Herbert (Centre National d'Études Spatiales, Toulouse, France), C. Leprieur (Grouppement pour le Développement de la Télédétection Aérospatiale, Toulouse, France), and M. Deneau (Electricité de France, Toulouse, France). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceed-

ings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 519-526. 5 refs.

It is pointed out that the management of dams in hydroelectric projects could be substantially improved by monitoring the extent of the existing snow cover. In a study concerning the feasibility of such monitoring activities, it was found that the Advanced Very High Resolution Radiometer (AVHRR) carried by the TIROS-N series satellites would be the most suitable instrument for obtaining the required data. Attention is given to the characteristics of the AVHRR data, the principles of image segmentation, a description of the processing, the ground estimate, and a comparison of ground estimate and processing results.

G.R.

A82-27634 # Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980. C. P. Berg, S. R. Schneider (NOAA, National Earth Satellite Service, Washington, DC), and D. L. Galat (Colorado State University, Fort Collins, CO). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings, Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 721-731. 16 refs.

Satellite data from the summers of 1978 and 1980 on calcium carbonate precipitation in Pyramid Lake, Nevada, are presented. The whiting sequence, the growth, distribution pattern, and cessation of the phenomenon were documented by NASA's Landsat and NOAA's GOES. Results from water chemistry sampling verify the satellite imagery, and give evidence of a relationship between particulate calcium concentration and observed brightness. An optimum spectral interval of 0.5-0.6 microns is verified, and a significant reduction of light penetration into the 'lake, and therefore light available for photosynthesis, is found to be caused by the whitings.

D.L.G.

A82-27637 # Use of Landsat imagery to delineate glaciofluvial aquifers in southeast South Dakota. E. F. Bugliosi (U.S. Geological Survey, Huron, SD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2: Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 761-769. 7

An analysis of Landsat satellite imagery has been used in the delineation of buried glaciofluvial aquifers in southeastern South Dakota. A color and tonal pattern analysis was performed on a band 7 and a false color composite Landsat image obtained in April 1974 to detect linear and curvilinear patterns, and the patterns were compared with drainage and geomorphological overlays to locate any anomalies indicative of a buried glaciofluvial deposit. Test drilling at 50 locations within the Landsat area confirmed the presence or absence of aquifers predicted by the image analysis in 72% of the cases. Of the 17 holes drilled where Landsat predicted no deposits, 10 detected a glaciofluvial deposit, however five of these were either dry or located 30 m or more below the surface. Results demonstrate the feasibility of using Landsat images to delineate glaciofluvial aquifers at depths less than about 24 m below land surface. A.L.W.

A82-27639 # Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer. H. Inomata, K. Okamoto, T. Ojima, H. Masuko, S. Yoshikado, and N. Fugono (Ministry of Posts and Telecommunications, Radio Research Laboratories, Koganei, Tokyo, Japan). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 781-792.

Characteristics of an airborne microwave rain-scatterometer and radiometer operating at X-band and Ka-band are summarized. Data analysis techniques for deriving rainfall rates from the received powers of the scatterometer are briefly described. Some preliminary results of flight experiments performed in October 1980 for rain on the sea are discussed. Qualitative correlations between rainfall rates calculated from the X-band scatterometer data and antenna temperatures of the X-band radiometer data are clearly found. They also correlate fairly well with the attenuation of backscattered powers from sea surfaces. Typical displays of analyzed data in the flight experiment are shown. The ground-based experiment for strong rainfall from the rainfront stimulated by the typhoon in September 1980 are also discussed. An example of time sequential display of

rainfall rates distribution are presented. Average wind speeds and falling speeds of raindrops can be easily estimated from the display.

(Author)

A82-27692 # Mapping of water quality using Landsat imagery. L. T. Lindell (Statens Naturvardsverk, Uppsala, Sweden). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1375-1385. 9 refs.

This paper discusses the possibilities of using Landsat imagery for purposes of mapping water quality. The methodology was first worked out on Lake Malaren, Sweden, where most of the practical procedures were tried and the variables to be mapped were chosen. The county of Orebro was selected as a test area for the country-wide mapping. This area contains more than 500 lakes larger than 10 ha ranging in trophic state from oligotrophic to eutrophic and, in elevation from mountain to lowland. Variables studied include turbidity, Secchi disc depth and lake surface area. The satellite data were geometrically corrected and color printed on a scale of 1:100 000 using an ink jet plotter. The experiences from this work will be used to develop a map of the water quality of Sweden. Mapping should be repeated frequently to record changes in water quality. Changes in water quality are displayed together with a separate field data base, which is used to determine possible causes for the changes. (Author)

A82-28137 † The use of space photographs to compile water-amelioration maps (Ispol'zovanie kosmicheskikh snimkov pri sostavlenii meliorativno-vodokhoziaistvennykh kart). T. V. Vereshchaka, B. V. Krasnopevtseva, and V. V. Usova. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 60-65. In Russian.

N82-16439*# Wisconsin Univ., Madison. Inst. for Environmental Studies

MULTIDISCIPLINARY RESEARCH ON THE APPLICATION OF REMOTE SENSING TO WATER RESOURCES PROBLEMS Progress Report, Aug. 1979 - Jul. 1980

Raiph W. Kiefer, Principal Investigator Jul. 1980 45 p ERTS (Grant NGL-50-002-127)

(E82-10021: NASA-CR-164815) Avail: NTIS HC A03/MF A01 CSCL 08H

Progress is reported in the following NASA-funded projects: (1) sediment plume study: (2) atmospheric correction to LANDSAT imagery; (3) demonstrating and evaluating opportunites for operational application of LANDSAT data in Wisconsin; and (4) the development of a facility to process imagery for the study of land cover, land use, water quality, electrophoresis gel analysis, prediction of storm and snow flow conditions, physical oceanography, and soils. Associated projects summarized are concerned with vegetation mapping in Sheboygan Marsh, surveying the Green Bay watershed to estimate the impact of land development on bay water quality; thermal scanning of ocean fronts; lake water quality, the Irondequoit River watershed, a model of thermal environment for land use planning, and changes in wetland vegetation near the Columbia Generating Station. Emphasis was focused on the selection of equipment for the efficient processing of images used for water-quality analysis and the development of supporting software for application by users.

N82-17601 Michigan Univ., Ann Arbor. SPECTRAL REFLECTANCES OF FRESHWATER ICE AND SNOW FROM 340 THROUGH 1100 nm Ph.D. Thesis Stanley Joseph Bolsenga 1981 159 p Avail: Univ. Microfilms Order No. 8125073

Measured spectral reflectances of new and moderately metamorphosed snow were generally > 80% from 340 to 950 nm. From 950 to 100 nm a characteristic dip and rise of spectral reflectances occurred. One scan over a deteriorated snow patch showed much lower spectral reflectances than fresh snow, but the shape of the curve remained similar to fresher snow. Spectral reflectances for clear ice contrasted sharply with those for snow. In general, values were < 10% and the curves lacked distinctive shape. Higher spectral reflectances, due to lighter colored ice in the measurement area, were measured at some sites. Secondary ice types (refrozen slush, pancake, brash, slush

06 HYDROLOGY AND WATER MANAGEMENT

curd) revealed spectral reflectance curves similar in form to each other, but which varied significantly in the range of spectral reflectances for each ice type. All measurements were acquired with a pair of scanning spectroradiometers adapted to obtain automatically simultaneous readings of incident and reflected radiation from 340 to 100 nm.

N82-17602 Colorado State Univ., Fort Collins. WATERSHED MODEL STUDY USING LANDSAT DATA Ph.D. Thesis

Tien-Po Chang 1981 331 p

Avail: Univ. Microfilms Order No. 8126421

In connection with the use of remote sensing techniques, a digital terrain model that characterizes geometric features and other terrain conditions of a watershed is necessary for watershed modeling. As a result of constructing a watershed cell system on the digital terrain model, the mathematical formation on simulated physical processes can be simplified since the mathematical expressions only handle the small-sized, well-defined and relatively homogeneous components of the physical processes within a watershed cell. Four submodels that link the processing of the remote sensed data to the watershed analysis were developed. The submodels are LANDSAT image data processing model, digital terrain model, hydrologic simulation model, and landslide-hazard potential delineation model. The structure, function, and computer programs related to these models, along with the results of watershed simulation using the models, are presented and discussed. Dissert. Abstr

N82-18469# Army Cold Regions Research and Engineering Lab., Hanover, N. H. Ice Engineering Research Branch.

ELECTROMAGNETIC SUBSURFACE MEASUREMENTS

Arnold M. Dean, Jr. Oct. 1981 24 p

(Proj. CWIS-31350)

(AD-A108192: CRREL-SR-81-23) Avail: NTIS

HC A02/MF A01 CSCL 17/9 In 1974, personnel at the U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) began using an impulse radar system to profile accumulations of ice forms. The system was modified for effective use as a profiling system in a ground or airborne configuration, in certain high-noise environments. The system can penetrate fresh water and media with a high water content. Frazil and brash ice accumulations with approximately 50% water were profiled to a depth of 25 to 35 ft. As a result of the CRREL modifications, the system has found extensive and varied applications as a low-level remote sensing tool. Applications include profiling ice accumulations (including ice jams), river beds, sheet ice, permafrost, subsurface ice masses, river bank revetments through air-entrained water, snow covers, sea ice, icebergs, and peat bogs. Limited laboratory work has also shown that the impulse radar system may be able to detect oil and gas under sea ice. Selected applications and data are presented. Since it was used mainly for research, the CRREL system needs further development to make it useful to operational units. Additional development of hardware and software is

N82-18663*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, Md.
SPECTRAL ALBEDOS OF MIDLATITUDE SNOWPACKS
Bhaskar Choudhury Nov. 1981 41 p refs Submitted for publication

recommended.

(NA SA-TM-83858) Avail: NTIS HC A03/MF A01 CSCL 08L

Spectral albedos of impure-nonhomogeneous snowpacks, typical of midlatitudes, from 400 to 2200 nm were modeled through a numerical solution of the radiative transfer equation in the two-stream approximation. Discrete depth-dependent values of density, grain size and impurity concentration were used to characterize the snowpacks. The model is for diffuse incident radiation, and the numerical method is based on doubling and invariant imbedding. The effect of soot impurities on snowpack albedos is illustrated when a snowpack is several centimeters deep and soot reduces the albedos at visible wavelengths, however, when a snowpack is only a few centimeters deep, soot may increase the albedos at visible wavelengths. By adjusting soot content and snow grain size, good quantitative agreement with some observations at the Cascade Mountains (Washington) and at Point Barrow (Alaska) are obtained; however, the model grain sizes are found to be fifty to four hundred percent larger than the measured values. For satellite snowcover observations,

06 HYDROLOGY AND WATER MANAGEMENT

a model for effective albedo of partially snow-covered areas was developed and compared with some NOAA-2 observations of the southeastern United States.

N82-18664*# National Aeronautics and Space Administration. Lewis Research Center, Cleveland, Ohio.

GROUND-TRUTH OBSERVATIONS OF ICE-COVERED NORTH SLOPE LAKES IMAGED BY RADAR

W. F. Weeks Oct. 1981 24 p refs Prepared in cooperation with CRREL, Hanover, N.H.

(NASA-TM-84127; AD-A108342; CRREL-81-19) Avail: NTIS HC A02/MF A01 CSCL 08/8

Field observations support the interpretation that differences in the strength of radar returns from the ice covers of lakes on the North Slope of Alaska can be used to determine where the lake is frozen completely to the bottom. An ice/frozen soil interface is indicated by a weak return and an ice/water interface by a strong return. The immediate value of this result is that SLAR (side-looking airborne radar) imagery can now be used to prepare maps of large areas of the North Slope showing where the lakes are shallower or deeper than 1.7m (the approximate draft of the lake ice at the time of the SLAR flights). The bathymetry of these shallow lakes is largely unknown and is not obvious from their sizes or outlines. Such information could be very useful, for example in finding suitable year-round water supplies.

N82-18670# World Meteorological Organization, Geneva (Switzerland). Rapporteur on Sediment Transport.

MEASUREMENT OF RIVER SEDIMENTS

1981 69 p refs (WMO-561; OHR-16; ISBN-92-63-10561-8) Avail: NTIS MF A01; print copy available at WMO, Geneva

Samples and remote sensing techniques for measuring sediment discharge in alluvial rivers are reviewed, noting that the simplest as well as sophisticated methods are not mutually exclusive. It is demonstrated that, in many cases, the optimum means for systematic sediment measurement is a combination of traditional and advanced methods and instruments. Areas where further improvement is needed, e.g., automation and telemetering as well as the international standardization of water pollution aspects of sediment monitoring, are indicated. Author (ESA)

N82-18671# World Meteorological Organization, Geneva (Switzerland)

FLASH FLOOD FORECASTING

A. J. Hall 1981 49 p refs

(WMO-577: OHR-18: ISBN-92-63-10577-4) Avail: NTIS MF A01; print copy available at WMO, Geneva SwFr 6

.The problem of flash floods is reviewed and basic flash flood forecasting techniques, warning systems, and non-real time solutions to flash flooding are discussed. Data sources for flash flood forecasting are identified, including radar, satellites and quantitative precipitation forecasting. Flash flood forecasting can based on meteorological, hydrological, meteorologicalhydrological or dam break techniques. The design and establishment of flash flood warning systems, ranging from simple networks and procedures to sophisticated computerized automatic systems are described. The success of a flash flood warning system is measured by public response to warnings, the saving of life, and reduction of damage to property. Community involvement is evaluated, indicating the complex interactions among agencies, information dissemination subsystems and the public. Flood plain zoning, and basin management and the construction of engineering works are considered. The limitations and advantages of flood damage reduction measures are also analyzed. Author (ESA)

N82-19304# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

DATA COLLECTION PLATFORMS: APPLICATIONS TO HYDROLOGY [PLATFORMAS DE COLETA DE DADOS: APLICACAO A HIDROLOGIA]

Jose Roberto deOliveira Oct. 1981 14 p refs In PORTUGUESE: ENGLISH summary Presented at 4th Brazilian Symp. on Hydrol. and Hydrol. Resources, 15-19 Nov. 1981

(INPE-2246-PRE/030) Avail: NTIS HC A02/MF A01

Data collection platforms which use artificial satellites as data relayers of meteorological data to receiving centers are discussed. The main systems available for data collection, and their advantages and limitations relative to hydrologic applications are discussed. R.J.F.

N82-19638*# Kansas Univ. Center for Research, Inc., Lawrence. Remote Sensing Lab.

DIELECTRIC PROPERTIES OF SNOW Interim Technical Report

W. H. Stiles and F. T. Ulaby Greenbelt, Md. NASA. Goddard Space Flight Center Dec. 1981 43 p refs

(Grant NAG5-163)

RSI-TR-527-1) NTIS (NASA-CR-166764: Avail: HC A03/MF A01 CSCL 08L

The dielectric properties of snow in the radio frequency range from 100 KHz to 35 GHz are reviewed. Applicable dielectric mixing formulas are discussed and compared to available experimental data.

N82-19646*# Kansas Univ. Center for Research, Inc., Lawrence. Remote Sensing Lab.

ACTIVE MICROWAVE INVESTIGATION OF SNOWPACKS: EXPERIMENTAL DOCUMENTATION, COLORADO 1979-

W. H. Stiles, Fawwaz T. Ulaby, A. Aslam, and M. Abdelrazik Jul. 1981 188 p refs

(Grant NsG-5335)

(NASA-CR-166727; RSL-TR-410-3) NTIS Avail:

HC A09/MF A01 CSCL 08L

During the winter of 1979-1980, the University of Kansas Microwave Active Spectrometer systems measured the backscattering properties of snowpacks under varying conditions at four test sites in Colorado. In addition to the radar data over 1-35 GHz. ground-truth measurements of the atmospheric, snow, and soil characteristics were obtained for each radar data set. The test sites, data acquisition procedures, and data that were acquired in this experiment are presented and described.

N82-19790# Food and Agriculture Organization of the United Nations, Rome (Italy). Remote Sensing Centre.
PRECIPITATION ASSESSMENT FROM ENVIRONMENTAL

SATELLITE DATA FOR NORTHWEST LIBYA INCLUDING THE GEFARA PLAN

A. vanDijk 1981 50 p refs (RSC-4) Avail: NTIS HC A04/MF A01

The FAO precipitation assessment technique (satellite imagery combined with rain gage data) was applied to NW Libya to improve precipitation monitoring in this data sparse region. A 21 day period containing a few dry days, a heavy rainstorm, then a few more dry days was chosen. Rain gages reported 3 days of heavy rainfall, but failed to detect 2 further days with rain indicated by satellite data. The FAO rainfall maps appear more reliable than rain gage ones. The application of the technique to the whole of Libya, using Meteosat 2, and 10 reliable, well distributed rain gages, in combination with selected rain gages in South Italy, Tunisia and West Egypt is suggested. Author (ESA)

N82-20586*# Brigham Young Univ., Provo, Utah. HCMM HYDROLOGICAL ANALYSIS IN UTAH

3 Sep. 1981 37 p refs Original contains imagery. Original imagery may be purchased from NASA Goddard Space Flight Center, (code 601). Greenbelt, Md. 20071. Domestic users send orders to 'Attn: National Space Science Data Center': non-domestic users send orders to 'Attn: World Data Center A from Rockets and Satellites'. HCMM

(E82-10063; NASA-CR-165085; NAS 1.26:165085; QR-2) Avail: NTIS HC A03/MF A01 CSCL 08H

Progress in analysis of Heat Capacity Mapping Mission (HCMM) infrared and visible observations of the hydrology of Utah Lake is reported. Correlation between HCMM intensities converted to temperature and ground truth temperatures was investigated, and a conversion offset value determined. Ground truth surface temperatures minus HCMM temperatures were plotted against several hydrological parameters. Relationships among visible data, thermal data, and algae concentrations were considered, and summer concentrations of predominant algae species determined. Investigations on the effects of varying algae concentrations on evaporation rates are reported. Efforts to develop a model for evaporation estimation are reported. The relationship between air and water surface temperatures was studied and the temperature distribution in different segments of the lake investigated. Indications of the existence of thermal springs are reported. Correlation of HCMM surface temperature data and depth to groundwater were investigated. J.D.H.

N82-20587* # National Oceanic and Atmospheric Administration, Washington, D. C.

EVALUATION OF HCMM SATELLITE DATA FOR ESTUARINE TIDAL CIRCULATION PATTERNS AND THERMAL INERTIA SOIL MOISTURE MEASUREMENTS Final Report Donald R. Wiesnet, David F. McGinnis, Jr., Principal Investigators, Michael Matson, and John A. Pritchard Jun. 1981 79 p refs Original contains color imagery. Original imagery may be purchased from NASA Goddard Space Flight Center, (code 601), Greenbelt, Md. 20071. Domestic users send orders to 'Attn: National Space Science Data Center'; non-domestic users send orders to 'Attn: World Data Center A for Rockets and Satellites'.

(NASA Order S-40229B)

(E82-10064; NASA-CR-165086; NAS 1.26:165086) Avail: NTIS HC A05/MF A01 CSCL 08C

Digital thermal maps of the Cooper River (SC) and the Potomac River estuaries were prepared from heat capacity mapping radiometer (HCMR) tapes. Tidal phases were correctly interpreted and verified. Synoptic surface circulation patterns were charted by location thermal fronts and water mass boundaries within the estuaries. Thermal anomalies were detected adjacent of a conventional power plant on the Potomac. Under optimum conditions, estuaries as small as the Cooper River can be monitored for generalized thermal/tidal circulation patterns by the HCMMtype IR sensors. The HCMM thermal inertia approach to estimating soil moisture at the Luverne (MN) test site was found to be unsatisfactory as a NESS operational satellite technique because of cloud cover interference. Thermal-IR data show similar structure of the Baltimore and Washington heat islands when compared to NOAA AVHHR thermal-IR data. Thermal anomalies from the warm water discharge water of a nuclear power plant were mapped in Lake Anna, Virginia.

N82-20605*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

DYNAMIC STUDY OF THE UPPER SAO FRANCISCO RIVER AND THE TRES MARIAS RESERVOIR USING MSS/ LANDSAT IMAGES [ESTUDO DINAMICO DO ALTO RICO SAO FRANCISCO ERESERVATORIO DETRES MARIAS, ATRAVES DE IMAGENS MSS/LANDSAT]

ATRAVES DE IMAGENS MSS/LANDSAT]
Nelson deJesusParada, Principal Investigator and Tania Maria
Sausen Jul. 1981 77 p refs In PORTUGUESE Presented
at 33rd Reuniao Anual da SBPC, Salvador, Brazil, 8-15 Jun.
1981 Sponsored by NASA ERTS

(E82-10082; NASA-CR-168403; NAS 1.26:168403;

INPE-2154-RPE/373) Avail: NTIS HC A05/MF A01 CSCL 08H

The use of LANDSAT multispectral ban scanner imagery to verify the relationship between the behavior of the Tres Marias reservoir and the dynamics of the Sao Francisco River supply basin is described. The dispersion of suspended sediments and their concentration in the surface layers of the water are considered. A five year survey of the region during both dry and rainy seasons was performed. The drainage network was analyzed based on the patterns of dessication, water rises and soil use in the supply basin. Surface layers of the reservoir were tabulated as a function of the levels of gray in the imagery. In situ observations of water depth and reflectance were performed. Ground truth and LANDSAT data were correlated to determine the factors affecting the dynamics of the supply basin. J.D.H.

N82-20617*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER PROJECT. VOLUME 1: OPERATIONAL APPLICATIONS OF SATELLITE SNOW COVER OBSERVATIONS: EXECUTIVE SUMMARY

Albert Rango Dec. 1981 81 p refs 8 Vol.

(NASA-TP-1822; NAS 1.60:1822; Rept-81F0060-Vol-1) Avail: NTIS HC A05/MF A01 CSCL 05B

Both LANÓSAT and NOAA satellite data were used in improving snowmelt runoff forecasts. When the satellite snow cover data were tested in both empirical seasonal runoff estimation and short term modeling approaches, a definite potential for reducing forecast error was evident. A cost benefit analysis run in conjunction with the snow mapping indicated a \$36.5 million annual benefit accruing from a one percent improvement in forecast accuracy using the snow cover data for the western United States. The annual cost of employing the system would be \$505,000. The snow mapping has proven that satellite snow

06 HYDROLOGY AND WATER MANAGEMENT

cover data can be used to reduce snowmelt runoff forecast error in a cost effective manner once all operational satellite data are available within 72 hours after acquisition. Executive summaries of the individual snow mapping projects are presented. J.M.S.

N82-20618*# Geological Survey, Phoenix, Ariz.
APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER
PROJECT. VOLUME 2: OPERATIONAL APPLICATIONS
OF SATELLITE SNOW-COVER OBSERVATIONS AND
DATA-COLLECTION SYSTEMS IN THE ARIZONA TEST

Herbert H. Schumann Dec. 1981 62 p refs 8 Vol. (NASA-TP-1823; NAS 1.60:1823; Rept-81F0061-Vol-2) Avail: NTIS HC A04/MF A01 CSCL 08L

Ground surveys and aerial observations were used to monitor rapidly changing moisture conditions in the Salt-Verde watershed. Repetitive satellite snow cover observations greatly reduce the necessity for routine aerial snow reconnaissance flights over the mountains. High resolution, multispectral imagery provided by LANDSAT satellite series enabled rapid and accurate mapping of snow-cover distributions for small- to medium-sized subwatersheds; however, the imagery provided only one observation every 9 days of about a third of the watershed. Low resolution imagery acquired by the ITOSa dn SMS/GOES meteorological satellite series provides the daily synoptic observation necessary to monitor the rapid changes in snow-covered area in the entire watershed. Short term runoff volumes can be predicted from daily sequential snow cover observations.

N82-20619*# California State Dept. of Water Resources, Sacramento.

APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER PROJECT. VOLUME 3: OPERATIONAL APPLICATIONS OF SATELLITE SNOW COVER OBSERVATIONS IN CAL-

A. J Brown and J. F. Hannaford (Sierra Hydrotech, Placerville, Calif.) Dec. 1981 70 p refs 8 Vol.

(Contract NAS5-20831)

(NASA-TP-1824; NAS 1.60:1824; Rept-81F0062-Vol-3) Avail: NTIS HC A04/MF A01 CSCL 08L

Five southern Sierra snowmelt basins and two northern Sierra-Southern Cascade snowmelt basins were used to evaluate the effect on operational water supply forecasting from satellite imagery. Manual photointerpretation techniques were used to obtain SCA and equivalent snow line for the years 1973 to 1979 for the seven test basins using LANDSAT imagery and GOES imagery. The use of SCA was tested operationally in 1977-79. Results indicate the addition of SCA improve the water supply forecasts during the snowmelt phase for these basins where there may be an unusual distribution of snowpack throughout the basin, or where there is a limited amount of real time data available. A high correlation to runoff was obtained when SCA was combined with snow water content data obtained from reporting snow sensors.

N82-20620*# Soil Conservation Service, Denver, Colo.
APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER
PROJECT. VOLUME 4: OPERATIONAL APPLICATIONS
OF SATELLITE SNOW COVER OBSERVATIONS. COLORADO FIELD TEST CENTER

Bernard A. Shafer, Charles F. Leaf, Jeris A. Danielson (Colorado State Engineers Office), and George F. Moravec (Colorado State Engineers Office) Dec. 1981 101 p. refs 8 Vol.

Engineers Office) Dec. 1981 101 p refs 8 Vol. (NASA-TP-1825; NAS 1.60:1825; Rept-81F0063-Vol-4) Avail: NTIS HC A06/MF A01 CSCL 08L

The study was conducted on six watersheds ranging in size from 277 km to 3460 km in the Rio Grande and Arkansas River basins of southwestern Colorado. Six years of satellite data in the period 1973-78 were analyzed and snowcover maps prepared for all available image dates. Seven snowmapping techniques were explored; the photointerpretative method was selected as the most accurate. Three schemes to forecast snowmelt runoff employing satellite snowcover observations were investigated. They included a conceptual hydrologic model, a statistical model, and a graphical method. A reduction of 10% in the current average forecast error is estimated when snowcover data in snowmelt runoff forecasting is shown to be extremely promising. Inability to obtain repetitive coverage due to the 18 day cycle of LANDSAT, the occurrence of cloud cover and slow image delivery are obstacles to the immediate

06 HYDROLOGY AND WATER MANAGEMENT

implementation of satellite derived snowcover in operational streamflow forecasting programs.

N82-20621*# Bonneville Power Administration, Portland, Oreg. APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER PROJECT. VOLUME 5: OPERATIONAL APPLICATIONS OF SATELLITE SNOW-COVER OBSERVATIONS, NORTH-WEST UNITED STATES

John P. Dillard Dec. 1981 84 p refs 8 Vol.

(Contract NASA Order S-53877)

(NASA-TP-1826; NAS 1.60:1826; Rept-81F0064-Vol-5) Avail: NTIS HC A05/MF A01 CSCL 08L

The study objective was to develop or modify methods in an operational framework that would allow incorporation of satellite derived snow cover observations for prediction of snowmelt derived runoff. Data were reviewed and verified for five basins in the Pacific Northwest. The data were analyzed for up to a 6-year period ending July 1978, and in all cases cover a low, average, and high snow cover/runoff year. Cloud cover is a major problem in these springtime runoff analyses and have hampered data collection for periods of up to 52 days. Tree cover and terrain are sufficiently dense and rugged to have caused problems. The interpretation of snowlines from satellite data was compared with conventional ground truth data and tested in operational streamflow forecasting models. When the satellite snow-covered area (SCA) data are incorporated in the SSARR (Streamflow Synthesis and Reservoir Regulation) model, there is a definite but minor improvement.

N82-20622* # National Environmental Satellite Service, Washing-

APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER PROJECT. VOLUME 6: OPERATIONAL APPLICATIONS OF SATELLITE SNOW-COVER OBSERVATIONS NOAA/ NESS SUPPORT STUDY Final Report, 1 Jan. 1975 - 31 Dec. 1978

Stanley R. Schneider Dec. 1981 68 p refs 8 Vol.

(NASA Order S-53772)

(NASA-TP-1827; NAS 1.60:1827; Rept-81F0065-Vol-6) Avail: NTIS HC A04/MF A01 CSCL 05B

Geostationary and polar orbiting satellite data from the National Oceanic and Atmospheric Administration were used to operationally provide field hydrologists with basin snowcover percentages for inclusion in runoff models. Data reduction is accomplished thru the use of optical rectification devices and electronic color density slicers. Over two thousand satellite-derived snow maps covering 30 different basins in the western United States were provided to users. Plans for improving snowmapping techniques on computer interactive systems and by all-digital analysis are presented. A description of the newest generation of NOAA polar orbiters, TIROS-N, and its potential for snowmapping is reviewed. Snowcover percentages for all basins determined between November 1974 and July 1978 are presented in tabular format.

N82-20623*# Ecosystems International, Inc., Gambrills, Md. **APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER** PROJECT. VOLUME 7: COST/BENEFIT ANALYSIS FOR THE ASVT ON OPERATIONAL APPLICATIONS OF SATEL-LITE SNOW-COVER OBSERVATIONS

P. Castruccio, H. Loats, D. Lloyd, and P. Newman Dec. 1981 245 p refs 8 Vol.

(Contract NAS5-23729)

(NASA-TP-1828; NAS 1.60:1818; Rept-81F0066-Vol-7) Avail: NTIS HC A11/MF A01 CSCL 08L

The results of the OASSO ASVT's were used to estimate the benefits accruing from the added information available from satellite snowcover area measurement. Estimates of the improvement in runoff prediction due to addition of SATSCAM were made by the Colorado ASVT personnel. The improvement estimate is 6-10%. Data were applied to subregions covering the Western States snow area amended by information from the ASVT and other watershed experts to exclude areas which are not impacted by snowmelt runoff. Benefit models were developed for irrigation and hydroenergy uses. The benefit/cost ratio is 72:1. Since only two major benefit contributors were used and since the forecast improvement estimate does not take into account future satellite capabilities these estimates are considered to be conservative. The large magnitude of the benefit/cost ratio supports the utility and applicability of SATSCAM.

N82-20624*# Environmental Research and Technology, Inc., Concord Mass

APPLICATIONS SYSTEMS VERIFICATION AND TRANSFER PROJECT. VOLUME 8: SATELLITE SNOW MAPPING AND **RUNOFF PREDICTION HANDBOOK**

Clinton J. Bowley, James C. Barnes, and Albert Rango (NASA. Goddard Space Flight Center) Dec. 1981 98 p refs 8 Vol. (Contract NAS5-24410)

(NASA-TP-1829; NAS 1.60:1829; Rept-81F0067-Vol-8) Avail: NTIS HC A05/MF A01 CSCL 08L

The purpose of the handbook is to update the various snowcover interpretation techniques, document the snow mapping techniques used in the various ASVT study areas, and describe the ways snowcover data have been applied to runoff prediction. Through documentation in handbook form, the methodology developed in the Snow Mapping ASVT can be applied to other

N82-20807*# Morgan State Univ., Baltimore, Md. Dept. of Mathematics and Computer Science.

ASSESSMENT OF THE QUALITY OF GATE AREA RAINFALL DATA FROM A NIMBUS-5 RADIOMETER Final Report Nathaniel Knox 31 Mar. 1982 18 p refs

(Grant NAG5-14) (NASA-CR-168512; NAS HC A02/MF A01 CSCL 04B 1.26:168512) Avail:

The quality of rainfall intensity estimates derived from passive microwave measurements by the Electrically Scanned Microwave Radiometer (ESMR-5) aboard the NIMBUS-5 satellite was evaluated. The microwave measurements used are those coincident with the GARP (Global Atmospheric Research Program) Atlantic Tropical Experiment (GATE). ESMR-5 derived rainfall intensity estimates are compared with hourly averaged GATE radar rainfall measurements. Using the radar measurements as ground truth it is determined that with the transfer curve derived herein the ratio (ESMR-5 derived rain rate)/radar measured rain rate has a mean of approximately 0.62.

N82-20822# Digital Programming Services, Inc., Waltham, Mass. DEVELOPMENT AND APPLICATIONS OF TECHNIQUES TO PROCESS HYDROMETEOR DISTRIBUTION DATA Report, 1 May 1978 - 31 Jul. 1981

Lawrence E. Belksy, Fredric B. Kaplan, James P. Lally, D. Keith Roberts, and Terence OToole 31 Jul. 1981 636 p (Contract F19628-78-C-0131; AF Proj. 627A)

(AD-A109929; AFGL-TR-81-0261) NTIS HC A99/MF A01 CSCL 04/2

This report summarizes the mathematical procedures used on a variety of standard and non-standard cloud physics data. It includes the complete descriptions and operating instructions for all programs developed under this contract.

N82-21680*# Hydex Corp., Fairfax, Va. STRATEGIES FOR USING REMOTELY SENSED DATA IN **HYDROLOGIC MODELS** Final Report

E. L. Peck, T. N. Keefer, and E. R. Johnson, Principal Investigators 31 Jul. 1981 85 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS5-26446; Proj. AgRISTARS)

(E82-10156; NASA-CR-166729; NAS 1.26:166729) Avail: NTIS HC A05/MF A01 CSCL 05B

Present and planned remote sensing capabilities were evaluated. The usefulness of six remote sensing capabilities (soil moisture, land cover, impervious area, areal extent of snow cover, areal extent of frozen ground, and water equivalent of the snow cover) with seven hydrologic models (API, CREAMS, NWSRFS, STORM, STANFORD, SSARR, and NWSRFS Snowmelt) were reviewed. The results indicate remote sensing information has only limited value for use with the hydrologic models in their present form. With minor modifications to the models the usefulness would be enhanced. Specific recommendations are made for incorporating snow covered area measurements in the NWSRFS Snowmelt model. Recommendations are also made for incorporating soil moisture measurements in NWSRFS. Suggestions are made for incorporating snow covered area, soil moisture, and others in STORM and SSARR. General characteristics of a hydrologic model needed to make maximum use of remotely sensed data are discussed. Suggested goals for improvements in remote sensing for use in models are also established. Author

06 HYDROLOGY AND WATER MANAGEMENT

N82-21704# National Academy of Sciences - National Research Council, Washington, D. C.

REMOTE SENSING FOR WATER RESOURCES AND HYDROLOGY: AN ASSESSMENT OF THE CORPS OF **ENGINEERS' PROGRAM** Final Report

Nov. 1981 53 p refs

(Contract Dacw72-81-M-0342)

(PB82-137142) Avail: NTIS HC A04/MF A01 CSCL 13B The U.S. Army Corps of Engineers' program of research and development and technology transfer on the application of remote sensing to problems of water resources and hydrology is reviewed. The Corps' current program consists of work units (coastal engineering, flood prediction and management, hydrology, environmental assessment, and development of techniques and equipment). Current research programs are reviewed and Author (GRA) recommendations are made.

N82-21774*# National Aeronautics and Space Administration. Langley Research Center, Hampton, Va.

LABORATORY UPWELLED RADIANCE AND REFLECTANCE SPECTRA OF KERR RESERVOIR SEDIMENT WATERS

William G. Witte, Charles H. Whitlock, W. Douglas Morris, and E. A. Gurganus Mar. 1982 22 p refs (NASA-TP-1993; L-14992; NAS 1.60:1993) Avail: NTIS HC A02/MF A01 CSCL 13B

Reflectance, chromaticity, and several other physical and chemical properties were measured for various water mixtures of bottom sediments taken from two sites at Kerr Reservoir, Virginia. Mixture concentrations ranged from 5 to 1000 ppm by weight of total suspended solids (TSS) in filtered deionized tap water. The two sets of radiance and reflectance spectra obtained were similar in shape and magnitude for comparable values of TSS. Upwelled reflectance was observed to be a nonlinear function of TSS with the degree of curvature a function of wavelength. Sediment from the downstream site contained a greater amount of particulate organic carbon than from the upstream site. No strong conclusions can be made regarding the effects of this difference on the radiance and reflectance spectra. Near-infrared wavelengths appear useful for measuring highly turbid water with concentrations up to 1000 ppm or more. Chromaticity characteristics do not appear useful for monitoring sediment loads above 150 ppm. Author

SMARTE ...

Page Intentionally Left Blank

Includes film processing, computer technology, satellite and aircraft hardware, and imagery.

A82-19833 † Optimal methods of computerized image conversion (Ob optimal'nykh sposobakh preobrazovaniia izobrazhenii na EVM). V. I. Krasnov, S. L. Krylov, and B. I. Savel'ev. *Geodeziia i Kartografiia*, Dec. 1981, p. 34-38. In Russian.

It is noted that digital methods of processing images are far more effective than analog methods. Because of the machine time required, however, these methods are less economical. A general model of image conversion using a computer and an input-output device for the images is considered.

C.R.

A82-20347 † Diffusion model of cloud cover and its use in the analysis of satellite operations (Diffuzionnaia model' oblachnosti i ee ispol'zovanie pri analize raboty ISZ). V. K. Saul'skii. *Issledovanie Zemli iz Kosmosa*, Nov.-Dec. 1981, p. 73-78. In Russian.

A diffusion model is developed which can be used to analyze the effects of cloud cover on satellite observations of the earth surface. Cloud cover values are modeled as a continuous Markov process of diffusion type which is completely characterized by two parameters: the transport coefficient and the diffusion coefficient. The application of this model to operations involving the remote sensing of earth resources is considered.

B.J.

A82-20401 The accuracy potential of the modern bundle block adjustment in aerial photogrammetry. A. Grün (München, Technische Universität, Munich, West Germany). Photogrammetric Engineering and Remote Sensing, vol. 48, Jan. 1982, p. 45-54. 24 refs.

The use of orthogonal bivariate polynomials as an additional parameter set, together with a gross error detection strategy, are shown to be necessary for self-calibrating bundle block adjustment photogrammetry accuracy. This is illustrated by the processing of data from four test field blocks, gathered by means of three different camera systems, proving empirically that 2.5-micron planimetry and 4.5-micron height accuracies can be achieved for photogrammetric coordinates. The use of dense control and 60/60% overlap, together with the additional parameter set, are demonstrated to be essential for the continuous achievement of such accuracy levels. These results are judged to carry analytical photogrammetry into such new fields of application as network densification and cadastral surveying. O.C.

A82-20402 Analytical triangulation of space photography. M. E. O. Ali (Gendron, Lefebvre, Inc., Laval, Quebec, Canada) and A. J. Brandenberger (Université Laval, Quebec, Canada). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 55-65. 12 refs. Research sponsored by the Department of Energy, Mines and Resources and National Research Council of Canada.

A computer program implementing a mathematical model is used to assess the accuracy of analytical aerial triangulation using Skylab photography combined with high-altitude aircraft photography and Skylab orbital parameters. Two novel bundle adjustment methods are employed: (1) in which the coordinates of the ground control as well as the photo measurements are used as observations in the collinearity condition equations, and (2) in which the camera parameters, control point ground coordinates and the photo measurements are used as observations in the equations. The former method yielded root mean square errors of 53 m in planimetry and 148 m in height. Comparisons of tests to which both bundle adjustment methods were submitted show a significant improvement in planimetric accuracy with the latter method, although this may be due to inherent Skylab mission difficulties.

O.C.

A82-20403 Calibration and model reconstruction in analytical close-range stereophotogrammetry. I - Mathematical fundamentals. W. Frobin and E. Hierholzer (Orthopädische Universitätsklinik, Münster, West Germany). Photogrammetric Engineering and

Remote Sensing, vol. 48, Jan. 1982, p. 67-72. 10 refs. Research supported by the Deutsche Forschungsgemeinschaft.

A discussion is presented on the application of the photogrammetric bundle method to close-range problems, with respect to (1) stereophotography, (2) rasterstereography, or the use of a projected grid in stereophotogrammetry, (3) moiré topography, and (4) stereoradiography. After giving the mathematical principles of the method in a form appropriate for application to most close-range problems, a simplified procedure which employs alternating orientation and reconstruction steps is described. In addition, a discussion on the convergence of the solution of the bundle equations and an error analysis are given.

A82-20404 The location of three-dimensional linear objects by using multiple projections. S. Kondo, R. Ohba, and K. Murata (Hokkaido University, Sapporo, Japan). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 73-79. 10 refs

A novel method is proposed which determines the least-squares position of a point, a straight line or a curved line by means of plural projections. The method is characterized by the following features: (1) the influence of errors on measurements is minimized, since the result is obtained as the least-squares solution for all data points; (2) the relative positions of data points on the object are unnecessary for every projection; (3) the cost function value at the termination of iterative calculation indicates the variance of the distances between data lines and the least-squares position; (4) the number of calculations increases as more projections and data lines are acquired for higher accuracy; and (5) in the case of a complex object, it is often difficult to select the initial simplex within the domain of the peak containing the minimum cost function value.

O.C.

A82-20409 The use of digital multi-date Landsat imagery in terrain classification. H. Schreier, L. M. Lavkulich (British Columbia, University, Vancouver, Canada), and L. C. Goodfellow (Canada Centre for Remote Sensing, Ottawa, Canada). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 111-119. 21 refs. Research supported by the Defence Research Establishment.

A quantitative assessment was made of organic terrain in northern Canada, in order to predict off-road mobility conditions, by using multi-date satellite imagery which provides contrast between vegetation communities and surface materials. A principal component analysis was used to identify the two most important MSS bands for each image, and selected spectral data from two images were then combined and subjected to an unsupervised cluster analysis. The resulting, color-coded images were then related to ground conditions, and were found to be directly useful as thematic mobility maps for operational planning in such environments. O.C.

A82-20410 Techniques for combining Landsat and ancillary data for digital classification improvement. C. F. Hutchinson (Arizona, University, Tucson, AZ). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 123-130. 17 refs. Research supported by the U.S. Geological Survey.

Such ancilliary data as digitized maps and terrain elevation data are combined with Landsat data in order to improve the digital classification in natural resource inventories. The combined data have been used in (1) preclassification scene stratification; (2) postclassification class sorting; and (3) classification modification through increases of the number of observation channels, the modification of prior probabilities, or the addition of a second stage to the classification. The two former uses of the data are found to be efficient, yet unsophisticated due to their reliance on deterministic decision rules. Of the later uses, stratification of the sample used for training by the ancilliary data is found to improve accuracy, as do the altering of prior probabilities and the incorporation of distribution models at the expense of additional sampling.

O.C.

A82-20411 Sampling for thematic map accuracy testing. G. H. Rosenfield, K. Fitzpatrick-Lins, and H. S. Ling (U.S. Geological Survey, National Mapping Div., Reston, VA). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 131-137, 13 refs.

The cumulative binomial distribution is used in thematic map accuracy testing to develop (1) the minimum sample size needed to

validate the accuracy for each category with specified confidence, and (2) the critical level, which is used as the criterion for determining whether the identification from remotely sensed data of a thematic category meets a specified accuracy. The algorithm used in map accuracy testing employs a stratified, systematic, unaligned sampling technique based on the map as a whole, and an additional random sample of points for under-represented categories from all points in that category. Such a technique is implemented by a computer program prepared to select the sample from the Geographic Information Retrieval and Analysis System file. The estimated overall accuracy of the map, and the estimated accuracy for the map, are considered, with associated confidence limits.

O.C.

A82-20423 * Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance. Y. Mekler (Tel Aviv University, Tel Aviv, Israel) and Y. J. Kaufman (NASA, Goddard Space Flight Center, Laboratory for Atmospheric Sciences, Greenbelt, MD). Applied Optics, vol. 21, Jan. 15, 1982, p. 310-316. 21 refs.

A radiative transfer model is developed which gives the upward radiance at nadir for any 1-D Lambertian surface reflectance. This model is used to depict the atmospheric effect on the transmittance of contrast for any 1-D surface reflectance. Here by contrast we mean a general variation of the radiation field across the image. With the aid of this model an inversion algorithm is developed for retrieval of true surface reflectance from high resolution satellite data (e.g., Landsat). This inversion technique can be a useful tool for extraction of surface reflectance from satellite data in the case of a surface reflectance variable in one dimension only (e.g., seashore or near borders of big fields). A sensitivity study of the inversion procedure on the knowledge of atmospheric parameters and sensor calibration was performed. It is shown that this inversion technique is stable even in the presence of errors in the sensor calibration and the atmospheric parameters. The method was applied to Landsat data in two wavelengths. The results show reasonable dependence of the derived surface reflectance on the distance from the seashore.

(Author)

A82-21039 * # Comparison of sigma/deg/ obtained from the conventional definition with sigma/deg/ appearing in the radar equation for randomly rough surfaces. D. M. LeVine (NASA, Goddard Space Flight Center, Greenbelt, MD). IEEE Transactions on Geoscience and Remote Sensing, vol. GE-20, Jan. 1982, p. 85-90. 18 refs.

Results from the radar cross section of rough surfaces calculated from a conventional definition and from a direct solution of the radar equation are compared. The purpose is to define conditions under which the conventional solution produces the same cross-section as the radar equation. A randomly rough conduction surface is considered for line sources and corrugated surfaces. Two problems are analyzed: first, a plane wave is assumed to be incident on the surface and the observed scattered fields are computed, and second, the scattered fields received by an antenna colocated with the emitting antenna are used to compute the available power. The fields are assumed to scatter incoherently and the stationary points are assumed to be homogeneously distributed over the surface. The cross sections are found to be equal if the observer is far-from the surface compared to the radii of the surface at the specular points. M.S.K.

A82-21040 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns. C. B. Chittineni (Conoco, Inc., Exploration Research Div., Ponca City, OK). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 99-111. 18 refs.

The estimation of recognition system performance and of the probabilities of label imperfections as maximum likelihood estimates from the classifier decisions of labeled and unlabeled patterns are considered. The classification of a set of labeled and unlabeled patterns are used to derive the maximum likelihood estimates of classification errors and a priori probabilities. Additionally, expressions for the asymptotic variances of probability of correct classification and proportions are presented. Imperfection in the labels are assumed, and simple models are developed for imperfections in the labels and classification errors. Dependencies between the imperfect,

classifier, and true labels, and between the probabilities of label imperfections and the classification accuracies are accounted for. The techniques developed are applicable for processing remotely sensed multispectral data.

M.S.K.

A82-21041 Exterior algebraic processing for remotely sensed multispectral and multitemporal images. M. Inamura, H. Toyota, and S. Fujimura (Tokyo, University, Tokyo, Japan). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 112-118. 5 refs. Research supported by the Japan Research Committee of Environmental Remote Sensing.

The application of Grassmann algebra to multispectral, multitemporal image processing is examined. The use of an exterior product, an inner product, and an inner product between two exterior products is introduced, and it is shown that a multispectral image and spectral images or a monochromatic image are representable by a vector image and a scalar image, respectively. The advantages of employing algebraic, as opposed to statistical, image processing are the simplicity of the algorithm because only the statistical mean values are used, and exterior image processing involves the algebraic relationship among spectral vectors or feature vectors. The method is noted to be the equivalent of a normalized correlation method.

A82-21089 Information extraction from remotely sensed data - A user view. J. Townshend (Reading University, Reading, Berks., England) and C. Justice (ESA, European Space Research Institute, Frascati, Italy). (Remote Sensing Society, Conference on Image Processing - Enhancement or Degradation, University of London, London, England, Nov. 14, 1980.) International Journal of Remote Sensing, vol. 2, Oct.-Dec. 1981, p. 313-329, 78 refs.

Digital image processing refers to a variety of transformations and manipulations for improving the ability to extract information from imagery. It is often difficult for the user to select the most suitable approach in computer-assisted information extraction. More objective assessments of the relative utility of the different supervised, unsupervised, and hybrid approaches, as well as the individual stages within each of them, is therefore required. The ultimate use of the information extracted from the data is also affected by its compatability with other geographical data planes. Four alternative strategies for incorporating remote sensing data into comprehensive automated geographic information systems are suggested, each of which differ according to flexibility and the quantity of data to be processed and stored. Finally, the success of image analysis and classification methods depends on the relationship between the capabilities of the sensing systems and the character of the phenomena being studied.

A82-21094 The use of contextual information to improve land cover classification of digital remotely sensed data. C. M. Gurney (Reading, University, Reading, Berks., England). *International Journal of Remote Sensing*, vol. 2, Oct. Dec. 1981, p. 379-388. 12 refs. Research supported by the Atomic Energy Research Establishment

Errors frequently occur in land cover classifications which use remotely sensed data. Where the error is assumed to conform to particular spatial patterns, automated contextual correction methods may be applied. Various types of classification errors are described first, and possible contextual correction methods are suggested. Accuracy testing procedures applied both before and after correction are described. The error correction methods were applied to urban:nonurban classifications of four sets of Landsat data of the United Kingdom. The results of linear feature detection were added to the urban classification to reduce the confusion between roads and urban areas. The results were smoothed, and the objects below a given size were removed. Increases in accuracy were obtained which were statistically significant at the 95% confidence level.

J.F.

A82-21398 Digital photography techniques (Digitale Aufnahmetechnik). O. Hofmann (Messerschmitt-Bölkow-Blohm GmbH, Munich, West Germany). *Bildmessung und Luftbildwesen*, vol. 50, Jan. 1, 1982, p. 16-32. 9 refs. In German.

Optoelectronic digital imagery technology has been developed for photographing the earth's surface from the air. The cameras operate according to a push-broom principle with high resolution,

linear semiconductor photodetector arrays. Based on a successful 1978 flight, the Modular Optoelectric Multispectral Scanner (MOMS) was developed, which will be used on the SPAS platform of the 1983 Space Shuttle. Image data are recorded directly on high-density digital tapes, which are later transcribed on computer-compatible tapes for further processing. The image data are produced in graphic form in black-and-white or color by means of a raster plotter. Solutions are still being sought to handle the large data rates and storage requirements as well as to correct the geometric distortions of the scanning lines.

A82-22146 * Registration of heat capacity mapping mission day and night images. K. Watson, S. Hummer-Miller, and D. L. Sawatzky (U.S. Geological Survey, Denver, CO). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Feb. 1982, p. 263-268. 14 refs. NASA Order S-40256-B.

Registration of thermal images is complicated by distinctive differences in the appearance of day and night features needed as control in the registration process. These changes are unlike those that occur between Landsat scenes and pose unique constraints. Experimentation with several potentially promising techniques has led to selection of a fairly simple scheme for registration of data from the experimental thermal satellite HCMM using an affine transformation. Two registration examples are provided. (Author)

A82-22891 # Classification of ice radar imagery. G. Y. Tang (National Taiwan University, Taipei, Republic of China). Republic of China, National Science Council, Proceedings, Part A: Applied Sciences, vol. 5, Oct. 1981, p. 287-296. National Science Council of Republic of China Grant No. 70-0404-E002-09; NSF Grant No. ECS-80-06884.

The development of algorithms for computerized radar ice-imagery processing is presented. Initial attempts have involved the establishment of statistical parameters for discerning different ice features from the radar images. Radar imagery is gathered by either side-looking airborne radar (SLAR) or by synthetic aperture side-looking airborne radar (SAR), with coordinates chosen as azimuth (flight path) and range direction, the direction of sensing. SLAR produces a two-dimensional image of the reflectivity distribution of the ground, while higher resolution has allowed SAR applications in satellites. Seasat-1 SAR images are cited as examples for grey level categorization of surface features, and analysis indicates that mean and variance of grey levels serve best for classification.

M.S.K.

A82-25139 Multispectral texture. A. Hosenfeld (maryland, University, College Park, MD), A. Y. Wu (Maryland, University, College Park, MD; American University, Washington, DC), and C.-Y. Wang, IEEE Transactions on Systems, Man, and Cybernetics, vol. SMC-12, Jan.-Feb. 1982, p. 79-84. 5 refs. Grant No. AF-AFOSR-77-3271.

Textures in single-band images are often characterized by statistics of the joint distributions of pairs of gray levels for pairs of pixels in given relative positions, or by statistics of absolute gray level differences for such pairs of pixels. Joint distributions of pairs of spectral vectors in multiband images are cumbersome, since for k bands they are 2k-dimensional, but absolute difference distributions are less so, e.g., for two bands they are only two-dimensional. The possibility is discussed of using statistics of absolute difference distributions for characterizing textures in multiband images, with emphasis on the two-band case. (Author)

A82-25454 Increase in correlation accuracy of remote sensing imagery by digital filtering. M. Ehlers (Hannover, Universität, Hanover, West Germany). Photogrammetric Engineering and Remote Sensing, vol. 48, Mar. 1982, p. 415-420. 8 refs.

For correlation of remote sensing photographs of Wetlands, a concept for rectification on a common reference image was developed at the University of Hanover. The results of two objective functions after previous filtering are compared to those obtained without filtering. It is shown that the accuracy and efficiency of the objective function at the constant process is essentially increased by a low pass filter.

(Author)

A82-25455 * Modeling misregistration and related effects on multispectral classification, F. C. Billingsley (California Institute of

Technology, Jet Propulsion Laboratory, Pasadena, CA). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Mar. 1982, p. 421-430. Contract No. NAS7-100.

Misregistration is but one of a group of parameters (noise, class separability, spatial transient response, field sizes) affecting the accuracy of multispectral classification. The entire group must be considered simultaneously. Any noise in the measurements (due to the scene, to the sensor, or to the analog/digital conversion) will cause a finite fraction of the measurements to fall outside of the classification limits, even within nominally uniform fields. For field boundaries, where the effects of misregistration are felt, additional pixels will be misclassified due to the mixture of materials in the pixels. Misregistration causes field borders in a given (set of) band(s) to be closer than expected to a given pixel, causing additional pixels to be misclassified. Simplified models of the various effects are used to gain conceptual understanding and to estimate the performance to be expected. (Author)

A82-25456 * Using known map category marginal frequencies to improve estimates of thematic map accuracy. D. H. Card (NASA, Ames Research Center, Moffett Field, CA). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Mar. 1982, p. 431-439, 10 refs.

By means of two simple sampling plans suggested in the accuracy-assessment literature, it is shown how one can use knowledge of map-category relative sizes to improve estimates of various probabilities. The fact that maximum likelihood estimates of cell probabilities for the simple random sampling and map category-stratified sampling were identical has permitted a unified treatment of the contingency-table analysis. A rigorous analysis of the effect of sampling independently within map categories is made possible by results for the stratified case. It is noted that such matters as optimal sample size selection for the achievement of a desired level of precision in various estimators are irrelevant, since the estimators derived are valid irrespective of how sample sizes are chosen. O.C.

A82-26050 A procedure for the interactive tracing of edges and lines by means of digital image processing (Ein Verfahren zur interaktiven Verfolgung von Kanten und Linien mit den Mitteln der Digitalen Bildverarbeitung). B.-S. Schulz (Institut für angewandte Geodäsie, Frankfurt am Main, West Germany). Bildmessung und Luftbildwesen, vol. 50, Mar. 1, 1982, p. 69-79. 18 refs. In German.

The considered procedure is partly related to the realization that object boundaries in an aerial photograph can be determined only on the basis of density discontinuities. The method has been developed for the calculation and the tracing of edges. In the study of cartographic objects, a special case involves conditions in which object width and image element size are approximately equal. Such problems can also be solved with the aid of the reported method. The strategy of line tracing is considered, taking into account the utilization of a 3 x 3 matrix. A preprocessing step is employed to close small gaps automatically and to delete inadmissible line connections. With an arbitrary starting point on the line, the line is followed to the end or to a point where an interruption occurs. Aspects of method implementation are illustrated with the aid of specific examples.

A82-26726 † Methods for the processing of syntheticaperture radar signals when solving problems of the national economy /Review/ (Sposoby obrabotki signalov radiolokatorov s sintezirovannoi aperturoi pri reshenii narodnokhoziaistvennykh zadach /Obzor/). V. B. Shteinshleiger, A. N. Erkin, P. S. Lifanov, G. S. Misezhnikov, and A. V. Ianovich. *Radiotekhnika i Elektronika*, vol. 27, Feb. 1982, p. 193-213. 34 refs. In Russian.

The paper examines and compares various signal processing methods for synthetic-aperture radar systems used in the remote sensing of earth resources. Attention is given to optical processing, processing using CRTs with memory, and digital and hybrid processing.

B.J.

A82-26840 An automatic optimum kernel-size selection technique for edge enhancement. P. Chavez, Jr. (U.S. Geological Survey, Flagstaff, AZ) and B. Bauer (U.S. Geological Survey, EROS Data Center, Sioux Falls, SD). Remote Sensing of Environment, vol. 12, Mar. 1982, p. 23-38. 5 refs. Research supported by the U.S.

Geological Survey.

An automatic optimum kernel-size selection technique for edge enhancement is presented, which is a correction for the modulation transfer function of an imaging system to a first order. The horizontal first difference is used to automatically select the optimum kernel size to enhance the edges contained in the image. The technique is easy to implement, works on a one-line-in/one-line-out basis, and the first difference and the subtractive rectangular filter are both efficient and simple.

D.L.G.

A82-26841 A relation between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle. W. S. Kowalik, S. E. Marsh (Stanford University, Stanford, CA; U.S. Geological Survey, Washington, DC), and R. J. P. Lyon (Stanford University, Stanford, CA). Remote Sensing of Environment, vol. 12, Mar. 1982, p. 39-55. 23 refs. Research supported by the U.S. Geological Survey.

A method for estimating the reflectance of ground sites from satellite radiance data is proposed and tested. The method uses the known ground reflectance from several sites and satellite data gathered over a wide range of solar zenith angles. The method was tested on each of 10 different Landsat images using 10 small sites in the Walker Lake, Nevada area. Plots of raw Landsat digital numbers (DNs) versus the cosine of the solar zenith angle (cos Z) for the test areas are linear, and the average correlation coefficients of the data for Landsat bands 4, 5, 6, and 7 are 0.94, 0.93, 0.94, and 0.94, respectively. Ground reflectance values for the 10 sites are proportional to the slope of the DN versus cos Z relation at each site. The slope of the DN versus cos Z relation for seven additional sites in Nevada and California were used to estimate the ground reflectances of those sites. The estimates for nearby sites are in error by an average of 1.2% and more distant sites are in error by 5.1%. The method can successfully estimate the reflectance of sites outside the original scene, but extrapolation of the reflectance estimation equations to other areas may violate assumptions of atmospheric homogeneity. (Author)

A82-27505 † The effectiveness of instrumented visual studies of the earth from space (Ob effektivnosti vizual'no-instrumental'nykh issledovanii zemli iz kosmosa). V. V. Kovalenok, A. D. Koval', and A. A. Tishchenko. In: Scientific lectures on aviation and astronautics 1980.

Moscow, Izdatel'stvo Nauka, 1981, p. 39-49. In Russian.

Recommendations are presented on the equipment required for making visual observations of the earth's surface from orbital space stations. Attention is given to the effectiveness of human vision with regard to the interpretation, recognition, and study of various types of earth resources and terrestrial phenomena in a wide range of observation conditions. General criteria are developed for the quantitative assessment of the effectiveness of visual-observation systems.

B.J.

A82-27587 # Context dependent modeling. P. R. Beaudet (Business and Technological Systems, Inc., Seabrook, MD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 145-164. 23 refs.

In connection with remote-sensing operations, the need arises to incorporate a priori knowledge in the interpretation of the digital images in order to gain complete understanding of the data that is present. This need to incorporate a priori knowledge is found in every part of the processing algorithm. As a consequence, context-dependent modeling is much utilized today as a means of incorporating a priori knowledge in the interpretation process. In most of the context-dependent work, the information extraction process is partitioned into a set of parallel feature extraction routines embedded in a decision tree network. The notion of context-dependent modeling, as it applies to processing algorithms, is considered along with the role of a priori knowledge, and data interpretive tools. G.R.

A82-27590 # Operational resampling for correcting images to a geocoded format. D. E. Friedmann (MacDonald, Dettwiler and Associates, Ltd., Richmond, British Columbia, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 195-212. 24 refs. Research supported by the Department of Industry, Trade and Commerce. DITC Project 534-3203.

Accompanying the improved satellite imagery provided in connection with new remote-sensing developments is the increasing compilation of detailed, geographically oriented data bases from disparate sources. Image correction must evolve to cope with the new sources of data. Precision processed images with map accuracies are now available for a variety of remote sensing applications. In connection with a study of the new developments, it becomes apparent that geometric correction must be expanded to yield satellite independent images. These geocoded images are precision images that have been rotated through the spacecraft heading angle so that they are aligned with the output map projection. Attention is given to the theoretical arguments for validating one-dimensional precision processing of imagery data from present and future sensors. It is shown that a radiometrically and geometrically accurate geocoded image can be obtained by a series of three one-dimensional resampling passes. G.R.

A82-27607 # Towards an operational SPOT system - A preliminary assessment. G. Brachet and P. Gonfreville (Centre National d'Etudes Spatiales, Paris, France). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 445-460.

A description is presented of the SPOT system, whose operation is scheduled to begin in 1984 and which comprises both earth observation satellites and ground stations offering the greatest achievable adherence to user requirements. The vertical and oblique viewing capability of the system will minimize the time interval between consecutive observations of the same area. Stereoscopic image pairs will be obtained by oblique observations of a given area during different satellite passes, and the 10-m resolution offered will permit operations on a 1/50,000-scale and even 1/25,000-scale, in some cases. It is expected that renewable resources management will gradually replace the creation of image data banks for mining and oil companies, which will represent the system's principal activity during its first years of existence.

A82-27623 # Enhancement of Landsat data for Hudson Bay lowlands vegetation. I. L. Johnston and P. J. Howarth (McMaster University, Hamilton, Ontario, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 623-633. 18 refs. Research supported by McMaster University; Natural Sciences and Engineering Research Council of Canada Grant No. A-5586.

The two basic methods of Landsat digital analysis include classification and enhancement. In classification, spectral data are statistically sorted and displayed as different colors or symbols on a CRT monitor or line printer. There are sometimes difficulties related to the assignment of a unique description or to interpretation. In order to overcome these problems, image enhancement has been developed as a second and complementary method of digital analysis. Image enhancement maximizes the visual information presented on the CRT monitor so that subtle details in the image are clearly displayed. The present investigation is concerned with the assessment of the capabilities of three Landsat digital enhancements to differentiate major land cover types in a remote subarctic environment, giving attention to linear contrast stretch, band ratioing, and video filtering.

G.R.

A82-27625 # An evaluation of the utility of smaller Landsat resolution elements /Resolution of Landsat resolution/. R. F. Hyde, N. J. Vesper, and I. A. Goldblatt (Butler University, Indianapolis, IN). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 647-652.

The considered project has the objective to make definitive statements on the spatial resolution level requirements or the optimum pixel size for several of the high volume Landsat data user

disciplines. Several issues are examined in anticipation of future and proposed satellite derived smaller pixels (or ground resolution levels). This is accomplished by the construction of a detailed database which combines the two technical philosophies associated with Landsat data analysis and application, with Geographic Information System database development. Aspects of methodology are considered. In connection with a discussion of data base construction, attention is given to design, encoding, and computer generating. Questions of aggregation to various pixel sizes are considered along with the assignment of reflectance values, the classification of each new pixel resolution, and the interpretation of aggregate levels. G.R.

A82-27626 # The use of digital terrain model in the rectification of satellite-borne imagery. F. Wong, R. Orth, and D. E. Friedmann (MacDonald, Dettwiler and Associates, Ltd.; Richmond, British Columbia, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 653-662. 8 refs. Research supported by the Industrial Research Assistance Program.

The present investigation is concerned with the precision geometric rectification of satellite-borne imagery, including correction for relief displacement with the use of a digital terrain model. While relief displacement error is small in Multispectral Scanner System (Landsats -1, -2, and -3) imagery, it will become significant in imagery from future sensors due to increased resolution (Thematic Mapper on Landsat-D) and off-nadir pointing capabilities (linear arrays on SPOT). It is shown how the slow varying geometric distortion correction can be separated from the fast varying relief displacement correction. Experiments illustrate that subpixel geometric rectification accuracy can be achieved even in areas of severe high relief provided an accurate digital terrain model is used during the correction process.

G.R.

A82-27629 # An approach to path radiance correction in MSS images. M. Onitsuka, K. Ohta (National Research Institute for Pollution and Resources, Yatabe, Ibaraki, Japan), N. Okami (Institute of Physical and Chemical Research, Wako, Saitama, Japan), and J. R. Miller (York University, Downsview, Ontario, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 681-689. 10 refs.

Problems related to providing accurate corrections for atmospheric scattering are a major obstacle to the use of remote sensing for determining changes in water quality with time. In the present investigation, published path radiance determinations are used to derive relationships which describe the systematic variation in the path radiance. Empirical equations are derived to relate the path radiance in Landsat bands 4, 5, and 6 to the path radiance in band 7. The algorithms are applied to a number of Landsat images acquired over Japanese coastal waters.

G.R.

A82-27636 # Strategies and uses of small distributed analysis centers as in the natural resource inventory of Venezuela. R. J. P. Lyon, K. Lanz (Stanford University, Stanford, CA), and R. Lairet (Ministerio del Ambiente y de los Recursos Naturales Renovables, Caracas, Venezuela). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 751-759.

A82-27651 # Field-by-field multitemporal analysis of aerial scanner data geometrically corrected by means of a sliding model. R. Jeansoulin, J.-C. Darcos, and G. Rigal (CNRS, Langages et Systèmes Informatiques; Toulouse, Ecole Nationale Supérieure d'Electrotechnique, d'Electronique, d'Informatique et d'Hydraulique, Toulouse, France). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 929-938. 6 refs. Research supported by the Centre National d'Etudes Spatiales.

Field-by-field multitemporal analysis is the geometrical processing of multitemporal images of a given scene through automatic registration and overlapping, with emphasis on the processing of information lying within the same geographical entity in order to obtain the population distribution function for every date. Two techniques are proposed to this end: (1) the sliding model, in which a sequence of local, simple and independent models of the relative deformation is computed and adjacent local models are joined by sliding processing; and (2) the field-by-field correction method, which is based on the segmentation of intersecting areas into a reference image, and the assessment of the same area at different dates through computation of local relative deformation with the minimum number of nearest neighbors among the registered control points.

A82-27654 # Effect of aerosols on optical remotely sensed data. W. G. Egan (Grumman Aerospace Corp., Research Dept., Bethpage, NY) and G. E. Shaw (Alaska, University, Fairbanks, AK). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 959-973. 23 refs.

It has been found possible to validate and determine certain characteristics of atmospheric aerosols, as well as to typify their effects, in major experimental tests of two complementary aerosol modeling approaches: (1) the Dave (1972) radiative transfer program, applied to the Caribbean area of St. Thomas in 1972, and (2) the constrained linear inversion method, applied to the continental area of Ft. Collins, Colorado, in 1980. The aerosol optical thickness at 0.5-micron wavelength over Ft. Collins was about 0.07, and about 0.12 over St. Thomas. It is concluded that, by using ground-based observations, the Dave model provides detailed angular variation of sky radiance and solar flux to + or - 20% away from the solar aureole, while the constrained linear inversion model furnishes path-averaged optical depth to + or - 3%, and total downwelling diffuse radiation to + or - 1%, as well as aerosol size distribution, 0.C.

A82-27655 # HCMM night-time thermal IR imaging experiment in Michigan. R. K. Vincent, J. B. Parrish, D. H. Coupland (Geospectra Corp., Ann Arbor, MI), and E. Jaworski (Eastern Michigan University, Ypsilanti, MI). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 975-980, 983, 984. 7 refs.

The Heat Capacity Mapping Mission satellite's 10.5-12.5-micron thermal IR channel obtained a color level-sliced image of Michigan during an August 21, 1978 overpass. Surface water, including most of the Great Lakes, was warmer than the land mass, and two area types in the southern peninsula of Michigan appear unusually cool: (1) forested valley areas with high soil infiltration rates, in the north-central region; and (2) small, flat, swampy areas in Sanilac County associated with peat bogs. Comparison with actual reported temperatures show an underestimation of temperature by the satellite of up to 8 C, perhaps due to atmospheric effects.

A82-27666 * # ELAS · A geobased information system that is transferable to several computers. S. L. Whitley, R. W. Pearson, B. R. Seyfarth, and M. H. Graham (NASA, National Space Technology Laboratories, Earth Resources Laboratory, Bay St. Louis, MS). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1091-1098.

In the early years of remote sensing, emphasis was placed on the processing and analysis of data from a single multispectral sensor. such as the Landsat Multispectral Scanner System (MSS). However, in connection with attempts to use the data for resource management, it was realized that many deficiencies existed in single data sets. A need was established to geographically reference the MSS data and to register with it data from disparate sources. Technological transfer activities have required systems concepts that can be easily transferred to computers of different types in other organizations. ELAS (Earth Resources Laboratory Applications Software), a geographically based information system, was developed to meet the considered needs. ELAS accepts data from a variety of sources. It contains programs to geographically reference the data to the Universal Transverse Mercator grid. One of the primary functions of ELAS is to produce a surface cover map. G.R.

A82-27667 # Flexible processing of remote sensing data through integration of image processing and geobased information systems. W. A. Hallada (Computer Sciences Corp., Silver Spring, MD), F. C. Mertz, L. R. Tinney, M. J. Cosentino, and J. E. Estes (California, University, Santa Barbara, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1099-1111. 13 refs.

Integrating image processing and geobased information systems (GBIS) provides the analyst with many new options and opportunities for processing and using remotely sensed data. Even when remote sensing can provide a crucial input to an analysis, it is not uncommon for this input to be only one of many that must be considered. In a similar manner, many types of data (e.g. terrain and soils) can be very useful when deriving products from remotely sensed data. Research to date indicates that a systems concept employing geobased system and image processing technologies provides a flexible means of analyzing remotely sensed data for purposes of preprocessing, stratification, classification, and modeling. This paper presents examples of the use of an image based information system (IBIS) that allows the spatial integration of remotely sensed imagery with other types of geobased data. An automated cluster labeling procedure, an automated land management system, and an automated fire information management system are discussed within this paper.

A82-27671 # Interpretation of Heat Capacity Mapping Mission images over Canada. J. Cihlar (Canada Centre for Remote Sensing, Applications Div., Ottawa, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1141-1152.

The influence of atmospheric and land surface variables on day and night Heat Capacity Mapping Mission (HCMM) thermal infrared data collected over two Canadian sites is analyzed for confirmation of the thermal inertia concept. Visual analysis of many images and digital nighttime apparent land temperature distribution was dominated by the near-surface air temperature and that the effects of typography, wind, and land cover were primarily indirect. In the daytime, surface cover was the most important variable, mainly because of the role of water in relation to cover type. The effect of soil moisture was very weak. Except for the land/water contrast, surface temperature differences were relatively small. Cloud cover was the dominant feature of daytime and nighttime thermal infrared images.

(Author)

A82-27677 # Classification of Landsat MSS data for surface cover of small areas. Y. J. Chong, A. C. Yeo, and V. K. Vong (National University of Singapore, Singapore). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI. Environmental Research Institute of Michigan, 1981.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1219-1225.

Multispectral scanner data acquired by Landsat 1, 2 and 3 have been studied for path 137 row 56 and path 137 row 57. Software has been developed to process the computer compatible tapes on a user terminal of a general purpose mini-computer utilizing only the standard input/output peripherals. Spectral classification of the data is done by identifying clusters in a four-dimensional vector space. An area of the sea in the vicinity of a tidal gauge station is chosen for study, both at high tide and at low tide. When the classified data is compared with a hydrographic map water depth boundaries are clearly discernible, even though the water in the area being influenced by river discharges is not particularly clear. (Author)

A82-27685 # An analysis of user requirements for operational land satellite data. G. W. Spann, N. J. Hooper (Metrics, Inc., Atlanta, GA), and D. J. Cotter (NOAA, National Earth Satellite Service, Washington, DC). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1297-1303.

The National Oceanic and Atmospheric Administration/National Earth Satellite Service (NOAA/NESS), as the agency designated to

implement and manage the U.S. operational land remote sensing satellite system, conducted a survey in March, 1980, to determine user needs for land satellite data in the context of an operational system. Analysis of the survey responses indicates that the operational requirements of most users can be met by data similar to that which can be provided by the MSS and/or TM instruments developed by NASA in the Landsat program. The analysis further indicates that users emphasize the timely, reliable delivery of data products as the essential element of an operational land satellite system. (Author)

A82-27686 * # Precision in the evaluation of Landsat autocorrelation - The terrain effect. R. G. Craig (Kent State University, Kent, OH). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1305-1314. 14 refs. Contract No. NAS5-26111.

The autocorrelation present in Landsat data can be described by a two-parameter model. Presence of this autocorrelation seriously inflates estimates of the variance of a set of pixels. The degree of inflation is always serious but varies markedly according to the values of the parameters phi and Theta. Thus corrections of the effects of the model require precise estimates of these parameters. Two hypotheses are proposed to explain the variation of phi with location. Several lines of evidence are presented which support the idea that phi is induced directly by the autocorrelation structure of the terrain being sensed. It is suggested that use of this relation will allow economical estimates of phi for any scene of interest. (Author)

A82-27688 # Natural resources inventories by computersatellite mapping techniques in Chaco State, Argentine Republic, South America. A. V. Gustin (State Institute of Ecology, Natural Resources and Technology, Resistencia, Chaco, Argentina) and L. L. Ledesma (National Institute of Agro-Technology, Roque Saénz Peña, Chaco, Argentina; Stanford University, San Francisco, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1327-1338, 9 refs. Research supported by the Quebracho Extract National Commission.

Information from satellites Landsat 1 and Landsat 2, launched by NASA in 1972 and 1975, were used to survey natural resources in Chaco State, Argentine. In order to get map representation by a digital system, computer processing was done defining spectral characteristics (Honey curves) which were used as survey patterns in the digital analysis. Results of this procedure are 1:100,000 and 1:25,000 dotprints maps and slides in false color, with band combination (4, 5, 6, 7). The multispectral analysis of Landsat C.C.T. data has shown to be useful for the characterization and correlation (based on field data, frames interpretation and aerial photo interpretation) for surveying and mapping natural resources in this State, because the site spectral values are well segregated by their own natural characteristics. (Author)

A82-27689 * # Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration. M. J. Duggin (New York, State University, Syracuse, NY) and W. R. Philipson (Cornell University, Ithaca, NY). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1339-1352. 36 refs. Research supported by the U.S. Department of Agriculture; Grant No. NGL-33-010-171.

The bandpasses, overflight conditions, and sensor geometry that will provide optimum target discrimination in remote-sensing studies can be determined only from spectral reflectance measurements made for various sun-target-sensor geometries, supplemented by model calculations which can be checked against field data. The accurate measurement of ground reflectance properties is critical to the design of future sensors and to the determination of imaging conditions. The current investigation has the objective to review typical methods of measuring spectral reflectance, to point out some of the problems inherent to reflectance measuring techniques, and to present a method of checking measurement accuracy.

G.R.

A82-27693 # Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto, Mexico. A. Jinich, J. L. Farah, M. Garza, C. Velarde, R. Méndez, J. Rosenblueth (Universidad Nacional Autónoma de México, Villa Obregón, Mexico), R. Alvarez, G. García, R. Hernández, and A. López (Comissión Federal de Electricidad, Mexico). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1387-1396. 13 refs. Research supported by the United Nations. UN Project MEX-120-8-004-05-X.

A82-27698 # Visual and digital analysis of H.C.M.M. data over eastern Canada. F. Bonn, M. Bernier, and R. Brochu (Sherbrooke, Université, Sherbrooke, Québec, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1449-1463. 21 refs. Natural Sciences and Engineering Council Grant No. A-6043

It is pointed out that the Heat Capacity Mapping Mission (HCMM) has generated a great conceptual and research interest due to its theoretical ability to map subsurface features which were up to now invisible to sensors. A satellite equipped with a thermal channel providing a 12 hour coverage at adequate passing times might be of great value to investigators interested in physical aspects of rocks, soils, and water. The present analysis is concerned with two HCMM scenes, which were acquired on June 6th, 1978 over Montreal and Lake Ontario, and on September 19th, 1978 over the St. Lawrence Valley. A visual analysis of the images is considered, taking into account geology and geomorphology, topography and climate, landuse and human activities, and hydrology and water surfaces. Attention is given to day and night images, the temperature difference image, the thermal inertia image, the digital analysis of a subimage, and observed features unique to HCMM.

G.R.

A82-27923 # The role of computer graphics in geographic research. F. T. Aldrich (Arizona State University, Tempe, AZ). In: Computer Graphics Symposium, Phoenix, AZ, April 24, 1982, Proceedings. New York, American Institute of Aeronautics and Astronautics, 1982, p. 38-41. 7 refs.

This paper discusses the way in which a geographer views computer graphics and the role this media plays in applied spatial research. A background perspective is presented which gives the scope of geographic research tasks and a discussion of manual cartographic displays, their characteristics and limitations. Advantages of digital production of conventional graphics is presented as well as a documenting of new capabilities available only by utilizing the media of computer graphics. These new capabilities involved the use of whole surface displays using perspective views, stereo perspective, and 'photogrammetric' surfaces. (Author)

A82-28141 † Correlation identification of stellar configurations for purposes of the coordinate referencing of aerial and space images (Korreliatsionnoe otozhdestvlenie zvezdnykh konfiguratsii dlia tselei koordinatnoi priviazki aerokosmicheskikh snimkov). V. K. Zlobin and V. N. Kobzev. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 83-88. 8 refs. In Russian.

Correlation algorithms are proposed for the identification of stellar configurations in the coordinate referencing of aerial and space remote-sensing images. In order to reduce the number of required computations, an image of the correlation-field fragment is constructed, and a search is carried out for the maximum of the cross correlation function of the real image and the reference image. B.J.

A82-28143 † Characteristics of the use of laser-mirror scanners for image processing in cartography and aerial photography (Osobennosti ispol'zovaniia lazernykh zerkal'nykh skanatorov dlia obrabotki izobrazhenii v kartografii i aerofotos'emke). 1. M. Kol'tsov, V. P. Mikheev, and B. S. Rozov. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR,

Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 94-99. In Russian

A special-purpose laser-mirror scanner for the processing of aerial photographs is described. The system provides for synphase scanning of two photographs per line, whose length varies automatically from 0.5 to 10 mm. The size of the scanning spot varies from 30 to 300 mm, while the rms error of the position of the raster centers is about 3 microns. A schematic diagram of the scanning system is presented, and the basic characteristics of the scanner are given.

B.J.

A82-28144 † Construction of digital models of statistically uniform characteristics on the basis of multispectral space imagery (Postroenie tsifrovykh modelei statisticheski odnorodnykh kharakteristik po spektrozonal'nym kosmicheskim materialam). N. P. Lavrova and G. Ia. Globa. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 99-108. In Russian.

The development of digital terrain models on the basis of multispectral remote-sensing data is considered. It is found that partial multispectral images can be subjected to statistical treatment using microphotometer data. Digital models are constructed for a portion of terrain having statistically uniform characteristics.

A82-28146 † Construction of a mathematical model for the recognition of identical images on a pair of photographs (O postroenii matematicheskoi modeli opoznavaniia identichnykh izobrazhenii na pare snimkov). I. G. Zhurkin. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 111-119. In Russian.

A82-28343 Earth-scanning satellites lead resource hunt. P. Kinnucan, *High Technology*, vol. 2, Mar.-Apr. 1982, p. 53-60.

Technology to be used for the acquisition of satellite imagery for earth resources applications is discussed. Advanced earth resource satellites to be launched in the 1980s by the United States, France and Japan will incorporate technical innovations increasing the value of satellite imagery for the mapping and monitoring of crops, mineral and petroleum deposits and other resources, including the Thematic Mapper to be carried on board the Landsat D satellites, data relay satellites to be used for image transmission to the ground, the pushbroom scanner to be used on the French SPOT satellites to provide high-resolution panchromatic and stereo images, and night and all-weather coverage offered by radar imaging from the Japanese ERS satellites. These technical innovations, however, raise sensitive issues concerning the need for specialized agricultural and geological satellites, the private operation of the Landsat satellites, the restriction of access to satellite data and national defense. A.L.W.

A82-28467 † Improving the quality of aerial photography /Concerning the 'Basic principles of aerial photography'/ (Povyshat' kachestvo aerofotos'emochnykh rabot /K Vypusku osnovnykh polozhenii po aerofotos'emke/). A. G. Vanin and lu. I. Poletaev. Geodeziia i Kartografiia, Feb. 1982, p. 45-48. In Russian.

The paper reviews the contents of the normative document 'Basic principles of aerial photography', issued by the Krasovskii Institute of Geodesy, Cartography, and Aerial Photography. Particular consideration is given to techniques for improving the quality of aerial photography.

B.J.

A82-28468 † Classification of systems for digital terrain simulation (K voprosu klassifikatsii sistem tsifrovogo modelirovaniia rel'efa mestnosti). A. S. Vasmut, A. V. Gusev, and Iu. A. Kravchenko. *Geodeziia i Kartografiia*, Feb. 1982, p. 53-57. 6 refs. In Russian.

A classification scheme for digital terrain models is examined. Particular attention is given to the three main classification characteristics: (1) data structures (the makeup and organization of terrain data interrelationships); (2) mathematical methods (i.e., recovery of relief at the required point); and (3) algorithms of data transformation. Interpolation methods for digital terrain models are considered.

B.J

N82-16437*# Wisconsin Univ. - Madison. Environmental Remote Sensing Center.

WETLAND MAPPING FROM DIGITIZED AERIAL PHOTOG-RAPHY

F. L. Scarpace, B. K. Quirk, R. W. Kiefer, and S. L. Wynn, Principal Investigators [1982] 31 p refs Original contains color imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. 57198. ERTS (E82-10019; NASA-CR-164816) HC A03/MF A01 CSCL 08B

Aerial photographic imagery of the Sheboygan Marsh in Wisconsin was scanned through three different narrow band interference filters centered at .45, .55, and .65 micrometers. The output data was transformed into log exposures and corrected for lens fall-off. The scanned area was approximately 253 hectares, with each pixel representing an area of 6.0 meters square on the ground. Training sets were extracted from the digital file of the imagery using the map generated from the photointerpretation and computer generated character displays from the digital file as first approximations. From these training sets, statistics were generated to be used with an elliptical classifier. The classifier generated a digital file from which color coded thematic representations of the classifications could be produced. A two stage table-look-up elliptical algorithm was used as the classification procedure. The wetland boundary was easily delineated, but there was difficulty in mapping the boundaries of vegetation within the wetland. A.R.H.

N82-16438* # Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

PARTIALLY PROCESSED MULTISPECTRAL SCANNER LANDSAT HIGH-DENSITY TAPES REFORMATTING SYSTEM (HDT-AM/AMC) DESIGN SPECIFICATIONS

Omar J. Holguin, Principal Investigator Dec. 1980 37 p **ERTS**

(Contract NAS9-15800)

(E82-10020; NASA-CR-161046; JSC-17101; LEMSCO-15905) Avail: NTIS HC A03/MF A01 CSCL 05B

The data interface formats and communication conventions used by the system (HDTRS) are defined. They are used to retrieve partially processed MSS and return beam vidicon type

N82-16441*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

CNPQ/INPE: LANDSAT SYSTEM Progress Report, 1 Jun. 1980 - 30 Apr. 1981

Nelson deJesusParada, Principal Investigator and Marcio Nogueira Barbosa May 1981 26 p Sponsored by NASA Original contains color imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. 57198. ERTS (E82-10023: NASA-CR-164814: INPE-2063-RPE/305) Avail: NTIS HC A03/MF A01 CSCL 058

The current status of the Brazilian LANDSAT facilities is reported. The activities at the Cuiaba tracking and receiving station, and at the electronic processing and photo laboratories are presented. The image data bank is discussed. Operation statistics are given and include: scenes received and recorded, and scenes converted to images; images distributed to users and revenues; CCT's produced to users and revenues; images and CCT's distributed (summary); and LANDSAT data sales/distribution analysis for the year of 1980. The status of the LANDSAT-D project is also reported.

N82-16450# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

SIMPLIFIED ALGORITHM FOR CALCULATING RADIATIVE TRANSFER IN SATELLITE IMAGES [ALGORITMO SIMPLIF-ICADO PARA CALCULO DE TRANSFERENCIA RADIATIVA EM IMAGENS DE SATELITE)

L. A. V. Dias, A. E. C. Pereira, and G. Camara Jul. 1981 17 p refs In PORTUGUESE; ENGLISH abstract Presented at the 33rd Reuniao Anual da SBPC, 8-15 Jul. 1981, Salvador, Brazil

(INPE-2169-RPE/385) Avail: NTIS HC A02/MF A01

Temporal variations of Earth's atmosphere may cause problems on remote sensing data analysis of satellites, such as LANDSAT, SKYLAB and NIMBUS-7. The apparent radiance of surface features which an orbiting spacecraft measures differs from the intrinsic surface radiance of the object, due to the presence of the intervening atmosphere of Earth. An algorithm for atmospheric correction is presented.

N82-16452*# Texas Univ. at Arlington. Applied Research Labs

DIGITAL CORRELATION OF DDRS DATA Final Report, 1 Oct. 1980 - 30 Sep. 1981

Carroll R. Griffin and James M. Estes 24 Nov. 1981 42 p refs

(Contract NAS9-16208)

(NASA-CR-167494; ARL-TR-81-51) NTIS HC A03/MF A01 CSCL 058

The reduction of digital SAR (synthetic aperture radar) data to radar images for use in remote sensing applications was investigated. The critical software operations are discussed in detail, and suggestions and recommendations are made for improving the algorithms currently being used. J.M.S.

N82-16677# National Weather Service, Fort Worth, Tex. Scientific Services Div.

WEATHER SATELLITE INTERPRETATION: INTRODUCTION TO WEATHER SATELLITE IMAGERY

David L. Carlson Jun. 1981 54 p refs (PB82-107657; NOAA-TM-NWS-SR-103; NOAA-81081105) Avail: NTIS HC A04/MF A01 CSCL 04B

This manual was designed to be a basic self-study course for the new GOES (Geostationary Operational Environmental Satellite). They may also be referred to as SMS, Synchronous Meteorological Satellite. Five GOES satellites launched by the U.S. and two others launched by Europe and Japan provide global coverage plus backup capability. Content of the manual includes basic operation of the GOES system and detailed explanations of some of the most commonly used GOES photos. The test consists of two chapters, a criterion test at the end of each chapter, and a comprehensive photo interpretation examina-

N82-17570# Inter-American Geodetic Survey, Fort Sam Houston, Tex.

PHOTOGRAMMETRY SOFTWARE. A PACKAGE FOR **EVERYONE**

James R. Hawk Oct. 1981 59 p

(AD-A108098) Avail: NTIS HC A04/MF A01 CSCL 08/2 An example photogrammetry software is presented for consideration. The system is being implemented throughout Latin America by IAGS. It includes both analytical and semi-analytical adjustments. It is a simplistic yet versatile system which has proven very successful.

N82-18656 Old Dominion Univ., Norfolk, Va.

USAGE AND LIMITATIONS OF CHARACTERISTIC VECTOR ANALYSIS OF REMOTE SENSING MULTISPECTRAL DATA FOR THE IDENTIFICATION AND QUANTIFICATION OF WATER QUALITY PARAMETERS Ph.D. Thesis

Theodore A. Talay 1981 394 p

Avail: Univ. Microfilms Order No. 8128308

Characteristic vector analysis is investigated to determine how it resolves total radiance signals measured by a remote sensor into eigenvectors and associated scalar coefficients and their relationships to the identification and quantification of the in situ water constituents. Technique operation is checked against a progression of hypothetical test cases and a limited number of laboratory data sets. Under ideal conditions, characteristic vector analysis has the potential of identifying and quantifying individual constituents in water, even when in mixtures, with a minimum of surface truth data. Exact constituent identification, using characteristic vectors, and quantification, by scaling a scalar coefficients, is possible when the study constituents have a linear radiance concentration relationship, superimpose linearly in mixtures, and the measured radiance spectra are devoid of noise and atmospheric effects. As these conditions are relaxed, technique limitations and inexact solutions are encountered. Dissert. Abstr.

N82-18657 Royal Aircraft Establishment, Farnborough (England). Space Dept.

AUTOMATIC RELOCATION OF GROUND CONTROL POINTS IN LANDSAT IMAGERY

A. H. Benny 5 Jun. 1981 37 p refs

(RAE-TR-81071; RAE-Space-598; BR80598) Copyright. Avail: Issuing Activity

A computer program which relocates ground control points (GCP), used in the geometric transformation of satellite pictures is discussed. The GCP's are first located manually on the image and a map. A transformation matrix enables image locations to

be converted to map references. For subsequent images, the identity of a first GCP and an indication (not necessarily precise) of its position in the new image enable a spiral search to locate that GCP and then all the others. Accuracy of + or - 0.4 pixel is obtained for LANDSAT pictures. For similar seasons, proportion relocated approaches 100%. In worst cases (6 months difference between images, with snow in the second) 60% is achieved.

Author (ESA)

N82-19611*# National Aeronautics and Space Administration. Washington, D. C.

SATELLITE EARTH RESOURCES DATA, MODULE U-3

Jan. 1980 13 p Original contains color imagery. Original photography may be purchased from the EROS Data Center, Sioux Fals, S.D. 57198. ERTS (E82-10035; NASA-TM-84130) Avail: NTIS

HC A02/MF A01 CSCL 05B

Satellite data image products potentially useful in solving Earth resource and environmental problems are described. Sources for satellite data and user information are given. Recommendations for suitability of use of data from each satellite are presented. Satellite sources of Earth resources data are summarized for satellites launched since 1965 and those projected for launch through the late 1980s. The sensors of interest on each satellite, the wavelength or frequency of operation, and the resolution are given. Color ranges are illustrated and compared. The form and utility of aircraft and LANDSAT images are compared. Data from the Gemini-Apollo photography, Skylab, meteorological satellites, the Heat Capacity Mapping Mission, the Coastal Zone Color Scanner, Seasat, LANDSAT, and projected future satellites are briefly described. JDH

N82-19612*# Consiglio Nazionale delle Ricerche, Venice (Italy). Lab. per lo Studio della Dinamica delle Grandi Masse

LANDSAT IMAGERY OF THE VENETIAN LAGOON: A **MULTITEMPORAL ANALYSIS**

L. Alberotanza and A. Zandonella, Principal Investigators (Telespazio S.p.A., Rome) 1980 9 p refs Sponsored by NASA ERTS

(F82-10036: NTIS NASA-CR-164772) Avail: HC A02/MF A01 CSCL 08H

The use of LANDSAT multispectral scanner images from 1975 to 1979 to determine pollution dispersion in the central basin of the lagoon under varying tidal conditions is described. Images taken during the late spring and representing both short and long range tidal dynamics were processed for partial haze removal and removal of residual striping. Selected spectral bands were correlated to different types of turbid water. The multitemporal data was calibrated, classified considering sea truth data, and evaluated. The classification differentiated tide diffusion, algae belts, and industrial, agricultural, and urban turbidity distributions. Pollution concentration is derived during the short time interval between inflow and outflow and from the distance between the two lagoon inlets and the industrial zones. Increasing pollution of the lagoon is indicated.

N82-19613*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

A COMPARISON OF UNSUPERVISED CLASSIFICATION PROCEDURES ON LANDSAT MSS DATA FOR AN AREA OF COMPLEX SURFACE CONDITIONS IN BASILICATA, SOUTHERN ITALY

Chris Justice and John Townshend, Principal Investigators Mar. 1981 40 p refs Submitted for publication Original contains imagery. Original photography may be purchased from the EROS Data Center, Sioux, Falls, S.D. 57198. ERTS

(E82-10038; NASA-TM-82098) NTIS HC A03/MF A01 CSCL 05B

Two unsupervised classification procedures were applied to ratioed and unratioed LANDSAT multispectral scanner data of an area of spatially complex vegetation and terrain. An objective accuracy assessment was undertaken on each classification and comparison was made of the classification accuracies. The two unsupervised procedures use the same clustering algorithm. By on procedure the entire area is clustered and by the other a representative sample of the area is clustered and the resulting statistics are extrapolated to the remaining area using a maximum likelihood classifier. Explanation is given of the major steps in the classification procedures including image preprocessing: classification; interpretation of cluster classes; and accuracy assessment. Of the four classifications undertaken, the monocluster

block approach on the unratioed data gave the highest accuracy of 80% for five coarse cover classes. This accuracy was increased to 84% by applying a 3 x 3 contextual filter to the classified image. A detailed description and partial explanation is provided for the major misclassification. The classification of the unratioed data produced higher pecentage accuracies than for the ratioed data and the monocluster block approach gave higher accuracies than clustering the entire area. The moncluster block approach was additionally the most economical in terms of computing Author

N82-19617*# Pennsylvania State Univ., University Park. Office for Remote Sensing of Earth Resources

DELINEATION OF SOIL TEMPERATURE REGIMES FROM **HCMM DATA Quarterly Report**

Rick L. Day and Gary W. Petersen, Principal Investigators 30 Sep. 1981 3 p Sponsored by NASA HCMM

(E82-10042: NASA-CR-164919) Avail: HC A02/MF A01 CSCL 08M

Supplementary data including photographs as well as topographic, geologic, and soil maps were obtained and evaluated for ground truth purposes and control point selection. A study area (approximately 450 by 450 pixels) was subset from LANDSAT scene No. 2477-17142. Geometric corrections and scaling were performed. Initial enhancement techniques were initiated to aid control point selection and soils interpretation. The SUBSET program was modified to read HCMM tapes and HCMM data were reformated so that they are compatible with the ORSER system. Initial NMAP products of geometrically corrected and scaled raw data tapes (unregistered) of the study were produced.

N82-19621*# Agricultural Research Service, Weslaco, Tex. METHODS OF EDITING CLOUD AND ATMOSPHERIC LAYER AFFECTED PIXELS FROM SATELLITE DATA Quarterly Progress Report, 5 Jun. - 5 Sep. 1981

Paul R. Nixon, Principal Investigator, Craig L. Wiegand, Arthur J. Richardson, Michael P. Johnson, and Benjamin G. Goodier Sep. 1981 10 p ERTS

(NASA Order S-75406-B) (E82-10046; NASA-CR-164923; QPR-3) Avail: NTIS HC A02/MF A01 CSCL 05B

The location and migration of cloud, land and water features were examined in spectral space (reflective VIS vs. emissive IR). Daytime HCMM data showed two distinct types of cloud affected pixels in the south Texas test area. High altitude cirrus and/or cirrostratus and 'subvisible cirrus' (SCi) reflected the same or only slightly more than land features. In the emissive band, the digital counts ranged from 1 to over 75 and overlapped land features. Pixels consisting of cumulus clouds, or of mixed cumulus and landscape, clustered in a different area of spectral space than the high altitude cloud pixels. Cumulus affected pixels were more reflective than land and water pixels. In August the high altitude clouds and SCi were more emissive than similar clouds were in July. Four-channel TIROS-N data were examined with the objective of developing a multispectral screening technique for removing SCi contaminated data.

N82-19622*# Miami Univ., Fla. School of Marine and Atmospheric Science.

INVESTIGATIONS OF MEDIUM WAVELENGTH MAGNETIC ANOMALIES IN THE EASTERN PACIFIC USING MAGSAT DATA Interim Report, Apr. - Jun. 1981

Christopher G. A. Harrison, Principal Investigator Jun. 1981 3 p Sponsored by NASA ERTS

(E82-10047; NASA-CR-164924) HC A02/MF A01 CSCL 08G

NTIS Avail:

Processing continued on the data set covering the first three months of the mission. Orbits were selected over a specified range of longitude and latitude and those orbits falling within the geographical boundaries were stored on a disk and a listing made. To verify the quality of the data, plots were made showing altitude vs latitude, anomalous field vs latitude, and corrected anomalous field vs latitude. Results of the plotting showed that: (1) data from the first day of the mission are not usable because they are too noisy; (2) some orbits contain spikes, no doubt a processing error on the tape; (3) some orbits contain a 20 deg region in latitude, offset roughly 30 nT from the rest of the anomalous field profiles; and (4) the correlation between the adjacent orbits is poor. Even the new ring current coefficients

provided with a later, corrected set of data tapes did not not yield the desired correlations. A.R.H.

N82-19623*# Pennsylvania State Univ., University Park. Dept.

INTERACTIVE INITIALIZATION OF HEAT FLUX PARAME-TERS FOR NUMERICAL MODELS USING SATELLITE TEMPERATURE MEASUREMENTS Quarterly Report.

1 Jun. - 31 Aug. 1981 Toby N. Carlson, Principal Investigator 31 Aug. 1981 5 p Sponsored by NASA HCMM

NASA-CR-164925; QR-2) (E82-10048: Avail: NTIS HC A02/MF A01 CSCL 08M

Day/night Heat Capacity Mapping Mission image pairs over Kansas and Indiana were used to examine the spatial variation of moisture availability on the mesoscale. Of particular concern was whether patterns of moisture availability and thermal inertia. as well as surface heat fluxes, respond to significant spatial variations in the rainfall pattern. A temperature analysis for the Indiana case is presented.

N82-19644*# Business and Technological Systems, Inc., Seabrook, Md

AN INFORMATION ADAPTIVE SYSTEM STUDY REPORT AND DEVELOPMENT PLAN

William S. Ataras, Kenneth Eng, John J. Morone, Paul R. Beaudet, and Roland Chin 9 May 1980 225 p

(Contract NAS5-25668)

BTS-FR-80-117) (NASA-CR-166768; NTIS Avail:

HC A10/MF A01 CSCL 05B

The purpose of the information adaptive system (IAS) study was to determine how some selected Earth resource applications may be processed onboard a spacecraft and to provide a detailed preliminary IAS design for these applications. Detailed investigations of a number of applications were conducted with regard to IAS and three were selected for further analysis. Areas of future research and development include algorithmic specifications, system design specifications, and IAS recommended time lines.

N82-19645*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md.

THE EFFECT OF FINITE FIELD SIZE ON CLASSIFICATION AND ATMOSPHERIC CORRECTION

Yoram J. Kaufman and Robert S. Fraser Sep. 1981 refs

(NASA-TM-83818) Avail: NTIS HC A04/MF A01 CSCL 20F

The atmospheric effect on the upward radiance of sunlight scattered from the Earth-atmosphere system is strongly influenced by the contrasts between fields and their sizes. For a given atmospheric turbidity, the atmospheric effect on classification of surface features is much stronger for nonuniform surfaces than for uniform surfaces. Therefore, the classification accuracy of agricultural fields and urban areas is dependent not only on the optical characteristics of the atmosphere, but also on the size of the surface do not account for the nonuniformity of the surface have only a slight effect on the classification accuracy in other cases the classification accuracy descreases. The radiances above finite fields were computed to simulate radiances measured by a satellite. A simulation case including 11 agricultural fields and four natural fields (water, soil, savanah, and forest) was used to test the effect of the size of the background reflectance and the optical thickness of the atmosphere on classification accuracy. It is concluded that new atmospheric correction methods, which take into account the finite size of the fields, have to be developed to improve significantly the classification accuracy. Author

N82-19649# British Aerospace Dynamics Group, Stevenage "Space and Communications Div. (England).

STUDY OF EARTH RESOURCES SATELLITE (ERS) DATA REDUCTION UNIT

C. J. Collins, comp., F. A. C. Burke, comp., J. W. Pengelly, comp., P. Redstone, comp. (Logica Ltd.), C. Burrows, comp. (Logica Ltd.), and N. McEvoy, comp. (Logica Ltd.) Paris ESA Aug. 1981 188 p refs

(Contract ESA-4415/80/NL-PP(SC))

(BAe-TP-7905; ESA-CR(P)-1478) Avail:

HC A09/MF A01

Techniques for reducing onboard, by a factor of 4, the data rate from imaging instruments on Earth resources satellites, especially from the ocean color monitor on ERS 1, were examined. Theoretical analysis and simulation with real images allow algorithms to be defined for implementation assessment. A tradeoff based on performance and engineering criteria shows that spatial resolution degrading unit (SRDU) and a fixed weight spectral transform followed by a Rice Machine (FWST + RM2) meet reduction criteria within the mass and power constraints. Costs (two model program) are comparable, the greater complexity of FWST + RM2 being largely offset by more advanced technology in SRDU. Before either option is adopted, further simulation and breadboarding are recommended.

N82-19654# Engins Matra, Velizy (France). Lab. de Traitement

DATA RATE REDUCTION. IMPACT OF IMAGE DATA COMPRESSION ON END TO END DATA MANAGEMENT OF A MULTISPECTRAL PAYLOAD

G. E. Lowitz, J. M. Vivier, J. P. Camus, and B. H. Roy Paris ESA Jul. 1980 51 p refs (Contract ESTEC-3749/78)

ESA-CR(P)-1507) (Rept-44/130:

NTIS HC A04/MF A01

Satellite onboard data compression by clustering in the raw channels with a variable number of classes is discussed. The effect on the overall image chain is illustrated by land applications satellite system (LASS) data and LANDSAT ground stations processing and dissemination systems. Image quality, processing costs, software and hardware are considered. Onboard mechanization is efficient and the compression principles benefit user interpretation routines such as classification. Compressed data can be processed efficiently, yielding cost savings on the order of 100 to 1. A 512 X 512 pixel frame, including preprocessing, is treated in 5 min. The compressed imagery can be recognized, zones can be located and cloud cover can be assessed, making high quality quick looks possible. Author (ESA)

N82-19656# Saab-Scania, Linkoping (Sweden). ON THE ACCURACY OF THERMAL INERTIA MAPPING BY INFRARED IMAGERY

Sune R. J. Axelsson 1981 20 p refs

(SAAB-REPR-AE-10) Avail: NTIS HC A02/MF A01

The influence of different interfering parameters on the estimation of the thermal inertia of the ground from the diurnal variations of the surface, temperature, using thermal infrared and albedo measuring imagery, was investigated. The strong influence of these parameters degrades the accuracy of the analysis and makes the interpretation complex. This influence was studied, starting from an improved analytic model of the surface temperature of a periodically heated ground surface. The errors in albedo and atmospheric heat exchange, and the limited accuracy of sensors and the model used in data processing, dominate the thermal inertia error. Further reductions of the accuracy are due to the translation of the thermal inertia map into user data like soil type, porosity and soil moisture. Upper bounds on the potential thermal inertia mapping accuracy are found by calculating the estimation error when the interfering parameters are known Author (ESA) with specified accuracy.

N82-19788# Wisconsin Univ. - Madison. Space Science and Engineering Center.

THE DEVELOPMENT AND TESTING OF METHODS TO INFER MIDLATITUDE PRECIPITATION INTENSITY FROM GEOSYNCHRONOUS SATELLITE INFRARED DATA

John V. Zapotocny, Donald R. Johnson, and Thomas M. Whittaker Hanscom AFB, Mass. AFGL 31 Jul. 1981 90 p refs (Contract F19628-78-C-0137; AF Proj. 6670)

(AD-A108881; SCIENTIFIC-3; AFGL-TR-81-0252) Avail: NTIS

HC A05/MF A01 CSCL 04/2

In an attempt to aid development of simple techniques applicable in middle latitudes, this study addresses the inference of precipitation intensity and its temporal change associated with imbedded convective activity at a location in areas of continuous stratiform precipitation from Geosynchronous Operational Environmental Satellite (GOES) IR digital data. Imbedded convective activity is easily identified in high resolution visible GOES imagery if high cloud layers are not present to obscure the convection. At low Sun angles with the shadowing effect of the convective towers, details of these convective areas are especially enhanced. However, with the need for these methods to be applicable during both daytime and nighttime hours, only the IR 11 micron channel data were used in this study which

NTIS

was based on several synoptic cases. In each of the cases examined, visible and IR imagery and loops were used to help pinpoint optimum areas for study.

N82-19927# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

SELECTION OF ATTRIBUTES APPLIED TO MULTI-SPECTRAL IMAGES [SELECAO DE ATRIBUTOS APLICADA A IMAGENS MULTISPECTRAIS]

Fernando A. Mitsuo li Jan. 1982 92 p refs In PORTUGUESE; ENGLISH summary

(INPE-2303-TDL/072) Avail: NTIS HC A05/MF A01

Classes of Gaussian distribution are defined, given a multispectral scene of 12 channels. The best channels for sparating classes are identified using the J-M distance criterion. The quantitative analysis of these interclass separations is also discussed.

M.G.

N82-20603*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

THE LANDSAT SYSTEM OPERATED IN BRAZIL BY CNPQ/INPE RESULTS OBTAINED IN THE AREA OF MAPPING AND FUTURE PERSPECTIVES [O SISTEMA LANDSAT OPERADO NO BRASIL PELO CNPQ/INPE RESULTADOS OBTIDOS NA AREA DE CARTOGRAFIA E PERSPECTIVAS FUTURAS]

Nelson deJesusParada, Principal Investigator and Marcio Nogueira Barbosa Jul. 1981 45 p refs In PORTUGUESE: ENGLISH summary Presented at the 10th Congr. Brasileiro de Cartografica, Brasil, 19-24 Jul. 1981 Sponsored by NASA ERTS (E82-10080; NASA-CR-168401; NAS 1.26:168401;

INPE-2191-RPE/003) Avail: NTIS HC A03/MF A01 CSCL 05B

The LANDSAT system, operated in the country by CNPg/INPE since 1973, systematically acquires, produces, and distributes both multispectral and panchromatic images obtained through remote sensing satellites to thousands of researchers and technicians involved in the natural resources survey. To cooperate in the solution of national problems, CNPq/INPE is developing efforts in the area of manipulation of those images with the objective of making them useful as planimetric bases for the simple revision of already published maps or for its utilization as basic material in regions not yet reliability mapped. The results obtained from performed tests are presented and the existing limitations are discussed. The new system purchased to handle data from the next series of LANDSAT as well as from MAPSAT and SPOT which will be in operation within the 80's decade, and are designed not only for natural resources survey but also for the solution of cartographic problems. Author

N82-20604*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

AN ALGORITHM FOR SPATIAL HEIRARCHY CLUSTERING [UM ALGORITMO PARA AGREGACAO HIERARQUICA ESPACIAL]

Nelson deJesusParada, Principal Investigator and Flavio Roberto Dias Velasco Jul 1981 12 p refs in PORTUGUESE; ENGLISH summary ERTS

(E82-10081; NASA-CR-168402; NAS 1.26:168402;

INPE-2170-RPE/386) Avail: NTIS HC A02/MF A01 CSCL 05B

A method for utilizing both spectral and spatial redundancy in compacting and preclassifying images is presented. In multispectral satellite images, a high correlation exists between neighboring image points which tend to occupy dense and restricted regions of the feature space. The image is divided into windows of the same size where the clustering is made. The classes obtained in several neighboring windows are clustered, and then again successively clustered until only one region corresponding to the whole image is obtained. By employing this algorithm only a few points are considered in each clustering, thus reducing computational effort. The method is illustrated as applied to LANDSAT images.

N82-20607*# Florida Univ., Gainesville. Climatology Lab.
APPLICATION OF SATELLITE FROST FORECAST TECHNOLOGY TO OTHER PARTS OF THE UNITED STATES,
PHASE 2 Final Report

J. David Martsolf, Ellen Chen, C. Terry Morrow, Stuart H. Gage, and Jon F. Bartholic Nov. 1981 265 p refs Prepared in

cooperation with Pennsylvania State Univ., University Park and Michigan State Univ., East Lansing Original contains color illustrations

(Contract NAS10-9876)

(NASA-CR-166827) Avail: NTIS HC A12/MF A01 CSCL 02C

Thermal infrared data taken from the GOES satellite over a period of several hours was color enhanced by computer according to temperature. The varying temperatures were then used to assist in frost forecasting. Input from Michigan and Pennsylvania to the cold climate mapping project is emphasized in the report of the second year's activities of a two-year effort.

N82-20608*# Florida Univ., Gainesville.

APPLICATION OF SATELLITE FROST FORECAST TECHNOL-OGY TO OTHER PARTS OF THE UNITED STATES, PHASE 2, INTRODUCTION Final Report

In its Appl. of Satellite Frost Forecast Technol. to Other Parts of the U.S., Phase 2 Nov. 1981 31 p

Avail: NTIS HC A12/MF A01 CSCL 02C

The history and status of University of Michigan and University of Pennsylvania involvement in determining if P-model for frost prediction used in Florida is applicable to those geographic locations is reviewed. The possibility of using the S-model to develop a satellite frost forecast system that can recall the distribution of temperatures during previous freezes from a particular area and bring that cold climate climatology to bear on present forecasts is discussed as well as a proposed GOES satellite downlink system to sectionalize the data used in Florida.

A.R.H.

N82-20612*# Pennsylvania State Univ., University Park.
THE OFFICE FOR REMOTE SENSING OF EARTH RESOURCES Final Report

In Florida Univ. Appl. of Satellite Frost Forecast Technol. to Other Parts of the U.S., Phase 2 Nov. 1981 6 p refs

Avail: NTIS HC A12/MF A01 CSCL 05B

The main effort of the University of Pennsylvania's office for remote sensing of Earth resources (ORSER) is the processing, analysis, and interpretation of multispectral data, most often supplied by NASA in the form of imagery and digital data. The facilities used for data reduction and image enhancement are described as well as the development of algorithms for producing a computer map showing various environmental and land use characteristics of data points in the analyzed scenes. The application of an (ORSER) capability for statewide monitoring of gypsy moth defoliation is discussed.

A.R.H.

N82-20614*# Michigan State Univ., East Lansing.
MSU TEST OF P-MODEL Final Report

In Florida Univ. Appl. of Satellite Frost Forecast Technol to Other Parts of the U.S., Phase 2 Nov. 1981 8 p refs

Avail: NTIS HC A12/MF A01 CSCL 05B

Results of running key station data (soil, air, and dew point temperatures, net irradiation, and wind direction and speed) from Michigan through the P-model are presented. The details of each of the 55 error calculations are shown in tables. A histogram is included showing errors in degrees Fahrenheit.

N82-20628# Army Engineer Topographic Labs., Fort Belvoir, Va.

COMPUTER-ASSISTED PHOTO INTERPRETATION RESEARCH AT USAETL

George E. Lukes 21 Apr. 1981 14 p refs

(AD-A109366: ETL-R028) Avail: NTIS HC A02/MF A01 CSCL 08/5

A program in computer-assisted photo interpretation research (CAPIR) has been initiated at the U.S. Army Engineer Topographic Laboratories. In a new laboratory, a photo interpreter (PI) analyzing high-resolution, aerial photography interfaces directly to a digital computer and geographic information system (GIS). A modified analytical plotter enables the PI to transmit encoded three dimensional spatial data from the stereomodel to the computer. Computer-generated graphics are displayed in the stereomodel for direct feedback of digital spatial data to the PI. Initial CAPIR capabilities include point positioning, mensuration, stereoscopic area search, GIS creation and playback, and elevation

data extraction. New capabilities under development include stereographic superposition, a digital image workstation, and integration of panoramic Optical Bar Camera photography as a primary GIS data source. This project has been conceived as an evolutionary approach to the digital cartographic feature extraction problem. As a working feature extraction system, the CAPIR laboratory can serve as a testbed for new concepts emerging from image understanding and knowledge-based systems research.

 ${\bf N82-21457^*\#}$ Business and Technological Systems, Inc., Seabrook, Md.

CONTEXT SENSITIVE FORMULATIONS OF ANTENNA PATTERN CORRECTION AND SIDE LOBE COMPENSATION FOR NOSS/LAMMR REAL TIME PROCESSING Final Report

Roland T. Chin and Paul R. Beaudet 7 Oct. 1981 157 p (Contract NAS5-26541)

(NASA-CR-166789; NAS 1.26:166789; BTS-FR-81-165) Avail: NTIS HC A08/MF A01 CSCL 20N

Large antenna multi-channel microwave radiometer (LAMMR) software specifications were written for LAMMR ground processing. There is a need to determine more computationally-efficient antenna temperature correction methods in compensating side lobe contributions especially near continents, islands and weather fronts. One of the major conclusions was that the antenna pattern corrections (APC) processes did not accomplish the implied goals of compensating for the antenna side lobe influences on brightness temperature. A-priori knowledge of land/water locations was shown to be needed and had to be incorporated in a context sensitive APC process if the artifacts caused by land presence is to be avoided. The high temperatures in land regions can severely bias the lower ocean response.

RJE

N82-21458# European Space Agency, Paris (France). SAR IMAGE QUALITY

Jun. 1981 96 p refs Presented at EARTHNET/EARSel Workshop, Frascati, Italy, 11-12 Dec. 1980 (ESA-SP-172; ISSN-0379-6566) Avail: NTIS HC A05/MF A01; ESA, Paris FF 55 (US \$12)

The processing and quality of synthetic aperture radar imagery is considered with particular attention on optimal multilook processing, simulation, beam tracking, speckle filtering, radiometric calibration, digital processing, ocean wave spectra, two-dimensional image spectrum, terrain models, etc.

N82-21474# Centre de Recherches en Physique de l'Environnement, Issy-les-Moulineaux (France).

DIRECT DETERMINATION OF THE TWO DIMENSIONAL IMAGE SPECTRUM FROM RAW SYNTHETIC APERTURE RADAR DATA

P. Martin In ESA SAR Image Quality Jun. 1981 p 81-87 refs Submitted for publication

Avail: NTIS HC A05/MF A01; ESA, Paris FF 55 (US \$12)

An algorithm is described which computes the two-dimensional Fourier transform of a synthetic aperture rader image. This method is intended to replace the whole SAR processing and the two-dimensional Fourier transformation by a specialized processing scheme which, in terms of computational speed and complexity, will be of the order of a single two-dimensional autocorrelation. This processing approach is applied to the estimation of the wave directional spectrum from the raw data of the SAR sensor of SEASAT-1.

Author (ESA)

N82-21499# Royal Signals and Radar Establishment, Malvern (England).

THE DESIGN AND IMPLEMENTATION OF AN OPER-ATIONAL, COMPUTER-BASED WEATHER RADAR SYS-TEM

A. P. Ball, J. L. Clarke, M. J. Brien, A. H. Shaw, S. E. Trigg, and T. A. Voller 1979 94 p refs Original contains color illustrations

(RSRE-MEMO-3151; BR71459) Avail: NTIS HC A05/MF A01

A system that provides quantitative rainfall data is described. It consists of an on-site PDP-11/40 computer used to process digitized radar data from a narrow beam, fully steerable radar aerial. The data are collected at several low elevation angles.

The radar amplitude signals received are digitized and transferred to the computer by a special purpose radar signal averaging unit (RSAU). After processing, the signals are displayed as a color coded, Cartesian map of instantaneous rainfall rate and distribution on a modified color TV via a special data store. Similar data can be transmitted via the DATEL service to users remote from the radar and to a network center computer where a composited color TV picture of data is displayed. Hardware and software are described in detail.

Author (ESA)

N82-21565# Royal Aircraft Establishment, Farnborough (England).

AN INTRODUCTION TO IMAGE PROCESSING AT ROYAL AIRCRAFT ESTABLISHMENT, FARNBOROUGH, ENGLAND

G. J. Davison London HMSO Sep. 1980 26 p refs (RAE-TR-80107: RAE-SPACE-585: BR76808) Avail: NTIS HC A03/MF A01

Data collection and image processing for the generation of photographic products from SEASAT, LANDSAT, NIMBUS TIROS and METEOSAT 2 are described. The hardware facilities include a Linoscan 204 D composition device driven by a PRIME 200 computer, and a Plessey IDP 3000 interactive image display system. A disk based system enables the user to apply various processing algorithms to standard format data for display. Algorithms are described including: contrast enhancement by applying a mapping function to a set of pixel intensity values, a destriping algorithm which equates the means and variances of the radiance levels from each detector (LANDSAT), four principal components analysis, edge enhancement, and geometric transformations. Collaborative projects using remote sensing data by other government agencies are also mentioned. Author (ESA)

N82-21637*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AS-BUILT DESIGN SPECIFICATION FOR UNIVAVEC

Mary Ann Tompkins and Carol A. Sivillo, Principal Investigators Jun. 1981 32 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10085; NASA-CR-161060; JSC-17389;

NAS 1.26:161060; SR-L1-00301; LEMSCO-16676) Avail: NTIS HC A03/MF A01 CSCL 02C

The UNIV4VEC program which is part of the CLSFYG package is described. This program reads a CLASFYG vector parameter file and converts it to a four channel universal formatted file.

ARH

N82-21638*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AS-BUILT DOCUMENTATION OF PROGRAMS TO IMPLE-MENT THE ROBERTSON AND DORAISWAMY/THOMPSON MODELS

D. J Valenziano, Principal Investigator Jun. 1981 96 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

[E82-10086; NASA-CR-161061; JSC-17400;

NAS 1.26:161061; SR-L1-00717; LEMSCO-16376) Avail: NTIS HC A05/MF A01 CSCL 02C

The software which implements two spring wheat phenology models is described. The main program routines for the Doraiswamy/Thompson crop phenology model and the basic Robertson crop phenology model are DTMAIN and BRMAIN. These routines read meteorological data files and coefficient files, accept the planting date information and other information from the user, and initiate processing. Daily processing for the basic Robertson program consists only of calculation of the basic Robertson increment of crop development. Additional processing in the Doraiswamy/Thompson program includes the calculation of a moisture stress index and correction of the basic increment of development. Output for both consists of listings of the daily results.

N82-21641*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AS-BUILT DESIGN SPECIFICATION FOR PARHIS
Mary Ann Tompkins, Principal Investigator Jun. 1981 122 p

Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10089: NASA-CR-161064: NAS 1.26:161064;

SR-L1-00305; JSC-17371; LEMSCO-16650) Avail: NTIS HC A06/MF A01 CSCL 02C

The program is part of the CLASFYG package. It produces histograms of the greenness profile derived parameters alpha, beta, t sub o, and chi squared, which are computed by the CLASFYG program. Alpha is the approximate greenness rise time, beta is the approximate greennss decay time, t sub o is the spectral crop emergence date, and chi squared per degree of freedom is the goodness of fit of the actual data to the computed greenness profile. The program also produces statistical information concerning the parameters.

N82-21642*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AS-BUILT DESIGN SPECIFICATION FOR PARCLS

Mary Ann Tompkins, Principal Investigator Jun. 1981 113 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10090; NASA-CR-161065; NAS 1.26:161065;

SR-L1-00302; JSC-17390; LEMSCO-16677) Avail: NTIS HC A06/MF A01 CSCL 02C

The PARCLS program, part of the CLASFYG package, reads a parameter file created by the CLASFYG program and a pure pixel ground truth file in order to create to classification file of three separate crop categories in universal format.

A.R.H.

N82-21643*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AS-BUILT DESIGN SPECIFICATION FOR MISMAP

P. M. Brown, D. E. Cheng, and M. A. Tompkins, Principal Investigators Jun. 1981 71 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS

(Contract NAS9-15800; Proj. AgRISTARS)

(E82-10091; NASA-CR-161066; NAS 1.26:161066;

SR-L1-00307; JSC-17231; LEMSCO-16300) Avail: NTIS HC A04/MF A01 CSCL 02C

The MISMAP program, which is part of the CLASFYT package, is described. The program is designed to compare classification values with ground truth values for a segment and produce a comparison map and summary table.

A.R.H.

N82-21646*# Lockheed Engineering and Management Services Co., Inc., Houston, Tex.

AS-BUILT DESIGN SPECIFICATION FOR SEGMENT MAP (SGMAP) PROGRAM

Mary Ann Tompkins, Principal Investigator Jun. 1981 100 p Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development ERTS (Contract NAS9-15800; Proj. AgRISTARS)

(E82-10094; NASA-CR-161056; NAS 1.26:161056;

SR-LI-00306; JSC-17037; LEMSCO-15937) Avail: NTIS HC A05/MF A01 CSCL 02C

The segment map program (SGMAP), which is part of the CLASFYT package, is described in detail. This program is designed to output symbolic maps or numerical dumps from LANDSAT cluster/classification files or aircraft ground truth/processed ground truth files which are in 'universal' format.

M.G.

N82-21656*# Research and Data Systems, Inc., Lanham, Md. DEVELOPMENT OF A SURFACE ISOLATION ESTIMATION TECHNIQUE SUITABLE FOR APPLICATION OF POLAR ORBITING SATELLITE DATA

P. A. Davis and L. M. Penn, Principal Investigators Nov. 1981 77 p refs Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development Original contains imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. 57198. ERTS (NASA Order C-00741; Proj. AgRISTARS)

(E82-10122; NASA-CR-167473; NAS 1.26:167473;

YM-N1-04198; JSC-17784) Avail: NTIS HC A05/MF A01 CSCL 04A

A technique is developed for the estimation of total daily insolation on the basis of data derivable from operational polar-orbiting satellites. Although surface insolation and meteorological observations are used in the development, the algorithm

is constrained in application by the infrequent daytime polar-orbiter coverage.

N82-21663*# North Carolina State Univ., Raleigh. Dept. of Marine, Earth and Atmospheric Sciences.

COMPATIBILITY STUDY OF THE MAGSAT DATA AND AEROMAGNETIC DATA Progress Report

I. J. Won, Principal Investigator Aug. 1981 15 p refs (Contract NAS5-26157)

(E82-10136; NASA-CR-168521; NAS 1.26:168521) Avail: NTIS HC A02/MF A01 CSCL 05B

The results of (1) an analysis of the fine attitude MAGSAT data covering the continental U.S., (2) analysis of the Project MAGNET U.S. aeromagnetic data in terms of its compatibility with the corresponding MAGSAT data, and finally, (3) analysis of MAGSAT data in the Pacific region and comparison with satellite gravity data are presented. All data reduction procedures are described and the resulting magnetic maps are given. The results indicate a general compatibility between the MAGSAT data and the MAGNET and gravity data.

N82-21665*# Paris VI Univ. (France).

CONTINUATION OF POTENTIAL FIELD DATA TO A COMMON ALTITUDE

Jean-Louis LeMouel, Principal Investigator and Joel Ducruix 1 Apr. 1981 3 p. refs. Sponsored by NASA ERTS (582-10138: NASA CR. 168523: NASA 1.26:188523). Avail.

(E82-10138; NASA-CR-168523; NAS 1.26:168523) Avail: NTIS HC A02/MF A01 CSCL 05B

It is noted that the distorsions introduced by the variation of distance between the sources and the measurement points can be important enough to create fake anomalies. The average amplitude of the anomalies at MAGSAT altitude is of the order of a few nT. Thus it is necessary to be careful in reducing MAGSAT data to a common elevation. The achievement of the corresponding anomaly map is of primary importance for the study of regional and long wave length anomalies. A method for the continuation of potential fields is described which consists in representing any harmonic function (in particular the anomaly is function of space coordinates) as a sum of elementary harmonic functions; the continuation being achieved by an inverse technique. Tests, made on a synthetic set of data, evaluate the method.

M.G.

N82-21666*# Paris VI Univ. (France).

SEPARATION OF INTERNAL AND EXTERNAL FIELDS: A NEW TECHNIQUE OF DATA SCREENING Progress Report

Jean-Louis LeMouel, Principal Investigator, Michel Menvielle, and Joel Ducruix 1 Dec. 1980 5 p ref Sponsored by NASA

(E82-10139: NASA-CR-168524: NAS 1.26:168524) Avail: NTIS HC A02/MF A01 CSCL 05B

A method for eliminating transient variation from MAGSAT data is described. Instead of using the conventional Kp index, the Km index is used for the rejection of nonquiet data. To build the Km index, the surface of the Earth is divided in eight sectors. Each sector is defined by two or three magnetic observatories and its geographic limits. For each three hourly interval the MAGSAT tracks were drawn on a map showing the location of the station (the crosses), the limits of the sector, and the value of the mean K index inside each sector. No figure in a sector means that the activity level in this sector is lower than 5 nt; in a sector covered with number 1, the activity lies between 5 and 20 nt; 2 stands for any level greater than 20 nT.

N82-21678*# Agricultural Research Service, Weslaco, Tex. METHODS OF EDITING CLOUD AND ATMOSPHERIC LAYER AFFECTED PIXELS FROM SATELLITE DATA Quarterly Progress Report, 5 Sep. - 5 Dec. 1981

Paul R. Nixon, Principal Investigator, Craig L. Wiegand, Arthur J. Richardson, and Michael P. Johnson Dec. 1981 6 p ref

(NASA Order S-75406B)

(E82-10154; NA SA-CR-168539; NAS 1.26:168539; PR-4) Avail: NTIS HC A02/MF A01 CSCL 058

Plotted transects made from south Texas daytime HCMM data show the effect of subvisible cirrus (SCI) clouds in the emissive (IR) band but the effect is unnoticable in the reflective (VIS) band. The depression of satellite indicated temperatures

ws greatest in the center of SCi streamers and tapered off at the edges. Pixels of uncontaminated land and water features in the HCMM test area shared identical VIS and IR digital count combinations with other pixels representing similar features. A minimum of 0.015 percent repeats of identical VIS-IR combinations are characteristic of land and water features in a scene of 30 percent cloud cover. This increases to 0.021 percent of more when the scene is clear. Pixels having shared VIS-IR combinations less than these amounts are considered to be cloud contaminated in the cluster screening method. About twenty percent of SCi was machine indistinguishable from land features in two dimensional spectral space (VIS vs IR).

N82-21687*# National Aeronautics and Space Administration, Washington, D. C.

OBSERVATION OF THE EARTH BY RADAR

Charles Elachi (French Petroleum Inst.) Feb. 1982 33 p Transl. into ENGLISH from La Recherche (France), v. 12, no. 128, Dec. 1981 p 1366-1375 Transl. by Scientific Translation Service, Santa Barbara, Calif. Original doc. prep. by French Petroleum Inst.

(Contract NASw-3542)

(NASA-TM-76830; NAS 1.15:76830) Avail: NTIS HC A03/MF A01 CSCL 17I

Techniques and applications of radar observation from Earth satellites are discussed. Images processing and analysis of these images are discussed. Also discussed is radar imaging from aircraft. Uses of this data include ocean wave analysis, surface water evaluation, and topographic analysis.

N82-21698# Logica Ltd., London (England).

FUTURE EARTHNET DISSEMINATION SYSTEMS (FEDS) STUDY. EXECUTIVE SUMMARY Final Report

M. Macintyre, P. Norris, and P. Scragg Paris ESA Dec. 1980 47 p

(Contract ESA-4241/80/F-FC(SC))

(Rept-3318: ESA-CR(P)-1438) Avail: NTIS HC A03/MF A01 The preparation of Earthnet for the dissemination to users of data from the European remote sensing program is considered. Worldwide plans for remote sensing satellite systems, European and north African user demand, data acquisition subsystems, data processing subsystems, data archiving subsystems and data communications subsystems are covered. Subsystems configurations that would meet these performance requirement are studied. Results are integrated to define overall systems configurations that would meet the performance requirements. Alternate centralized acquires data at four Earth stations and stores it temporarily on magnetic tape. Data are forwarded by satellite and disseminated to users by satellite and terrestrial links. Raw data are stored in a permanent playback archive, on optical disks, at the central site. Author (ESA)

N82-21699# Logica Ltd., London (England).

INTERPRETATION OF REMOTELY SENSED IMAGE DATA AND IMPACT OF CLUSTER COMPRESSION

David J. Stanley Paris ESA Feb. 1981 154 p refs (Contract ESA-3749/78/NL-HP)

(Contract ESA-3/49/78/NL-HP) (Rept-44.2866; ESA-CR(P)-1450) Avail:

HC A08/MF A01

Image interpretation techniques are described and related to the needs of application areas. A survey of users and literature shows (1) little correlation between processing techniques and specific applications; (2) most users employ general purpose image analysis algorithms rather than developing special purpose techniques: (3) interpretation methodology frequently involves the use of several preprocessing, enhancement, and classification methods; (4) the majority of operational applications rely on manual photointerpretation; and (5) most digital image interpretation is done with general purpose software packages and/or special hard-wired image analysis systems. Operational users, (a minority), rely heavily on human photointerpretation, especially in geology, and at most use simple linear classifiers or enhancement techniques on interactive image processing systems. The impact of compression is limited because of academic and research user hostility, and decreasing cost of machine processing.

Author (ESA)

NTIS

N82-21700# European Space Agency. Paris (France). ATLAS OF METEOSAT IMAGERY

C. A. Brimacombe (ESOC) May 1981 494 p refs In ENGLISH

and FRENCH Original contains color illustrations (ESA-SP-1030; ISSN-0379-6566) Avail: NTIS HC A21/MF A01: ESA, Paris FF 200 Member States, AU, CN, and NO (+20% others)

A selection of the images received from METEOSAT during its first two years of operation is presented. The METEOSAT system is described and characteristics of images as well as image processing are explained. Imagery is examined as to cloud classification, surface features, and mesoscale cloud formations. Synoptic scale cloud patterns, planetary scale cloud systems, and details of tropical cloud systems are also discussed. Miscellaneous aspects of satellite meteorology are included.

Author (ESA)

Includes data acquisition and camera systems and remote sensors.

A82-21022 Thermal viewing system for studying the earth's resources. V. V. Perlov, D. N. Krasnikov, V. P. Sergeev, B. V. Ukhov, and G. I. Iasinskii. (Optiko-Mekhanicheskaia Promyshlennost', vol. 48, Apr. 1981, p. 27-29.) Soviet Journal of Optical Technology, vol. 48, Apr. 1981, p. 213-215. 5 refs. Translation.

The paper presents the Vulkan airborne thermal viewing system for remote studies of earth's resources, which operates simultaneously in two spectral bands of 3.8-5.2 microns. The construction and circuit features of the thermal viewer are examined, and further improvements for studying natural resources involving simultaneous radiometric measurements in several spectral channels are discussed.

D.L.G.

A82-21027 * Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer. I. J. Birrer, G. Berthold (University of Kansas Center for Research, Inc., Lawrence, KS), E. M. Bracalente (NASA, Langley Research Center, Hampton, VA), G. J. Dome (Bell Telephone Laboratories, Inc., Holmdel, NJ), and J. Sweet (Kentron Corp., Hampton, VA). IEEE Transactions on Geoscience and Remote Sensing, vol. GE-20, Jan. 1982, p. 11-17.

Scatterometer data from Seasat of the Amazon rain forest were examined to determine if the region is suitable to use as a reference for calibration of radars. The consistency of Skylab data viewing the Amazon region prompted the analyses, and the Seasat-A scatterometer system (SASS) gathered data of the same region at varying angles. The instrument employed a 100 W 14.6 GHz signal with the reflected power sampled 61 times during each 1.89 sec measurement period. Doppler filters were used in 15 parallel channels of reception, and represented areas 20 km by 50-70 km. Tests were made of regional and temporal stability of the Amazon area, with five measurement angles averaged at different incidence angles to find the mean deviation, which was found to be less than 0.5 dB. Diurnal effects were confined to early morning, and further tests are recommended to obtain results for an entire year, to develop screening methods for thick clouds and rain, and to determine the deviation more precisely. M.S.K.

A82-21034 Theoretical and experimental studies of microwave emission signatures of snow. M. E. Tiuri (Helsinki University of Technology, Esbo, Finland). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 51-57. 11 refs.

Theoretical and experimental studies of the brightness temperature of snow are reported. A snow model was devised, with the dielectric constant for snow determined from the dielectric properties of ice and water. The equivalent scattering particle dielectric constant was calculated from the dielectric constant of snow, and the theory was expanded to consider different homogeneous layers. Radiometric readings at 4.8, 11.6, and 36.8 GHz were taken from a seven meter high tower in a snow field. The brightness temperature decreased rapidly with increasing frequencies, and the brightness temperature of snow covered land was found to be higher in cold weather than that of bare land.

M.S.K.

A82-21035 Towards the definition of optimum sensor specifications for microwave remote sensing of snow. C. Mätzler, E. Schanda (Bern, Universität, Berne, Switzerland), and W. Good (Eidgenössisches Institut für Schnee- und Lawinenforschung, Davos, Switzerland). *IEEE Transactions on Geoscience and Remote Sensing*, vol. GE-20, Jan. 1982, p. 57-66. 20 refs.

The inconsistencies in the relationships between microwave data and the water equivalent of the snowcover, and the disappearance of the contrast between snow and snow-free regions when the snow is wet were studied. A relationship between the water equivalent of a dry snow layer and the brightness temperature is discussed in terms of a complete set of snow radiometry data at 4.9, 10.4, 21, and 36 GHz. The combined effects of volume scattering on large crystals is shown to be a function of the water equivalent, which is determined

from knowledge of the state of metamorphism. A strong decrease of the reflected wavelengths was found to be due to snow wetness, especially at higher frequencies. Multivariate data analysis was employed to analyze the data set to find the respective discriminant powers in splitting the ground-truth data-points of the changing snow cover.

M.S.K.

A82-21082 Observation of the turbulent structure in the planetary boundary layer with a kytoon-mounted ultrasonic anemometer system. Y. Ogawa (National Institute for Environmental Studies, Yatabe, Ibaraki, Japan) and T. Ohara (Hokkaido University, Sapporo, Japan). Boundary-Layer Meteorology, vol. 22, Jan. 1982, p. 123-131.

The development of a small, lightweight ultrasonic kytoon-mounted anemometer system for transmitting windspeed, momentum, and heat flux data to the ground in digital form by means of optical fibers is reported. The 70 cu m kytoon can lift 20-30 kg, and the weight of the instruments is 10 kg, with an optic fiber 1500 m long capable of carrying one megabyte/sec at 18 cycles/sec on 16 channels. Numerical filters are used to eliminate artificial velocities induced by swinging motion of the sensors, with calibration achieved in wind tunnel studies. Experimental data were gathered at heights of 50, 100, 200, 300, 400, 500, and 700 m, and the standard deviations for the u, v, and w components were found to stabilize at 400 m, and increase with decreasing height below that level. The kytoon-mounted system is suitable for operation in winds below 10 m/s.c.

A82-21090 Image quality control in the Meteosat ground processing system. M. Jones and N. C. Colombeski (ESA, European Space Research Operations Centre, Darmstadt, West Germany). International Journal of Remote Sensing, vol. 2, Oct.-Dec. 1981, p. 331-349, 11 refs.

The approach taken to image quality control in the European Space Agency's Meteosat project is discussed. User requirements, to both instrumental and physical accuracy, on the quality of the meteorological end-products and on the image quality are presented, and the effect of a deterioration in image quality on budget errors is discussed. Methods for evaluating image quality are described, and the implementation of these methods within the Meteosat Ground Computer System is reviewed. It is concluded, that the proper hardware and software must be provided to monitor the quality indicators and to allow for an adequate level of manning. This includes interactive displays permitting near real-time display of image data and key parameters, and facilities for a longer-term view of the evolution of the quality parameters. Image quality control should also be closely coupled with mission control. The radiometric and geometric quality from the F1-model of Meteosat is described as an example.

A82-21091 Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data. J. Otterman (U.S. Geological Survey, Reston, VA; Tel Aviv University, Tel Aviv, Israel) and C. J. Robinove (U.S. Geological Survey, Reston, VA). International Journal of Remote Sensing, vol. 2, Oct.-Dec. 1981, p. 351-360.

The atmospheric effects of radiometric data recorded in the Landsat multispectral scanner system bands are compiled for cases of representative and ideal atmospheric conditions. These effects are expressed as a difference between the actual spectral reflectivity measured close to the ground and the surface-atmosphere system reflectivity to zenith, derived from satellite data. The resulting formula includes two optical thickness parameters for backscattering and absorption as well as a function for the anisotropy of backscattering from the direct beam to the zenith. The expression is accurate only for an atmosphere of low optical thickness and large areas of uniform reflectivity. It is concluded that in the quantitative monitoring of surface changes from satellites, scattering effects will predominate in some cases (mapping coastal waters), while absorption effects will predominate in others (desert fringe regions). The measurements used for monitoring scattering effects are also shown to differ from those for monitoring absorption effects. J.F.

A82-21399 Analysis of the direction-dependent radiation behavior in multispectral scanning data (Untersuchung des richtungs-

abhängigen Strahlungsverhaltens in multispektralen Abtastdaten). B. Pfeiffer (Karlsruhe, Universität, Karlsruhe, West Germany). Bildmessung und Luftbildwesen, vol. 50, Jan. 1, 1982, p. 35-47. 7 refs. In German.

The direction-dependent radiation behavior of several natural objects is analyzed, based on multispectral scanning data from a number of different flight altitudes. Results show a significant change in brightness with view angle and wavelength, and a comparison with atmospheric model calculations shows that the increase in directional behavior is caused more by the object itself than by the atmosphere. The position of the sun seemed to have a greater effect in changing the object-reflected signal than did height. The direction-dependence could not be corrected for all classes of objects and wavelengths due to variations in brightness as well as object-dependent color shifts. The application of a modified classification procedure by use of a direction dependent statistic greatly improved the results.

A82-21434 Recent auroral measurements using a field-widened interferometer spectrometer. A. J. Steed, D. J. Baker, B. Y. Bartschi (Utah State University of Agriculture and Applied Science, Logan, UT), and A. T. Stair, Jr. (USAF, Geophysics Laboratory, Bedford, MA). In: International Conference on Fourier Transform Infrared Spectroscopy, Columbia, SC, June 8-12, 1981, Proceedings.

Bellingham, WA, Society of Photo-Optical Instrumentation Engineers, 1981, p. 202-205. 9 refs. USAF-sponsored research.

Questions regarding the evolution of field-widened interferometer (FWI) instruments are briefly considered. The first FWI instrument was designed for visible and near IR applications. In response to the need for a faster drive system for auroral work, a second generation instrument using a gas-lubricated bearing was developed in 1973. A description is presented of the field operating configuration of the second generation system, taking into account also recent auroral results. A third generation rocket-borne version of this instrument has been developed by Haycock et al. (1979). A presented graph shows one 40 second spectral scan of an auroral arc taken with the second generation FWI instrument in Andoya, Norway, on November 11, 1980. The instrument was pointed at the zenith, and a separate dual channel radiometer was co-aligned with the interferometer to provide long-term OH and O2 emission levels.

A82-22140 Accuracy of the normal case of close-range photogrammetry. Y. I. Abdel-Aziz (University of Petroleum and Minerals, Dhahran, Saudi Arabia). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Feb. 1982, p. 207-213. 5 refs.

The photogrammetric technique is used for the three-dimensional recording of historical monuments. In connection with the recording operation, certain problems have to be solved concerning the establishment of the optimum location of the camera relative to the monument. So far, there have been no satisfactory formulas for the determination of the optimum positions of the two camera stations. The main objective of the considered investigation is related to the development of formulas which will make it possible to determine the object accuracy, for any camera setup, right in the field. The new formulas developed express the accuracy of the ground points as a function of the four parameters of external orientation. A description is provided of mathematical and experimental proofs regarding the correctness of the new formulas. G.R.

A82-22141 Calibration and model reconstruction in analytical close-range stereophotogrammetry. II - Special evaluation procedures for rasterstereography and moiré topography. W. Frobin and E. Hierholzer (Orthopädische Universitätsklinik, Münster, West Germany). Photogrammetric Engineering and Remote Sensing, vol. 48, Feb. 1982, p. 215-220. 8 refs. Research supported by the Deutsche Forschungsgemeinschaft.

It is pointed out that, in the case of rasterstereography and moiré topography, special provisions have to be made when standard photogrammetric procedures are employed. Rasterstereography is a modification of conventional stereophotography, in which one of the two cameras has been replaced by a projector with a regular (cross) raster diapositive. The raster lines are projected onto the surface to be measured and are photographed by the camera. The calibration of a rasterstereographic apparatus is discussed. In cross rasterstereog-

raphy, there is an overdeterminancy regarding the reconstruction of the surface point. Either vertical or horizontal raster lines may be omitted. Special procedures employed in line rasterstereography are considered. Problems related to the use of moiré topography are also investigated, taking into account the projection method and the shadow method.

G.R.

A82-22148 Satellite photos can aid navigation on aerial photo missions. R. J. Myhre (U.S. Forest Service, Fort Collins, CO). Photogrammetric Engineering and Remote Sensing, vol. 48, Feb. 1982. p. 275-279.

Accurate navigation is important to the success of aerial photo missions. The accuracy of the navigation on these missions depends on the amount of useful information available on the flight maps or photos. If satisfactory maps or aerial photos are not available, current satellite imagery (Landsat photos) can be enlarged for use as navigational aids. This technique has been tested and proven successful on operational aerial photography missions. Aspects of photo mission planning are considered, taking into account aerial photo coverage and satellite photo coverage. Attention is also given to questions regarding Landsat imagery and the two methods employed to enlarge the Landsat image to the desired scale. It is found to be important to select a satellite image which represents the time frame of the anticipated aerial photo mission.

G.R.

A82-22397 † Spaceborne photography for the study of earth resources (Kosmicheskaia fotos'emka dlia izucheniia prirodnykh resursov). G. B. Bonin. Leningrad, Izdatel'stvo Nedra, 1980. 320 p. 564 refs. In Russian.

Various theoretical and practical aspects of spaceborne photography in the study of earth resources are reviewed, including problems of photogrammetric image processing. Particular consideration is given to the attitude control and stabilization of remotesensing satellites; the effect of the atmosphere on the quality and photometric properties of the photographs; subsatellite experiments; and external-orientation elements of space imagery. Photogrammetric measurements on the basis of single images, the transformation of images, and elements of scanner photogrammetry are also discussed.

B.J.

A82-22877 * Microwave remote sensing: Active and passive. Volume 1 - Microwave remote sensing fundamentals and radiometry. F. T. Ulaby, R. K. Moore, and A. K. Fung (Kansas, University, Lawrence, KS). Research supported by NASA, NSF, and DOD. Reading, MA, Addison-Wesley Publishing Co. (Remote Sensing, No. 2), 1981. 470 p. 267 refs. \$46.50.

The three components of microwave remote sensing (sensor-scene interaction, sensor design, and measurement techniques), and the applications to geoscience are examined. The history of active and passive microwave sensing is reviewed, along with fundamental principles of electromagnetic wave propagation, antennas, and microwave interaction with atmospheric constituents. Radiometric concepts are reviewed, particularly for measurement problems for atmospheric and terrestrial sources of natural radiation. Particular attention is given to the emission by atmospheric gases, clouds, and rain as described by the radiative transfer function. Finally, the operation and performance characteristics of radiometer receivers are discussed, particularly for measurement precision, calibration techniques, and imaging considerations.

M.S.K.

A82-23045 * Superconducting tensor gravity gradiometer. H. J. Paik (Maryland, University, College Park, MD). (International Symposium on Inertial Technology for Surveying and Geodesy, 2nd, Banff, Alberta, Canada, June 1-5, 1981.) Bulletin Géodésique, vol. 55, no. 4, 1981, p. 370-381. 12 refs. Contract No. NAS8-33822.

The employment of superconductivity and other material properties at cryogenic temperatures to fabricate sensitive, low-drift, gravity gradiometer is described. The device yields a reduction of noise of four orders of magnitude over room temperature gradiometers, and direct summation and subtraction of signals from accelerometers in varying orientations are possible with superconducting circuitry. Additional circuits permit determination of the linear and angular acceleration vectors independent of the measurement of the gravity gradient tensor. A dewar flask capable of maintaining helium in a liquid state for a year's duration is under

development by NASA, and a superconducting tensor gravity gradiometer for the NASA Geodynamics Program is intended for a LEO polar trajectory to measure the harmonic expansion coefficients of the earth's gravity field up to order 300.

M.S.K.

A82-24964 Thermal infrared data from the Heat Capacity Mapping Mission. Remote Sensing of Environment, vol. 11, Mar. 1981, p. 77-79.

The Heat Capacity Mapping Mission (HCMM) satellite, launched on April 26, 1978, was designed to experimentally evaluate the usefulness of remotely sensed surface temperature measurements for applications in geology, botany, ecology, hydrology and meteorology. The orbital characteristics of the satellite permit repetitive observations of midlatitude regions over the course of the diurnal heating cycle. This type of coverage is optimal for observing the temporal and spatial thermal contrasts within surface materials. HCMM thermal IR measurements can also be used to estimate the apparent thermal inertia of surface cover materials. A nighttime thermal IR image of Utah is examined.

A82-25460 Satellite photograph interpretation. C. Peebles. Spaceflight, vol. 24, Apr. 1982, p. 161-163. 10 refs.

The instrumentation and interpretation of satellite earth surface reconnaissance data are outlined. IR scanners, multispectral photo systems, and digitally returned optical sensor information are soon to be augmented by imaging radar and continuation of the use of the Big Bird satellites for high resolution photographic imaging. The photographs are sometimes scanned visually by using a 60% overlap to provide a stereo view and gain depth information on the observed scene. Human photointerpreters are mentioned as having an encyclopedic knowledge of particular areas of scanning, enabling immediate detection and educated guessing at the function of any change in a repeatedly monitored scene. Comparative covers is a process of historically referencing updated photos to determine increases or decreases in use of areas, or precise visual steps of weapons assembly.

M.S.K.

A82-26000 # Ideal phase in estimating the spatial gradient of magnetic daily variations recorded by magnetometer arrays. F. E. M. Lilley and M. N. Sloane (Australian National University, Canberra, Australia). Journal of Geomagnetism and Geoelectricity, vol. 33, no. 9, 1981, p. 517-525. 14 refs.

A82-26049 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data (Auswertung von Reihenmesskammer- und Flugzeugabtasteraufnahmen aus Wattgebieten - Digitale Korrelation und Klassifizierung multitemporaler Bilddaten). E. Dennert-Möller and M. Ehlers (Hannover, Universität, Hanover, West Germany). Bildmessung und Luftbildwesen, vol. 50, Mar. 1, 1982, p. 59-67. 14 refs. In German.

It has been found that large-scale aerial photographs are particularly suited for the study of the special conditions of the tidal lands at the German coast of the North Sea. Procedures of digital correlation make it possible to establish, for a comparison, relations between imagery obtained with various sensors at different scales and at different times. In the present investigation, photographs obtained with serial photogrammetric cameras, and aircraft scanner imagery are, after image correction, classified on an individual basis, and are compared with each other. A multitemporal picture is finally obtained and classified. The required digital processing operations are performed by making use of interactive image processing equipment and a Cyber 76-14 computer.

A82-26963 Radiometric calibration of the Coastal Zone Color Scanner on Nimbus 7 - A proposed adjustment. M. Viollier (Lille I, Université, Villeneuve d'Ascq, Nord, France). Applied Optics, vol. 21, Mar. 15, 1982, p. 1142-1145. 12 refs. Research supported by the Centre National d'Etudes Spatiales and Ministère de l'Environnement et du Cadre de Vie.

In conjunction with atmospheric effect computations, ground measurements of water reflectances for two very clear days are compared with Coastal Zone Color Scanner satellite data to point out scanner calibration errors. A new set of calibration constants is proposed which standardizes radiances relative to the extraterrestrial

solar irradiance. It is emphasized that the suggested modification is theoretically valid only for the June and July, 1979 period of study alone, and for the corresponding electronic gain. It is expected that similar calibration error trends exist for the other gains and periods.

O.C.

A82-27576 * International Symposium on Remote Sensing of Environment, 15th, University of Michigan, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volumes 1, 2 & 3. Symposium sponsored by the Environmental Research Institute of Michigan, NOAA, NASA, et al. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981. Vol. 1, 570 p.; vol. 2, 568 p.; vol. 3, 493 p. Price of three volumes, \$88.

Developments related to advanced sensors and sensor systems are being examined, taking into account advanced aerospace remote sensing systems for global resource applications, spaceborne radar observation of the earth surface, a concept for an advanced earth resources satellite system, technologies for the multispectral mapping of earth resources, and the use of Landsat images and morphologic analogs in space exploration. Other topics discussed are related to modeling for terrain analysis, digital processing and analysis of remotely sensed data, microwave remote sensing, new discoveries from planetary remote sensing, and data base utilization. Advances in the area of luminescence are also considered along with future plans and prospects concerning the remote sensing of the earth from space.

A82-27577 * # Advanced aerospace remote sensing systems for global resource applications. J. V. Taranik (NASA, Office of Space and Terrestrial Applications, Washington, DC). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 3-20. 8 refs.

The Landsat program, which was concerned with testing the use of satellite data for global resource observations, has been an unqualified success, and users of Landsat data demand now that repetitive global multispectral data be provided on a routine basis for a wide variety of applications. A review is provided of the current status of NASA's land observation program, new developments in advanced aerospace remote sensing techniques, and issues related to the development and testing of new prototype systems by the U.S. The current Landsat program is considered along with developments in solid-state imaging technology, short wave infrared research using the Space Shuttle, the Shuttle Orbiter camera payload system large format camera, and advanced research in thermal remote sensing. Attention is also given to the potential of imaging radar for global resource observations, and research related to geopotential field G.R. mapping.

A82-27578 * # Spaceborne radar observation of the earth surface. C. Elachi (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 21-31. 9 refs. Contract No. NAS7-100.

Seasat SAR images are being analyzed to determine the potential of spaceborne radars for earth resources and ocean surface observation. Examples are presented for a variety of applications in structural mapping, lithological classification, soil moisture detection, polar ice motion monitoring and ocean features observation. These examples are briefly discussed with emphasis on the future research needed to further the capability of radar sensors, by themselves or in combination with other sensors. A brief discussion is then given on the spaceborne sensors which are required and planned to meet these needs. (Author)

A82-27579 # A concept for an advanced earth resources satellite system. G. T. Keene (Eastman Kodak Co., Rochester, NY). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 33-44. 5 refs.

Attention is given to a study concerned with the definition of a concept for an advanced sensor system to follow the Landsat D series. In this project NASA sought maximum operational reliability and minimum development risk by use of proven mechanisms and available technology, taking into account an employment of visible (VIS), shortwave infrared (SWIR), and thermal infrared (TIR) spectral bands. The TIR section was to be an optional modular unit, and all focal planes would utilize the inherent registration of solid state linear arrays with no moving parts while imaging, and passive thermal control. Attention is given to optics, detectors, thermal control, performance estimates, and recent modifications.

A82-27580 * # Technologies for the multispectral mapping of earth resources. J. B. Wellman (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 45-64. 16 refs. Contract No. NAS7-100.

The application of solid-state detector array imaging to the remote sensing of the earth as a follow-on to currently planned Landsat missions provides the opportunity to achieve significantly increased performance. First-order advantages to be anticipated are higher sensitivity resulting in greater radiometric accuracies and improved geometric fidelity. The Multispectral Mapper design concept is responsive to a broad range of user needs by incorporating in-flight selection of spectral bands, instantaneous fields of view, and swath width. This versatility is achieved by the use of an imaging spectrometer which permits both spatial and spectral sampling in the image plane using area array detectors. Other improvements over the current Landsat multispectral scanner and Thematic Mapper include higher spatial resolution and inherently precise registration of the spectral bands. The key technologies required in order to realize these improvements include short-wavelength infrared detectors, wide field of view, broad spectral coverage optics, focal plane cooling, and high-speed onboard signal processing. Significant development activities will be required if an advanced remote sensing capability is to be implemented. (Author)

A82-27581 # Mapsat compared to other earth-sensing concepts. A. P. Colvocoresses (U.S. Geological Survey, Reston, VA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 65-72. 10 refs.

The acceptance and use of Landsat products clearly indicates that there is a need for a truly operational earth-sensing system. In December 1980 NASA issued a request for proposal of an MLA (multispectral linear array) Instrument Definition Study. The MLA study calls for two 'short-wave' infrared bands (1.55 to 1.75 micrometers and 2.08 to 2.35 micrometers). However, in connection with cost and complexity problems, it appears unlikely that these bands will be utilized on any operational system during the 1980's. The characteristics of available systems for imaging the earth are discussed. Attention is given to Mapsat which is the result of an effort to define an operational earth-sensing system. Mapsat is based on Landsat technology and will provide global coverage on a continuous basis. Aspects of mapping geometry are considered along with questions of resolution and data transmission, spectral bands, stereoscopic capability, and one-dimensional data processing.

Information expectations from Landsat-D. V. A82-27583 * # V. Salomonson, D. L. Williams, and J. L. Barker (NASA, Goddard Space Flight Center, Applications Directorate, Greenbelt, MD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 81-93. 5 refs.

The first satellite of the Landsat-D Project is to be launched in the third quarter of 1982 with a second satellite to be prepared for launch 12 to 15 months later. Both spacecraft are to include the familiar Multispectral Scanner (MSS) and the advanced multispectral scanner called the Thematic Mapper (TM). The ground data processing system for the MSS data is to be ready to produce 200 scenes a day in 1982. The data processing systems for the TM are to be fully operational at the 50 to 100 scenes a day level in early 1985.

The fabrication of the system components has proceeded well in recent months, and integration of the total system is under way. The procedures for processing the data and meeting specifications are nearly completed for the MSS and are outlined in detail for the TM. An outline of an investigation program stressing systems performance has been developed for the period 1982 to 1985.

A82-27589 # Overview of digital processing of SAR data. J. P. Guignard (ESA, Data Handling and Signal Processing Div., Noordwijk, Netherlands). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 179-194. 18 refs.

It is pointed out that before the launch of the Seasat-A spacecraft, the processing of synthetic aperture radar (SAR) data was mainly performed using optical correlators. Seasat offered the first opportunity to develop digital SAR processors. An overview is provided of the Seasat-A SAR digital processors, taking into account the MDA configuration, Communication Research Center processing, the RAE processor, the DFVLR-GSOC processor, the JPL processor, the Bendix SAR processor, the CCRS processors, the Mitsubishi Seasat processor, the Norway Defense Research Establishment processor, and the Nippon Electric Company processor. Attention is also given to algorithms, image quality experiments, and a number of new developments.

A82-27591 # The logit classifier - A general maximum likelihood discriminant for remote sensing applications. P. F. Maynard and A. H. Strahler (California, University, Santa Barbara, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 213-222. 17 refs.

The most commonly used discriminant function in remote sensing applications is the Bayes maximum likelihood classifier (Bayes MLC). However, in an evaluation study it is found that Bayes MLC with parametric estimation of the probability density functions is not an optimal classifier for many remote sensing applications. It is pointed out that there are several statistically acceptable techniques for classifying nominal data such as the probit, logit, and arctan. However, the logit model has computational advantages since it is a closed (explicit) functional form with convenient curvature properties for numerical optimization. An investigation shows that the logit classifier is both theoretically and experimentally superior to the Bayes MLC with the simulated data and the Landsat Multispectral Scanner System (MSS) data employed in the study.

A82-27594 * # Simulation and studies of spaceborne synthetic aperture radar image quality with reduced bit rate. F. Li, D. Held, B. Huneycutt, and H. Zebker (California Institute of Technology, Jet Propulsion Laboratory, Pasadena, CA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981.

p. 259-270. 18 refs, Contract No. NAS7-100.

A computer simulation program that is used to study the effects of digitization in spaceborne synthetic aperture radar systems is described. An analytical study of the distortion noise introduced by the digitization process at various gain settings, sampling rates and bit error rates is presented and the results agree well with those obtained from the simulation program. The simulation program is also used to study the spatial frequency response of hard-limiting (quantizing to 1-bit) synthetic aperture radar systems. The implications of these results on synthetic aperture radar system design are discussed.

(Author)

A82-27595 # Features of a generalized digital Synthetic Aperture Radar processor. J. R. Bennett, I. G. Cumming, P. R. McConnell, and L. Gutteridge (MacDonald, Dettwiler and Associates, Ltd., Richmond, British Columbia, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 271-290.

A summary of the planned or proposed international Synthetic

Aperture Radar (SAR) activity for the next decade is provided in a table. A large number of primarily Shuttle-based experimental missions carrying SARs are being considered. In terms of SAR processing requirements, this activity translates into a need for modest throughput, highly flexible processors. The required processors will have to be adaptable to SARs of different pulse coding schemes, frequency, antenna length (beam width), swath width, depression angle, altitude, squint angle, polarization, and data rates. Experimental flexibility will be required to process the data from a given SAR configuration in a variety of different ways, taking into account resolution, multilooks, and multisubapertures. A description is presented of a digital processor designed to service the needs of this projected SAR activity.

A82-27606 # The Japanese MOS and Los program. Y. Ishizawa (National Space Development Agency of Japan, Tokyo, Japan). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 1. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 433-443.

The status of the Japanese Earth Observation Satellite Program and sensor development program is reviewd, with emphasis on the Marine Observation Satellite-1 (MOS-1) to be launched in 1985. Mission objectives of the MOS-1 program are outlined, and the satellite and radiometers are described. Three sensors to be mounted on the satellite are presented, which are to observe visible, near visible, near infrared, infrared, and microwave regions. The MOS-1 is a three-axis stabilized satellite with a cubic body on which the three sensors and bus equipment are mounted. The overall height, including antennas, is about 300 cm, with a length and width of about 146 and 126 cm, respectively.

A82-27628 # Implementation of the Space Oblique Mercator projection in a production environment. J. Brooks, R. Kumar, and I. Levine (General Electric Co., Space Div., Lanham, MD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 671-679, 5 refs.

The Space Oblique Mercator (SOM) projection, first considered by Colvocoresses (1974) is the first known map projection to provide continuous conformal mapping of satellite imagery true to scale along ground track, and accurate to within a few parts in a million. Although SOM was specifically designed for Landsat Imagery, it is also suitable for other near polar satellites. Snyder (1978) obtained a full mathematical derivation of the projection and developed a computer program for it (Snyder's Code). The present investigation has the objective to show that it is possible to incorporate the Snyder code output into Landsat-D Multispectral Scanner System (MSS) processing by means of mostly offline calculations. G.R.

A82-27633 # Spectritek - A multispectral electron-optic pushbroom camera. R. F. Lucy (Itek Corp., Optical Systems Div., Lexington, MA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 715-720.

Spectritek is an electro-optic aircraft camera concept designed to provide multispectral imagery for earth resources exploration. The silicon CCD focal plane arrays provide registered imagery in three Landsat color bands. The camera sensitivity meets Landsat-MLA requirements. The data collected is recorded on magnetic tape. After ground processing and calibration the data is stored in a low-cost storage medium for use by earth resources investigators. The camera system provides the wide area coverage of a satellite sensor and the high resolution of an aircraft sensor. Spectritek complements a companion large format stereo film camera (Metritek). Another advantage of the aircraft approach is its ability to update data files rapidly and economically. (Author)

A82-27638 # Locating prehistoric archaeological sites using Landsat. I. Wells, J. Custer, and V. Klemas (Delaware, University, Newark, DE). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 771-780. 29 refs. Research

supported by the Bureau of Archaeology and Historic Preservation of the State of Delaware.

It has been suggested that computer statistical techniques using Landsat digital imagery classifications can be applied over large areas and a large number of sites to locate areas that have a high probability of containing prehistoric sites. To test this hypothesis, an experiment has been performed on a selected area along the Appoquinimink River in New Castle County, Delaware. The results of the experiment suggest that Landsat data combined possibly with digital terrain data can provide the necessary consistent synoptic analysis of the landscape.

B.J.

A82-27642 # Passive bathymetric measurements in the Bruce Peninsula region of Ontario. W. C. Weidmark, S. C. Jain (Moniteq, Ltd., Concord, Ontario, Canada), H. H. Zwick (Canada Centre for Remote Sensing, Ottawa, Canada), and J. R. Miller (York University, Downsview, Ontario, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 811-822. 12 refs. Research supported by the Canada Centre for Remote Sensing; Department of Supply and Services Contract No. OSQ-80-00097.

Airborne MSS measurements in the 400-1000 nm wavelength range were performed in the summer of 1980 over the Bruce Peninsula in order to evaluate techniques of computing water depth from MSS imagery. The spectral volume reflectance maps were processed using radiative transfer models to interpret the image in terms of water depth. Theoretical modelling shows that the modification of Hulbert's formulation of the two-flow model to include asymmetric attenuation of upwelling and downwelling radiation results in reflectance values which express accurately the exact Monte Carlo calculations. A value of asymmetry factor can be chosen for any scattering albedo and backscatter probability to ensure a good fit of the two-flow model results to the Monte Carlo calculations.

A82-27648 # Utilization of spatial complexity in computer classified Landsat MSS data for multi-factoral thematic mapping. J. W. Merchant (Kansas, University, Lawrence, KS). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 905-914. 32 refs.

Graphic displays of classified Landsat MSS data commonly exhibit substantial variations in the degree to which pixels of various cover types are fragmented, aggregated and interspersed within a scene. The nature of the spatial distribution of classified pixels, or 'spatial complexity', in a scene is discussed. The components of cover frequency, cover diversity and cover composition are defined and are employed to measure spatial complexity. Regions of similar spatial complexity are delimited in a Kansas test site and are found to be associated with independently defined multi-factoral landscape regions. Such multi-factoral regions are characterized by integrated complexes of physical and cultural phenomena. Potential applications of research results are considered. (Author)

A82-27649 # Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application. N. L. Faust, L. E. Jordon, III, and M. D. Furman (ERDAS, Inc., Atlanta, GA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 915-917.

This paper addresses some of the issues involved in the design and operational use of a low-cost image processing system based on recent advances in micro-computer technology. Also discussed are the integration on the micro system of Landsat image processing and GIS capabilities, with an overview of existing software capabilities such as false color display, training field selection, geometric correction, and both supervised and unsupervised (cluster) classification. Considerations for the use of the system by 'non-computer types' provide the basis for a menu-selection approach using simple keywords. Future directions in the development of the micro system are also mentioned. (Author)

A82-27652 # Instrumentation for remote reflectance and radiance measurements. L. Daubner, J. Davies, R. Dick, and S. M. Till (Barringer Research, Ltd., Toronto, Canada). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 939-948. 12 refs.

Reflectance spectroscopy has led to the development of a family of instruments capable of remote sensing applications. The various features in the reflectance spectra of soils, rocks, and other materials are dependent upon their constituent minerals. Attention is given to the Field Reflectance Spectrometer (REFSPEC), which is a self-contained dual beam scanning reflectance spectrometer. The optical train looks alternately at the target of choice and then at the solar radiation. REFSPEC comprises the optical head, a battery pack, a standard reflectance target package, and a digital data logger. An analog output is also provided. Another instrument considered is the Hand Held Ratioing Radiometer (HHRR). This instrument measures the energy reflected by a target scene of interest. Applications for both instruments are related to general studies, agriculture, geobotany, geochemistry, geology, and oceanography.

G.R.

A82-27653 # Orbital performance of a 1.6 micrometer DMSP snow/cloud discrimination sensor. A. W. Kimball (Westinghouse Electric Corp., Baltimore, MD). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 949-958. USAF-supported research.

A report on the orbital performance of a line array infrared (1.57 + or - 0.6 micron) sensor flown on DMSP satellite F4 in 1979 is given. Instrument characteristics are discussed briefly. Numerical data reduction and normalization methods are described, Samples of orbital data, normalized and compared to data in DMSP visible and thermal infrared channels, are presented. It is concluded that the instrument design performance was essentially as expected and that cloud/snow contrast ratios predicted to lie in the range of three to six were realized in analysis of daylight data over the Northern Hemisphere in December 1979. (Author)

A82-27659 # University of Dundee satellite image data acquisition and archiving facility. P. E. Baylis (Dundee, University, Dundee, Scotland). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 2.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1017-1024. 10 refs.

The capabilities, operations and equipment of the facility for the reception and archiving of satellite image data maintained by the University of Dundee are presented. The Dundee station receives, records and stores data from the Very High Resolution Radiometer (VHRR) of the ITOS/NOAA satellites, the Advanced Very High Resolution Radiometer (AVHRR) of the Tiros-N/NOAA satellites, the Coastal Zone Color Scanner (CZCS) of the Nimbus 7 satellite, and the Visible and Infra-red Spin Scan Radiometer of the Meteosat satellite. Products available from the archive include hard copy and browse files of VHRR/AVHRR and CZCS images, and computer compatible tapes of AVHRR and CZCS scenes. Station equipment used to carry out the functions of the Dundee station consists of a spun aluminum antenna with computer-driven drive motors for satellite tracking purposes, connected with two front ends, telemetry receivers, a bit conditioner frame synchronizer, and decommutator. and also includes a video processor and tape transports.

A82-27675 # The use of wave contrast measurements in the evaluation of SAR/gravity models. E. S. Kasischke and R. A. Shuchman (Michigan, Environmental Research Institute, Ann Arbor, MI). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1187-1209. 36 refs. Contract No. N00014-76-C-1048.

A new method to measure the detectability of gravity waves imaged by a synthetic aperture radar (SAR) has been developed. This new method is called a peak-to-background ratio (PBR). The PBR was used in studying two different SAR data sets. X- and L-band aircraft SAR data collected over a Lake Michigan test site were used

to study the effects of changing SAR processing parameters (telerotation adjustments and integration time) on wave visibility. A second data set was collected by the Seasat L-band SAR over the JASIN test array and was used to correlate PBRs to various wind and wave parameters. Results of this study indicate the peak-to-background ratio is an effective means to correlate SAR/ oceanography theory with actual SAR data sets. (Author)

A82-27681 # A low cost NOAA/TIROS AVHRR receiving station. W. Carroll (Western Australia Institute of Technology, South Bentley, Australia), R. D. Cargill, and F. R. Honey (Commonwealth Scientific and Industrial Research Organization, Div. of Land Resources Management, Wembley, Australia). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3.

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981,

Ann Arbor, MI, Environmental Research Institute of Michigan, 1981 p. 1253-1264. 12 refs.

In August 1980, a project was initiated with the objective to build in Australia a facility for real-time reception, processing, and dissemination of data from the Advanced Very High Resolution Radiometer (AVHRR) on the NOAA satellites. Using existing equipment and developing some special purpose hardware and software, the facility cost approximately \$5000, excluding labor costs. This facility will provide data for experiments on correlation of sea surface temperatures with fish catches around Australia, for cloud seeding experiments, and for regional geologic, soil moisture, and land system mapping.

G.R.

A82-27683 # Spatial resolution and geometric potential of planned earth satellite missions. R. Welch (Georgia, University, Athens, GA). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1275-1283. 14 refs.

Evidence to-date indicates that spatial resolutions of satellite sensor systems equivalent to 5 to 10 m IFOV will be required for the compilation of topographic maps at scales larger than 1:250,000, or for the preparation of land use maps depicting Level II and III classes of information. Film and line array cameras planned for use on satellite missions in the 1980's will provide image data meeting accepted accuracy standards for planimetric maps of 1:25,000 to 1:100,000 scale. Contour intervals of approximately 50 to 100 m appear feasible. Contour intervals of this magnitude are normally associated with topographic maps of 1:250,000 scale. (Author)

A82-27706 # Geometric correction of airborne multispectral scanner images. M. Kindelan (IBM Scientific Centre, Madrid, Spain), V. Moreno (Instituto Nacional de Técnica Aerospacial, Madrid, Spain), and A. Valverde (Escuela Técnica Superior de Ingenieros de Minas, Madrid, Spain). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1539-1549. 17 refs.

The aim of this paper, is to compare different methods to correct the geometric distortions which are present in Multispectral Scanner Images, and to propose a method based on the orientation parameters which are recorded in flight in the same tape as the image data. This method has the advantage that it may be completed automatically, while their results are comparable or better than those of other methods.

(Author)

A82-28127 † Investigation of earth resources using rocket and space technology (Issledovanie zemnykh resursov pri pomoshchi raketno-kosmicheskoi tekhniki). V. P. Mishin. (Vsesoiuznaia Konferentsiia po Probleman Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 9-11. In Russian.

Various applications of the remote sensing of earth resources are described, and the basic characteristics of the investigation of resources of land and sea from space are discussed. The features of a long-term remote sensing program are examined.

B.J.

A82-28128 † Structure of hardware and software at a regional center for the automated processing of aerial and space

remote-sensing images (Struktura tekhnicheskikh i programmnykh sredstv regional'nogo tsentra avtomatizirovannoi obrabotki aerokosmicheskikh izobrazhenii). A. S. Alekseev, V. N. Dement'ev, B. K. Kozhevnikov, N. V. Kul'kov, V. P. Piatkin, R. M. Salavatov, and S. L. Shevelev. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvarni, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 12-21. 8 refs. In Russian.

The paper describes a multiprocessor system for the processing of multispectral remote-sensing images, which features interactive thematic processing. Hardware and software structures for the system are described, and particular attention is given to the development of problem-oriented languages.

B.J.

A82-28129 † The structure and basic parameters of a satellite system for the remote sensing of earth resources (O sostave i osnovnykh parametrakh kosmicheskoi sistemy issledovaniia prirodnykh resursov). A. S. Selivanov. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 22, 23. In Russian.

The characteristics of a remote sensing complex for the study of earth resources are briefly described. Particular attention is given to the characteristics and operation of a multispectral scanner of high and medium resolution. Also included in the complex are sidelooking radar, a radar altimeter, and a microwave scanning radiometer. The organization of regional processing centers for the remote sensing data is considered.

B.J.

A82-28130 † Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery (Opyt kompleksnogo izucheniia prirodnykh resursov Kalmytskoi ASSR na osnove kosmicheskoi informatsii). I. N. El'vartynov and lu. P. Kienko. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 23-26. In Russian.

Various applications of the remote sensing of earth resources in the Kalmyk ASSR are reviewed. These applications include structural mapping, gas and oil exploration, hydrogeology, soil studies, and the mapping of agricultural lands and pastures.

B.J.

A82-28132 † The earth resources program for the long-term orbital station Salyut 6 (Programma 1PRZ na dolgovremennoi orbital'noi stantsii 'Saliut-6'). V. V. Arkhipov, A. D. Koval', V. V. Kovalenok, A. A. Tishchenko, and L. A. Ronzhin. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 30-36. In Russian.

A general review is given of the basic features of the remote sensing of earth resources from Salyut 6. Particular attention is given to the development of the earth resources program, preparatory steps towards the implementation of the program, and the acquisition, processing, and application of the data.

B.J.

A82-28140 † Complex of units for the storage and automated processing of research data (Kompleks sredstv dlia nakopleniia i avtomatizirovannoi obrabotki dannykh pri nauchnykh issledovaniiakh). N. I. Baklashov, G. M. Solodikhin, and L. V. Sergeev. (Vsesoiuznaia Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982, p. 76-82. 5 refs. In Russian.

The paper describes an onboard system for the acquisition, storage, and processing of remote sensing data. Various storage techniques are discussed, and block diagrams of the various elements of the system are presented.

B.J.

A82-28142 † Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements (Mashinnaia realizatsiia algoritmov kartirovaniia vlazhnosti pochvy po rezul'tatam SVCh-radiometricheskikh izmerenii). N. A. Armand, F. A. Mkrtchian, and A. M. Shutko. (Vsesoiuznaia

Konferentsiia po Problemam Issledovaniia Prirodnykh Resursov Zemli i Mirovogo Okeana, Aviatsionno-Kosmicheskimi Sredstvami, Moscow, USSR, Nov. 1980.) Geodeziia i Aerofotos'emka, no. 1, 1982. p. 89-94. In Russian.

The paper describes a method for the compilation of soil moisture maps on the basis of microwave remote-sensing data. The technique involves the use of the BENSON graphic device, a general-purpose computer, and an analog-digital converter. The program for the implementation of the proposed algorithm is presented, and it is shown that the program makes it possible to obtain moisture maps of arbitrary gradation.

B.J.

A82-28342 Instruments watch for impending earthquakes. B. C. Cole. *High Technology*, vol. 2, Mar.-Apr. 1982, p. 43-47, 50, 51

The current state of the art of earthquake prediction techniques is discussed. Signs of an imminent earthquake detected upon the analysis of seismic records preceding the Sylmar quake in 1971 are described which have led to the development of more sophisticated instruments and procedures for monitoring seismic velocities and other precursors, including seismometers and seismographs, tiltmeters, linear-strain meters, creep meters, dilatometers, magnetometers, gravimeters, ohmmeters, well monitors, radon monitors and radio telescopes and satellites. Problems with the establishment of a useful earthquake theory on which to base a prediction model are considered, and plans for improving data collection and analysis, particularly from California and the western states, are outlined. The mixed record of previous earthquake predictions in the United States, the Soviet Union and China is noted, and indications of greater confidence in predictions over the next decade as the understanding of earthquake processes grows are pointed out. A.L.W.

A82-28466 † Complex examination of photorectifiers (Kompleksnoe issledovanie fototransformatorov). V. A. Moroz and L. I. lablonskii. *Geodeziia i Kartografiia*, Feb. 1982, p. 42-44. In Russian.

A method for the complex investigation of photorectifiers is proposed which involves the simultaneous determination of instrumental accuracy and corrections to null points which characterize the operational accuracy of the basic elements of the instruments. This makes possible a more effective adjustment and improves the accuracy of transformation.

N82-16154*# National Aeronautics and Space Administration. Langley Research Center, Hampton, Va.
THE MICROWAVE RADIOMETER SPACECRAFT. A DESIGN STUDY: EXECUTIVE SUMMARY
Uriel M. Lovelace In its The Microwave Radiometer Spacecraft Dec. 1981 p 1-14 refs

Avail: NTIS HC A11/MF A01 CSCL 22B

A conceptual design was developed for a microwave radiometer spacecraft (MRS) using a large passive reflector, microwave radiometer, and advanced control concepts soil moisture mapping from microwave sensing for global crop forecasting. Mission requirements and tradeoffs were defined, and major subsystems (structural, electromagnetic surface, and attitude control) conceptually designed. An overview of the mission and a summary of the study results are presented.

N82-16155*# National Aeronautics and Space Administration. Langley Research Center, Hampton, Va. MISSION DEFINITION FOR A LARGE-APERTURE MICROWAVE RADIOMETER SPACECRAFT Lloyd S. Keafer, Jr. In its The Microwave Radiometer Spacecraft Dec. 1981 p 17-32 refs

Avail: NTIS HC A11/MF A01 CSCL 22B

An Earth-observation measurements mission is defined for a large-aperture microwave radiometer spacecraft. This mission is defined without regard to any particular spacecraft design concept. Space data application needs, the measurement selection rationale, and broad spacecraft design requirements and constraints are described. The effects of orbital parameters and image quality requirements on the spacecraft and mission performance are discussed. Over the land the primary measurand is soil moisture; over the coastal zones and the oceans important

measurands are salinity, surface temperature, surface winds, oil spill dimensions and ice boundaries; and specific measurement requirements have been selected for each. Near-all-weather operation and good spatial resolution are assured by operating at low microwave frequencies using an extremely large aperture antenna in a low-Earth-orbit contiguous mapping mode. Author

N82-16440*# General Electric Co., Philadelphia, Pa. Space

LANDSAT-2 AND LANDSAT-3 FLIGHT EVALUATION REPORT, 23 JANUARY TO 23 JULY 1980

1 Aug. 1980 241 p ERTS

(Contract NAS5-21808)

(E82-10022; NASA-CR-164392; Doc-80SDS4229) Avail: NTIS HC A11/MF A01 CSCL 05B

Flight performance analyses of LANDSAT 2 and LANDSAT 3 are presented. Spacecraft operations and orbital parameters are summarized for each spacecraft. Data are provided on the performance and operation of the following onboard subsystems: power; attitude control; command/clock; telemetry; orbit adjust; magnetic moment compensation assembly; unified S-band/ premodulation processor; electrical interface; thermal; narrowband tape recorders; wideband tape recorders; return beam vidicon; multispace multispectral scanner; and data collection. Orbit reference tables for January 1980 through July 1981 are

N82-16444*# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

BRAZILIAN REMOTE SENSING ACTIVITIES, CURRENT AND PROSPECTIVE NEEDS

Nelson deJesusParada, Principal Investigator Apr. 1981 55 p Presented at the United Nations Regional Seminar on Remote Sensing Appl. and Satellite Commun. for Education and Develop., Toulouse, 21-25 Apr. 1981 Sponsored by NASA ERTS (E82-10026; NASA-CR-164811) Avail: NTIS

HC A04/MF A01 CSCL 05A

Remote sensing activities began in Brazil in 1968 and are now concentrated in a satellite and a side-looking radar program. The radar program systematically surveys the natural resources of the whole national territory in a level of detail compatible with a 1:1,000,000 scale, focusing on geology, geomorphology, soil, agricultural aptitude, ecology, and potential land use. The satellite program receives, processes, and disseminates remotely sensed data (basically LANDSAT data) and develops methodologies for applying these data for surveying, monitoring and mapping. Special emphasis is given to national priorities, particularly food and energy. Major results obtained and difficulties encountered in the following applications are described: crop forecasting, reforestation, mineral exploration, fishing chart models, land use, sedimentation in reservoirs, and deforestation in the Amazon forest. A decision was made to upgrade existing LANDSAT reception and processing stations to receive and process MSS and thematic data from LANDSAT-D and from SPOT and to construct two satellites for launch in 1987-1990.

N82-16445* # South Dakota State Univ., Brookings.

REMOTE SENSING APPLICATIONS TO RESOURCE PROBLEMS IN SOUTH DAKOTA Semiannual Progress Report, 1 Jul. 1980 - 1 Jan. 1981

Victor I. Myers, Principal Investigator, T. Bailey, R. G. Best, J. C. Eidenshink, D. Hause, H. Haivala, F. A. Schmer, M. Wehde, and K. Winks 1 Jan. 1981 102 p refs Original contains color imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. 57198. ERTS (Grant NGL-42-003-007)

(E82-10027; NASA-CR-164810; SDSU-RSI-81-03) Avail: NTIS HC A06/MF A01 CSCL 05A

Data obtained from field studies, aerial color infrared photography, and LANDSAT imagery are being used for resources management in South Dakota. The procedures used and results obtained are described for the following applications: (1) detecting Dutch elm disease in the city of Watertown; (2) determining the distribution and abundance of grasshoppers in Corcon County; (3) inventorying sagebrush in Butte County to support sage grouse management; (4) computerized digitization of aerial thermography of the concentration of Canada geese on the Missouri River Reservoir; (5) surveying to determine the diversion of water along the Belle Fourche River from the Keyhole Reservoir in eastern Wyoming to the City of Belle Fourche in western South Dakota; (6) identifying and locating areas of the Lower James River where stream blockages, streambank erosion, and flooding occur; and (7) acquiring and analyzing data on the landcover in the Lake Herman watershed for the national pilot Model Implementation program. A.R.H.

N82-18466# Analysis and Technology, Inc., North Stonington,

EVALUATION OF TWO AN/APS-94 SIDE-LOOKING AIRBORNE RADAR SYSTEMS IN THE DETECTION OF SEARCH AND RESCUE TARGETS Interim Report, Jan. 1978 - Aug. 1981

S. R. Osmer, N. C. Edwards, Jr., G. L. Hover, and T. J. Mazour Aug. 1981 163 p refs (Contract DTCG39-80-C-80052)

(AD-A108404; USCG-D-64-81) HC A08/MF A01 CSCL 17/9

NTIS Avail:

Side-Looking Airborne Radar (SLAR) detection data were gathered in conjunction with four visual detection experiments designed to improve search planning guidance contained in the National Search and Rescue Manual. HC-130 aircraft, equipped with either the Airborne Oil Surveillance System (AOSS) or SLAR/radar image processor (SLAR/RIP) configuration of the AN/APS-94C or D SLAR, conducted controlled searches for life rafts, small boats, and 41- to 95-foot Coast Guard vessels in Block Island Sound or open ocean. Using a microwave tracking system and SLAR data, the positions of searchers and targets were accurately reconstructed to facilitate the verification of detections on SLAR films or video tape. These data were used to evaluate the effects of environmental and controllable parameters on SLAR detection of the various target types. Target size/composition search altitude, swell height, wind speed, and humidity/precipitation were found to have a significant influence of SLAR detection performance. Upper-bound lateral range curves and sweep widths for SLAR search are included. Real-time performance tests for AN/APS-94D SLAR and system performance tests for new SLARs (AN/APS-131) are recommended.

GRA

N82-18481# Thomson-CSF, Meudon-la-Foret (France). Dept. Espace-Satellites.

STUDY OF SYNTHETIC APERTURE RADAR IN 2D - 2FS **OPERATION OVER THE OCEAN Final Report**

Paris ESA 5 Mar. 1981 25 p (Contract ESA-4586/81/F-DD(SC))

(ESA-CR(P)-1475) Avail: NTIS HC A02/MF A01

Synthetic aperture radar operation (imaging mode) for the European Remote Sensing program is considered. The 2D - 2FS function consists in operating in a low power mode (100 W RF) for 1.5 sec every 15 sec in order to image patches on the sea surface of 5 km by 5 km every 100 km, with the 5 km squares in the center of the beam. The data stream needs to be buffered such that a continuous (300 kbit/sec) data stream is delivered. The impact of such a mode on hardware, especially in terms of mass and power consumption, was studied. Results show that the 2D - 2FS option requires minor changes. One additional dispersive line and one additional box, containing the added hardware for data handling, are necessary. This represents 7 kg more (with redundancy) for payload. The average power consumption in wave mode becomes 150 W.

Author (ESA)

N82-18564# British Aerospace Dynamics Group, Bristol (England). "Space and Communications Div.

IMAGING MICROWAVE RADIOMETER. PHASE A STUDY. **VOLUME 1: EXECUTIVE SUMMARY Final Report**

C. R. Francis Paris ESA Jul. 1980 50 p refs Prepared in cooperation with Dornier-Werke G.m.b.H., Friedrichshafen, West Germany, B and W Electronik and Tech. Univ. of Denmark Original contains color illustrations

(Contract ESA-4243/80/F-CG(SC))

(ESS/SS-1006; ESA-CR(P)-1468) Avail: NTIS

HC Á03/MF A01

An imaging microwave radiometer, a passive microwave instrument proposed for inclusion in the sensor payload of the Coastal Ocean Monitoring Satellite System (COMSS) spacecraft, was studied. The instrument detects microwave radiation at 5 frequencies in the range 6.8 to 36.5 GHz, each at vertical and horizontal polarization, and has an optional tacility for measurements at 90 GHz. Results show that the instrument meets the experiment requirements proposed by ESA and meets the accommodation constraints of the COMSS payload.

Author (ESA)

N82-18672# Research Inst. of National Defence, Linkoeping (Sweden). Huvudavdelning 3.

OBSERVATIONS WITH AN IMAGING 35 GHz RADIOMETER OF TERRAIN IN MALMSLATETT, JULY 1980

Gunnar Stenstroem and Ain Sume Oct. 1981 Original contains color illustrations

(FOA-C-30240-E1/E3) Avail: NTIS HC A03/MF A01

Microwave emission of militarily important terrain was studied, using Dicke radiometer measurements around an air traffic control tower. The radiometer has a 60 cm parabolic Cassegrain antenna, controlled through a desk top computer, which also manages the data sampling and recording. The radiometric images were color-coded and presented on-line on a TV monitor. A selected part of the scenery was monitored once every hour in order to examine time variations of the observed antenna temperature and their correlation with day-to-night and meteorological changes. The significance of reflected, cold sky radiation in smooth surfaces (metals, plastics, roads) is demonstrated, resulting in a contrast with the less reflective sur-Author (ESA) roundings.

N82-18776*# National Aeronautics and Space Administration. Goddard Space Flight Center, Greenbelt, Md. STRATOSPHERIC INSTRUMENTS AND ANALYSES In its The Stratosphere 1981 Jan. 1982 26 p

Avail: NTIS HC A22/MF A01 CSCL 04A

The Instruments are divided into two groups, ground based instruments and satellite-borne instruments. The ground based instruments include a Dobson ozone spectrophotometer, a filter ozonometer, and ozonesondes. The satellite-borne instruments include: a backscatter ultraviolet spectrometer, a high resolution infrared radiation sounder, a infrared interferometer spectrometer, a limb radiance inversion radiometer, and multichannel filter radiometer. A list of investigations using stratospheric satellite data is presented.

N82-18881# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil).

A MICROCOMPUTER FOR CONTROL OF DATA COLLEC-TION PLATFORMS [UM MICROCOMPUTADOR PARA CONTROLE DE PLATAFORMAS DE COLETA DE BADOS] Jose Bianchi Neto and E. W. Bergamini Jun. 1981 12 p refs In PORTUGUESE; ENGLISH summary Presented at the 2nd Natl. Meeting on Automation, Salvador, Bahia, Brazil, Jul.

(INPE-2104-RPE/331) Avail: NTIS HC A02/MF A01

A microcomputer developed for application in an environmental data collection platform performs functions of data control, acquisition and processing of a self timed data collection platform compatible with the GOES (satellite) system. Block diagrams are presented and the data collection platform is described.

Author

N82-19520# Instituto de Pesquisas Espaciais, Sao Jose dos Campos (Brazil)

AUTOMATIC ANALYSIS OF MULTISPECTRAL IMAGES

Luciano Vieira Dutra, Ricado Cartaxo Modesto deSouza, Fernando Augusto Mitsuo, II, and Jose Carlos Moreira Aug. 1981 33 p refs In PORTUGUESE; ENGLISH summary (INPE-2212-MD/009) Avail: NTIS HC A03/MF A01

Some ideas of automatic multispectral image analysis are introduced. Automatic multispectral image analysis plays a central role in numerically oriented remote sensing systems. It presupposes the utilization of electronic equipments, mainly computers and their peripherals, to help people to interpret the information contained in multispectral digital imagery. This necessity derives from the great amount of multispectral data gathered by remote sensors within satellites and airplanes. When the number of channels or spectral bands is increased, the interpretation becomes more complex and subjective. In some cases, for example, in harvest estimation in national or regional level, it is imperative to use computer systems to complete the work within the time required. Automatic analysis also aimes to eliminate subjective factors that appear in the human interpretation, so increasing the global precision.

N82-19647*# Systematics General Corp., Sterling, Va. GUIDELINES FOR SPACEBORNE MICROWAVE REMOTE SENSORS

Viqui Litman (Applied Media, Inc., Greenbelt, Md.) and John Nicholas Mar. 1982 87 p refs

(Contract NASw-3398)

(NASA-RP-1086) Avail: NTIS HC A05/MF A01 CSCL 14B A handbook was developed to provide information and support to the spaceborne remote sensing and frequency management communities: to guide sensor developers in the choice of frequencies; to advise regulators on sensor technology needs and sharing potential; to present sharing analysis models and, through example, methods for determining sensor sharing feasibility; to introduce developers to the regulatory process; to create awareness of proper assignment procedures; to present sensor allocations; and to provide guidelines on the use and limitations of allocated bands. Controlling physical factors and user requirements and the regulatory environment are discussed. Sensor frequency allocation achievable performance and usefulness are reviewed. Procedures for national and international registration, the use of non-allocated bands and steps for obtaining new frequency allocations, and procedures for reporting interference are also discussed.

N82-19650# Dornier-Werke G.m.b.H., Friedrichshafen (West

SATELLITE SCATTEROMETER FEASIBILITY STUDY. **VOLUME 1: TECHNICAL RESULTS Final Report**

R. Anders, G. Bommas, W. Gieraths, W. Gilg, P. Hans, M. Haimerl, H. Hoelzl, A. Kuehnle, H. Schuessler, P. Stuerzenhofaecker et al Paris ESA Apr. 1981 194 p refs 2 Vol. (Contract ESA-4367/80/F-DD(SC))

(ESA-CR(P)-1492-Vol-1) Avail: NTIS HC A09/MF A01

A scatterometer for ERS 1 is described. A wind sensor determines vector fields within a 400 km sweep parallel to satellite motion. Individual vectors are extractable from 50 X 50 km cells. Wind speeds between 4 and 24 m/sec are measured with an angular accuracy of + or - 20 deg. A wave sensor handles spectra between 100 and 1000 m wavelength. Measurements are taken with a spacing of 100 km or less along the satellite track. Data are extractable from 5 x 5 km resolution cells. Wind speed and wind direction measurements are derived from Seasat data and of two-dimensional ocean wave spectra measurement are derived from the synthetic aperture radar mode. Author (ESA)

N82-19651# Dornier-Werke G.m.b.H., Friedrichshafen (West Germany).

SATELLITE SCATTEROMETER FEASIBILITY STUDY. **VOLUME 2: DATA EXTRACTION ALGORITHM AND ERROR** SIMULATION FOR WIND SENSOR Final Report

P. Hans Paris ESA Apr. 1981 100 p ref 2 Vol. (Contract ESA-4367/80/F-DD(SC))

(ESA-CR(P)-1492-Vol-2) Avail: NTIS HC A05/MF A01

The ERS 1 scatterometer operation was computer simulated to: (1) test the Moore's relationship between the backscattering coefficient sigma deg and wind speed/direction; (2) investigate the influence of statistical errors in the sigma deg measurement on the resultant wind parameters; and (3) investigate antenna configurations with respect to functional performance and hardwear realization. Erroneous a sub zero parameter values in the radar sea return model cause errors mainly in wind speed, while erroneous a sub 2 causes errors in wind direction, and a sub 1 has little effect. The dual beam/dual polarization concept is recommended. Author (ESA)

N82-19652# Spar Aerospace Products Ltd., Toronto (Ontario). STUDY OF A RADAR ALTIMETER FOR THE EUROPEAN REMOTE SENSING PROGRAM. VOLUME 1: EXECUTIVE SUMMARY

A. Thompson and S. J. Alexander Jun. 1981 90 p Prepared jointly with Dornier-Werke GmbH Friedrichshafen, West Germany

(Contract ESA-4427/80/F-DD(SC))

NTIS (Spar-R.1090-Issue-A; ESA-CR(P)-1502) Avail: HC A05/MF A01

Sea scattering, radar parameter selection, performance characteristics such as acquisition and tracking, and operation in rain and over land were studied in order to design a radar altimeter. Tradeoffs covering the antenna, microwave subsystem, signal processor, and altimeter controller were performed.

A configuration consisting of a full deramp radar pulse compression system operating at 13.7 GHz, with a maximum likelihood estimator tracker/processor is chosen. The design meets the specification in all respects, has better performance and less weight than the Seasat altimeter, yet is fully redundant. A costed development plan completely compatible with the ERS 1 schedule Author (ESA) is outlined.

N82-19653# Royal Netherlands Aircraft Factories Fokker. Schiphol-Oost.

DEVELOPMENT OF A BREADBOARD COOLER FOR INFRARED REMOTE SENSING PAYLOADS, PHASE 1 Final

E. G. Overbosch and N. P. Enderberg Paris ESA 14 Mar. 1981 153 p

(Contract ESTEC-4484/80/NL-PP(SC))

(FOK-RV-R-81-064; ESA-CR(P)-1506) Avail:

HC A08/MF A01

A multistage passive cryogenic cooler was designed for the ocean color monitor (OCM) for ERS 1. Mathematical models of thermal and mechanical behavior support the concept of a radiator located in a parabolic reflector. Technologically critical areas of the design are compared with corresponding components in the optical imaging instrument, i.e. the glass reinforced thermal insulation/suspension straps, the suspension system integrated in the cooler, the parabolic reflector, and the cold stage radiator. A set of critical components suitable for both coolers is feasible. A three stage breadboard cooler is described. The multilayer insulation (MLI) radiator cools the MLI support, the first stage cools the paraboloid. The second stage is the cold stage radiating its heat loads by the open faced honeycomb radiator to space. The suspension of the first stage consists of dummies representing the thermal behavior of the corresponding OCM straps. The outside mounting ring is sufficiently stiff to support the cooler, and is used for mounting the cooler in the test chamber. Author (ESA)

N82-20375# European Space Agency, Paris (France) MRSE: A MICROWAVE REMOTE SENSING EXPERIMENT IN SPACELAB

Marian Werner In its On Radio Frequencies in Aerospace (ESA-TT-704) Dec. 1981 p 75-83 Transl: into ENGLISH from "Beitraege zum Kolloq. Hochfrequenztech, in der Luft- u. Raumfahrt''', Rept. DFVLR-Mitt-80-10 DFVLR, Oberpfaffenhofen, West Germany, Jun. 1980

Avail: NTIS HC A06/MF A01; DFVLR, Cologne DM 21,80 The design and development of the microwave remote sensing experiment are discussed. The equipment allows for three operating modes: scatterometry, synthetic aperture radar, and microwave radiometry. Sea state measurement, radar imagery, and passive detection of terrestrial radiation are planned.

N82-20491# Electronics Research Lab., Adelaide (Australia). PROPOSED DIGITAL CARTRIDGE RECORDING SYSTEM FOR WRELADS

T. R. Adams and D. M. Phillips Aug. 1981 22 p (AD-A109484; ERL-0210-TM) Avail: NTIS HC A02/MF A01 CSCL 09/2

The present data recording system in WRELADS II uses a hybrid tape recorder. Signal waveforms are recorded in analogue form while system parameters are recorded digitally. The hybrid recording system has several disadvantages that would be overcome by introducing a fully digital recording system. A proposal is described for developing a system to utilize two high-capacity digital cartridge recorders in conjunction with a microprocessor based cartridge controller.

N82-20606*# National Aeronautics and Space Administration, Washington, D. C.

GRADIO: PROJECT PROPOSAL FOR SATELLITE GRAD-IOMETRY

G. Balmino, F. Barilier, A. Bernard, C. Bouzat, G. Riviera, and J. Runavot Dec. 1981 55 p refs Transl into ENGLISH of "Gradio: Gradiometrie par Satellite Proposition de Projet" no. 244 PRT/AMP/AP (France), 8 Sep. 1981 p 1-51 Transl. by Kanner (Leo) Associates, Redwood City, Calif. Original doc. prep. by Centre National Etudes Spatiales

(Contract NASw-3541)

(NASA-TM-76796; NAS 1.15:76796) HC A04/MF A01 CSCL 08B

Avail: NTIS

A gradiometric approach, rather than the more complicated satellite to satellite tracking, is proposed for studying anomalies in the gravitational fields of the Earth and, possibly, other telluric bodies. The first analyses of a gradiometer based on four of ONERA's CACTUS or SUPERCACTUS accelerometers are summarized, it is shown that the obstacles to achieving the required accuracy are not insuperable. The device will be carried in a 1000 kg lens shaped satellite in a heliosynchronous orbit 200 to 300 km in altitude. The first launching is planned for the end of 1987 Author

N82-20630# Naval Ocean Systems Center, San Diego, Calif. SATELLITE-BORNE NON-DOD SENSORS FOR RESTRIAL OBSERVATIONS

H. M. Wight Aug. 1981 66 p refs (AD-A109486; NOSC/TD-458)

NTIS Avail:

HC A04/MF A01 CSCL 22/2

This is a summary review that was made of satellite-borne 'non-DoD sensors' used for terrestrial observations. The term non-DoD sensors refers to 'civil' (as contrasted with 'military') remote sensing systems. The civil satellite-borne sensing systems were developed for the most part by NASA and are employed operationally by NOAA/NESS. Author (GRA)

N82-21669*# Purdue Univ., Lafayette, Ind. Lab. for Applications of Remote Sensing.

A MULTIBAND RADIOMETER AND DATA ACQUISITION SYSTEM FOR REMOTE SENSING FIELD RESEARCH

M. E. Bauer, Principal Investigator, B. F. Robinson, D. P. DeWitt, L. F. Silva, and V. C. Vanderbilt Nov. 1981 14 p refs Repr. from from Proc. of the Intern. Arch. of Photogrammetry (West Germany), v. 23(B8) p 783-793 Presented at the 14th Congr. of the Intern. Soc. for Photogrammetry, Hamburg, 13-25 Jul. 1980 Sponsored by NASA, USDA, Dept. of Commerce, Dept. of the Interior, and Agency for International Development **ERTS**

(Contract NAS9-15466; Proj. AgRISTARS) (E82-10142; NASA-CR-167506; NAS 1.26:167506; SR-P1-04201; LARS-071480) Avail: NTIS HC A02/MF A01 CSCL 14B

Specifications are described for a recently developed prototype multispectral data acquisition system which consists of multiband radiometer with 8 bands between 0.4 and 12.5 micrometers and a data recording module to record data from the radometer and ancillary sources. The system is adaptable to helicopter, truck, or tripod platforms, as well as hand-held operation. The general characteristics are: (1) comparatively inexpensive to acquire, maintain and operate; (2) simple to operate and calibrate; (3) complete with data hardware and software; and (4) well documented for use by researchers. The instrument system is to be commercially available and can be utilized by many researchers to obtain large numbers of accurate. calibrated spectral measurements. It can be a key element in improving and advancing the capability for field research in remote

N82-21703# Tennessee Valley Authority, Chattanooga.
NATIONAL HIGH-ALTITUDE PHOTOGRAPHY (NHAP) OF THE TENNESSEE VALLEY REGION, VOLUME 1, NO. 1 31 Oct. 1981 19 p (PB82-130899; TV

TVA/ONR/NRO-82/3) NTIS Avail: HC A02/MF A01 CSCL 08B

The capabilities and activities of the photogrammetry and remote sensing section of the mapping services branch are described. The uses of aerial photography are briefly described. Plans for upgrading of services and equipment are discussed.

N82-21808# Wyoming Univ., Laramie. Dept. of Physics and

OZONE MEASUREMENTS TO 48Km WITH CHEMILUMIN-**ESCENT OZONE DETECTORS** Annual Progress Report

J. M. Rosen and D. J. Hofman Jan. 1982 9 p refs (Contract N00014-76-C-0170)

(AD-A110342; AP-70) Avail: NTIS HC A02/MF A01 CSCL

An inflight ozone calibrator was tested both in a laboratory environmental chamber and on a balloon flight. The results demonstrate the need for an inflight calibrator and also indicate that there may be a serious and previously unobserved tempera-

ture sensitivity problem with one of the primary ozone detectors.

Author (GRA)

N82-21826*# National Aeronautics and Space Administration.
Goddard Space Flight Center, Greenbelt, Md.
CLOUD TOP SCANNING RADIOMETER (CTS): USER'S
GUIDE

K. S. Brown Nov. 1981 30 p refs (NASA-TM-83887; NAS 1.15:83887) Avail: NTIS HC A03/MF A01 CSCL 04B

The CTS maps the Earth's surface with a resolution of 0.1 km from an altitude of 18km with 60km side-to-side coverage of the field. It has three spectral channels. The 0.625 micrometer centered visual channel detects reflectance to within 1 percent. The 6.75 micrometer centered water vapor channel detects changes in temperature of less than one degree Kelvin at 175 K. The 11.5 micrometer centered infrared window channel detects changes of less one half degree Kelvin at 175 K. The data can be converted graphically into three display images of the scene. Values for scene temperature and albedo are calculated from calibration equations. The equations were derived from in-situ and laboratory measurements. Intercomparisons of the flight data temperatures with ground based and other remote sensor results established the certainty of the derived temperature values to within 3 K over a wide temperature range (180 to 320 K). The system performance, calibration, and operation is successful and the engineering information describing this system should prove useful to scientists and potential users of the data.

09 GENERAL

Includes economic analysis.

A82-20412 Landsat classification accuracy assessment procedures. R. A. Mead (Virginia Polytechnic Institute and State University, Blacksburg, VA) and J. Szajgin (Technicolor Graphic Services, Inc., Sioux Falls, SD). *Photogrammetric Engineering and Remote Sensing*, vol. 48, Jan. 1982, p. 139-141.

At the November 12-14, 1980 conference on Landsat classification accuracy assessment procedures, attention was given to sampling procedures, statistical analysis techniques, and examples of projects concerned with accuracy assessment as well as the associated costs, logistical problems, and value of accuracy data to the remote sensing and resource management fields. It was commented during the proceedings that national standards for reporting thematic map accuracy have not been established, so that potential users of Landsat classifications often do not know the relative accuracies achievable in the identification of land-cover types. Moreover, Landsat classification accuracy assessments are often made with inadequate reference data, such as maps, photointerpretations or visits to the field. These reference data should be distributed throughout the scene in such a way that all cover types and transition zones between them are adequately represented.

A82-21280 The Landsat program - Moving ahead. A. Chiaviello. Satellite Communications, vol. 6, Feb. 1982, p. 34-36.

The operations and accomplishments of Landsats 1-3 are reviewed, and attention is given to the capabilities and uses of Landsat D. Landsats 1-3 fly at a 510 mi altitude in polar orbits, taking photographs of 115 by 115 km areas of the earth surface for transmittance to cover 100 countries. False color composites are developed with color coding for vegetation, water, cities, and highways. Multispectral data on minerals and oil locations, population estimates, crop yield estimates, and for disaster warnings have been gathered, along with data for resources planning and environmental monitoring. The Landsat-D satellite will carry a Thematic Mapper besides the Multispectral Scanner in a 435 mi altitude orbit and transmit at X-band and S-band frequencies. The Thematic Mapper will have 30 m resolution and the whole package will generate 800 images/day.

M.S.K.

A82-21875 Remote sensing for natural resources: An international view of problems, promises and accomplishments. Moscow, ID, University of Idaho, 1980. 527 p.

Aspects of remote sensing which were discussed included historical uses of remote sensing and reports on current applications in forestry, in international assistance programs, for spatial classification of multisource data types for lithologic mapping in Southwestern Idaho, and for rangeland sensing. Interactive roles between remote sensing and management information/mapping systems in resource inventories were discussed, along with Landsat contributions to national and regional resource inventories, techniques for obtaining multiresource information from remote sensing and ancillary data sources for resources in Costa Rica, and computer analysis of remote sensing data. Consideration was given to applications of remote sensing to pest control, in identifying wind energy sites, for crops identification, and for mapping world forests and nonrenewable resources.

M.S.K.

A82-22149 An intelligent earth sensing information system. T. H. Fay (Southern Mississippi, University, Hattiesburg, MS), J. Nazemetz (Oklahoma State University, Stillwater, OK), D. M. Sandford (Rutgers University, New Brunswick, NJ), V. Taneja (Western Illinois University, Macomb, IL), and P. Walsh (Fairleigh Dickinson University, Teaneck, NJ). Photogrammetric Engineering and Remote Sensing, vol. 48, Feb. 1982, p. 281-286. 9 refs.

By the year 2000, problems related to the expected increase in the world population will require for their solution a highly effective widespread management of earth resources with the aid of remote earth sensing. The cost of operating an earth sensing system can be greatly reduced through the use of artificial intelligence techniques to achieve goal oriented data gathering, information extraction using a world model, and direct user interfacing. A technology feasibility study was conducted to investigate the use of advanced and intelligent automation in space. The concept of an ambitious earth resource monitoring system directed toward future needs was developed as a result of this study. A proposal is made for the extensive use of artificial intelligence techniques within an autonomous satellite system to acquire and interpret data required by future users at as low a cost as possible.

G.R.

A82-24343 # Remote sensing and international law. C. Q. Christol (Southern California, University, Los Angeles, CA). In: Annals of air and space law. Volume 5. Toronto, Carswell Co., Ltd.; Paris, Editions A. Pedone, 1980, p. 375-426. 90 refs

Legal aspects of spaceborne remote sensing are reviewed, with consideration given to a definition of remote sensing, a functional approach to remote sensing, the emergence of contending positions on remote sensing, and the range of legal viewpoints in 1980. It is concluded that it has become increasingly evident during the COPUOS negotiations relating to the space-based remote sensing of the earth and its natural resources that substantial obstacles lie in the way of acceptance of fundamental principles concerning this matter.

B.J.

A82-26123 Some problems concerning the effective use of remote sensing (Zu einigen Problemen der effektiven Nutzung der Erdfernerkundung). P. Bormann (Deutsche Akademie der Wissenschaften, Zentralinstitut für Physik der Erde, Potsdam, East Germany). Gerlands Beiträge zur Geophysik, vol. 91, no. 1, 1982, p. 13-24. 13 refs. In German.

The paper investigates a number of problems in remote sensing relating to data aquisition, information extraction, and the utilization of information, in an effort to increase its effectiveness. Emphasis is on the conception of suitable remote sensing systems; the importance of accessibility, continuity, and timelessness of data; and the acceptability and feasibility of a remote sensing system as related to the scientific-technical, economical, infrastructural and environmental conditions of a given country. The assessment of cost benefits of remote sensing is discussed, and information extraction and integration of results into traditional disciplines, information systems and decision making are considered.

D.L.G.

A82-27169 Imaging the earth. I - The troubled first decade of Landsat. M. M. Waldrop. *Science*, vol. 215, Mar. 26, 1982, p. 1600-1603.

The coming launching of Landsat-D in July 1982 follows a decade of problems between NASA and users of Landsat data. The users wanted the continued use on Landsat-D of the multispectral scanner that had been aboard previous Landsats, since they had made heavy investments in computers, software and trained personnel to process the data obtained through that scanner. NASA, however, had planned to replace the scanner with a thematic mapper that advances the 80-meter resolution of the MSS to 30 meters and senses in not four spectral bands but seven. Users also wanted a far higher map production rate from NASA. Although it appeared that Landsat-D might go into orbit without the thematic mapper, the problems were finally resolved as NASA achieved high-volume map output and decided to put both the MSS and the mapper into orbit.

A82-27501 Scientific lectures on aviation and astronautics 1980 (Nauchnye chteniia po aviatsii i kosmonavtike 1980 g.). Edited by A. Iu. Ishlinskii. Moscow, Izdatel'stvo Nauka, 1981. 336 p. In Russian.

Papers from the 1979 and 1980 Gagarin Lectures on Aviation and Astronautics are presented. Attention is given to such topics as directional solidification in conditions of weightlessness, scientific-technical and organizational problems of cosmonaut training, the remote sensing of earth resources, the ballistic-navigational support for the Salyut 6-Soyuz-Progress complex, and the automation of the thermal-stress analysis of flight vehicles. Also considered are the development of spacecraft power supply systems, space biomedical

09 GENERAL

studies, method for the design of flight-vehicle control systems, problems of space-flight mechanics, and the development of life support systems.

B.J.

A82-27506 † Present and future studies of natural resources and the environment from space (Kosmicheskoe prirodovedenie segodnia i zavtra). lu. P. Kienko. In: Scientific lectures on aviation and astronautics 1980. Moscow, Izdatel'stvo Nauka, 1981, p. 50-56. In Russian.

The advantages of space data on natural resources, as compared with conventional sources of such data, are described. Current trends in remote sensing technology are reviewed, and examples are presented illustrating the application of remote sensing data to solve various scientific and economic problems.

B.J.

A82-27543 † Development of cooperation between CMEA member countries in the development and utilization of space-based systems for the remote sensing of earth resources and the environment (Razvitie sotrudnichestva stran-chlenov SEV v oblasti sozdaniia i ispol'zovaniia kosmicheskikh sistem issledovaniia prirodnykh resursov i okruzhaiushchei sredy). B. A. Chumachenko, V. V. Marchenko, lu. A. Tiurin, and E. P. Vlasov. In: Problems of space studies.

Moscow, Mezhdunarodnyi Tsentr Nauchnoi i Tekhnicheskoi Informatsii, 1981, p. 13-22. 10 refs. In Russian.

The development of remote sensing systems for geological services is examined with reference to cooperation between CMEA member countries. Attention is given to the organization of the sequential processing and complex integration of space and ground data in relation to the prediction of earth resources on the basis of a problem-oriented man-machine system. The Region system, dedicated to geological prediction, is considered as an example of such a system.

B.J.

A82-27669 # Earth sensing from space - Commercial and international aspects. A. W. Frutkin (Burroughs Corp., Pacific Canada Div., Detroit, MI). In: International Symposium on Remote Sensing of Environment, 15th, Ann Arbor, MI, May 11-15, 1981, Proceedings. Volume 3. Ann Arbor, MI, Environmental Research Institute of Michigan, 1981, p. 1121-1126.

A critical evaluation is conducted of problems and promises related to earth sensing operations from space, taking into account developments occurring during the last two or three years. In a quick survey of the fundamental elements of the present situation, it is found that there were no changes with respect to the space segment during the last two years. Neither has there been any great increase in the use of the data during the same period. Attention is also given to the absence of substantial changes regarding the price of data, the transfer of responsibility for a future operational system to NOAA, national programs in France and Japan, and the absence of a real provision for continuity beyond Landsats D/D-prime. All hope and planning for the future seem to be a function of legislation to be proposed for a private sector follow-on to Landsats D/D-prime. After an investigation of the envisaged private-sector solution, it is concluded that the primary role should be played by government.

N82-17792# National Oceanic and Atmospheric Administration, Washington, D. C. National Earth Satellite Service.
PUBLICATIONS AND REPORTS ON CONTRACTS AND GRANTS, 1980 Final Report

Nancy A. Everson May 1981 19 p refs (PB82-103219: NOAA-TM-NESS-115; NOAA-81072202) Avail: NTIS HC A02/MF A01 CSCL 04B

This bibliography cites the titles and authors of 122 articles and reports published by or for the National Earth Satellite Service (NESS). The first section includes publications by NESS staff members and the second section includes final reports on contracts and grants sponsored by NESS.

GRA

N82-18669# Eurospace, Paris (France).

EXAMINATION OF THE OPERATIONAL PROSPECTS FOR REMOTE SENSING Final Report [EXAMEN DES PERSPECTIVES OPERATIONNELLES DE LA TELEDETECTION]

Eleonora Ambrosetti Paris ESA Dec. 1980 305 p refs In FRENCH

(Contract ESA-4080/79/F-FC(SC))

(ESA-CR(P)-1476) Avail: NTIS HC A14/MF A01

European remote sensing activities are reviewed while development and utilization trends are identified. Existing and

planned satellite systems are described. Remote sensing applications are listed by country in the European Economic Community. Cartography, geology, agriculture, silviculture, and land and water resources management are mentioned among other user disciplines. Applications are summarized in three categories: terrestrial, maritime, and coastal. Although maritime and coastal uses of remote sensing data are less well developed than terrestrial applications, economic, social and political benefits which can be accrued by Europe are sure to provide a strong incentive to continuing development.

Author (ESA)

N82-19627*# Public Technology, Inc., Washington, D. C.
REMOTE SENSING PROCUREMENT PACKAGE: A
MANAGEMENT REPORT FOR STATE AND LOCAL GOVERNMENTS

Jun. 1981 21 p ERTS (Contract NAS13-129) (E82-10052: NASA-

(E82-10052; NASA-CR-168633) Avail: NTIS HC A02/MF A01 CSCL 05B

An overview of the remote sensing procurement process is presented for chief executives, senior administrators, and other local and state officials responsible for purchasing remote sensing products, services, or equipment. Guidelines are provided for planning, organizing, staffing, and implementing such a procurement project. Other sections of the four-volume package are described and their benefits examined.

A.R.H.

N82-20626# Inter-American Geodetic Survey, Fort Sam Houston,

REMOTE SENSING IN LATIN AMERICA: TECHNOLOGY AND MARKETS FOR THE 1980'S

Lawrence J. Jungman Aug. 1981 16 p refs

(AD-A108784) Avail: NTIS HC A02/MF A01 CSCL 22/2

A review is made on the impact of satellite derived remote sensing data in Latin America. Data availability has generated a phenomenal growth in the user community in Latin America, and new sensor systems planned and proposed are viewed as a further impetus to an increased market in the Americas. The international institutionalization of remote sensing interests in the area is an indicator submitted as a viable force in the continued, future market and transfer of technology. The availability of required training and funding for special projects by these institutions is reviewed. Proposals are made for special training to prepare for increased digital and cartographic applications that will be required in the expanded users market of the 1980s. GRA

N82-21660*# Washington Univ., St. Louis, Mo. Center for Development Technology.

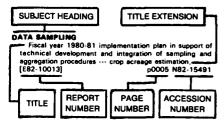
PROGRAM ON STIMULATING OPERATIONAL PRIVATE SECTOR USE OF EARTH OBSERVATION SATELLITE INFORMATION Final Report, 1 Nov. 1979 - 15 Jan. 1981 Lester F. Eastwood, Jr., Jerry Foshage, Guillermo Gomez, Becky Kirkpatrick, Barry Konig, and Robert Stein, Principal Investigators 15 Jan. 1981 216 p refs Original contains imagery. Original photography may be purchased from the EROS Data Center, Sioux Falls, S.D. 57198. ERTS (Contract NASw-3331)

(E82-10131: NASA-CR-168515: NAS 1.26:168515) Avail: NTIS HC A10/MF A01 CSCL 05B

Ideas for new businesses specializing in using remote sensing and computerized spatial data systems were developd. Each such business serves as an information middleman', buying raw satellite or aircraft imagery, processing these data, combining them in a computer system with customer-specific information, and marketing the resulting information products. Examples of the businesses the project designed are: (1) an agricultural facility site evaluation firm; (2) a mass media grocery price and supply analyst and forecaster; (3) a management service for privately held woodlots; (4) a brokerage for insulation and roofing contractors, based on infrared imagery; (5) an expanded real estate information service. In addition, more than twenty-five other commercially attractive ideas in agribusiness, forestry, mining, real estate, urban planning and redevelopment, and consumer information were created. The commercial feasibility of the five business was assessed. This assessment included market surveys, revenue projections, cost analyses, and profitability studies. The results show that there are large and enthusiastic markets willing to pay for the services these businesses offer, and that the businesses could operate profitably. M.G.

JULY 1982

Typical Subject Index Listing



The subject heading is a key to the subject content of the document. The title is used to provide a description of the subject matter. When the title is insufficiently descriptive of the document content. the title extension is added, separated from the title by three hyphens. The (NASA or AIAA) accession number and the page number are included in each entry to assist the user in locating the abstract in the abstract section (of this supplement). If applicable, a report number is also included as an aid in identifying the document. Under any one subject heading, the accession numbers are arranged in sequence with the AIAA accession numbers appearing first.

ACCURACY

Modern methods for monitoring and controlling the timeliness, accuracy, and completeness meteorological analysis p007 p0073 A82-19179 Landsat classification accuracy assessment procedure

p0137 A82-20412

Using known map category marginal frequencies to

improve estimates of thematic map accuracy p0113 A82-25456

ADRIATIC SEA

Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ n0076 A82-27661

LANDSAT imagery of the Venetian Lagoon:

poral analysis multite [E82-10036] p0119 N82-19612

AERIAL PHOTOGRAPHY

An airphoto key for major tropical crop

p0058 A82-22142

Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049

AERIAL RECONNAISSANCE

p0126 A82-22148 Satellite Earth resources data, module U-3

[E82-10035] p0119 N82-19611 National High-Altitude Photography (NHAP) of the

Tennessee Valley Region, volume 1, no. [PB82-130899] p0134 N82-21703

AEROSOLS

The use of the airborne lidar system 'ALEX F 1' for aerosol p0073 A82-20226 tracing in the lower troposphere The NASA participation in the 1980 EPA PEPE/NEROS field measurements program D0075 A82-26621

Effect of aerosols on optical remotely sensed data n0115 A82-27654

Demonstration of a long-range atmospheric tracer system [PB82-106246]

p0081 N82-16613 Sounding the aerosol distribution over the Upper Rhine Valley in the Valley in the Speyer area by means of lidar p0079 N82-20782

Ore deposits in Africa and their relation to the underlying n0090 A82-26604 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 n0075 A82-26700

Preliminary models of the core field --- geomagnetic models [E82-10129]

AGRICULTURE

n0087 N82-21659

remote sensing in resources identification and land use in India - An integrated approach

p0076 A82-27701 Examination of the operational pro-

sensing --- in Europe [ESA-CR(P)-1476] nO138 N82-18669 Elevation of a cane-growing Paulo using LANDSAT data
[E82-10077] rowing area of the state of Sao

p0067 N82-20600 System of forecasting agricultural crops using satellite

p0067 N82-20602 [E82-10079] Sovbean canopy reflectance as influenced by cultural ractices --- West Lafayette, Indiana

A look at the commonly used LANDSAT vegetation

[E82-10123] p0070 N82-21657 Sonora exploratory study for the detection of wheat-leaf

[E82-10133] p0070 N82-21661 Spectral-agronomic relationships of corn, soybean and

wheat canopies [F82-10143] p0070 N82-21670

A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect p0069 N82-21648 FR2-101071

AGROMETEOROLOGY

Data base requirements in support of crop model p0060 A82-27588 Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634

The use of the airborne lidar system 'ALEX F 1' for a tracing in the lower troposphere p0073 A82-20226 Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999

An investigation of the ozone plume from a small city p0074 A82-26329

A regional air quality model for the Kwinana industrial area of Western Australia n0075 A82-26403 The NASA participation in the 1980 EPA PEPE/NEROS

field measurements program n0075 A82-26621 Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152

Demonstration of a long-range atmospheric tracer system perfluorocarbons [PB82-106246] p0081 N82-16613

Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary

[PB82-115122] p0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. plume 2: Data

[PB82-115130] p0066 N82-19716

Sounding the aerosol distribution over the Upper Rhine Valley in the Valley in the Speyer area by means of lida p0079 N82-20782

AIR QUALITY

A regional air quality model for the Kwinana industrial area of Western Australia p0075 A82-26403 p0075 A82-26403

AIR SAMPLING

An investigation of the ozone plume from a p0074 A82-26329

AIR WATER INTERACTIONS

Structure and variability of the Alboran Sea frontal system n0093 A82-20447 SASS measurements of the Ku-band radar signature of the ocean p0093 A82-21917 the ocean

Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921

Optimal spatial filtering and transfer function for SAR ocean wave spectra p0094 A82-27596

Estimation of sea surface temperature from remote sensing in the 3.7 micron window region p0095 A82-28031

Estimating ocean-air heat fluxes during cold air outbreaks by satellite

[NASA-TM-83854] p0097 N82-19781

AIRBORNE/SPACEBORNE COMPUTERS

The Seasat low rate data processing sys D0093 A82-24061

Strategies and uses of small distributed analysis centers as in the natural resource inventory of Ve

f Venezuela p0115 A82-27636

Utilization of spatial complexity in computer classified Landsat MSS data for multi-factoral thema nematic mapping p0129 A82-27648

Development and implementation of a low cost micro computer system for Landsat analysis and geographic data p0129 A82-27649 ase application

Structure of hardware and software at a regional center the automated processing of p0130 A82-28128 remote-sensing images

Complex of units for the storage and automated rocessing of research data p0131 A82-28140

Landsat thermal imaging of alpine regi

p0079 A82-22147 Ground-truth observations of ice-covered North Slope

radar [NASA-TM-84127] nO107 N82-18664

ALBEDO

Optical properties of snow n0101 A82-21922 Low-latitude cloudiness and climate feedback

Comparative estimates from satellite data p0075 A82-26980

Albedo and brightness coefficients of snow cove p0103 A82-27465

Spectral albedos of midlatitude sn

[NASA-TM-83858] p0106 N82-18663

ALFALFA

Simple radiative transfer model for relationships b p0057 A82-20422 canopy biomass and reflectance Dew and vapor pressure as complicating factors in the

Dew and vapor pressure as company properties of spectral radiance from crops p0060 A82-27617

ALGAE

Spectrometric studies of the water composition of Lake p0104 A82-27474 Inland water quality assessment from Landsat data

p0105 A82-27610 HCMM hydrological analysis in Utah --- Utah lake p0107 N82-20586 [F82-10063]

ALGEBRA

Exterior algebraic processing for remotely sensed multispectral and multitemporal images

p0112 A82-21041

ALGORITHMS

Context dependent modeling --- for reremote sensing data p0114 A82-27587 processing Automatic and semi-automatic classification of Landsat

agricultural crops
Fanning - A classification p0061 A82-27664 algorithm for mixture landscapes applied to Landsat data of Maine forests

p0062 A82-27668 Simplified algorithm for calculating radiative transfer in

satellite images [INPE-2169-RPE/385] p0118 N82-16450 NOSS altimeter algorithm specifications p0095 N82-16683 [NASA-RP-1083]

An evaluation of ISOCLS and CLASSY clustering algorithms for forest classification in northern Idaho .- Elk River quadrange of the Clearwater National Forest [E82-10109] p0069 N82-21650

ALLUVIUM

Measurement of river sediments [WMO-561]

o0107 N82-18670 ALPS MOUNTAINS (EUROPE)

Towards the definition of optimum se for microwave remote sensing of snow tion of optimum sensor specifications p0125 A82-21035

AMAZON REGION (SOUTH AMERICA)

Sigma/deg/ signature of the Amazon rain forest obtain from the Seasat scatterometer p0125 A82-21 p0125 A82-21027 Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas --- Brazil [E82-10069] p0078 N82-20592

ANALYSIS OF VARIANCE

Development of rotation sample designs for the estimation of crop acreages

[E82-10117] p0070 N82-21654 Determination of the optimal level for combining area

[E82-10146]

ANGULAR DISTRIBUTION Regional properties of angular reflecta p0083 N82-17599

p0071 N82-21673

SUBJECT INDEX

ANNUAL VARIATIONS ANNUAL VARIATIONS Low-latitude cloudiness and climate feedback -Comparative estimates from satellite data p0075 A82-26980 A study of model parameters associated with the urban climate using HCMM data --- analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 ANTARCTIC REGIONS Ionospheric troughs in Antarctica p0073 A82-21217 Satellite-derived ice data sets no. 1: Antarctic monthly Satellite-deprete the data sets inc. 1. Authartuct monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976
[NASA-TM-83812] p0096 N82-17563
[Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] p0086 N82-20585 Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data p0087 N82-21674 ANTENNA DESIGN The microwave radiometer spacecraft. A design study:
Executive summary p0131 N82-16154
Mission definition for a large-aperture microwave ANTENNA RADIATION PATTERNS
Contact Contact Context sensitive formulations of antenna pattern correction and side lobe compensation for NOSS/LAMMR p0122 N82-21457 AQUIFERS Use of Landsat imagery to delineate glaciofluvial aquifers p0105 A82-27637 in southeast South Dakota ARABIAN SEA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 ARCHAEOLOGY Locating prehistoric archaeological sites using Landsat p0129 A82-27638 Applications of aircraft and satellite data for the study rchaeology and environment - Mekong Delta, Vietna p0091 A82-27705 ARCTIC OCEAN The use of data from satellite-borne microwave scanning radiometers for the automated compilation of operational maps of ice cover for the Arctic Ocean p0095 A82-28145 ARGENTINA The Pampean Plain studied with Landsat images p0089 A82-26013 Natural resources inventories by computer-satellite mapping techniques in Chaco State, Argentine South America [E82-10058]

p0116 A82-27688 Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they

p0065 N82-19633 Sample selection in foreign similarity regions for multicrop [E82-10118] p0070 N82-21655

The 1981 Argentina ground data collection 82-10127| p0070 N82-21658 [E82-10127] ARIZONA

Cliff and slope topography of part of the Grand Canyon, Arizona as characterized on a Seasat radar image p0082 A82-26843

Applications systems verification and transfer project. Volume 2: Operational applications of satellite snow-cover observations and data-collection systems in the Arizona

[NASA-TP-1823] p0108 N82-20618 ARTIFICIAL INTELLIGENCE

An intelligent earth sensing information system p0137 A82-22149 ASHES

Detection of volcanic ash fall area from Landsat MSS CCT data Eruption of Mt. Ontake in 1979

p0076 A82-27650

Potential use of space photographs obtained from the manned orbital station Salyut-5 in order to compile a set of small-scale thematic maps of mountain and piedmont regions of Central Asia p0083 A82-28139 ASTRONOMICAL COORDINATES

Correlation identification of stellar configurations for purposes of the coordinate referencing of aerial and space images p0117 A82-28141

ATLANTIC OCEAN The use of Meteor-satellite oceanography

image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal p0093 A82-20447 system Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 n0075 A82-26700

High precision radiometric temperature measurements the ocean surface p0094 A82-27640 of the ocean surface Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold [BLL-TRANS-1509-(9022.552)] p0097 N82-19756

Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil

[INPE-2307-TDL/074] p0097 N82-19778 Interaction between the Agulhas current and the subtropical convergence [CSIR-RR-384] n0098 N82-20824

Surface wave statistics and spectra during high sea state conditions in the North Atlantic

(AD-A109832) p0098 N82-20827 ATMOSPHERIC ATTENUATION

Dew and vapor pressure as complicating factors in the interpretation of spectral radiance from crops p0060 A82-27617 Simplified algorithm for calculating radiative transfer in

satellite images [INPE-2169-RPE/385] nO118 N82-16450

Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected

pixels from satellite data [E82-10154] p0123 N82-21678

ATMOSPHERIC CHEMISTRY

Mid-latitude summertime measurements of stratosp NO2 n0074 A82-25149

ATMOSPHERIC CIRCULATION Multidimensional aspects: Ozone, temperature and

p0081 N82-18772 ATMOSPHERIC COMPOSITION

A regional air quality model for the Kwinana industrial ea of Western Australia p0075 A82-26403 Stratospheric instruments and analy p0133 N82-18776

ATMOSPHERIC DIFFUSION

Diffusion model of cloud cover and its ts use in the analysis p0111 A82-20347 of satellite operations

Demonstration of a long-range atmospheric tracer system using perfluoroca [PB82-106246] carbons n0081 N82-16613

ATMOSPHERIC EFFECTS Diffusion model of cloud cover and its use in the analysis p0111 A82-20347 of satellite operations Contrast reduction by the atmosphere and retrieval of

nonuniform surface reflectance p0112 A82-20423
Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data

p0125 A82-21091 Spaceborne photography for the study of earth resources
Russian book p0126 A82-22397 Influence of illumination and viewing geometry and the 'tasseled cap' atmospheric composition on the tasseled cap transformation of Landsat MSS data p0059 A82-24961 Effect of aerosols on optical remotely sensed data

p0115 A82-27654 ATMOSPHERIC HEAT BUDGET

Low-latitude cloudiness and climat Comparative estimates from satellite data climate feedback

p0075 A82-26980 ATMOSPHERIC MODELS Effect of aerosols on optical remotely sensed data p0115 A82-27654

Multidimensional aspects: Ozone, temperature and p0081 N82-18772 transport
ATMOSPHERIC MOISTURE

Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921

ATMOSPHERIC OPTICS

Effect of aerosols on optical remotely p0115 A82-27654

ATMOSPHERIC RADIATION

Measurement of atmospheric emission using a balloon-borne cryogenic Fourier spectrometer p0074 AB2-21432

Particle precipitation and atmospheric X-and Gamma-rays in the South Atlantic magnetic anomaly by balloon experiments

[JNPE-2119-RPE/343] n0083 N82-17711

ATMOSPHERIC SCATTERING

Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21091

Microwave remote sensing: Active and passive. Volume 1 - Microwave remote sensing fundamentals and radiometry p0126 A82-22877 -- Book An approach to path radiance correction in MSS p0115 A82-27629

images The effect of finite field size on classification and

atmospheric correction [NASA-TM-83818] p0120 N82-19645

ATMOSPHERIC SOUNDING

Observation of the turbulent structure in the planetary boundary layer with a kytoon-mounted ultrasonic anemometer system p0125 A82-21082 Sounding the aerosol distribution over the Upper Rhine
Valley in the Valley in the Speyer area by means of lidar

ATMOSPHERIC TEMPERATURE

Multidimensional aspects: Ozone, temperature and posport p0081 N82-18772 transport MSU test of P-model o0121 N82-20614 AURORAL ZONES

p0079 N82-20782

Ionospheric troughs in Antarctica p0073 A82-21217

AURORAS

Recent auroral measurements using a field-widened terferometer spectrometer p0126 A82-21434 interferometer spectrometer AUSTRALIA

A regional air quality model for the Kwinana industrial area of Western Australia p0075 A82-26403 Inland water quality assessment from p0105 A82-27610

Topographic mapping using Landsat data

p0082 A82-27615 A vegetation response model applied to range inventory and monitoring using Landsat MSS data

p0060 A82-27643 Now cost NOAA/TIROS AVHRR receiving station ---Advanced Very High Resolution Radiometer

An aerial survey of water turbidity and laser depth sounding performance along the Queensland Coast

n0098 N82-19802 [AD-A109050] Sample selection in foreign similarity regions for multicrop experiments

n0070 N82-21655 [F82-10118]

TOCORRELATION

Precision in the evaluation of Landsat autocorrelation p0116 A82-27686 The terrain effect

В

BACKSCATTERING

Influence of dissolved organic materials on turbid water optical properties and remote-sensing reflectance

Volumetric effects in cross-polarized airborne radar p0058 A82-21032 Crop classification using sighers. Crop classification using airborne radar and Landsat p0058 A82-21033
Application and experimental verification of an empirical backscattering cross section model for the earth's surface

p0081 A82-21036
A radar signature model for partially coherent scattering from irregular surfaces p0079 A82-21038

Microwave remote sensing: Active and passive. Volume 1 - Microwave remote sensing fundamentals and radiometry p0126 A82-22877

Remote sensing of rainfall rates using airborne microwave Active microwave investigation of snowpacks:

Experimental documentation, Colorado 1979-1980

Experimental documentation, Colorado 19/9-1980
[MASA-CR-166727]
Satellite scatterometer feasibility study. Volume 2: Data extraction algorithm and error simulation for wind sensor ... Earth Resources Satellite (ERS 1)
[ESA-CR(P)-1492-VOL-2] p0133 N82-19651
Atlas of the global distribution of the total ozone consentation according to satellite measurement.

concentration according to satellite measurements p0078 N82-19740 [MITT-28]

BANGLADESH

Digital processing of tropical forest habitat in Bangladesh and the development of a low cost processing facility at the National Zoo, Smithsonian Institution

p0063 A82-27687 Assessment of change in Bangladesh coastal regions p0076 A82-27696

Documentation of computer procedures for labeling spring grains and discriminating between spring wheat and barley using LANDSAT data
[E82-10030] p0063 N82-16448

AgRISTARS: Foreign commodity production forecasting. Minutes of the annual formal project manager's revincluding preliminary technical review reports of F experiments wheat/barley and corn/soybean

p0064 N82-19614

BAYS (TOPOGRAPHIC FEATURES)

Multidisciplinary research on the application of remote sensing to water resources problems --- Wisconsin [E82-10021] p0106 N82-16439 Ship and satellite bio-optical research in the California

Bight [NASA-CR-168681] DO098 N82-20823 BIBLIOGRAPHIES

Publications and reports on contracts and grants, 1980 [PB82-103219] p0138 N82-17792 BIOGRAPHY

Wolf: On the occasion of his 70th birthday p0084 N82-19603 Helmut W [SER-E-18]

BIOMASS

Simple radiative transfer model for relationships between p0057 A82-20422 canopy biomass and reflectance Multispectral photographic remote sensing of green vegetation biomass and productivity p0059 A82-22144

BIRDS Remote sensing applications to resource problems in South Dakot

[E82-10027] nO132 N82-16445 BLIGHT

Sonora exploratory study for the detection of wheat-leaf [E82-10133]

p0070 N82-21661 BOUNDARIES

Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686

CHLOROPHYLLS

function of view and p0061 A82-27645

p0070 N82-21657

n0071 N82-21671

p0108 N82-20619

SUBJECT INDEX Towards the definition of optimum sensor specifications for microwave remote sensing of snow Microwave radiation peculiarities of vegetative covers p0058 A82-21029 BRAZIL Use of Landsat data for automatic classification and area estimation of sugar-cane plantation in Sao Paulo state.

Brazil p0058 A82-21092 p0125 A82-21035 Investigation of the vegetative covers on ploughed areas SLAR p0058 A82-21031 Ontical properties of snow n0101 A82-21922 by SLAR A structural synthesis of Brazil, based on the study of An optical model for the microwave properties of sea The estimation of the surface moisture of a vegetated soil using aerial infrared photography p0058 A82-21093 major linearments derived from remote sensing imagery interpretation p0079 A82-26012 [NASA-TM-83865] p0095 N82-17561 Multispectral photographic remote sensing of green vegetation biomass and productivity p0059 A82-22144 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 CNPq/INPE: LANDSAT system --- operations at the Cuiaba station and the electronic processing and photo Stochastic models of cover class dynamics --- remote sensing of vegetation p0059 A82-27586 laboratories [E82-10023] | NASA-TM-83812| p0096 N82-17563 |
| Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 |
| FOA-C-30240-E1/E3| p0133 N82-18672 | nO118 N82-16441 Dew and vapor pressure as complicating factors in the interpretation of spectral radiance from crops p0060 A82-27617 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at Landsat feature enhancement - Or, can we separate getation from soil p0060 A82-27622 [E82-10024] p0091 N82-16442 Building and road extraction from aerial photographs p0074 A82-25140 vegetation from soil Remote sensing data applied to land-use survey at the Paraiba Valley --- Brazil [E82-10025] p0081 N82-16443 Enhancement of Landsat data for Hudson Bay lowlands getation p0114 A82-27623 vegetation Soybean canopy reflectance as a Soybean canupy removed illumination geometry p0061 A82-2/0+5 The influence of illumination and viewing geometry on the reflectance factor of agricultural targets p0061 A82-27646 Brazilian remote sensing activities, current and C rospective needs [F82-10026] p0132 N82-16444 CALCIUM CARBONATES The severity of the Brazilian freeze of July 1981, as Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980 monitored by satellite An invertible coniferous forest canopy reflectance odel p0062 A82-27679 Influence of solar illumination angle on soybean canopy p0063 A82-28153 [INPE-2231-RPE/399] p0064 N82-17746 p0105 A82-27634 Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they The accuracy potential of the modern bundle block The accuracy potential of the modern bundle block adjustment in aerial photogrammetry p0111 A82-20401 Calibration and model reconstruction in analytical close-range stereophotogrammetry. I - Mathematical fundamentals p0111 A82-20403 Calibration and model reconstruction in analytical close-range stereophotogrammetry. II - Special evaluation procedures for rasterstereography and moire topography p0126 A82-23141 reflectance reflectance p0063 A82-28153
The application of remote sensing to resource management and environmental quality programs in Kansas --- Cimarron National Grasslands, Prairie Potawatomi [E82-10058] p0065 N82-19633 [E82-10029] p0063 N82-16447
Thermal vegetation canopy model studies
[A0-A106422] p0064 N82-16455
Effects of nitrogen nutrition on the growth, yield and reflectance characteristics of corn canopies --- Purdue Agronomy Farm, Indiana
[E82-10068] Notes for Brazil sampling frame evaluation trip [E82-10060] p0066 N82-19635
Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas --- Rio Grande do p0126 A82-22141
Radiometric calibration of the Coastal Zone Color Scanner Sul. Brazil
[INPE-2197-PRE/006] p0066 NB2-19639
Preliminary results of a study of mapping thermal discharge in the ocean, using remote sensing data [INPE-2229-PRE/021] p0097 NB2-19704
Convergence zones in the South Atlantic and their on Nimbus 7 - A proposed adjustment p0127 A82-26963 Ground level reflectance measurement techniques - An Dryland pasture and crop conditions as seen by HCMM Washita River watershed evaluation with emphasis on the importance of spectral calibration p0116 A82-27689 [E82-10074] p0067 N82-20597 Soybean canopy reflectance as influenced by cultural practices --- West Lafayette. Indiana [E82-10105] p0068 N82-21647 influence on the precipitation regime in Northeastern Ozone measurements to 48Km with chemilumines [INPE-2307-TDL/074] ozone detectors The utilization of orbital images as an adequate form of control of preserved areas --- Araguaia National Park, p0134 N82-21808 [AD-A110342] A look at the commonly used LANDSAT vegetation CALIFORNIA Techniques for combining Landsat and ancillary data indices [E82-10123] [E82-10065] digital classification improvement p0111 A82-20410
A relation between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle n0078 N82-20588 Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas --- Brazil Spectral-agronomic relationships of corm, soybean and wheat canopies
[E82-10143] p0070 N82-21670 ir zenith angle p0114 A82-26841 Scene analysis for wildland fire-fuel characteristics in a Simulated response of a multispectral scanner over wheat [E82-10069] n0078 N82-20592 Scene analysis for wildland fire-fuel characteristics in a Mediterranean climate p0060 A82-27624 Session III of the VLBI/Laser intercomparison task of the NASA crustal dynamics project [NASA-Cr.168427] p0083 N82-17708 Applications systems verification and transfer project. Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 --- maps, Brazil function of wavelength and view/illumination [E82-10144] Variability of reflectance measurements with sensor altitude and canopy type
[E82-10145] p0071 N82-21672
Applications of HCMM satellite data to the study of urban heating patterns
[E82-10161] p0080 N82-21685 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed Volume 3: Operational applications of satellite snow cover -- Brazil [F82-10072] n0079 N82-20595 observations in California observations in California [NASA-TP-1824] p0108 N82-20619 HCMM: Soil moisture in relation to geologic structure and lithology, northern California --- Northern Coast Range, Sacramento Valley, and the Mooc Plateau [E82-10135] p0092 N82-21662 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and CASCADE BANGE (CA.OR.WA) southeast of the state of Sao Paulo --- Brazil [E82-10076] p0092 N82-20599
Elevation of a cane-growing area of the state of Sao
Paulo using LANDSAT data Applications systems verification and transfer project.
Volume 3: Operational applications of satellite snow cover observations in California [NASA-TP-1824] CANADA Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 ... Mato Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139 [NASA-TP-1824]
CASPIAN SEA
Survey and mapping of shallow water bodies and the distribution of the river runoff of solids on the basis of multispectral aerial and space photographs
p0103 A82-27467 The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409
Change detection in the Peace-Athabasca Delta using digital Landsat data p0101 A82-24959
The Canadian north - Utility of remote sensing for environmental monitoring p0074 A82-24962
A timely and accurate potato acreage estimate from Grosso do Sul, Brazil [E82-10078] p0067 N82-20601 The LANDSAT system operated in Brazil by CNPq/INPE Polarimetric method for the remote sensing of oil slicks p0095 A82-28135 - results obtained in the area of mapping and future on the sea surface CATALOGS (PUBLICATIONS) p0121 N82-20603 Dynamic study of the upper San Francisco River and Landsat - Results of a demonstration p0060 A82-27621
Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 acquisition year 1979 [E82-10032] the Tres Marias reservoir using MSS/LANDSAT images over Canada
Western Canada
Wistern C [E82-10082] CELESTIAL GEODESY p0108 N82-20605 Sample selection in foreign similarity regions for multicrop experiments
[E82-10118] p0070 N82-21655 BRIGHTNESS Analysis of the direction-dependent radiation behavior Analysis of the direction-dependent radiation denawor in multispectral scanning data p0.125 A82-2.1399
The spectral reflectance of certain soils --- Russian book p0.059 A82-25577
Evaluation of snow-cover pollution in industrial regions using satellite TV images p0.103 A82-27464
Landsat feature enhancement - Or. can we separate vegetation from soil p0.060 A82-27522
A look at the commonly used LANDSAT vegetation inclinae. Canada --- thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698

Development of a Canadian thermal infrared forest fire mapping operational program p0063 A82-27699 Seasat-A Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada
[E82-10070] p0079 N82-20593 p0079 N82-20593 Relief effects and the use of terrain models in SAR image processing --- Anderson River test site, British Columbia p0070 N82-21657

AgRISTARS: Interim catalog ground data summary, data p0064 N82-19608 Orbital methods of celestial geodesy --- Russian book DO079 A82-25234
CELESTIAL REFERENCE SYSTEMS
Correlation identified purposes of the coordinate referencing of aerial and space images p0117 A82-28141 CENTRAL PROCESSING UNITS Overview of digital processing of SAR data --- from p0128 A82-27589 Features of a generalized digital Synthetic Aperture Rada p0128 A82-27595 Scene analysis for wildland fire-fuel characteristics in a Mediterranean climate p0060 A82-27624 CHEMILUMINESCENCE p0060 A82-27624 [E82-10123] BRIGHTNESS DISTRIBUTION p0086 N82-21475 Ozone measurements to 48Km with chemiluminescent CANALS Albedo and brightness coefficients of snow cover ozone detectors [AD-A110342] Applications of aircraft and satellite data for the study of archaeology and environment - Mekong Delta, Vietnam p0091 A82-27705 p0134 N82-21808 **BRIGHTNESS TEMPERATURE** CHESAPEAKE BAY (US) Soil moisture determination - Experiments with passive microwave radiometers p0057 A82-19529 The relationship among sea surface roughness variations, oceanographic analyses, and airborne remote sensing Microwave radiation from a natural snow field p0101 A82-19559 CANOPIES (VEGETATION) Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 analyses [NASA-CR-168444] n0096 N82-17798 CHLOROPHYLLS

Ship and satellite bio-optical research in the California Microwave brightness temperature pattern over the Mapping in tropical forests - A new approach using the laser APR --- Airborne Profile Recorder Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard Bhaskara p0093 A82-19560 D0081 A82-20407 [NASA-CR-168681] n0098 N82-20823 Theoretical and experimental studies of microwave p0125 A82-21034 Simple radiative transfer model for relationships between monv biomass and reflectance p0057 A82-20422 As-built design specification for PARHIS
[E82-10089] p01 p0122 N82-21641 emission signatures of snow canony biomass and reflectance A-3

SUBJECT INDEX NESSATOODADIIV

CINEMATOGRAPHY		20BJECT INDEX
CINEMATOGRAPHY	Evaluation of a segment-based LANDSAT full-frame	Methods of editing cloud and atmospheric layer affected
Photogrammetry from aircraft side camera movies -	approach to corp area estimation	pixels from satellite data
Winter MONEX p0075 A82-26721	[E82-10067] p0066 N82-20590	[E82-10046] p0119 N82-19621 COASTAL WATER
A system for quantitative determination of species and	Land use in the Paraiba Valley through remotely sensed data Brazil	A photometric method for depth determination by aerial
vitalities of urban trees on color-infrared photographs	[E82-10072] p0079 N82-20595	photography p0101 A82-19831
p0074 A82-24958	An algorithm for spatial heirarchy clustering	An approach to path radiance correction in MSS
Analysis of two Seasat synthetic aperture radar images of an urban scene p0074 A82-25452	[E82-10081] p0121 N82-20604	images p0115 A82-27629 A formation process of an oceanic vortex analyzed by
An investigation of the ozone plume from a small city	As-Built design specification for UNIV4VEC [E82-10085] p0122 N82-21637	multi-temporal remote sensing p0095 A82-27674
p0074 A82-26329	US com and soybeans exploratory experiment	Imaging microwave radiometer. Phase A study. Volume
Phenomena modelling of remotely sensed data by image rationing p0076 A82-27670	[E82-10088] p0068 N82-21640	1: Executive summary instrument for the European Remote Sensing system payload
Visual and digital analysis of H.C.M.M. data over eastern	As-built design specification for PARHIS	[ESS/SS-1006] p0132 N82-18564
Canada thermal imagery by Heat Capacity Mapping	[E82-10089] p0122 N82-21641	Coastal upwelling ecosystems analysis. Atlas of the
Mission p0117 A82-27698 The effect of finite field size on classification and	As-built design specification for PARCLS [E82-10090] p0123 N82-21642	JOINT I aircraft winds for the 500 foot level [PB82-114703] p0097 N82-19796
atmospheric correction	As-built design specification for MISMAP	An aerial survey of water turbidity and laser depth
[NASA-TM-83818] p0120 N82-19645	[E82-10091] p0123 N82-21643	sounding performance along the Queensland Coast
A study of model parameters associated with the urban	As-built design specification for the CLASFYG program	(AD-A109050) p0098 N82-19802 Ship and satellite bio-optical research in the California
climate using HCMM data [E82-10159] p0080 N82-21683	[E82-10092] p0068 N82-21644 An evaluation of ISOCLS and CLASSY clustering	Bight
A study of model parameters associated with the urban	algorithms for forest classification in northern Idaho Elk	[NASA-CR-168681] p0098 N82-20823
climate using HCMM data analysis of St. Louis, Missouri	River quadrange of the Clearwater National Forest	COASTAL ZONE COLOR SCANNER Radiometric calibration of the Coastal Zone Color Scanner
infrared imagery [E82-10160] p0080 N82-21684	[E82-10109] p0069 N82-21650	on Nimbus 7 - A proposed adjustment
Applications of HCMM satellite data to the study of urban	Transition year labeling error characterization study Kansas, Minnesota, Montana, North Dakota, South Dakota,	p0127 A82-26963
heating patterns	and Oklahoma	COASTS
[E82-10161] p0080 N82-21685 CLASSIFICATIONS	[E82-10111] p0069 N82-21651	Integrated sensor system for collection of wave data applied to coastal engineering design p0094 A82-27602
Landscape mapping and physical-geographical	AgRISTARS: Supporting research. Classification of corn: Badhwar profile similarity technique us corn belt	Assessment of change in Bangladesh coastal regions
classification of the eastern part of the Chechen-Ingush,	[E82-10150] p0071 N82-21676	p0076 A82-27696
A6SR using space imagery p0073 A82-20339 Automation of the processing of aerial and space images	CUFFS	Applications of aircraft and satellite data for the study of archaeology and environment - Mekong Delta, Vietnam
for forest inventory p0057 A82-20350	Cliff and slope topography of part of the Grand Canyon, Arizona as characterized on a Seasat radar image	p0091 A82-27705
Techniques for combining Landsat and ancillary data for	p0082 A82-26843	Examination of the operational prospects for remote
digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures	CLIMATE	sensing in Europe [ESA-CR(P)-1476] p0138 N82-18669
p0137 A82-20412	Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping	Heat Capacity Mapping Mission (HCMM) program: Study
Crop classification using airborne radar and Landsat	Mission p0117 A82-27698	of geological structure of Sicily and other Italian areas
data p0058 A82-21033 Maximum likelihood estimation of label imperfection	Application of satellite frost forecast technology to other	Sardinia and the Gulf of Orosei [E82-10073] p0091 N82-20596
probabilities and its use in the identification of mislabeled	parts of the United States, phase 2, introduction p0121 N82-20608	COHERENT SCATTERING
patterns p0112 A82-21040	Freeze prediction model Pennsylvania	A radar signature model for partially coherent scattering
Information extraction from remotely sensed data - A user view p0112 A82-21089	p0067 N82-20609	from irregular surfaces p0079 A82-21038 Coherent scatter of microwaves from moderately rough
Use of Landsat data for automatic classification and area	Applicability of satellite freeze forecasting and cold climate mapping to the other parts of the United States	surfaces
estimation of sugar-cane plantation in Sao Paulo state,	Michigan p0068 N82-20613	[AD-A106133] p0095 N82-16331
Brazil p0058 A82-21092 The use of contextual information to improve land cover	MSU test of P-model p0121 N82-20614	COLD WEATHER The severity of the Brazilian freeze of July 1981, as
classification of digital remotely sensed data	A satellite frost forecasting system for Florida p0079 N82-20615	monitored by satellite
p0112 A82-21094	CLIMATOLOGY	[INPE-2231-RPE/399] p0064 N82-17746
A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs	Low-latitude cloudiness and climate feedback -	Use of thermal inertia determined by HCMM to predict nocturnal cold prone areas in Florida
p0074 A82-24958	Comparative estimates from satellite data p0075 A82-26980	[E82-10040] p0064 N82-19615
Change detection in the Peace-Athabasca Delta using	Climate observing system studies: An element of the	Application of satellite frost forecast technology to other
digital Landsat data p0101 A82-24959 Spectral reflectance of hydrophytes p0102 A82-24960	NASA Climate Research Program: Workshop report	parts of the United States, phase 2, introduction
Building and road extraction from aerial photographs	[NASA-TM-84040] p0078 N82-18808 Application of satellite frost forecast technology to other	p0121 N82-20608 COLOR CODING
p0074 A82-25140	parts of the United States, phase 2 Pennsylvania,	Development and implementation of a low cost micro
Modeling misregistration and related effects on multispectral classification p0113 A82-25455	Michigan, and Florida	computer system for Landsat analysis and geographic data
Using known map category marginal frequencies to	[NASA-CR-166827] p0121 N82-20607 A study of model parameters associated with the urban	base application p0129 A82-27649
improve estimates of thematic map accuracy	climate using HCMM data	Matrix data analysis: Color/B and W coding is not always enough
p0113 A82-25456 Use of Landsat-derived temporal profiles for corn-soybean		
	[E82-10159] p0080 N82-21683	[AD-A108406] p0084 N82-18930
feature extraction and classification p0059 A82-26842	[E82-10159] p0080 N82-21683 A study of model parameters associated with the urban	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro	[E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data	[882-10159]	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649	[E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [E82-10160] p0080 N82-21684 CLOUD COVER	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [882-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP snow/cloud discrimination sensor p0130 A82-27653 Detailed land use classification based on multitemporal	[E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [E82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP snow/cloud discrimination sensor p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data	[882-10159] p0080 N82-21683 A study of model parameters associated with the urben climate using HCMM data analysis of S1. Louis. Missouri infrared imagery [882-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data Automatic and semi-automatic classification of Landsat	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of S1. Louis. Missouri infrared imagery [882-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-186727] p0107 N82-19646
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP snow/cloud discrimination sensor p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [882-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data	[AD-Ā108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project.
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests	[E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [E82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-186727] p0107 N82-19646
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application of a 1.6 micrometer DMSP snow/cloud discrimination sensor p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [822-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometre DMSP snow/cloud discrimination sensor Detailed land use classification based on multitemporal Landsat-MSS-data p0016 A82-27653 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission Images over Canada Heat Capacity Mapping Mission (HCMM): Interpretation (HCM	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project.
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27657 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0161 A82-27677	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 (NASA-CR-166727) p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometer DMSP pnow/cloud discrimination sensor Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27653 Automatic and semi-automatic classification of Landsat agricultural crops p0076 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission Images over Canada Heat Capacity Mapping Mission (HCMM): Interpretation (HCM	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project.
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27657 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0164 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [822-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 (NASA-CR-166727) p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometre DMSP snow/cloud discrimination sensor Detailed land use classification based on multitemporal Landsat-MSS-data p0016 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0016 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine	[82-10159] p0080 N82-21683 A study of model parameters associated with the urben climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p016 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [82-10070] p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields ··· Oregon.
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27657 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0164 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-2680 Interpretation of Heat Capacity Mapping Mission images over Canada p0075 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data p0122]	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 (NASA-CR-166727] p0107 N82-19646 A pplications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields Oregon. Texas, Montana. Nebraska, Washington. Colorado, Kansas,
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometre DMSP snow/cloud discrimination sensor Detailed land use classification based on multitemporal Landsat-MSS-data p0016 A82-27653 Automatic and semi-automatic classification of Landsat agricultural crops p0016 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data Remote sensing data applied to land-use survey at the	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [882-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [PR80-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [882-10070] p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [882-1012] P0123 N82-21656 Methods of editing cloud and atmospheric layer affected	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations. [NASA-TP-1828] Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083]
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27657 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0061 A82-27680 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data Remote sensing data applied to land-use survey at the Paraiba Valley Brazil	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback -Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [82-10070] p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [82-1012] Methods of editing cloud and atmospheric layer affected pixels from satellite data [82-10124] p0123 N82-21678	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 (NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields Oregon. Texas, Montana. Nebraska, Washington, Colorado. Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometre DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025]	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [882-10070] p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [882-10122] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [882-10154] Atlas of METEOSAT imagery	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20620 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometre DMSP snow/cloud discrimination sensor p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0164 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil p0081 N82-16443 A comparison of unsupervised classification propedures on LANDSAT MSS data for an area of complex surface	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission Images over Canada p0075 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [182-10070] p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data p123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [182-10122] p0123 N82-21678 Attas of METEOSAT imagery [1936-1930] p0124 N82-21700	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 (NASA-CR-166727) p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields Oregon. Texas, Montana. Nebraska, Washington, Colorado. Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometre DMSP snow/cloud discrimination sensor Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27653 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-1025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicate, Southern Italy	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [PR80-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] p0123 N82-21678 Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHS	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] p0068 N82-21649
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landsacapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0164 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy p0119 N82-19613	[882-10159] p0080 N82-21683 A study of model parameters associated with the urben climate using HCMM data analysis of St. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [1880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [182-10172] Methods of editing cloud and atmospheric layer affected pixels from satellite data [182-10154] p0123 N82-21658 Methods of editing cloud and atmospheric layer affected pixels from satellite data [182-10154] p0123 N82-21678 Attas of METEOSAT imagery [183-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHS Attas of METEOSAT imagery [185A-SP-1030] p0124 N82-21700	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields Oregon. Texas, Montana. Nebraska, Washington. Colorado. Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometre DMSP snow/cloud discrimination sensor Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27653 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-1025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicate, Southern Italy	[E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [E82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada Heat Capacity Mapping Mission images over Canada [E82-10070] p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10154] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10159] p0123 N82-21678 Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHS Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation. Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover (NASA-TP-1825) p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations (NASA-TP-1825) p0109 N82-20620 Registration verification of SEA/AR fields Oregon. Texas, Montana. Nebraska, Washington. Colorado. Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 p0073 A82-19826
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometre DMSP snow/cloud discrimination sensor p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27654 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p1016 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy [E82-10038] Taxonomic classification of world map units in crop producting areas of Argentina and Brazil with representative US soil series and major land resource areas in which they	[82-10159] p0080 N82-21683 A study of model parameters associated with the urben climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission Images over Canada p0075 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20593 Dust from the Sahara in satellite images p079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHS Atlas of METEOSAT imagery [ESA-SP-1030] P0124 N82-21700 CLOUD PHOTOGRAPHY Photogrammetry from aircraft side camera movies	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields Oregon. Texas. Montana. Nebraska, Washington. Colorado. Kansas, Oklahoma, and North Dakota [E82-10083] p068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometre DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0061 A82-27664 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27684 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicate, Southern Italy [E82-10038] Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they occur	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p016 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [182-10070] p0079 N82-20593 Dust from the Sahara in satellite images p079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [182-10122] methods of editing cloud and atmospheric layer affected pixels from satellite data [182-10154] Atlas of METEOSAT imagery [183-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHY Photogrammetry from aircraft side camera movies Winter MONEX p0075 A82-26721 CLOUD PHYSICS	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20620 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 COMMERCE Program on stimulating operational private sector use of Earth observation satellite information
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometer DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0061 A82-27665 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata. Southern Italy [E82-10038] p0119 N82-19613 Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they occur	[82-10159] p0080 N82-21683 A study of model parameters associated with the urben climate using HCMM data analysis of St. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p186-256761 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [182-10172] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [182-10154] p0123 N82-21678 Atlas of METEOSAT imagery [183-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHY Photogrammetry from aircraft side camera movies - Winter MONEX p0075 A82-26721 CLOUD PHYSICS Development and applications of techniques to process	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20620 Applications of SEA/AR fields ··· Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] p0069 N82-21649 COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 COMMERCE Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometre DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27664 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy [E82-10038] p0119 N82-19613 Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they occur [E82-10058] p0065 N82-19633 The effect of finite field size on classification and atmospheric correction	[82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of S1. Louis, Missouri infrared imagery [182-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p016 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [182-10070] p0079 N82-20593 Dust from the Sahara in satellite images p079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [182-10122] methods of editing cloud and atmospheric layer affected pixels from satellite data [182-10154] Atlas of METEOSAT imagery [183-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHY Photogrammetry from aircraft side camera movies Winter MONEX p0075 A82-26721 CLOUD PHYSICS	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20620 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 COMMERCE Program on stimulating operational private sector use of Earth observation satellite information
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application Orbital performance of a 1.6 micrometer DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27657 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0062 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy [E82-10038] p0119 N82-19613 Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they occur [E82-10058] p0065 N82-19633 The effect of finite field size on classification and atmospheric correction [NASA-TM-83818] p0120 N82-19645	[882-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [E82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [PR80-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada p0116 A82-27671 Heat Capacity Mapping Mission images pover Canada p018-20593 Dust from the Sahara in satellite images p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20802 Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] p0123 N82-21678 Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHY	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation. Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20620 Registration verification of SEA/AR fields ··· Oregon. Texas, Montana. Nebraska, Washington. Colorado. Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] p0069 N82-21649 COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 COMMERCE Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 COMPUTER COMPATIBLE TAPES Partially processed multispectral scanner LANDSAT high-density tapes reformating system (HDT-AM/AMC)
feature extraction and classification p0059 A82-26842 Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 Orbital performance of a 1.6 micrometre DMSP p0130 A82-27653 Detailed land use classification based on multitemporal Landsat-MSS-data p0076 A82-27664 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 Fanning - A classification algorithm for mixture tandscapes applied to Landsat data of Maine forests p0062 A82-27668 Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy [E82-10038] p0119 N82-19613 Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they occur [E82-10058] p0065 N82-19633 The effect of finite field size on classification and atmospheric correction	[E82-10159] p0080 N82-21683 A study of model parameters associated with the urben climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 CLOUD COVER Satellite observed cloud patterns associated with excessive precipitation outbreaks [P80-215130] p0073 A82-19177 Diffusion model of cloud cover and its use in the analysis of satellite operations p0111 A82-20347 Low-latitude cloudiness and Comparative estimates from satellite data p0075 A82-26980 Interpretation of Heat Capacity Mapping Mission Images over Canada p016 A82-27671 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20593 Dust from the Sahara in satellite images p0079 N82-20565 Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] p0123 N82-21656 Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] p0123 N82-21678 Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHS Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700 CLOUD PHOTOGRAPHY Photogrammetry from aircraft side camera movies - Winter MONEX Development and applications of techniques to process hydrometeor distribution data [AD-A109929] p0109 N82-20822	[AD-Ā 108406] p0084 N82-18930 COLOR INFRARED PHOTOGRAPHY Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611 COLORADO Effect of aerosols on optical remotely sensed data p0115 A82-27654 Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1826] p0108 N82-20620 Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82-10108] p0069 N82-21649 COLORIMETRY Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 COMMERCE Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] COMPUTER COMPATIBLE TAPES Partially processed multispectral scanner LANDSAT

N

SUBJECT INDEX		CROP IDENTIFICATION
COMPUTER GRAPHICS	Wetland mapping from digitized aerial photography	Effects of nitrogen nutrition on the growth, yield and
A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26050	Sheboygan Marsh, Wisconsin [E82-10019] p0118 N82-16437	reflectance characteristics of corn canopies Purdue Agronomy Farm, Indiana
Utilization of spatial complexity in computer classified	A satellite frost forecasting system for Florida	[E82-10068] p0067 N82-20591
Landsat MSS data for multi-factoral thematic mapping p0129 A82-27648	p0079 N82-20615 Context sensitive formulations of antenna pattern	US com and soybeans exploratory experiment [E82-10088] p0068 N82-21640
The role of computer graphics in geographic research	correction and side lobe compensation for NOSS/LAMMR real time processing	The 1981 Argentina ground data collection
p0117 A82-27923 Computer-assisted photo interpretation research at	[NASA-CR-166789] pO122 N82-21457	[E82-10127] p0070 N82-21658 Spectral-agronomic relationships of corn, soybean and
USAETL	Sonora exploratory study for the detection of wheat-leaf rust	wheat canopies
[AD-A109366] p0121 N82-20628 The design and implementation of an operational,	[E82-10133] p0070 N82-21661 COMPUTERIZED SIMULATION	[E82-10143] p0070 N82-21670 Variability of reflectance measurements with sensor
computer-based weather radar system rainfall maps	Accuracy of the normal case of close-range	altitude and canopy type
[RSRE-MEMO-3151] p0122 N82-21499 A digital technique for constructing variable-width lines	photogrammetry p0126 A82-22140 Simulation and studies of spaceborne synthetic aperture	[E82-10145] p0071 N82-21672 Determination of the optimal level for combining area
[AD-A110287] p0087 N82-21689	radar image quality with reduced bit rate	and yield estimates [E82-10146] p0071 N82-21673
Experiences with digital terrain elevation data contouring programs	p0128 A82-27594 Satellite scatterometer feasibility study. Volume 2: Data	AgRISTARS: Supporting research. Classification of corn:
[AD-A110280] p0087 N82-21690	extraction algorithm and error simulation for wind sensor Earth Resources Satellite (ERS 1)	Badhwar profile similarity technique us corn belt [E82-10150] p0071 N82-21676
COMPUTER PROGRAMS Automatic linear recognition and analysis using computer	[ESA-CR(P)-1492-VOL-2] p0133 N82-19651	CORRELATION
program LIRA sateflite imagery for earth observations p0090 A82-27612	CONFERENCES International Symposium on Remote Sensing of	Profiling sensitivity to image quality [AD-A108405] p0084 N82-18931
Scene analysis for wildland fire-fuel characteristics in a	Environment, 15th, University of Michigan, Ann Arbor, MI, May 11-15, 1981, Proceedings, Volumes 1, 2 & 3	CORRELATION COEFFICIENTS
Mediterranean climate p0060 A82-27624 Implementation of the Space Oblique Mercator projection	p0127 A82-27576	Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454
in a production environment p0129 A82-27628 ELAS - A geobased information system that is	Precipitation measurements from space - Workshop summary 28 April-1 May 1981, Greenbelt, MD	CORRELATION DETECTION
transferable to several computers Earth resources	p0077 A82-28295	Correlation identification of stellar configurations for purposes of the coordinate referencing of aerial and space
Laboratory Applications Software p0115 A82-27666 Documentation of computer procedures for labeling	AgRISTARS: Foreign commodity production forecasting. Minutes of the annual formal project manager's review,	images p0117 A82-28141
spring grains and discriminating between spring wheat and	including preliminary technical review reports of FY80 experiments wheat/barley and corn/soybean	COST EFFECTIVENESS Some problems concerning the effective use of remote
barley using LANDSAT data [E82-10030] p0063 N82-16448	experiments	sensing p0137 A82-26123
Photogrammetry software. A package for everyone	[E82-10039] p0064 N82-19614 SAR image quality conference, Frascati, Italy, 11-12	Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on
AgRISTARS: Early warning and crop condition	Dec. 1980; synthetic aperture radar (SAR)	operational applications of satellite snow-cover observations
assessment. Patch image processor user's manual [E82-10055] p0065 N82-19630	CONFORMAL MAPPING	[NASA-TP-1828] p0109 N82-20623
Development and applications of techniques to process	Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628	CROP CALENDARS Wheat stress indicator model, Crop Condition Assessment
hydrometeor distribution data [AD-A109929] p0109 N82-20822	CONGRESSIONAL REPORTS	Division (CCAD) data base interface driver, user's manual
Ground registration of data from an airborne scatterometer	Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring	[E82-10031] p0064 N82-19607 AgRISTARS: Foreign commodity production forecasting.
[E82-10084] p0068 N82-21636	[OTA-0-142] p0097 N82-18844 CONIFERS	Minutes of the annual formal project manager's review,
As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models	Remote sensing of the structure of taiga landscapes	including preliminary technical review reports of FY80 experiments wheat/barley and corn/soybean
[E82-10086] p0122 N82-21638	Russian book p0059 A82-27397 An invertible coniferous forest canopy reflectance	experiments [E82-10039] p0064 N82-19614
As-built design specification for PARHIS [E82-10089] p0122 N82-21641	model p0062 A82-27679	Preliminary evaluation of spectral, normal and
As-built design specification for segment map (Sgmap) program	CONTEXT The use of contextual information to improve land cover	meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634
[E82-10094] p0123 N82-21646	classification of digital remotely sensed data p0112 A82-21094	Wheat stress indicator model, Early Warning (EW) data
Wheat stress indicator model, Early Warning (EW) data base interface driver, user's manual	Context dependent modeling for remote sensing data	base interface driver, user's manual [E82-10115] p0069 N82-21652
[E82-10115] p0069 N82-21652 Experiences with digital terrain elevation data contouring	processing p0114 A82-27587 CONTOURS	AgRISTARS: Supporting research. US crop calendars in support of the early warning project
programs	Experiences with digital terrain elevation data contouring programs	[E82-10158] p0072 N82-21682
[AD-A110280] p0087 N82-21690 COMPUTER SYSTEMS PROGRAMS	[AD-A110280] p0087 N82-21690	CROP GROWTH Evaluation of the state of crops from satellite data
As-Built design specification for UNIV4VEC [E82-10085] p0122 N82-21637	Computer based technique for converting a contour map into an equispaced grid of points	p0059 A82-27393
As-built design specification for PARCLS	[RAE-TR-80110] p0087 N82-21697 CONVECTION CURRENTS	Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664
[E82-10090] p0123 N82-21642 As-built design specification for MISMAP	The development and testing of methods to infer	A technique for automatic labeling of Landsat agricultural scene elements by analysis of temporal-spectral patterns
[E82-10091] p0123 N82-21643	midlatitude precipitation intensity from geosynchronous satellite infrared data	p0062 A82-27678
As-built design specification for the CLASFYG program [E82-10092] p0068 N82-21644	[AD-A108881] p0120 N82-19788	Segment-level evaluation of the simulated aggregation test: US corn and soybean exploratory experiment
COMPUTER TECHNIQUES Optimal methods of computerized image conversion	COORDINATE TRANSFORMATIONS - Analytic methods of geodetic referencing of	[E82-10061] p0066 N82-19636
p0111 A82-19833	nontopographic images p0083 A82-28134 COORDINATES	System of forecasting agricultural crops using satellite observations of Earth
Analytical triangulation of space photography p0111 A82-20402	Computer based technique for converting a contour map	[E82-10079] p0067 N82-20602 Freeze prediction model Pennsylvania
Image quality control in the Meteosat ground processing system p0125 A82-21090	into an equispaced grid of points [RAE-TR-80110] p0087 N82-21697	p0067 N82-20609
Use of Landsat data for automatic classification and area	CORN Manual and automatic crop identification with airborne	As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models
estimation of sugar-cane plantation in Sao Paulo state, Brazil p0058 A82-21092	radar imagery p0057 A82-20408	[E82-10086] p0122 N82-21638 AgRISTARS: Agriculture and Resources Inventory
Remote sensing for natural resources: An international	Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842	Surveys Through Aerospace Remote Sensing. Enumerator's
view of problems, promises and accomplishments Book p0137 A82-21875	Potential utility of thematic mapper data in estimating	manual, 1981 ground data survey [E82-10116] p0069 N82-21653
A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143	crop areas p0061 A82-27663 Crop area estimates using ground-gathered and Landsat	CROP IDENTIFICATION Experimental evaluation of methods of the automated
Analog devices for the processing of aerial and space	data A multitemporal approach p0062 A82-27676	interpretation of crops from a Fragment MSS image
images for the study of water resources p0104 A82-27476	Recommended data sets, corn segments and spring wheat segments, for use in program development	p0057 A82-20349 Manual and automatic crop identification with airborne
Topographic mapping using Landsat data p0082 A82-27615	[E82-10034] p0064 N82-19610	radar imagery p0057 A82-20408 Simple radiative transfer model for relationships between
Evaluation of large area crop estimation techniques	AgRISTARS: Foreign commodity production forecasting. Minutes of the annual formal project manager's review.	canopy biomass and reflectance p0057 A82-20422
p0061 A82-27662 Classification of Landsat MSS data for surface cover of	including preliminary technical review reports of FY80 experiments wheat/barley and corn/soybean	The Dutch ROVE program Radar Observation of VEgetation p0057 A82-21026
small areas p0116 A82-27677 Natural resources inventories by computer-satellite	experiments	Crop classification using airborne radar and Landsat
mapping techniques in Chaco State, Argentine Republic,	[E82-10039] p0064 N82-19614 AgRISTARS: Foreign commodity production forecasting.	data p0058 A82-21033 Remote sensing for natural resources: An international
South America p0116 A82-27688 Structure of hardware and software at a regional center	Corn/soybean decision logic development and testing	view of problems, promises and accomplishments Book p0137 A82-21875
for the automated processing of aerial and space	[E82-10056] p0065 N82-19631 Notes for Brazil sampling frame evaluation trip	An airphoto key for major tropical crops
remote-sensing images p0130 A82-28128 Analytic methods of geodetic referencing of	[E82-10060] p0066 N82-19635	p0058 A82-22142 Automatic and semi-automatic classification of Landsat
nontopographic images p0083 A82-28134 Machine implementation of algorithms for the mapping	Segment-level evaluation of the simulated aggregation test: US corn and soybean exploratory experiment	agricultural crops p0061 A82-27664
of soil moisture on the basis of microwave-radiometer	[E82-10061] p0066 N82-19636	A technique for automatic labeling of Landsat agricultural scene elements by analysis of temporal-spectral patterns
measurements p0131 A82-28142 Classification of systems for digital terrain simulation	Evaluation of a segment-based LANDSAT full-frame approach to corp area estimation	p0062 A82-27678 An autodigitizing procedure for ground-data labelling of
p0117 A82-28468	[E82-10067] p0066 N82-20590	Landsat pixels p0062 A82-27682

CROP INVENTORIES SUBJECT INDEX

Documentation of computer procedures for labeling Determination of the optimal level for combining area DATA CORRELATION spring grains and discriminating between spring wheat and and yield estimates [E82-10146] Evaluation of serial photogrammetric camera and aircraft using LANDSAT data p0071 N82-21673 scanner pictures from tidal lands - Digital correlation and [E82-10030] classification of multitemporal imagery data p0127 A82-26049 p0063 N82-16448 AgRISTARS: Supporting research. Classification of corn: AgRISTARS: Foreign commodity production forecasting. Badhwar profile similarity technique --- us corn belt [E82-10150] p0071 N82-: A relation between Landsat digital numbers, surface Corn/soybean decision logic development and testing DO071 N82-21676 reflectance, and the cosine of the solar zenith angle p0114 A82-26841 82-10056) p0065 N82-19631 AgRISTARS: Foreign commodity production forecasting. **CROP VIGOR** AgRISTARS: Soil moisture/early warning and crop condition assessment. Interface control document [E82-10053] p0065 N82-19628 LANDSAT imagery of the Venetian Lagoon:
[E82-10036]
Assessment Project test reports document, volu me 1 --- using North Dakota, South Dakota, Montana, and Minnesota nO118 N82-16452 p0068 N82-21639 AgRISTARS: Early warning and crop condition Transition year labeling error characterization study -assessment. Patch image processor user's manual n0119 N82-19612 Kansas, Minnesota, Montana, North Dakota, South Dakota, [E82-10055] p0065 N82-19630 Assessment of the quality of GATE area rainfall data from a Nimbus-5 radiometer As-built design specification for PARHIS [E82-10111] p0122 N82-21641 [E82-10089] A look at the commonly used LANDSAT vegetation [NASA-CR-168512] p0109 N82-20807 CROSS POLARIZATION indices [E82-10123] Ground registration of data p0070 N82-21657 Volumetric effects in cross-polarized airborne radar p0058 A82-21032 p0068 N82-21636 The 1981 Argentina ground data colle [E82-10084] p0070 N82-21658 CRUSTAL FRACTURES [ER2-10127] DATA MANAGEMENT AgRISTARS: Interim catalog ground data summary, data acquisition year 1979 CROP INVENTORIES Relationship of hydrothermal phenomena within the Use of Landsat data for automatic classification and area Leinster Granite to crustal fractures delineated from Landsai p0089 A82-26015 [E82-10032] estimation of sugar-cane plantation in Sao Paulo state n0064 N82-19608 razil p0058 A82-21092
Use of Landsat-derived temporal profiles for corn-soybean CRYOGENIC COOLING DATA PROCESSING The Seasat low rate data processing system Development of a breadboard cooler for infrared remote Influence of illumination and viewing geometry and atmospheric composition on the tasseled cap transformation of Landsat MSS data p0059 A82-24961 p0059 A82-26842
Data base requirements in support of crop models
p0060 A82-27588 feature extraction and classification sensing payloads, phase 1 --- Earth Resources Satellite [FOK-RV-R-81-064] p0134 N82-19653 A timely and accurate potato acreage estimate from Landsat - Results of a demonstration p0060 A82-27621 **CULTURAL RESOURCES** Mapsat compared to other earth-ser e of close-range p0126 A82-22140 nsing concepts p0128 A82-27581 Accuracy of the normal case photogrammetry A vegetation response model applied to and monitoring using Landsat MSS data d to range inventory Information expectations from Landsat-D Locating prehistoric archaeological sites using Landsat p0129 A82-27638 Donext dependent modeling policy for remote sensing data coessing policy A82-27583 Overview of digital processing of SAR data -- from p0060 A82-27643 Evaluation of large area crop estimation techniques p0061 A82-27662 **CZECHOSLOVAKIA** Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Potential utility of thematic mapper data in estimating pop areas p0061 A82-27663 P0128 A82-27589
Features of a generalized digital Synthetic Aperture Radar occssor p0128 A82-27595 crop areas
Crop area estimates using ground-gathered and Landsat Seasat-A D Brazilian remote sensing activities, Strategies and uses of small distributed analysis centers current prospective needs
[E82-10026] p0132 N82-16444
AgRISTARS: Interim catalog ground data summary, data as in the natural resource inventory of Venezuela
p0115 A82-27636
Detection of volcanic ash fall area from Landsat MSS DATA ACQUISITION Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis p0073 A82-19179 isition year 1979 CCT data Eruption of Mt. Ontake in 1979 p0076 A82-27650 Orbital performance of a 1.6 micrometer DMSP p0130 A82-27653 p0064 N82-19608 Recommended data sets, corn segments and spring An intelligent earth sensing information system p0137 A82-22149 wheat segments, for use in program developm snow/cloud discrimination sensor p0130 A82
Detailed land use classification based on multite [E82-10034] p0064 N82-19610 AgRISTARS: Foreign commodity production forecasting. Some problems concerning the effective use of remote p0137 A82-26123 University of Dundee satellite image data acquisition and Minutes of the annual formal project manager's review archiving facility p0130 A82-27659
A low cost NOAA/TIROS AVHRR receiving station --ng preliminary technical review reports of FY80 nents --- wheat/barley and corn/soybean University of Dundee satellite image data acquisition and p0130 A82-27659 niving facility experiments Advanced Very High Resolution Radiomete Data collection platforms: Applications to hydrology NPE-2246-PRE/030] p0107 N82-19304 experiments p0064 N82-19614 DO130 A82-27681 [E82-10039] [INPE-2246-PRE/030] Notes for Brazil sampling frame evaluation trip

[E82-10060] p0066 N82-19635

Segment-level evaluation of the simulated aggregation Precision in the evaluation of Landsat autocorrelation the terrain effect p0116 A82-27686
Non-parametric classification of abandoned coal mine Precinitation assessment from environmental satellite The terrain effect northwest Libya including the Gefara plan p0107 N82-19790 [RSC-4] US corn and soybean exploratory experiment p0066 N82-19636 features using multioriented and ratio transformed Landsat An introduction to image processing at Royal Aircraft Establishment, Farnborough, England --- U.S. and European ta p0090 A82-27694 Structure of hardware and software at a regional center Utilization of Aerochrome 2443 film for identification satellite imagery aerial and space p0130 A82-28128 and estimating wheat growing areas --- Rio Grande do for the automated processing of aerial [RAE-TR-80107] n0122 N82-21565 remote-sensing images AgRISTARS: Agriculture and Resources Inventory The structure and basic parameters of a satellite system [INPE-2197-PRE/006] p0066 N82-19639
Evaluation of a segment-based LANDSAT full-frame Surveys Through Aerospace Remote Sensing. Enumerator's manual, 1981 ground data survey for the remote sensing of earth resources approach to corp area estimation p0131 A82-28129 [E82-10116] p0069 N82-21653 [E82-10067] p0066 N82-20590
Survey of the cane-growing area of the state of Sao
Paulo using LANDSAT data, Safra Year 1979/80, volume
2 --- maps, Brazil
[E82-10071] p0067 N82-20594 p0066 N82-20590 The earth resources program for the long-term orbital ation Safyut 6 p0131 A82-28132 A multiband radiometer and data acquisition system for station Salyut 6 nsing field research remote sensin [E82-10142] Partially processed multispectral scanner LANDSAT p0134 N82-21669 igh-density tapes reformatting system (HDT-AM/AMC) Some altimetric signatures from Seasat over the design specifications [E82-10020] Elevation of a cane-growing area of the state of Sao mid-Pacific Seamount Range p0118 N82-16438 Paulo using LANDSAT data

[E82-10077] p0067 N82-20600

Registration verification of SEA/AR fields --- Oregon. [AD-A110419] p0099 N82-21691 ter algorithm specifications p0095 N82-16683 NOSS altimo p0067 N82-20600 DATA BASES [NASA-RP-1083] Data base requirements in support of crop models Study of synthetic aperture radar in 2D - 2FS operation over the ocean --- European Remote Sensing system [ESA-CR(P)-1475] p0132 N82-18481 i, Montana, Nebraska, Washington, Colorado, Kansas, orna, and North Dakota p0060 A82-27588 A data base of geologic field spectra p0068 N82-21635 p0090 A82-27600 [E82-10083] As-Built documentation of programs to implement the Usage and limitations of characteristic vector analysis Robertson and Doraiswamy/Thompson mode [E82-10086] p0122 An evaluation of the utility of smaller Landsat resolution of remote sensing multispectral data for the identification and quantification of water quality parameters elements / Resolution of Landsat resolution/ p0114 A82-27625 p0122 N82-21638 ameters p0118 N82-18656 .82-10086]
AgRISTARS: Foreign commodity production forecasting. Development and implementation of a low cost micro Project test reports document, volume 1 Dakota, South Dakota, Montana, and Min Magsat science investigations [E82-10045] Minnesota p0068 N82-21639 [E82-10087] ations of medium wavelength magnetic in the Eastern Pacific using Magsat data p0119 N82-19622 University of Dundee satellite image data acquisition and chiving facility p0130 A82-27659 Investigations US corn and soybeans exploratory experiment [E82 10088] p0068 N82-21640 archiving facility [E82-10047] DATA COLLECTION PLATFORMS As-built design specification for PARCLS The LANDSAT system operated in Brazil by CNPq/INPE A microcomputer for control of data collection platforms - GOES satellites [E82-10090] p0123 N82-21642 results obtained in the area of mapping and future As-built design specification for the CLASFYG program 82-10092| p0068 NB2-21644 p0133 N82-18881 [INPE-2104-RPE/331] [E82-10080] [E82-10092] p0121 N82-20603 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-19304 Project communications/documentation standards As-built design specification for segment map (Sgmap) p0107 N82-19304 program [E82-10094] manual [E82-10093] DATA COMPRESSION n0123 N82-21646 p0068 N82-21645 Study of Earth Resources Satellite (ERS) data reduction Methods of editing cloud and atmospheric layer affected AgRISTARS: Agriculture and Resources Inventory Surveys Through Aerospace Remote Sensing. Enumerator's manual, 1981 ground data survey pixels from satellite data [BAE-TP-7905] n0120 N82-19649 [E82-10154] p0123 N82-21678 Data rate reduction. Impact of image data compression on end to end data management of a multispectral payload p0069 N82-21653 [E82-101'6] DATA RECORDING Proposed digital cartridge recording system for WRELADS --- laser airborne depth sounder Development of rotation sample designs for the for satellite imagery estimation of crop acreages [E82-101-7] [REPT-44/130] pO120 N82-19654 p0134 N82-20491 D0070 N82-21654 [AD-A109484] An algorithm [E82-10081] ithm for spatial heirarchy clustering p0121 N82-20604 DATA REDUCTION
Use of GOES and TIROS/NOAA satellite Sample selection in foreign similarity regions for multicrop Interpretation of remotely sensed image data and impact [F82-10118] p0070 N82-21655 of cluster compression --- impact of cluster compression: snow-cover mapping p0101 A82-22145

Imaging the earth. I - The troubled first decade of andsat p0137 A82-27169

[E82-10127]

The 1981 Argentina ground data collection p0070 N82-21658

users [REPT-44.2866]

n0124 N82-21699

SUBJECT INDEX EARTH (PLANET)

OODSECT TIEDEX		CANTO (I CANCI)
Digital correlation of DDRS data	DENSITY DISTRIBUTION	Construction of digital models of statistically uniform
[NASA-CR-167494] p0118 N82-16452 Studies related to Magsat Backus effect and the	Information theory lateral density distribution for Earth inferred from global gravity field	characteristics on the basis of multispectral space imagery p0117 A82-28144
westward drift	[NASA-TM-83825] p0085 N82-19731 DEPTH MEASUREMENT	Digital correlation of DDRS data
[E82-10050] p0085 N82-19625 Improved definition of crustal anomalies for Magsat	A photometric method for depth determination by aerial	[NASA-CR-167494] p0118 N82-16452 Matrix data analysis: Color/B and W coding is not always
data	photography p0101 A82-19831 Ground-truth observations of ice-covered North Slope	enough
[E82-10051] p0085 N82-19626 Study of Earth Resources Satellite (ERS) data reduction	Lakes imaged by radar	[AD-A108406] p0084 N82-18930 The LANDSAT system operated in Brazil by CNPq/INPE
unit	[NASA-TM-84127] p0107 N82-18664 An aerial survey of water turbidity and laser depth	- results obtained in the area of mapping and future
[BAE-TP-7905] p0120 N82-19649 The Office for Remote Sensing of Earth Resources ···	sounding performance along the Queensland Coast	perspectives [E82-10080] p0121 N82-20603
Pennsylvania p0121 N82-20612	[AD-A109050] p0098 N82-19802 Some altimetric signatures from Seasat over the	Computer-assisted photo interpretation research at
Development and applications of techniques to process	mid-Pacific Seamount Range	USAETL [AD-A109366] p0121 N82-20628
hydrometeor distribution data [AD-A109929] p0109 N82-20822	[AD-A110419] p0099 N82-21691 DESERTS	Relief effects and the use of terrain models in SAR image
An evaluation of ISOCLS and CLASSY clustering	Color characteristics of the earth's surface determined	processing Anderson River test site, British Columbia p0086 N82-21475
algorithms for forest classification in northern Idaho Elk River quadrange of the Clearwater National Forest	on the basis of spectroscopy results from Salyut 4 p0073 A82-19826	As-built design specification for segment map (Sgmap)
[E82-10109] p0069 N82-21650	DIELECTRIC PROPERTIES Mixture formulas applied in estimation of dielectric and	program [EB2-10094] p0123 N82-21646
Compatibility study of the MAGSAT data and aeromagnetic data	radiative characteristics of soils and grounds at microwave	A digital technique for constructing variable-width lines
[E82-10136] p0123 N82-21663	frequencies p0058 A82-21030 Dielectric properties of snow	[AD-A110287] p0087 N82-21689 Computer based technique for converting a contour map
Continuation of potential field data to a common altitude magsat data	[NASA-CR-166764] p0107 N82-19638	into an equispaced grid of points
[E82-10138] p0123 N82-21665	DIGITAL DATA The use of digital multi-date Landsat imagery in terrain	[RAE-TR-80110] p0087 N82-21697 DISASTERS
Separation of internal and external fields: A new technique of data screening MAGSAT data	classification p0111 A82-20409	Detection of natural disasters via Meteosat
[E82-10139] p0123 N82-21666	The use of contextual information to improve land cover classification of digital remotely sensed data	p0075 A82-27040 DISCRIMINANT ANALYSIS (STATISTICS)
DATA SAMPLING Sampling for thematic map accuracy testing	p0112 A82-21094	The logit classifier - A general maximum likelihood
p0111 A82-20411	A relation between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle	discriminant for remote sensing applications p0128 A82-27591
Landsat classification accuracy assessment procedures p0137 A82-20412	p0114 A82-26841	DISCRIMINATION
Development of rotation sample designs for the	Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations	Methods of editing cloud and atmospheric layer affected pixels from satellite data
estimation of crop acreages [E82-10117] p0070 N82-21654	p0090 A82-27612 Remote sensing in Latin America: Technology and	[E82-10154] p0123 N82-21678 DIURNAL VARIATIONS
Sample selection in foreign similarity regions for multicrop	markets for the 1980's	HCMM detection of high soil moisture areas by diurnal
experiments	[AD-A108784] p0138 N82-20626 Experiences with digital terrain elevation data contouring	temperature observation p0059 A82-24963 Ideal phase in estimating the spatial gradient of magnetic
[E82-10118] p0070 N82-21655 DATA SMOOTHING	programs	daily variations recorded by magnetometer arrays
Determination of the optimal level for combining area	[AD-A110280] p0087 N82-21690 DIGITAL FILTERS	p0127 A82-26000 Diurnal variation of summer convection over West Africa
and yield estimates [E82-10146] p0071 N82-21673	Increase in correlation accuracy of remote sensing	and the Tropical Eastern Atlantic during 1974 and 1978
DATA STORAGE	imagery by digital filtering p0113 A82-25454 DIGITAL RADAR SYSTEMS	p0075 A82-26700 Interpretation of Heat Capacity Mapping Mission images
Complex of units for the storage and automated processing of research data p0131 A82-28140	Simulation and studies of spaceborne synthetic aperture	over Canada p0116 A82-27671
DATA SYSTEMS	radar image quality with reduced bit rate p0128 A82-27594	Influence of solar illumination angle on soybean canopy reflectance p0063 A82-28153
ELAS - A geobased information system that is transferable to several computers Earth resources	DIGITAL SIMULATION	Use of thermal inertia determined by HCMM to predict
Laboratory Applications Software p0115 A82-27666	Classification of systems for digital terrain simulation p0117 A82-28468	nocturnal cold prone areas in Florida [E82-10040] p0064 N82-19615
Flexible processing of remote sensing data through integration of image processing and geobased information	Watershed model study using LANDSAT data p0106 N82-17602	On the accuracy of thermal inertia mapping by infrared
systems p0116 A82-27667	DIGITAL SYSTEMS	imagery [SAAB-REPR-AE-10] p0120 N82-19656
A microcomputer for control of data collection platforms GOES satellites	Proposed digital cartridge recording system for WRELADS laser airborne depth sounder	Comparison of storm-time changes of geomagnetic field at ground and at MAGSAT altitudes
[INPE-2104-RPE/331] p0133 N82-18881	[AD-A109484] p0134 N82-20491	[E82-10148] p0087 N82-21675
Wheat stress indicator model, Early Warning (EW) data base interface driver, user's manual	DIGITAL TECHNIQUES Techniques for combining Landsat and ancillary data for	Use of thermal inertia determined by HCMM to predict nocturnal cold prone areas in Florida The Everglades
[E82-10115] p0069 N82-21652	digital classification improvement p0111 A82-20410	agricultural area, Lake Okeechobee, and the Suwanee River
Future Earthnet Dissemination Systems (FEDS) study. Executive summary remote sensing data transmission	Information extraction from remotely sensed data - A user view p0112 A82-21089	basin [E82-10157] p0071 N82-21681
[REPT-3318] p0124 N82-21698	Digital photography techniques p0112 A82-21398	DOPPLER EFFECT Experiments in satellite Doppler control positioning at
DATA TRANSMISSION Future Earthnet Dissemination Systems (FEDS) study.	Classification of ice radar imagery p0113 A82-22891	sea p0086 N82-20581
Executive summary remote sensing data transmission	Change detection in the Peace-Athabasca Delta using digital Landsat data p0101 A82-24959	DOPPLER RADAR Recovering ocean waveheight from HF radar sea echoes
[REPT-3318] p0124 N82-21698 DAYTIME	Evaluation of serial photogrammetric camera and aircraft	distorted by imperfect ionospheric reflection
Registration of heat capacity mapping mission day and night images p0113 A82-22146	scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data	[PB82-113283] p0096 N82-17805 DRAINAGE
DECIDUOUS TREES	p0127 A82-26049	Use of thermal inertia determined by HCMM to predict
A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs	A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26050	nocturnal cold prone areas in Florida The Everglades agricultural area, Lake Okeechobee, and the Suwanee River
p0074 A82-24958	Methods for the processing of synthetic-aperture radar	basin [E82-10157] p0071 N82-21681
DEER Application of remote sensing to state and regional	signals when solving problems of the national economy /Review/ p0113 A82-26726	DRAINAGE PATTERNS
problems mississippi	An automatic optimum kernel-size selection technique	Application of side-looking color infrared photography for structure detection in subtle topography
[E82-10033] p0078 N82-19609 DEFORESTATION	for edge enhancement p0113 A82-26840	p0082 A82-27611
Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources	Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595	Watershed model study using LANDSAT data p0106 N82-17602
in Amazonas Brazil	Enhancement of Landsat data for Hudson Bay lowlands vegetation p0114 A82-27623	Methodology of the interpretation of remote sensing data and applications in pedology
[E82-10069] p0078 N82-20592 DELAWARE	vegetation p0114 A82-27623 The use of digital terrain model in the rectification of	[INPE-2211-MD/008] p0078 N82-19641
Locating prehistoric archaeological sites using Landsat	satellite-borne imagery p0115 A82-27626	Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images
p0129 A82-27638 DELAWARE BAY (US)	Forest change detection p0061 A82-27644 Digital analysis of spatial and spectral features from	Brazil
Evaluation of HCMM satellite data for estuarine tidal	airborne MSS of a forested region p0061 A82-27647	[E82-10082] p0108 N82-20605 DROUGHT
circulation patterns and thermal inertia soil moisture measurements Delaware Bay, Cooper River, and the	Detection of volcanic ash fall area from Landsat MSS CCT data Eruption of Mt. Ontake in 1979	Satellite sensing for extraction of groundwater resources
Potomac River estuaries: Luverne, Minnesota, soil moisture,	p0076 A82-27650	information p0105 A82-27613 DUST STORMS
and water temperature of Lake Anna, Virginia [E82-10064] p0108 N82-20587	An autodigitizing procedure for ground-data labelling of Landsat pixels p0062 A82-27682	Dust from the Sahara in satellite images
DELTAS Change detection in the Peace-Athabasca Delta using	Digital processing of tropical forest habitat in Bangladesh	p0079 N82-20802
digital Landsat data p0101 A82-24959	and the development of a low cost processing facility at	-
Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839	the National Zoo, Smithsonian Institution p0063 A82-27687	E
Assessment of change in Bangladesh coastal regions	Visual and digital analysis of H.C.M.M. data over eastern	
p0076 A82-27696 Applications of aircraft and satellite data for the study	Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698	EARTH (PLANET) Information theory lateral density distribution for Earth
of archaeology and environment - Mekong Delta, Vietnam	The role of computer graphics in geographic research	inferred from global gravity field
p0091 A82-27705	p0117 A82-27923	[NASA-TM-83825] p0085 N82-19731

ΕX

EARTH ALBEDO		SUBJECT INDEX
EARTH ALBEDO	Instruments watch for impending earthquakes	Polarimetric method for the remote sensing of oil slicks
Regional properties of angular reflectance models p0083 N82-17599	p0131 A82-28342 EAST GERMANY	on the sea surface p0095 A82-28135 Instruments watch for impending earthquakes
EARTH AXIS	Interpretation of multispectral aerial photographs of Lake	p0131 A82-28342
Developments in geodesy within the scope of Helmut Wolf's work p0084 N82-19604	Mueggelsee p0104 A82-27473 Spectrometric studies of the water composition of Lake	Multidisciplinary research on the application of remote sensing to water resources problems Wisconsin
EARTH CORE	Mueggelsee p0104 A82-27474	[E82-10021] p0106 N82-16439
Investigation of geomagnetic field forecasting and fluid dynamics of the core	ECOLOGY	Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice
[É82-10162] p0087 N82-21686 EARTH CRUST	Topographic mapping using Landsat data p0082 A82-27615	concentrations, 1973 - 1976
Ring structures in the earth's crust, and their significance	ECOSYSTEMS	[NASA-TM-83812] p0096 N82-17563 Publications and reports on contracts and grants, 1980
for geology and methods for their investigation p0091 A82-28136	Remote sensing of the structure of taiga landscapes Russian book p0059 A82-27397	[PB82-103219] p0138 N82-17792
Session III of the VLBI/Laser intercomparison task of	EDGES	Imaging microwave radiometer. Phase A study. Volume 1: Executive summary instrument for the European
the NASA crustal dynamics project [NASA-CR-168427] p0083 N82-17708	A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26050	Remote Sensing system payload
Satellite and surface geophysical expression of anomalous	An automatic optimum kernel-size selection technique	[ESS/SS-1006] p0132 N82-18564 Measurement of river sediments
crustal structure in Kentucky and Tennessee [NASA-TM-82163] p0084 N82-17715	for edge enhancement p0113 A82-26840 EDITING	[WMO-561] p0107 N82-18670
Electromagnetic deep-probing (100-1000 KMS) of the	Methods of editing cloud and atmospheric layer affected	A microcomputer for control of data collection platforms GOES satellites
Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources	pixels from satellite data [E82-10046] p0119 N82-19621	[INPE-2104-RPE/331] p0133 N82-18881
[E82-10043] p0084 N82-19618 Electromagnetic deep-probing (100-1000 KMS) of the	Methods of editing cloud and atmospheric layer affected	General configuration and internal disposition of equipment in a satellite for collecting environmental data
Earth's interior from artificial satellites: Constraints on the	pixels from satellite data [E82-10154] p0123 N82-21678	[INPE-2240-PRE/026] p0078 N82-19256
regional emplacement of crustal resources [E82-10044] p0085 N82-19619	EDUCATION	Resourceful decisions: LANDAT in Michigan [E82-10037] p0078 N82-19601
Use of Magsat anomaly data for crustal structure and	Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at	The utilization of orbital images as an adequate form of
mineral resources in the US midcontinent [E82-10049] p0091 N82-19624	INPE	control of preserved areas Araguaia National Park, Brazil
Investigation of Antarctic crust and upper mantle using	[E82-10024] p0091 N82-16442 ELECTRIC POWER PLANTS	[E82-10065] p0078 N82-20588
MAGSAT and other geophysical data [E82-10062] p0086 N82-20585	Remote sensing of sulfur dioxide effects on vegetation.	Applications systems verification and transfer project. Volume 1: Operational applications of satellite snow cover
Investigation of antarctic crust and upper mantle using	Volume 2: Data [PB82-115130] p0066 N82-19716	observations: Executive summary usefulness of satellite
MAGSAT and other geophysical data [E82-10147] p0087 N82-21674	ELECTRO-OPTICAL PHOTOGRAPHY	snow-cover data for water yield prediction [NASA-TP-1822] p0108 N82-20617
Use of MAGSAT anomaly data for crustal structure and	Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633	Applications systems verification and transfer project.
mineral resources in the US midcontinent [E82-10152] p0092 N82-21677	ELECTRO-OPTICS	Volume 2: Operational applications of satellite snow-cover observations and data-collection systems in the Arizona
EARTH MANTLE Ore deposits in Africa and their relation to the underlying	Digital photography techniques p0112 A82-21398 ELECTROMAGNETIC ABSORPTION	test site
mantle p0090 A82-26604	On randomly absorbing and scattering surface layers	[NASA-TP-1823] p0108 N82-20618 Optimal network density for atmospheric recording
Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the	p0079 A82-21037	p0079 N82-20776
regional emplacement of crustal resources	Electromagnetic deep-probing (100-1000 KMS) of the	Sounding the aerosol distribution over the Upper Rhine Valley in the Valley in the Speyer area by means of lidar
[E82-10044] p0085 N82-19619 Gravity and geoid anomalies of the Philippine Sea:	Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources	p0079 N82-20782
Evidence on the depth of compensation for the negative	[E82-10043] p0084 N82-19618	Remote sensing for water resources and hydrology: An assessment of the Corps of Engineers' program
residual water depth anomaly [NASA-CR-168639] p0085 N82-19732	Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the	[PB82-137142] p0110 N82-21704
Investigation of geomagnetic field forecasting and fluid	regional emplacement of crustal resources	ENVIRONMENTAL QUALITY
dynamics of the core [E82-10162] p0087 N82-21686	[E82-10044] p0085 N82-19619 ELECTROMAGNETISM	The application of remote sensing to resource management and environmental quality programs in Kansas
EARTH OBSERVATIONS (FROM SPACE) The effectiveness of instrumented visual studies of the	Electromagnetic deep-probing (100-1000 KMS) of the	Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation
earth from space p0114 A82-27505	Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources	[E82-10029] p0063 N82-16447
International Symposium on Remote Sensing of Environment, 15th, University of Michigan, Ann Arbor, MI,	[E82-10155] p0087 N82-21679 ELEVATION	EROSION Inventory of eroded areas in the state of Guanajuato
May 11-15, 1981, Proceedings, Volumes 1, 2 & 3	Experiences with digital terrain elevation data contouring	Mexico, by automatic analysis of Landsat images
p0127 A82-27576 Spaceborne radar observation of the earth surface	programs [AD-A110280] p0087 N82-21690	p0076 A82-27690 ERROR ANALYSIS
p0127 A82-27578	EMISSIVITY	Modern methods for monitoring and controlling the
Characterizing user requirements for future land observing satellites	Methods of editing cloud and atmospheric layer affected pixels from satellite data	timeliness, accuracy, and completeness of data for meteorological analysis p0073 A82-19179
[NASA-TM-83867] p0081 N82-17562 Satellite Earth resources data, module U-3	[E82-10154] p0123 N82-21678	Maximum likelihood estimation of label imperfection
[E82-10035] p0119 N82-19611	END-TO-END DATA SYSTEMS Data rate reduction. Impact of image data compression	probabilities and its use in the identification of mislabeled patterns p0112 A82-21040
EARTH RESOURCES Spaceborne radar observation of the earth surface	on end to end data management of a multispectral payload for satellite imagery	Modeling misregistration and related effects on
p0127 A82-27578	[REPT-44/130] p0120 N82-19654	multispectral classification p0113 A82-25455 Error analysis of pulse location estimates for simulated
EARTH RESOURCES INFORMATION SYSTEM Flexible processing of remote sensing data through	ENERGY BUDGETS Applications of HCMM satellite data to the study of urban	bathymetric lidar returns
integration of image processing and geobased information systems p0116 A82-27667	heating patterns	[PB82-109448] p0096 N82-17803 Some criteria for the accuracy and the reliability of
EARTH SURFACE	[82-10161] p0080 N82-21685 ENVIRONMENT MODELS	networks in geodesy p0086 N82-20580
Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4	Watershed model study using LANDSAT data p0106 N82-17602	Transition year labeling error characterization study Kansas, Minnesota, Montana, North Dakota, South Dakota,
p0073 A82-19826	ENVIRONMENT POLLUTION	and Oklahoma
Analysis of space imagery to compile a geomorphological map of the world p0089 A82-20338	Evaluation of snow-cover pollution in industrial regions using satellite TV images p0103 A82-27464	[E82-10111] p0069 N82-21651 ERROR CORRECTING DEVICES
Application and experimental verification of an empirical	ENVIRONMENTAL MONITORING	The use of contextual information to improve land cover
backscattering cross section model for the earth's surface p0081 A82-21036	Modem methods for monitoring and controlling the timeliness, accuracy, and completeness of data for	classification of digital remotely sensed data p0112 A82-21094
Effects of the atmosphere on the detection of surface	meteorological analysis p0073 A82-19179	ERS-1 (ESA SATELLITE)
changes from Landsat multispectral scanner data p0125 A82-21091	The Canadian north - Utility of remote sensing for environmental monitoring p0074 A82-24962	The first ESA remote sensing satellite system ERS-1 p0094 A82-27608
Area determination by means of the method of finite	Detection of natural disasters via Meteosat	Study of Earth Resources Satellite (ERS) data reduction
elements p0082 A82-26048 A relation between Landsat digital numbers, surface	p0075 A82-27040 Present and future studies of natural resources and the	unit {BAE-TP-7905} p0120 N82-19649
reflectance, and the cosine of the solar zenith angle	environment from space p0138 A82-27506 Development of cooperation between CMEA member	Satellite scatterometer feasibility study. Volume 1:
p0114 A82-26841 The effectiveness of instrumented visual studies of the	countries in the development and utilization of space-based	Technical results Earth Resources Satellite (ERS 1) [ESA-CR(P)-1492-VOL-1] p0133 N82-19650
earth from space p0114 A82-27505	systems for the remote sensing of earth resources and the environment p0138 A82-27543	Satellite scatterometer feasibility study. Volume 2: Data
Interpretation of Heat Capacity Mapping Mission images over Canada p0116 A82-27671	Topographic mapping using Landsat data	extraction algorithm and error simulation for wind sensor Earth Resources Satellite (ERS 1)
On the accuracy of thermal inertia mapping by infrared	p0082 A82-27615 Forest change detection p0061 A82-27644	[ESA-CR(P)-1492-VOL-2] p0133 N82-19651
imagery [SAAB-REPR-AE-10] p0120 N82-19656	Monitoring forest land cover alteration in Thailand with	Study of a radar altimeter for the European remote sensing program. Volume 1: Executive summary Earth
Cloud Top Scanning radiometer (CTS): User's guide	the analysis of ancillary and digital Landsat data p0062 A82-27673	Resources Satellite (ERS 1)
[NASA-TM-83887] p0135 N82-21826 [ARTHQUAKES	Environmental studies by multispectral scanner under large-scale civil engineering construction	[SPAR-R.1090-ISSUE-A] p0133 N82-19652 Development of a breadboard cooler for infrared remote
The relationship between seismicity and lineaments of	p0063 A82-27691	sensing payloads, phase 1 Earth Resources Satellite
the Anatolian-Caucasian-Iranian segment of the	Remote SO2 emission measurements with correlation	ERS 1 [FOK-RV-R-81-064] p0134 N82-19653
Mediterranean fold belt p0089 A82-20341	spectrometers from volcanoes p0077 A82-27704	

SUBJECT INDEX FROST

ESTIMATING	The effect of finite field size on classification and	Multiresource inventory methods pilot test for
Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches	atmospheric correction [NASA-TM-83818] p0120 N82-19645	forests p0060 A82-27601
[E82-10059] p0065 N82-19634	Elevation of a cane-growing area of the state of Sao	Application of space remote sensing data in forestry p0063 A82-28131
Development of rotation sample designs for the	Paulo using LANDSAT data [E82-10077] p0067 N82-20600	Examination of the operational prospects for remote
estimation of crop acreages [E82-10117] p0070 N82-21654	FERTILIZERS	sensing in Europe
ESTUARIES	Effects of nitrogen nutrition on the growth, yield and	[ESA-CR(P)-1476] p0138 N82-18669
The relationship among sea surface roughness variations.	reflectance characteristics of corn canopies Purdue Agronomy Farm, Indiana	Method of interpretation of remote sensing data and applications to vegetation
oceanographic analyses, and airborne remote sensing analyses	[E82-10068] p0067 N82-20591	[INPE-2215-MD/010] p0066 N82-19640
[NASA-CR-168444] p0096 N82-17798	FIELD OF VIEW	Relation of the activities of the IPDF/INPE project
Evaluation of HCMM satellite data for estuarine tidal	A multiband radiometer and data acquisition system for remote sensing field research	(reforestation subproject) during the year 1979 Mato
circulation patterns and thermal inertia soil moisture measurements Delaware Bay, Cooper River, and the	[E82-10142] p0134 N82-21669	Grosso do Sul, Brazil [E82-10078] p0067 N82-20601
Potomac River estuaries; Luverne, Minnesota, soil moisture,	Variability of reflectance measurements with sensor altitude and canopy type	FORESTS
and water temperature of Lake Anna, Virginia	[E82-10145] p0071 N82-21672	Manual and automatic crop identification with airborne
[E82-10064] p0108 N82-20587	FINITE ELEMENT METHOD	radar imagery p0057 A82-20408
Structural analysis of the basement of the East European	Area determination by means of the method of finite elements p0082 A82-26048	Remote sensing of the structure of taiga landscapes Russian book p0059 A82-27397
platform by remote sensing methods p0089 A82-20342	FINLAND	Forest change detection p0061 A82-27644
Examination of the operational prospects for remote sensing in Europe	Microwave radiation from a natural snow field	Digital analysis of spatial and spectral features from
[ESA-CR(P)-1476] p0138 N82-18669	p0101 A82-19559 Theoretical and experimental studies of microwave	airborne MSS of a forested region p0061 A82-27647
EVAPORATION RATE	emission signatures of snow p0125 A82-21034	HCMM night-time thermal IR imaging experiment in
HCMM hydrological analysis in Utah Utah lake	FIRE PREVENTION	Michigan Heat Capacity Mapping Mission
[E82-10063] p0107 N82-20586 EVAPOTRANSPIRATION	Scene analysis for wildland fire-fuel characteristics in a Mediterranean climate p0060 A82-27624	p0115 A82-27655
A gradient model of vegetation and climate utilizing	FISHERIES	Potential utility of thematic mapper data in estimating crop areas p0061 A82-27663
NOAA satellite imagery. Phase 1: Texas transect	Brazilian remote sensing activities, current and	Fanning - A classification algorithm for mixture
[E82-10107] p0069 N82-21648 Applications of HCMM satellite data to the study of urban	prospective needs [E82-10026] p0132 N82-16444	landscapes applied to Landsat data of Maine forests
heating patterns	Technology and oceanography: An assessment of Federal	p0062 A82-27668
[E82-10161] p0080 N82-21685	technologies for oceanographic research and monitoring	Monitoring forest land cover alteration in Thailand with
EVERGLADES (FL) Use of thermal inertia determined by HCMM to predict	[OTA-0-142] p0097 N82-18844 FUGHT ALTITUDE	the analysis of ancillary and digital Landsat data p0062 A82-27673
nocturnal cold prone areas in Florida The Everglades	Analysis of the direction-dependent radiation behavior	An invertible coniferous forest canopy reflectance
agricultural area, Lake Okeechobee, and the Suwanee River	in multispectral scanning data p0125 A82-21399	model p0062 A82-27679
basin [E82-10157] p0071 N82-21681	FLOOD PLAINS Change detection in the Peace-Athabasca Delta using	Digital processing of tropical forest habitat in Bangladesh
(and the total)	digital Landsat data p0101 A82-24959	and the development of a low cost processing facility at
F	FLOOD PREDICTIONS	the National Zoo, Smithsonian Institution p0063 A82-27687
F	Satellite observed cloud patterns associated with excessive precipitation outbreaks	Environmental studies by multispectral scanner under
FARM CROPS	[PB80-215130] p0073 A82-19177	large-scale civil engineering construction
Experimental evaluation of methods of the automated	Dynamics of snow cover in mountain regions of the Aral	p0063 A82-27691
interpretation of crops from a Fragment MSS image	Sea basin, studied using satellite photographs p0102 A82-27462	Utilisation of remote sensing in resources identification
p0057 A82-20349 Manual and automatic crop identification with airborne	Flash flood forecasting and damage control	and land use in India - An integrated approach p0076 A82-27701
radar imagery p0057 A82-20408	measures [WMO-577] p0107 N82-18671	Application of space remote sensing data in forestry
The Dutch ROVE program Radar Observation of	[WMO-577] p0107 N82-18671 Remote sensing for water resources and hydrology: An	p0063 A82-28131
VEgetation p0057 A82-21026 Investigation of the vegetative covers on ploughed areas	assessment of the Corps of Engineers' program	Brazilian remote sensing activities, current and
by SLAR p0058 A82-21031	[PB82-137142] p0110 N82-21704	prospective needs [E82-10026] p0132 N82-16444
Crop classification using airborne radar and Landsat	FLORIDA Use of thermal inertia determined by HCMM to predict	The application of remote sensing to resource
data p0058 A82-21033 Data base requirements in support of crop models	nocturnal cold prone areas in Florida	management and environmental quality programs in Kansas
p0060 A82-27588	[E82-10040] p0064 N82-19615	Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation
Dew and vapor pressure as complicating factors in the	Application of satellite frost forecast technology to other	[E82-10029] p0063 N82-16447
interpretation of spectral radiance from crops p0060 A82-27617	parts of the United States, phase 2 Pennsylvania, Michigan, and Florida	The effect of finite field size on classification and
Automatic and semi-automatic classification of Landsat	[NASA-CR-166827] p0121 N82-20607	atmospheric correction
agricultural crops p0061 A82-27664 AgRISTARS: Yield model development/soil moisture.	A satellite frost forecasting system for Florida	[NASA-TM-83818] p0120 N82-19645 San Juan National Forest Land Management Planning
Interface control document	p0079 N82-20615 Use of thermal inertia determined by HCMM to predict	Support System (LMPSS) requirements definition
[E82-10054] p0065 N82-19629	nocturnal cold prone areas in Florida The Everglades	[E82-10108] p0069 N82-21649
Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary	agricultural area, Lake Okeechobee, and the Suwanee River	An evaluation of ISOCLS and CLASSY clustering algorithms for forest classification in northern Idaho Elk
[PB82-115122] p0066 N82-19715	basin . [E82-10157] p0071 N82-21681	River quadrange of the Clearwater National Forest
Atlas of the global distribution of the total ozone	FLUOROCARBONS	[E82-10109] p0069 N82-21650
concentration according to satellite measurements [MITT-28] p0078 N82-19740	Demonstration of a long-range atmospheric tracer system	FRENCH SPACE PROGRAMS
System of forecasting agricultural crops using satellite	using perfluorocarbons [PB82-106246] p0081 N82-16613	Earth sensing from space - Commercial and international aspects p0138 A82-27669
observations of Earth	[PB82-106246] p0081 N82-16613 FOLIAGE	FREQUENCY ASSIGNMENT
[E82-10079] p0067 N82-20602 A look at the commonly used LANDSAT vegetation	Atlas of the global distribution of the total ozone	Guidelines for spaceborne microwave remote sensors
indices	concentration according to satellite measurements [MITT-28] p0078 N82-19740	[NASA-RP-1086] p0133 N82-19647 FRESH WATER
[E82-10123] p0070 N82-21657 AgRISTARS: Supporting research. US crop calendars	FOOTPRINTS	Spectral reflectances of freshwater ice and snow from
in support of the early warning project	Ground registration of data from an airborne	340 through 1100 nm p0106 N82-17601
[E82-10158] p0072 N82-21682	scatterometer	FRONTS (METEOROLOGY)
FARMLANDS The influence of illumination and viewing geometry on	[E82-10084] p0068 N82-21636 FORECASTING	Structure and variability of the Alboran Sea frontal system p0093 A82-20447
the reflectance factor of agricultural targets	System of forecasting agricultural crops using satellite	FROST
p0061 A82-27646	observations of Earth	Application of satellite frost forecast technology to other
The potential of remote sensing to monitor soil erosion on cropland p0061 A82-27656	[E82-10079] p0067 N82-20602	parts of the United States, phase 2 Pennsylvania, Michigan, and Florida
Experience with a variety of studies of earth resources	FOREST FIRE DETECTION Flexible processing of remote sensing data through	[NASA-CR-166827] 1 p0121 N82-20607
in the Kalmyk ASSR using space imagery	integration of image processing and geobased information	Application of satellite frost forecast technology to other
p0131 A82-28130	systems p0116 A82-27667	parts of the United States, phase 2, introduction
The application of remote sensing to resource management and environmental quality programs in Kansas	Development of a Canadian thermal infrared forest fire mapping operational program p0063 A82-27699	p0121 N82-20608 Freeze prediction model Pennsylvania
Cimarron National Grasslands, Prairie Potawatomi	FOREST FIRES	p0067 N82-20609
Reservation, and Kickepoo Reservation [E82-10029] p0063 N82-16447	Airborne lidar measurements of smoke plume distribution,	Applicability of satellite freeze forecasting and cold
AgRISTARS: Foreign commodity production forecasting.	vertical transmission, and particle size p0073 A82-21386	climate mapping to the other parts of the United States Michigan p0068 N82-20613
Corn/soybean decision logic development and testing	Scene analysis for wildland fire-fuel characteristics in a Mediterranean climate p0060 A82-27624	MSU test of P-model p0121 N82-20614
[E82-10056] p0065 N82-19631 Taxonomic classification of world map units in crop	The utilization of orbital images as an adequate form of	A satellite frost forecasting system for Florida
producing areas of Argentina and Brazil with representative	control of preserved areas Araguaia National Park,	p0079 N82-20615
US soil series and major land resource areas in which they	Brazil [E82-10065] p0078 N82-20588	Use of thermal inertia determined by HCMM to predict nocturnal cold prone areas in Florida The Everglades
occur [E82-10058] p0065 N82-19633	FOREST MANAGEMENT	agricultural area, Lake Okeechobee, and the Suwanee River
Notes for Brazil sampling frame evaluation trip	Automation of the processing of aerial and space images	basin
[E82-10060] p0066 N82-19635	for forest inventory p0057 A82-20350	[E82-10157] p0071 N82-21681

GARP ATLANTIC TROPICAL EXPERIMENT GARP ATLANTIC TROPICAL EXPERIMENT Assessment of the quality of GATE area rainfall data from a Nimbus-5 radiometer p0109 N82-20807 [NASA-CR-168512] GÁS DETECTORS Ozone measurements to 48Km with chemiluminescent ozone detectors [AD-A110342] p0134 N82-21808 **GAS POCKETS** Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 GEOCHEMISTRY Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980 p0105 A82-27634 GEODESY ession III of the VLBI/Laser intercomparison task of the NASA crustal dynamics project [NASA-CR-168427] p0083 N82-17708 Some criteria for the accuracy and the reliability of networks --- in geodesy p0086 N82-20580 Experiments in satellite Doppler control positioning at sea Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 GEODETIC COORDINATES methods of geodetic referencina nontopographic images Mathematical and stochastic models in photogrammetry relating to Helmut Wolfs work p0084 M82-19605 The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectorie [SER-B-253-MITT-159-PT-2] p00 p0085 N82-19648 Some criteria for the accuracy and the reliability of poose N82-20580 Some criteria iu iu p0086 N82-20500 tworks --- in geodesy p0086 N82-20500 Experiments in satellite Doppler control positioning at p0086 N82-20581 GEODETIC SURVEYS Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18]

ER-E-18]
Developments in geodesy within the scope of Helmut p0084 N82-19604 Wolf's work Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605
The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 Very-long-baseline Applications to Earth physics: interferometry and data analysis [NASA-CR-168743] n0088 N82-21796 GEODYNAMICS

Developments in geodesy within the scope of Helmut folf's work p0084 N82-19604 Wolf's work GEOGRAPHY The role of computer graphics in geographic research p0117 A82-27923 The atlas 'Geographical Results p0077 A82-28133 Multispectral Experiments

Gravity and geoid anomalies of the Philippine Sea: e on the depth of compensation for the negative water depth anomaly

[NASA-CR-168639] p0085 N82-19732 Recent results of geoid determination by combination chniques in the North Sea test area p0086 N82-20583 **GEOLOGICAL FAULTS**

ents watch for impending earthquakes DO131 A82-28342

GEOLOGICAL SURVEYS

Structural analysis of the basement of the East Europe platform by remote sensing methods p0089 A82-20342 Remote sensing for natural resources: An international view of problems, promises and accomplishment p0137 A82-21875 Book

Dip determinations in photogeology p0089 A82-25453 Development of cooperation between CMEA member

countries in the development and utilization of space-based systems for the remote sensing of earth resources and the environment p0138 A82-27543 environment Automatic linear recognition and analysis using computer program LIRA --- satellite imagery for earth observations p0090 A82-27612

Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scal

p0090 A82-27672

Airborne remote sensing in east Greenland

p0090 A82-27695 Ring structures in the earth's crust, and their significance

for geology and methods for their investigation p0091 A82-28136 Satellite and surface geophysical expression of anomalous

crustal structure in Kentucky and Tennessee
[NASA-TM-82163] p0084 N82-17715

Resourceful decisions: LANDAT in Michigan p0078 N82-19601

Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624

Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas --- Brazil p0078 N82-20592

Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and outheast of the state of Sao Paulo --- Brazil [E82-10076] n0092 N82-20599

HCMM: Soil moisture in relation to geologic structure and fithology, northern California --- Northern Coast Range, Sacramento Valley, and the Modoc Plateau p0092 N82-21662 [E82-10135]

Application of HCMM data to regional geologic analysis mineral and energy resource evaluation p0092 N82-21664 [E82-10137]

Use of MAGSAT anomaly data for crustal structure and mineral resources in the US midcontinent (FR2-10152) n0092 N82-21677

GEOLOGY

Visual and digital analysis of H.C.M.M. data over eastern Canada --- thermal imagery by Heat Ca p0117 A82-27698 Mission

GEOMAGNETIC MICROPULSATIONS Harmonic structure of Pc 3-4 pulsations

p0082 A82-26266

GEOMAGNETISM

Ideal phase in estimating the spatial gradient of magnetic daily variations recorded by magnetometer arrays p0127 A82-26000

Harmonic structure of Pc 3-4 pulsations

p0082 A82-26266 Particle precipitation and atmospheric X-and Gamma-rays in the South Atlantic magnetic anomaly by balloon

[INPE-2119-RPE/343] p0083 N82-17711 Some new methods in geomagnetic field modeling applied to the 1960 - 1980 epoch

[NASA-TM-83868] p0083 N82-17714 Equivalent source modeling of the main field using Magsat

[E82-10041]

Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources DOOR4 NR2-19618 [E82-10043]

Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources
[E82-10044] p00 p0085 N82-19619

Magsat science investigations [E82-10045] p0085 N82-19620 of medium Investigations wavelength magnetic alies in the Eastern Pacific using Mag sat data

pO119 N82-19622 [E82-10047] Studies related to Magsat --- Backus effect and the westward drift

n0085 N82-19625 [E82-10050] Improved definition of crustal anomalies for Magsat

[F82-10051] n0085 N82-19626 Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] p0086 N82-20585

anomaly profiles of the eastern Indian Ocean p0086 N82-20589 MAGSAT 10066] harmonic representation Spherical of the

geomagnetic field for world charting and investigations of some fundamental problems of physics and geophysics [E82-10075] p0086 N82-20598 Preliminary models of the core field --- geomagnetic

[E82-10129] p0087 N82-21659 Compatibility study of the MAGSAT data and nmannetic data

[E82-10136] p0123 N82-21663 Continuation of potential field data to a common altitude

magsat data p0123 N82-21665 [E82-10138]

observation of internal and external fields: A new changue of data screening --- MAGSAT data p0123 N82-21666 [E82-10139]

Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10147] nOO87 N82-21674

Comparison of storm-time changes of geomagnetic field at ground and at MAGSAT altitudes [E82-10148] nOO87 N82-21675

Use of MAGSAT anomaly data for crustal structure and resources in the US midcontinent

p0092 N82-21677 [E82-10152] Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources

182-10155] p0087 N82-21679
Investigation of geomagnetic field forecasting and fluid [E82-10155] dynamics of the core

DO087 N82-21686 [É82-10162]

GEOMÉTRIC RECTIFICATION (IMAGERY)

Primary processing of and possibilities of using data from rological satellite TIROS-N p0103 A82-27470 Operational resampling for correcting images to a geocoded format --- in remote sensing

nO114 A82-27590

The use of digital terrain model in the rectification of Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application policy field multitamental analysis of confidence of the cost Field-by-field multitemporal analysis of aerial scanner netrically corrected by means of a sliding model p0115 A82-27651

Geometric correction of airborne multispectral scanner p0130 A82-27706

Automatic relocation of ground control points in LANDSAT imagery nO118 N82-18657

[RAE-TR-81071] p0118 N
Relief effects and the use of terrain models in meter effects and the use of terrain models in SAR image processing --- Anderson River test site, British Columbia

An introduction to image processing at Royal Aircraft Establishment, Farnborough, England --- U.S. and European satellite imagery

p0122 N82-21565 BAF-TR-801071

Analysis of space imagery to compile a geomorphological

Analysis or space imagery to compile a geomorphological map of the world p0089 A82-20338

Structural analysis of the basement of the East European platform by remote sensing methods p0089 A82-20342

A structural synthesis of Brazil, based on the study of major lineaments derived from remote sensing imagery interpretation p0079 A82-26012 Remote sensing applied to basement tectonics of the

calcareous High Atlas / Morocco/ p0089 A82-26014
Area determination by means of the method of finite p0082 A82-26048

Satellite sensing for extraction of groundwater resources information p0105 A82-27613

Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-2209-MD/007] n0091 N82-19642

Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas ---Sardinia and the Gulf of Orosei

[£82-10073] p0091 N82-20596 GEOPHYSICS

Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] n0087 N82-21686

Applications to Earth physics: Very-long-baseline interferometry and data analysis n0088 N82-21796 [NASA-CR-168743]

GEOTECHNICAL ENGINEERING

Geotechnical applications of Landsat image analysis of Bhakra Dam Reservoir, India p0102 A82-26838

GEOTEMPERATURE

Analysis of a discrete-time linear model for geothermal flux reconnaissance from two or three measurements p0075 A82-27627

GEOTHERMAL RESOURCES

Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of luation of geothermal p0090_A82-27635 resources Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto, Mexico p0117 A82-27693

The use of the airborne lidar system 'ALEX F 1' for aerosol tracing in the lower troposphere p0073 A82-20226 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049

GLACIAL DRIFT

Use of Landsat imagery to delineate glaciofluvial aquifers southeast South Dakota p0105 A82-27637 in southeast South Dakota

GOES SATELLITES

Weather satellite interpretation: Introduction to weather satellite imagery

p0118 N82-16677 [PB82-107657] **GOVERNMENT PROCUREMENT**

Remote sensing procurement package: A management report for state and local governments [E82-10052] n0138 N82-19627

GOVERNMENT/INDUSTRY RELATIONS

Earth sensing from space - Commercial and international p0138 A82-27669 aspects GRAINS (FOOD)

Documentation of computer procedures for labeling spring grains and discriminating between spring wheat and barley using LANDSAT data [E82-10030] p0063 N82-16448

AgRISTARS: Foreign commodity production forecasting. Project test reports document, volume 1 --- using North Dakota, South Dakota, Montana, and Minnesota

[E82-10087] n0068 N82-21639 GRAND CANYON (AZ)

Cliff and slope topography of part of the Grand Canyon, Arizona as characterized on a Seasat radar image p0082 A82-26843

GRASSES

Assessing mesquite-grass vegetation condition from p0059 A82-25457

GRASSHOPPERS

Remote sensing applications to resource problems in [E82-10027] nO132 N82-16445 SUBJECT INDEX HYDROLOGY

GRASSLANDS		
	The 1981 Argentina ground data collection	HYDROGEOLOGY
Simple radiative transfer model for relationships between	[E82-10127] p0070 N82-21658	Microwave radiometry of lands under natural and artificial
canopy biomass and reflectance p0057 A82-20422	A study of model parameters associated with the urban	moistening p0057 A82-21028
Multispectral photographic remote sensing of green	climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667	Mixture formulas applied in estimation of dielectric and
vegetation biomass and productivity p0059 A82-22144	[E82-10140] p0079 N82-21667 A multiband radiometer and data acquisition system for	radiative characteristics of soils and grounds at microwave
The application of remote sensing to resource	remote sensing field research	frequencies p0058 A82-21030
management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi	[E82-10142] p0134 N82-21669	Geotechnical applications of Landsat image analysis of Bhakra Dam Reservoir, India p0102 A82-26838
Reservation, and Kickapoo Reservation	GROUND WATER	Remote-sensing determination of the characteristics of
[E82-10029] p0063 N82-16447	Investigation of the dynamics of the regional underground	hydrological objects p0102 A82-27460
The effect of finite field size on classification and	runoff of the Aral sea basin using space photography	Application of aerial and space photographic data in the
atmospheric correction	p0101 A82-20343 Mixture formulas applied in estimation of dielectric and	study of subsurface water and tectonic structures
[NASA-TM-83818] p0120 N82-19645	radiative characteristics of soils and grounds at microwave	p0090 A82-27466
GRAVIMETRY	frequencies p0058 A82-21030	The use of space photographs for hydrogeological studies
Developments in geodesy within the scope of Helmut	Remote-sensing functions in the interpretation of	of the Baikal region and Mongolia p0103 A82-27468
Wolf's work p0084 N82-19604	moisture from aerial and space images	Satellite sensing for extraction of groundwater resources
GRAVITATION Ore deposits in Africa and their relation to the underlying	p0102 A82-27459	information p0105 A82-27613
mantle p0090 A82-26604	Application of aerial and space photographic data in the	Use of Landsat imagery to delineate glaciofluvial aquifers
GRAVITATIONAL FIELDS	study of subsurface water and tectonic structures p0090 A82-27466	in southeast South Dakota p0105 A82-27637
Information theory lateral density distribution for Earth	Satellite sensing for extraction of groundwater resources	Experience with a variety of studies of earth resources
inferred from global gravity field	information p0105 A82-27613	in the Kalmyk ASSR using space imagery p0131 A82-28130
[NASA-TM-83825] p0085 N82-19731	Environmental studies by multispectral scanner under	HYDROGRAPHY
GRAVITY ANOMALIES	large-scale civil engineering construction	The Pampean Plain studied with Landsat images
Geophysical and Landsat lineament mapping - An	p0063 A82-27691	p0089 A82-26013
approach illustrated from west-central and south India	HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20\$86	Aerospace methods for the study of water resources and
p0089 A82-26016	[E82-10083] p0107 N82-20388	their pollution Russian book p0102 A82-27457
Satellite and surface geophysical expression of anomalous		Interpretation of multispectral aerial photographs of Lake
crustal structure in Kentucky and Tennessee [NASA-TM-82163] p0084 N82-17715	H	Mueggelsee p0104 A82-27473
Gravity and geoid anomalies of the Philippine Sea:	= -	Spectrometric studies of the water composition of Lake
Evidence on the depth of compensation for the negative	HABITATS	Mueggelsee p0104 A82-27474
residual water depth anomaly	Remote sensing of the structure of taiga landscapes	Integration of Landsat, geological and geophysical data
[NASA-CR-168639] p0085 N82-19732	Russian book p0059 A82-27397	for use in thematic mapping at regional scale
Recent results of geoid determination by combination	Digital processing of tropical forest habitat in Bangladesh	p0090 A82-27672
techniques in the North Sea test area p0086 N82-20583	and the development of a low cost processing facility at	Classification of Landsat MSS data for surface cover of small areas p0116 A82-27677
Investigation of Antarctic crust and upper mantle using	the National Zoo, Smithsonian Institution	•
MAGSAT and other geophysical data [E82-10062] p0086 N82-20585	The application of remote sensing to resource	Mapping of water quality using Landsat imagery
Gradio: Project proposal for satellite gradiometry	management and environmental quality programs in Kansas	p0106 A82-27692
[NASA-TM-76796] p0134 N82-20606	Cimarron National Grasslands, Prairie Potawatomi	The use of space photographs to compile water-amelioration maps p0106 A82-28137
GRAVITY GRADIOMETERS	Reservation, and Kickapoo Reservation	Error analysis of pulse location estimates for simulated
Superconducting tensor gravity gradiometer	[E82-10029] p0063 N82-16447	bathymetric lidar returns
p0126 A82-23045	Application of remote sensing to state and regional	[P882-109448] p0096 N82-17803
Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606	problems mississippi [E82-10033] p0078 N82-19609	Proposed digital cartridge recording system for
[NASA-TM-76796] p0134 N82-20606 GRAVITY WAVES	[E82-10033] p0078 N82-19609 San Juan National Forest Land Management Planning	WRELADS laser airborne depth sounder
The use of wave contrast measurements in the evaluation	Support System (LMPSS) requirements definition	[AD-A109484] p0134 N82-20491
of SAR/gravity models p0130 A82-27675	[E82-10108] p0069 N82-21649	HYDROLOGY
GREAT LAKES (NORTH AMERICA)	HANDBOOKS	Investigation of the dynamics of the regional underground
HCMM night-time thermal IR imaging experiment in	Applications systems verification and transfer project.	runoff of the Aral sea basin using space photography
Michigan Heat Capacity Mapping Mission	Volume 8: Sateflite snow mapping and runoff prediction	p0101 A82-20343
p0115 A82-27655 GREAT PLAINS CORRIDOR (NORTH AMERICA)	handbook [NASA-TP-1829] p0109 N82-20624	The possibilities of microwave remote sensing for the study of water resources and their pollution
Transition year labeling error characterization study	HEAT CAPACITY MAPPING MISSION	p0102 A82-27458
Kansas, Minnesota, Montana, North Dakota, South Dakota,	A study of model parameters associated with the urban	Remote-sensing determination of the characteristics of
and Oklahoma	climate using HCMM data	hydrological objects p0102 A82-27460
[E82-10111] p0069 N82-21651	[E82-10159] p0080 N82-21683	Application of satellite data to analyze and predict meltage
AgRISTARS: Supporting research. US crop calendars	HEAT FLUX	runoff in a mountain basin p0102 A82-27461
in support of the early warning project [E82-10158] p0072 N82-21682	Analysis of a discrete-time linear model for geothermal flux reconnaissance from two or three aircraft infrared	Dynamics of snow cover in mountain regions of the Aral Sea basin, studied using satellite photographs
GREEN WAVE EFFECT	measurements p0075 A82-27627	p0102 A82-27462
		Survey and mapping of shallow water bodies and the
As-built design specification for PARHIS	Interactive initialization of heat flux parameters for	
As-built design specification for PARHIS [E82-10089] p0122 N82-21641	Interactive initialization of heat flux parameters for numerical models using satellite temperature	distribution of the river runoff of solids on the basis of
[E82-10089] p0122 N82-21641 GREENLAND	numerical models using satellite temperature measurements	multispectral aerial and space photographs
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623	multispectral aerial and space photographs p0103 A82-27467
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695	numerical models using satellite temperature maasurements [EB2-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27695 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [EB2-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station Advanced Very High Resolution Radiometer	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility A low cost NOAA/TIROS AVHRR receiving station Advanced Very High Resolution Radiometer p0130 A82-27681 CNPq/INPE: LANDSAT system operations at the	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT 18LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station Advanced Very High Resolution Radiometer p0130 A82-27681 CNPq/INPE: LANDSAT system operations at the Cuiaba station and the electronic processing and photo	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0090 N82-21685 HAT 15(LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution
[E82-10089] p0122 N82-21641 GREENLAND Ariborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station Advanced Very High Resolution Radiometer p0130 A82-27681 CNPq/INPE: LANDSAT system operations at the Cuiaba station and the electronic processing and photo laboratories [E82-10023] p0118 N82-16441 GROUND TRUTH	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p1004 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] A study of model parameters associated with the urban climate using HCMM data	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of unban heating patterns [E82-10161] p0080 N82-21685 HEAT (SLANDS A Study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A Study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A Study of model parameters associated with the urban climate using HCMM data Pour Pour Pour Pour Pour Pour Pour Pour	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0097 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0090 N82-21685 HEAT 15LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0090 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 MEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670
[E82-10089] p0122 N82-21641 GREENLAND Ariborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 ### HEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0090 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data [E82-10160] p0080 N82-21683	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/O30] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kanasa 1978: Measured and predicted hydrological properties of
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT 15(LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21683 Applications of HCMM satellite data to the study of urban	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p1004 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18367 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-18304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil
[E82-10083] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 ### HEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0090 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data [E82-10160] p0080 N82-21683	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-189304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632
[E82-10089] p0122 N82-21641 GREENLAND Ariborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A tow cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT (SLANDS A study of model parameters associated with the urban climate using HCMM data p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis. Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p104 A82-27475 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution p20105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057]
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 ### HEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0090 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 ###################################	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 [MMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/O30] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station Advanced Very High Resolution Radiometer p0130 A82-27681 CNPq/INPE: LANDSAT system operations at the Cuiaba station and the electronic processing and photo laboratories [E82-10023] p0118 N82-16441 GROUND TRUTH Crop area estimates using ground-gathered and Landsat data A multitemporal approach p0062 A82-27682 AgRISTARS: Interim catalog ground data summary, data acquisition year 1979 [E82-10032] p0064 N82-19608 Recommended data sets, corn segments and spring wheat segments, for use in program development [E82-10034] p0064 N82-19610 Agricultural soil moisture experiment. Colby, Kansas 1978: Measured and predicted hydrological properties of	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT 15LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p10104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Dynamic study of the upper Sao Francisco River and
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 MEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0099 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21683 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-189304 Agricultural soil moisture experiment, Colby, Kanasa 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Dynamic study of the upper Sao Francisco River and the Tres Mariais reservoir using MSS/LANDSAT images Brazil
[E82-10089] p0122 N82-21641 GREENLAND Ariborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT 15(LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0097 N82-21667 A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10159] A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21683 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil [E82-10069] p0078 N82-20592	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10063] p0107 N82-20586 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] p0108 N82-20605
[E82-10083] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT (SLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0099 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil [E82-10069] p0078 N82-20592	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10067] p0065 N82-19632 HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082]
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27695 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 MEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil [E82-10069] p0078 N82-20592 HUMIDITY MEASUREMENT Humidity measurement by infrared thermometry	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources D0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission Measurement of river sediments [WMO-561] Data collection platforms: Applications to hydrology [INPE-2246-PRE/O30] p0107 N82-19364 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] p0108 N82-20605 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover
[E82-10089] p0122 N82-21641 GREENLAND Ariborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A tow cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT (SLANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0099 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil [E82-10069] p0078 N82-20592	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/O30] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Oynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] p0108 N82-20605 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT 15LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0090 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS Amazonas Brazil [E82-10069] p0078 N82-20592 HUMIDITY MEASUREMENT Hunidity measurement by infrared thermometry p0075 A82-25844	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/O30] p0107 N82-189304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images: Brazil [E82-10082] Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620
[E82-10089] p0122 N82-21641 GREENLAND Ariborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A tow cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT (SLANDS A study of model parameters associated with the urban climate using HCMM data \$1. Louis, Missouri [E82-10140] p0098 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21683 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil [E82-10069] p0078 N82-20592 HUMIDITY MEASUREMENT Humidity measurement by infrared thermometry p0075 A82-26844	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-18670 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] HCMM hydrological analysis in Utah Utah lake [E82-10063] Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20605 Applications systems verification and transfer project.
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27695 A low cost NOAA/TIROS AVHRR receiving station Advanced Very High Resolution Radiometer p0130 A82-27681 CNPq/INPE: LANDSAT system operations at the Cuiaba station and the electronic processing and photo laboratories [E82-10023] p0118 N82-16441 GROUND TRUTH Crop area estimates using ground-gathered and Landsat data A multitemporal approach p0062 A82-27687 An autodigitizing procedure for ground-data labelling of Landsat pixels p0062 A82-27682 Agristrans: Interim catalog ground data summary, data acquisition year 1979 [E82-10032] p0064 N82-19608 Recommended data sets, corn segments and spring wheat segments, for use in program development [E82-10034] p0064 N82-19610 Agricultural soil moisture experiment, Cotby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] p0066 N82-19635 Notes for Brazil sampling frame evaluation trip [E82-10060] p0066 N82-19635 As-built design specification for PARHIS [E82-10089]	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 MEAT ISLANDS A study of model parameters associated with the urban climate using HCMM data \$1. Louis, Missouri [E82-10140] p0098 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0090 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21683 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0090 N82-21685 HIGHWAYS Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil [E82-10069] p0078 N82-20592 HUMIDITY MEASUREMENT Humidity measurement by infrared thermometry p0075 A82-25844 HUNGARY Remote-sensing determination of the characteristics of hydrological objects p0102 A82-27460 Monitoring of the thermal pollution of natural channels	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/O30] p0107 N82-189304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 HCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images: Brazil [E82-10082] Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27695 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT 15LANDS A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM satellite data to the study of urban heating patterns [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS Amazonas Brazil [E82-10069] p0078 N82-20592 HUMIDITY MEASUREMENT Hunidity measurement by infrared thermometry p0075 A82-25844 HUNGARY Remote-sensing determination of the characteristics of hydrological objects p0102 A82-27460 Monitoring of the thermal pollution of natural channels of water using infrared aerial photography	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/O30] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10067] hCMM hydrological analysis in Utah Utah lake [E82-10063] p0107 N82-20586 Opnamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] p0108 N82-20605 Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p0109 N82-20620
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27695 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT (SLANDS Astudy of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0099 N82-21687 A study of model parameters associated with the urban climate using HCMM data st. Louis, Missouri [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0098 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS Amazonas Brazil [E82-10069] p0080 N82-21685 HUMIDITY MEASUREMENT Humidity measurement by infrared thermometry p0075 N82-26844 HUNGARY Remote-sensing determination of the characteristics of hydrological objects p0102 A82-27460 Monitoring of the thermal pollution of natural channels of water using infrared aerial photography p0104 A82-27471	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission Measurement of river sediments [WMO-561] Data collection platforms: Applications to hydrology (INPE-2246-PRE/O30) p0107 N82-19364 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10063] p0107 N82-19364 (E82-10063) p0107 N82-20656 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center (NASA-TP-1825) p0108 N82-20620 Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations. northwest United States [NASA-TP-1826] p0109 N82-20621 Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations. northwest United States [NASA-TP-1826] p0109 N82-20621 Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations. northwest United States [NASA-TP-1826] p0109 N82-20621 Applications systems verification and transfer project.
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT 15(LANDS) A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0080 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas Brazil [E82-10069] p0078 N82-20592 HUMIDITY MEASUREMENT Humidity measurement by infrared thermometry p0075 A82-26844 Monitoring of the thermal pollution of natural channels of water using infrared aerial photography p0104 A82-27471 Investigation of silting and currents in Lake Balaton by	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p0104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0105 A82-27614 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 Measurement of river sediments [WMO-561] p0107 N82-18670 Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 N82-19304 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10057] HCMM hydrological analysis in Utah Utah lake [E82-10063] Oynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow-cover observations. Colorado Field Test Center [NASA-TP-1825] p0109 N82-20620 Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p0109 N82-20621 Applications systems verification and transfer project. Volume 6: Operational applications of satellite snow-cover
[E82-10089] p0122 N82-21641 GREENLAND Airborne remote sensing in east Greenland p0090 A82-27695 GROUND STATIONS University of Dundee satellite image data acquisition and archiving facility p0130 A82-27695 A low cost NOAA/TIROS AVHRR receiving station	numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HEAT (SLANDS Astudy of model parameters associated with the urban climate using HCMM data St. Louis, Missouri [E82-10140] p0099 N82-21687 A study of model parameters associated with the urban climate using HCMM data st. Louis, Missouri [E82-10159] p0080 N82-21683 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] p0098 N82-21684 Applications of HCMM satellite data to the study of urban heating patterns [E82-10161] p0080 N82-21685 HIGHWAYS Amazonas Brazil [E82-10069] p0080 N82-21685 HUMIDITY MEASUREMENT Humidity measurement by infrared thermometry p0075 N82-26844 HUNGARY Remote-sensing determination of the characteristics of hydrological objects p0102 A82-27460 Monitoring of the thermal pollution of natural channels of water using infrared aerial photography p0104 A82-27471	multispectral aerial and space photographs p0103 A82-27467 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Noncontact methods for the quality control of water resources p104 A82-27475 Analog devices for the processing of aerial and space images for the study of water resources p0104 A82-27476 Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution p0105 A82-27614 Visual and digital analysis of H.C.M.M. data over eastern Canada thermal imagery by Heat Capacity Mapping Mission Measurement of river sediments [WMO-561] Data collection platforms: Applications to hydrology (INPE-2246-PRE/O30) p0107 N82-19364 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of the soil [E82-10063] p0107 N82-19364 (E82-10063) p0107 N82-20656 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil [E82-10082] Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center (NASA-TP-1825) p0108 N82-20620 Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations. northwest United States [NASA-TP-1826] p0109 N82-20621 Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations. northwest United States [NASA-TP-1826] p0109 N82-20621 Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations. northwest United States [NASA-TP-1826] p0109 N82-20621 Applications systems verification and transfer project.

HYDROLOGY MODELS SUBJECT INDEX

Applications systems verification and transfer project. Automation of the processing of aerial and space images Data rate reduction. Impact of image data compression Volume 8: Satellite snow mapping and runoff prediction handbook for forest inventory p0057 A82-20350 on end to end data management of a multispectral payload --- for satellite imagery --- for satellite in [REPT-44/130] The accuracy potential of the modern bundle block p0120 N82-19654 adjustment in aerial photogrammetry p0111 A82-20401 Exterior algebraic processing for remotely sensed multispectral and multitemporal images Selection of attributes applied to multispectral images Remote sensing for water resources and hydrology: An assessment of the Corps of Engineers' program
[PB82-137142] p0110 N82-21704 [INPE-2303-TDL/072] p0121 N82-19927 Study project of intrusive rocks: States of Espirito Santo p0112 A82-21041 HYDROLOGY MODELS and Rio de Janeiro, south and east of Minas Gerais and Information extraction from remotely sensed data - A ser view p0112 A82-21089 Investigation of silting and currents in Lake Balaton by the of hydraulic models and aerial and space potographs p0104 A82-27472 utheast of the state of Sao Paulo --- Brazil p0092 N82-20599 The use of contextual information to improve land cover An algorithm for spatial heirarchy clustering [E82-10081] p0121 N82-20604 Applicability of satellite freeze forecasting and cold climate mapping to the other parts of the United States photographs classification of digital remotely sensed dat Watershed model study using LANDSAT data d data p0112 A82-21094 p0106 N82-17602 Strategies for using remotely sensed data in hydrologic Registration of heat capacity mapping mission day and ph images p0113 A82-22146 night images --- Michigan p0068 N82-20613 Satellite-borne non-DOD sensors p0109 N82-21680 Spaceborne photography for the study of earth resources
Russian book p0126 A82-22397 [ER2-10156] HYDROMETEOROLOGY observations [AD-A109486] The use of satellite data in rainfall monitoring --- Book Classification of ice radar imagery p0113 A82-22891 p0134 N82-20630 p0101 A82-22873 Direct determination of the two dimensional image spectrum from raw synthetic aperture radar data Multispectral texture p0113 A82-25139 The possibility of determining snow-meltage fronts using Building and road extraction from aerial photographs p0074 A82-25140 Relief effects and the use of terrain models in SAR image processing --- Anderson River test site, British Columbia Meteor-satellite multispectral data /with Kazakhstan Considered as an example/ p0102 A82-27463
Publications and reports on contracts and grants, 1980
[PB82-103219] p0138 N82-17792 n0102 A82-27463 Increase in correlation accuracy of remote sensing pagery by digital filtering p0113 A82-25454 Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-26454 A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26050 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 p0086 N82-21475 Flash flood forecasting --- and An introduction to image processing at Royal Aircraft Establishment, Farnborough, England --- U.S. and European nO107 N82-18671 satellite imagery [RAE-TR-80107] Development and applications of techniques to process hydrometeor distribution data [AD-A109929] p0109 N82-20822 p0122 N82-21565 Analog devices for the processing of aerial and space Sonora exploratory study for the detection of wheat-leaf images for the study of water resou p0104 A82-27476 Operational resampling for correcting images to a [E82-10133] p0070 N82-21661 Operational resampling 10. Security geocoded format --- in remote sensing p0114 A82-27590 Observation of the Earth by radar 1 [NASA-TM-76830] p0124 N82-21687 Computer based technique for converting a contour map Topographic mapping using Landsat data p0082 A82-27615
Implementation of the Space Oblique Mercator projection into an equispaced grid of points

[RAE-TR-80110] p0087 N82-21697

Interpretation of remotely sensed image data and impact
of cluster compression · · · impact of cluster compression: Spectral reflectances of freshwater ice and snow from 340 through 1100 nm ICE MAPPING in a production environment p0129 A82-27628

Development and implementation of a low cost micro p0106 N82-17601 computer system for Landsta analysis and geographic data base application Field multitemporal analysis of aerial scanner field-by-field multitemporal analysis of aerial scanner data geometrically corrected by means of a sliding model Classification of ice radar imagery p0113 A82-22891 [REPT-44.2866] p0124 N82-21699 The possibilities of microwave remote sensing for the study of water resources and their pollution IMAGE RECONSTRUCTION Reconstruction of a present-day landscape map of a central part of Italy using space images p0102 A82-27458 Remote-sensing determination of the characteristics of p0115 A82-27651 p0081 A82-20340 p0102 A82-27460 hydrological objects p0102 A82-2 Land cover classification accuracy as a function of s Evaluation of large area crop estimation technique Calibration and model reconstruction in analytical p0061 A82-27662 close-range stereophotogrammetry. I - Mathematical fundamentals p0111 A82-20403 spatial resolution p0076 A82-27665
The use of data from satellite-borne microwave scanning radiometers for the automated compilation of operational Flexible processing of remote sensing data through integration of image processing and geobased incompany spatial resolution p0116 A82-27667 Calibration and model reconstruction in analytical close-range stereophotogrammetry. II - Special evaluation Phenomena modelling of remotely sensed data by image maps of ice cover for the Arctic Ocean p0095 A82-28145
Satellite-derived ice data sets no. 1: Antarctic monthly rerage microwave heights. tioning p0076 A82-27670 Classification of Landsat MSS data for surface cover of procedures for rasterstereography and moire topography n0126 A82-22141 for surface cover of p0116 A82-27677 Image quality control in the Meteosat ground processing system IMAGE RESOLUTION Digital processing of tropical forest habitat in Bangladesh and the development of a low cost processing facility at the National Zoo, Smithsonian Institution p0125 A82-21090 ASA-TM-83812J
Electromagnetic subsurface measurements
p0106 N82-18469 The Landsat program - Moving ahead p0063 A82-27687 [AD-A108192] p0137 A82-21280 Ground-truth observations of ice-covered North Slope Lakes imaged by radar [NASA-TM-84127] p0107 N82-18664 Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto. A comparison between aerial photography and Landsat r computer land-cover mapping p0074 A82-22143 An evaluation of the utility of smaller Landsat resolution for computer land-cover mapping exico p0117 A82-27693
Visual and digital analysis of H.C.M.M. data over eastern Mexico Sea ice movements from synthetic aperture radar ND-A109002] p0097 N82-19435 elements /Resolution of Landsat resolution/ Canada --- thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 [AD-A109002] p0114 A82-27625 ICE REPORTING Improving the quality of aerial photography / Concerning the 'Basic principles of aerial photography'/ p0117 A82-28467 Structure of hardware and software at a regional center Comparisons of laser profilometer sea ice roughness for the automated processing of remote-sensing images statistics with surface truthed data and SLAR imag p0094 A82-27619 p0130 A82-28128 Possibilities of using experience gained from the thematic Profiling sensitivity to image quality IDAHO p0084 N82-18931 Multiresource inventory methods pilot test --- for mapping of the moon in studies of earth resources by [AD-A108405] p0060 A82-27601 p0083 A82-28138 The LANDSAT system operated in Brazil by CNPq/INPE Characteristics of the use of laser-mirror scanners for An evaluation of ISOCLS and CLASSY clustering results obtained in the area of mapping and future algorithms for forest classification in northern Idaho --- Elk River quadrange of the Clearwater National Forest image processing in cartography and aerial photography p0121 N82-20603 [E82-10080] Partially processed multispectral scanner p0069 N82-21650 SAR image quality --- conference, Frascati, Italy, 11-12 [E82-10109] high-density tapes reformatting system (HDT-AM/AMC) ILLINOIS Dec. 1980; synthetic aperture radar (SAR) [ESA-SP-172] p012 p0122 N82-21458 an specifications An investigation of the ozone plume from a small city p0074 A82-26329 p0118 N82-16438 Two-dimensional power spectra of SEASAT SAR imagery ocean waves p0098 N82-21469 Multidisciplinary research on the application of remote ocean waves ILLUMINATION sensing to water resources problems --- Wisconsin [E82-10021] p0106 N82-16439 CNPq/INPE: LANDSAT system --- operations at the The influence of illumination and viewing geometry on The influence of illumination one state that the reflectance factor of agricultural targets p0061 A82-27646 IMAGING TECHNIQUES p0112 A82-21398 Digital photography techniques The use of satellite data in rainfall monitoring --- Book p0101 A82-22873 Cuiaba station and the electronic processing and photo IMAGE CONTRAST Contrast reduction by the atmosphere and retrieval [E82-10023] p0118 N82-16441 Detection of natural disasters via Meteosat nonuniform surface reflectance p0112 A82-20423 p0075 A82-27040 Simplified algorithm for calculating radiative transfer in IMAGE CORRELATORS satellite images [INPE-2169-RPE/385] the long-term orbital p0131 A82-28132 The earth resources program for Automatic relocation of ground control points in p0118 N82-16450 station Salyut 6 LANDSAT imagery [RAE-TR-81071] Evaluation of two AN/APS-94 side-looking airborne radar Earth-scanning satellites lead reso p0117 A82-28343 [RAE-TR-8107.1]

IMAGE ENHANCEMENT

Geotechnical applications of Landsat image analysis of policy AB2-28838

policy applications of Landsat image analysis of policy applications of Landsat image analysis of policy applications are policy and policy applications and policy applications are policy and policy applications. pO118 N82-18657 systems in the detection of search and rescue targets D-A 108404] p0132 N82-18466 Matrix data analysis: Color/B and W coding is not always [AD-A108404] Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] enough p0133 N82-18672 [AD-A108406] selection technique p0113 A82-26840 DO084 N82-18930 An automatic optimum kernel-size INCIDENCE IDENCE
Influence of solar illumination angle on soybean canopy p0063 A82-28153 for edge enhancement Automatic analysis o [INPE-2212-MD/009] alysis of multispectral in images p0133 N82-19520 Landsat feature enhancement vegetation from soil r, can we separate LANDSAT imagery of the Venetian Lagoon: multitemporal analysis [E82-10036] p0119 N82-19 reflectance INDEXES (RATIOS) Enhancement of Landsat data for Hudson Bay lowlands getation p0114 A82-27623 A look at the commonly used LANDSAT vegetation p0119 N82-19612 vegetation indices A comparison of unsupervised classification procedures IMAGE FILTERS [E82-10123] p0070 N82-21657 on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy Increase in correlation accuracy of remote sens INDIA imagery by digital filtering p0113 A82-25454 p0119 N82-19613 Microwave brightness temperature pattern over the [E82-10038] IMAGE PROCESSING Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard Bhaskara p0093 A82-19560 Delineation of soil temperature regimes from HCMM Optimal methods of computerized image conversion data [E82-10042]

DO119 N82-19617

Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India p0089 A82-26016

AgRISTARS: Early warning and crop condition assessment. Patch image processor user's manual [E82-10055] p0065 N82-19630

AgRISTARS:

p0111 A82-19833

Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349

SUBJECT INDEX		LAKES
One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precambrian metamorphics of Singhbhum, eastern India	Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [PB82-115130] p0066 N82-19716	LANDSAT imagery of the Venetian Lagoon: A multitemporal analysis [E82-10036] p0119 N82-19612
Geotechnical applications of Landsat image analysis of Bhakra Dam Reservoir, India p0102 A82-26838 Satellite sensing for extraction of groundwater resources	INFRARED RADIATION Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980	A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy [E82-19038] p0119 N82-19613
information p0105 A82-27613 Utilisation of remote sensing in resources identification and land use in India - An integrated approach	INFRARED RADIOMETERS Snow cover monitoring using AVHRR data from TIROS and NOAA satellites Advanced Very High Resolution Radiometer p0105 A82-27614	Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas Sardinia and the Gulf of Orosei
p0076 A82-27701 INDIAN OCEAN Microwave brightness temperature pattern over the	Analysis of a discrete-time linear model for geothermal flux reconnaissance from two or three aircraft infrared measurements p0075 A82-27627	_
Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard Bhaskara p0093 A82-19560	Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 INFRARED SCANNERS	J
The TOCIND experiment relation between surface isotherms and ocean currents [CTAMN/81/R/10] p0098 N82-19805	Humidity measurement by infrared thermometry p0075 A82-26844 INFRARED SPECTRA	An approach to path radiance correction in MSS images p0115 A82-27629 Detection of volcanic ash fall area from Landsat MSS
MAGSAT anomaly profiles of the eastern Indian Ocean [E82-10066] p0086 N82-20589 INDIANA	Thermal vegetation canopy model studies [AD-A106422] p0064 N82-16455 INFRARED SPECTROMETERS	CCT data Eruption of Mt. Ontake in 1979 p0076 A82-27650 Phenomena modelling of remotely sensed data by image
Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat p0090 A82-27694	Measurement of atmospheric emission using a balloon-borne cryogenic Fourier spectrometer p0074 A82-21432 INFRARED SPECTROSCOPY	rationing p0076 A82-27670 A formation process of an oceanic vortex analyzed by multi-temporal remote sensing p0095 A82-27674
Interactive initialization of heat flux parameters for numerical models using satellite temperature measurements [E82-10048] p0120 N82-19623	Recent auroral measurements using a field-widened interferometer spectrometer p0126 A82-21434	The Japanese MOS and Los program Marine Observation Satellite p0129 A82-27606
Soybean canopy reflectance as influenced by cultural practices West Lafayette, Indiana [E82-10105] p0068 N82-21647	Inland water quality assessment from Landsat data p0105 A82-27610 INSOLATION	Earth sensing from space - Commercial and international aspects p0138 A82-27669
INDUSTRIAL AREAS A regional air quality model for the Kwinana industrial area of Western Australia p0075 A82-26403	Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656	Κ
INFESTATION Remote sensing applications to resource problems in South Dakota	INSTRUMENT ERRORS Radiometric calibration of the Coastal Zone Color Scanner on Nimbus 7 - A proposed adjustment	Crop classification using airborne radar and Landsat data p0058 A82-21033
[E82-10027] p0132 N82-16445 The application of remote sensing to resource management and environmental quality programs in Kansas	p0127 A82-26963 INTERFEROMETERS Recent autorial measurements using a field-widened	Utilization of spatial complexity in computer classified Landsat MSS data for multi-factoral thematic mapping p0129 A82-27648
Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447	interferometer spectrometer p0126 A82-21434 INTERNATIONAL COOPERATION Development of cooperation between CMEA member countries in the development and utilization of space-based	The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation
The Office for Remote Sensing of Earth Resources Pennsylvania INFORMATION ADAPTIVE SYSTEM An information adaptive system study report and	systems for the remote sensing of earth resources and the environment p0138 A82-27543 INTERNATIONAL LAW	[E82-10029] p0063 N82-16447 Interactive initialization of heat flux parameters for numerical models using satellite temperature
development plan [NASA-CR-166768] p0120 N82-19644 INFORMATION DISSEMINATION	Remote sensing and international law p0137 A82-24343 IONOSPHERIC CURRENTS	measurements [E82-10048] p0120 N82-19623 Agricultural soil moisture experiment, Colby, Kansas
An analysis of user requirements for operational land satellite data p0116 A82-27685 CNPq/INPE: LANDSAT system operations at the	Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources [E82-10043] p0084 N82-19618	1978: Measured and predicted hydrological properties of the soil [E82-10057] p0065 N82-19632 Registration verification of SEA/AR fields Oregon,
Cuiaba station and the electronic processing and photo laboratories [E82-10023] p0118 N82-16441 AgRISTARS: Soil moisture/early warning and crop	IONOSPHERIC PROPAGATION Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection	Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635
condition assessment. Interface control document [E82-10053] p0065 N82-19628 Future Earthnet Dissemination Systems (FEDS) study.	[PB82-113283] p0096 N82-17805 IONOSPHERIC SOUNDING Ionospheric troughs in Antarctica p0073 A82-21217	Ground registration of data from an airborne scatterometer [E82-10084] p0068 N82-21636
Executive summary remote sensing data transmission [REPT-3318] p0124 N82-21698 INFORMATION SYSTEMS	IOWA Evaluation of a segment-based LANDSAT full-frame approach to corp area estimation	Application of aerial and space photographic data in the study of subsurface water and tectonic structures p0090 A82-27466
Information extraction from remotely sensed data - A user view p0112 A82-21089 Some problems concerning the effective use of remote	[E82-10067] p0066 N82-20590 Determination of the optimal level for combining area and yield estimates	KENTUCKY Satellite and surface geophysical expression of anomalous crustal structure in Kentucky and Tennessee
sensing p0137 A82-26123 Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660	[E82-10146] p0071 N82-21673 IRAN The relationship between seismicity and lineaments of	[NASA-TM-82163] pOO84 N82-17715 KUWAIT An experiment in probabilistic relaxation for terrain cover
INFRARED DETECTORS Orbital performance of a 1.6 micrometer DMSP snow/cloud discrimination sensor p0130 A82-27653	the Anatolian-Caucasian-Iranian segment of the Mediterranean fold belt p0089 A82-20341	classification of Kuwait from Landsat imagery p0062 A82-27680
INFRARED IMAGERY Satellite observed cloud patterns associated with excessive precipitation outbreaks	The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the Mediterranean fold belt p0089 A82-20341	L
[PB80-215130] p0073 A82-19177 Thermal viewing system for studying the earth's resources p0125 A82-21022	Relationship of hydrothermal phenomena within the Leinster Granite to crustal fractures delineated from Landaut	LAGOONS LANDSAT imagery of the Venetian Lagoon: A multitemporal analysis
Thermal infrared data from the Heat Capacity Mapping Mission p0127 A82-24964 High precision radiometric temperature measurements	imagery p0089 A82-26015 IRON ORES One orogenic belt or two - A structural reinterpretation	[E82-10036] p0119 N82-19612 LAKE ICE Ground-truth observations of ice-covered North Slope
of the ocean surface p0094 A82-27640 HCMM night-time thermal IR imaging experiment in Michigan Heat Capacity Mapping Mission	supported by Landsat data products of the Precambrian metamorphics of Singhbhum, eastern India p0089 A82-26017	Lakes imaged by radar [NASA-TM-84127] p0107 N82-18664 LAKE MICHIGAN
p0115 A82-27655 Thermal IR detection of submarine gas seepages in the western lstra off-shore area / Yugoslavia/ p0076 A82-27661	IRRIGATION Microwave radiometry of lands under natural and artificial moistening p0057 A82-21028	The use of wave contrast measurements in the evaluation of SAR/gravity models p0130 A82-27675 LAKE ONTARIO Visual and digital analysis of H.C.M.M. data over eastern
Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567	The use of space photographs to compile water-amelioration maps p0106 A82-28137	Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698
On the accuracy of thermal inertia mapping by infrared imagery [SAAB-REPR-AE-10] p0120 N82-19656	The TOCIND experiment relation between surface isotherms and ocean currents [CTAMN/81/R/10] p0098 N82-19805	Geotechnical applications of Landsat image analysis of Bhakra Dam Reservoir, India p0102 A82-26838 Remote sensing of the structure of taiga landscapes
INFRARED PHOTOGRAPHY The estimation of the surface moisture of a vegetated soil using aerial infrared photography p0058 A82-21093 A system for quantitative determination of species and	The use of the airborne lidar system 'ALEX F 1' for aerosol tracing in the lower troposphere p0073 A82-20226 Reconstruction of a present-day landscape map of a	Russian book p0059 A82-27397 The effect of anthropogenic factors on the dynamics of lakes in the plains of Central Asia /studied on the basis of space photographs/ p0103 A82-27469
vitalities of urban trees on color-infrared photographs p0074 A82-24958 Remote sensing of sulfur dioxide effects on vegetation.	central part of Italy using space images p0081 A82-20340 Integration of Landsat, geological and geophysical data	Investigation of silting and currents in Lake Balaton by use of hydraulic models and aerial and space photographs p0104 A82-27472
Volume 1: Summary [PB82-115122] p0066 N82-19715	for use in thematic mapping at regional scale p0090 A82-27672	Interpretation of multispectral aerial photographs of Lake Mueggelsee p0104 A82-27473

LAND MANAGEMENT		SUBJECT INDEX
Spectrometric studies of the water composition of Lake	LANDSAT 2	Particle precipitation and atmospheric X-and Gamma-rays
Mueggelsee p0104 A82-27474 Inland water quality assessment from Landsat data	LANDSAT-2 and LANDSAT-3 flight evaluation report, 23 January to 23 July 1980	in the South Atlantic magnetic anomaly by balloon experiments
p0105 A82-27610	[E82-10022] p0132 N82-16440	[INPE-2119-RPE/343] p0083 N82-17711
Mapping of water quality using Landsat imagery p0106 A82-27692	LANDSAT 3 LANDSAT-2 and LANDSAT-3 flight evaluation report,	Some new methods in geomagnetic field modeling applied to the 1960 - 1980 epoch
Multidisciplinary research on the application of remote	23 January to 23 July 1980	[NASA-TM-83868] p0083 N82-17714
sensing to water resources problems Wisconsin [E82-10021] p0106 N82-16439	[E82-10022] p0132 N82-16440 LARGE AREA CROP INVENTORY EXPERIMENT	Satellite and surface geophysical expression of anomalous crustal structure in Kentucky and Tennessee
Ground-truth observations of ice-covered North Slope	Transition year labeling error characterization study	[NASA-TM-82163] p0084 N82-17715
Lakes imaged by radar [NASA-TM-84127] p0107 N82-18664	Kansas, Minnesota, Montana, North Dakota, South Dakota, and Oklahoma	Equivalent source modeling of the main field using Magsat data
Resourceful decisions: LANDAT in Michigan [E82-10037] p0078 N82-19601	[E82-10111] p0069 N82-21651	[E82-10041] p0084 N82-19616 Magsat science investigations
HCMM hydrological analysis in Utah Utah lake	LARGE SPACE STRUCTURES The microwave radiometer spacecraft. A design study:	[E82-10045] p0085 N82-19620
[E82-10063] p0107 N82-20586 LAND MANAGEMENT	Executive summary pO131 N82-16154	Investigations of medium wavelength magnetic anomalies in the Eastern Pacific using Magsat data
Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images	LASER ALTIMETERS Airborne laser systems use in terrain mapping	[E82-10047] p0119 N82-19622 Use of Magsat anomaly data for crustal structure and
p0076 A82-27690	p0082 A82-27584	mineral resources in the US midcontinent
Assessment of change in Bangladesh coastal regions p0076 A82-27696	A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632	[E82-10049] p0091 N82-19624 Improved definition of crustal anomalies for Magsat
Landsat MSS applied to rangeland management in	LASER APPLICATIONS	data
Seasat imagery for detection of coastal Wetlands	Mapping in tropical forests - A new approach using the laser APR Airborne Profile Recorder	[E82-10051] p0085 N82-19626 MAGSAT anomaly profiles of the eastern Indian Ocean
p0063 A82-27700 Examination of the operational prospects for remote	p0081 A82-20407 Comparisons of laser profilometer sea ice roughness	[E82-10066] p0086 N82-20589 Preliminary models of the core field geomagnetic
sensing in Europe	statistics with surface truthed data and SLAR imagery	models
[ESA-CR(P)-1476] p0138 N82-18669 San Juan National Forest Land Management Planning	p0094 A82-27619 Characteristics of the use of laser-mirror scanners for	[E82-10129] p0087 N82-21659 Compatibility study of the MAGSAT data and
Support System (LMPSS) requirements definition	image processing in cartography and aerial photography p0117 A82-28143	aeromagnetic data [E82-10136] p0123 N82-21663
LAND USE	Model studies of laser absorption computed tomography	Continuation of potential field data to a common attitude
A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143	for remote air pollution measurement p0077 A82-28152 An aerial survey of water turbidity and laser depth	magsat data [E82-10138] p0123 N82-21665
Detailed land use classification based on multitemporal	sounding performance along the Queensland Coast	Investigation of antarctic crust and upper mantle using
Landsat-MSS-data p0076 A82-27657 Flexible processing of remote sensing data through	[AD-A109050] p0098 N82-19802 LASER RANGE FINDERS	MAGSAT and other geophysical data [E82-10147] p0087 N82-21674
integration of image processing and geobased information systems p0116 A82-27667	Session III of the VLBI/Laser intercomparison task of the NASA crustal dynamics project	Use of MAGSAT anomaly data for crustal structure and
Visual and digital analysis of H.C.M.M. data over eastern	[NASA-CR-168427] p0083 N82-17708	mineral resources in the US midcontinent [E82-10152] p0092 N82-21677
Canada thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698	LEAST SQUARES METHOD The location of three-dimensional linear objects by using	MAGNETIC DIPOLES
Utilisation of remote sensing in resources identification	multiple projections pO111 A82-20404 LEAVES	Equivalent source modeling of the main field using Magsat data
and land use in India - An integrated approach p0076 A82-27701	Soybean canopy reflectance as influenced by cultural	[E82-10041] p0084 N82-19616
Remote sensing data applied to land-use survey at the Paraiba Valley Brazil	practices West Lafayette, Indiana [E82-10105] p0068 N82-21647	MAGNETIC INDUCTION Electromagnetic deep-probing (100-1000 KMS) of the
[E82-10025] p0081 N82-16443	LIBYA	Earth's interior from artificial satellites: Constraints on the
The application of remote sensing to resource management and environmental quality programs in Kansas	Precipitation assessment from environmental satellite data for northwest Libya including the Gefara plan	regional emplacement of crustal resources [E82-10044] p0085 N82-19619
Cimarron National Grasslands, Prairie Potawatomi	[RSC-4] p0107 N82-19790 LIGHT SCATTERING	MAGNETIC STORAGE Partially processed multispectral scanner LANDSAT
Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447	Simulated response of a multispectral scanner over wheat	high-density tapes reformatting system (HDT-AM/AMC)
Resourceful decisions: LANDAT in Michigan	as a function of wavelength and view/illumination direction	design specifications [E82-10020] p0118 N82-16438
[E82-10037] p0078 N82-19601 Application of remote sensing to state and regional	[E82-10144] p0071 N82-21671	MAGNETIC STORMS
problems mississippi	Application of remote sensing to state and regional	Comparison of storm-time changes of geomagnetic field at ground and at MAGSAT altitudes
[E82-10033] p0078 N82-19609 Notes for Brazil sampling frame evaluation trip	problems mississippi {E82-10033} p0078 N82-19609	[E82-10148] p0087 N82-21675
[E82-10060] p0066 N82-19635	LIMNOLOGY	MAGNETIC SURVEYS Integration of LANDSAT with geology and airborne
. Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources	The effect of anthropogenic factors on the dynamics of lakes in the plains of Central Asia /studied on the basis	geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming
in Amazonas Brazil [E82-10069] p0078 N82-20592	of space photographs/ p0103 A82-27469 Calcium carbonate precipitation in Pyramid Lake, Nevada,	[E82-10028] p0091 N82-16446
Land use in the Paraiba Valley through remotely sensed	as monitored by satellite - 1978 and 1980	Improved definition of crustal anomalies for Magsat data
data Brazil [E82-10072] p0079 N82-20595	p0105 A82-27634	[E82-10051] p0085 N82-19626
AgRISTARS: Agriculture and Resources Inventory	Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas	Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data
Surveys Through Aerospace Remote Sensing. Enumerator's manual, 1981 ground data survey	Sardinia and the Gulf of Orosei	[E82-10062] p0086 N82-20585
[E82-10116] p0069 N82-21653	[E82-10073] p0091 N82-20596 HCMM: Soil moisture in relation to geologic structure	Spherical harmonic representation of the main geomagnetic field for world charting and investigations of
Strategies for using remotely sensed data in hydrologic models	and lithology, northern California Northern Coast Range, Sacramento Valley, and the Modoc Plateau	some fundamental problems of physics and geophysics [E82-10075] p0086 N82-20598
[EB2-10156] p0109 N82-21680 ANDFORMS	[E82-10135] p0092 N82-21662	Preliminary models of the core field geomagnetic
Methods of editing cloud and atmospheric layer affected	Use of MAGSAT anomaly data for crustal structure and mineral resources in the US midcontinent	models [E82-10129] p0087 N82-21659
pixels from satellite data [E82-10154] p0123 N82-21678	[E82-10152] p0092 N82-21677	Compatibility study of the MAGSAT data and
ANDSAT D	LITHOSPHERE Electromagnetic deep-probing (100-1000 KMS) of the	aeromagnetic data [E82-10136] p0123 N82-21663
Imaging the earth, I - The troubled first decade of Landsat p0137 A82-27169	Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources	Continuation of potential field data to a common altitude
Information expectations from Landsat-D	[E82-10043] p0084 N82-19618	magsat data [E82-10138] p0123 N82-21665
p0128 A82-27583 Implementation of the Space Oblique Mercator projection	MAGSAT anomaly profiles of the eastern Indian Ocean [E82-10066] p0086 N82-20589	Separation of internal and external fields: A new technique of data screening MAGSAT data
in a production environment p0129 A82-27628	Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the	[E82-10139] p0123 N82-21666
The potential of remote sensing to monitor soil erosion on cropland p0061 A82-27656	regional emplacement of crustal resources	Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data
Earth sensing from space - Commercial and international	[E82-10155] p0087 N82-21679 LONG RANGE WEATHER FORECASTING	[E82-10147] p0087 N82-21674
aspects p0138 A82-27669 An analysis of user requirements for operational land	Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold	Comparison of storm-time changes of geomagnetic field at ground and at MAGSAT altitudes
satellite data p0116 A82-27685	half-year	[E82-10148] p0087 N82-21675
ANDSAT D PRIME Earth sensing from space - Commercial and international	[BLL-TRANS-1509-(9022.552)] p0097 N82-19756	MAGNETIC VARIATIONS Ideal phase in estimating the spatial gradient of magnetic
aspects p0138 A82-27669	M	daily variations recorded by magnetometer arrays
An analysis of user requirements for operational land satellite data p0116 A82-27685	141	p0127 A82-26000 Studies related to Magsat Backus effect and the
ANDSAT SATELLITES Effects of the atmosphere on the detection of surface	MAGNETIC ANOMALIES Geophysical and Landast lineament manning - An	westward drift [E82-10050] p0085 N82-19625
changes from Landsat multispectral scanner data	Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India	Electromagnetic deep-probing (100-1000 KMS) of the
p0125 A82-21091	p0089 A82-26016	Earth's interior from artificial satellites: Constraints on the

Harmonic structure of Pc 3-4 pulsations p0082 A82-26266

Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources [E82-10155] p0087 N82-21679

The Landsat program - Moving ahead p0137 A82-21280

	MARITIME SATELLITES	METEOROLOGICAL SATELLITES
MAGNETIZATION Satellite and surface geophysical expression of anomalous	The Japanese MOS and Los program Marine	Climate observing system studies: An element of the
crustal structure in Kentucky and Tennessee	Observation Satellite p0129 A82-27606	NASA Climate Research Program: Workshop report
[NASA-TM-82163] p0084 N82-17715	MARKET RESEARCH Program on stimulating operational private sector use	[NASA-TM-84040] p0078 N82-18808
MAINE Fanning - A classification algorithm for mixture	of Earth observation satellite information	METEOROLOGICAL SERVICES Analyses of the Eastern Pacific without ship PAPA data
landscapes applied to Landsat data of Maine forests	[E82-10131] p0138 N82-21660	buoys, radar and satellite to replace weathership
p0062 A82-27668	MARKING	p0093 A82-19139
MAN ENVIRONMENT INTERACTIONS	Documentation of computer procedures for labeling spring grains and discriminating between spring wheat and	Publications and reports on contracts and grants, 1980
The effect of anthropogenic factors on the dynamics of lakes in the plains of Central Asia /studied on the basis	barley using LANDSAT data	[PB82-103219] p0138 N82-17792
of space photographs/ p0103 A82-27469	[E82-10030] p0063 N82-16448	METEOSAT SATELLITE Detection of natural disasters via Meteosat
MAPPING	MARSHLANDS HCMM night-time thermal IR imaging experiment in	p0075 A82-27040
Reconstruction of a present-day landscape map of a	Michigan Heat Capacity Mapping Mission	Atlas of METEOSAT imagery
central part of Italy using space images	p0115 A82-27655	[ESA-SP-1030] p0124 N82-21700
Mapsat compared to other earth-sensing concepts	MASSIFS	MEXICO Inventory of eroded areas in the state of Guanajuato
pO128 A82-27581	Application of aerial and space photographic data in the study of subsurface water and tectonic structures	Mexico, by automatic analysis of Landsat images
Airborne laser systems use in terrain mapping	p0090 A82-27466	p0076 A82-27690
p0082_A82-27584 Automatic linear recognition and analysis using computer	MATHEMATICAL MODELS	Application of machine processing of visible and thermal
program LIRA satellite imagery for earth observations	Stochastic models of cover class dynamics remote sensing of vegetation p0059 A82-27586	data to the study of the geothermal area of Cerro Prieto, Mexico p0117 A82-27693
p0090 A82-27612	Data base requirements in support of crop models	Sonora exploratory study for the detection of wheat-leaf
Topographic mapping using Landsat data	p0060 A82-27588	rust
p0082 A82-27615	Analysis of a discrete-time linear model for geothermal flux reconnaissance from two or three aircraft infrared	[E82-10133] p0070 N82-21661
Wide area, coarse resolution imaging with satellite-borne synthetic aperture radars in low-earth and geosynchronous	measurements p0075 A82-27627	MICHIGAN HCMM night-time thermal IR imaging experiment in
orbits p0082 A82-27631	The use of wave contrast measurements in the evaluation	Michigan Heat Capacity Mapping Mission
The role of computer graphics in geographic research	of SAR/gravity models p0130 A82-27675 An invertible coniferous forest canopy reflectance	pO115 A82-27655
p0117 A82-27923 Photogrammetry software. A package for everyone	model p0062 A82-27679	Seasat imagery for detection of coastal Wetlands p0063 A82-27700
[AD-A108098] p0118 N82-17570	Construction of a mathematical model for the recognition	p0063 A82-27700 Resourceful decisions: LANDAT in Michigan
Matrix data analysis: Color/B and W coding is not always	of identical images on a pair of photographs	[E82-10037] p0078 N82-19601
enough [AD-A108406] p0084 N82-18930	p0117 A82-28146 An optical model for the microwave properties of sea	Application of satellite frost forecast technology to other
[AD-A108406] p0084 N82-18930 Profiling sensitivity to image quality	ice	parts of the United States, phase 2 Pennsylvania,
[AD-A108405] p0084 N82-18931	[NASA-TM-83865] p0095 N82-17561	Michigan, and Florida - [NASA-CR-166827] p0121 N82-20607
The LANDSAT system operated in Brazil by CNPq/INPE	Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605	Application of satellite frost forecast technology to other
 results obtained in the area of mapping and future perspectives 	Wheat stress indicator model, Crop Condition Assessment	parts of the United States, phase 2, introduction
[E82-10080] p0121 N82-20603	Division (CCAD) data base interface driver, user's manual	p0121 N82-20608
Remote sensing in Latin America: Technology and	[E82-10031] p0064 N82-19607 Equivalent source modeling of the main field using Magsat	Applicability of satellite freeze forecasting and cold
markets for the 1980's [AD-A108784] p0138 N82-20626	data	climate mapping to the other parts of the United States Michigan p0068 N82-20613
As-built design specification for segment map (Sgmap)	[E82-10041] p0084 N82-19616	MSU test of P-model p0121 N82-20614
program	Spherical harmonic representation of the main	MICROCOMPUTERS
[E82-10094] p0123 N82-21646	geomagnetic field for world charting and investigations of some fundamental problems of physics and geophysics	Development and implementation of a low cost micro
Preliminary models of the core field geomagnetic models	[E82-10075] p0086 N82-20598	computer system for Landsat analysis and geographic data
[E82-10129] p0087 N82-21659	Freeze prediction model Pennsylvania	base application p0129 A82-27649 A microcomputer for control of data collection platforms
A digital technique for constructing variable-width lines	p0067 N82-20609 MSU test of P-model p0121 N82-20614	GOES satellites
[AD-A110287] p0087 N82-21689 Computer based technique for converting a contour map	A gradient model of vegetation and climate utilizing	[INPE-2104-RPE/331] p0133 N82-18881
into an equispaced grid of points	NOAA satellite imagery. Phase 1: Texas transect	MICROWAVE EMISSION
[RAE-TR-80110] p0087 N82-21697	[E82-10107] p0069 N82-21648 MAXIMUM ENTROPY METHOD	Soil moisture determination - Experiments with passive microwave radiometers p0057 A82-19529
MAPS Taxonomic classification of world map units in crop	Information theory lateral density distribution for Earth	Microwave radiometry of lands under natural and artificial
producing areas of Argentina and Brazil with representative	inferred from global gravity field	moistening p0057 A82-21028
US soil series and major land resource areas in which they	[NASA-TM-83825] p0085 N82-19731 MAXIMUM LIKELIHOOD ESTIMATES	Microwave radiation peculiarities of vegetative covers
		p0058 A82-21029
OCCUI 0050) 0065 NR3 19633		
[E82-10058] p0065 N82-19633	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled	Mixture formulas applied in estimation of dielectric and radiative characteristics of soils and grounds at microwave
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040	Mixture formulas applied in estimation of dielectric and radiative characteristics of soils and grounds at microwave frequencies p0058 A82-21030
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood	radiative characteristics of soils and grounds at microwave frequencies p0058 A82-21030 Theoretical and experimental studies of microwave
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p0128 A82-27591	radiative characteristics of soils and grounds at microwave frequencies p0058 A82-21030 Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p0128 A82-27591 MEDITERRANEAN SEA	radiative characteristics of soils and grounds at microwave frequencies p0058 A82-21030 Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p0128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in	radiative characteristics of soils and grounds at microwave frequencies p0058 A82-21030 Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p0128 A82-27591 MEDITERRANEAN SEA	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p0128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20344	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy classifier - A general maximum likelihood discriminant for remote sensing applications policy A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in policy policy policy policy and policy pol	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy and policy an	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data—buoys, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontial system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy classifier - A general maximum likelihood discriminant for remote sensing applications policy A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite oceanography policy A82-20344 Structure and variability of the Alboran Sea frontal system policy A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakatstan considered as an example/ policy A82-27463	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy and policy an	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p0128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Astructure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data between the book of the book of the Combination of the Structure and variability of the Alboran Sea frontal system p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-2670 Photogram metry from aircraft side camera movies Winter MONEX Remote sensing of rainfall rates using airborne microwave	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy (12 A82-21040). The logit classifier - A general maximum likelihood discriminant for remote sensing applications policy (12 A82-27591). The use of Meteor-satellite oceanography policy (12 A82-27591). Structure and variability of the Alboran Sea frontal system policy (12 A82-20447). The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakhstan policy (12 A82-27463). MERCATOR PROJECTION might mentation of the Space Oblique Mercator projection in a production environment policy A82-27628.	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700 Photogrammetry from aircraft side camera movies - Winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26309	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policial polici	radiative characteristics of soils and grounds at microwave frequencies p0058 A82-21030 Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policial polici	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data believe to the pool of the	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett. July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data below, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-2670 Photogram metry from aircraft side camera movies winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-27639 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [P881-246035] p0095 N82-16697	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policity and the logistic classifier - A general maximum likelihood discriminant for remote sensing applications pol 28 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite oceanography poly a Meteor-satellite oceanography of the Alboran Sea frontal system MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data with Kazakhstan considered as an example/ MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment pol 29 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] METAL VAPOR LASERS	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements p0131 A82-28142
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data buoys, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontial system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700 Photogrammetry from aircraft side camera movies - Winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/ radiometer p0105 A82-26721 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/ radiometer p0105 A82-26739 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [P881-246035] Classification of the fields of anomaly in monthly water	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policial polici	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21030 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-3024-0-11/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements MICROWAVE ADIOMETERS Microwave brightness temperature pattern over the
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policities and policities policities policities policities. Policities poli	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20444 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakhstan considered as an example/ MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational.	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Blaskara
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data below, and the season of the combination of the	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policities and policities policities policities policities. Policities poli	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [INASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [INASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard Bhaskara Comparison of conventionally measured sea surface
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data body, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontial system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-25700 Photogrammetry from aircraft side camera movies - Winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26721 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26739 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy classifier - A general maximum likelihood discriminant for remote sensing applications pol 28 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ p0102 A82-27463 MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSRE-MEMO-3151]	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21030 Some peculiarities of formutation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmshatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data body, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700 Photogrammetry from aircraft side camera movies - Winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26721 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-27639 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0095 N82-18697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns probabilities and its use in the identification of mislabeled patterns policial policia	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21030 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-3024-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Microwave Implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer of 0903 A82-284063 The structure and basic parameters of a satellite system
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSRE-MEMO-3151] p0122 N82-21499 METEOROLOGICAL FLIGHT Photogrammenty from aircraft side camera movies winter MONEX p0075 A82-2672.	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements p0131 A82-28142 MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 The structure and basic parameters of a satellite system for the remote sensing of earth resources
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data by busy, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700 Photogrammetry from aircraft side camera movies - Winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-27639 An experimental program to provide remote measurement and analysis of ocean waives, sea level winds and balanced pressure in support of Seasat-A [P81-246035] p0095 N82-16697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by satellite	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policities and policities polic	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [INASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [INASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 The structure and basic parameters of a satellite system for the remote sensing of earth resources p0131 A82-28129
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data by bursh, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-219212 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 Photogrammetry from aircraft side camera movies winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26721 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-27639 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [P81-246035] p0095 N82-16697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022-552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] MARINE RESOURCES	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ p10102 A82-27463 MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSRE-MEMO-3151] p012 N82-26721 METEOROLOGICAL FLIGHT Photogrammetry from aircraft side camera movies winter MONEX METEOROLOGICAL PARAMETERS Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara D003 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-19563 The structure and basic parameters of a satellite system for the remote sensing of earth resources P0131 A82-28129 The microwave radiometer spacecraft. A design study: Executive summary P0131 N82-16154
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data below, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diumal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-25700 Photogrammetry from aircraft side camera movies - Winter MONEX P0075 A82-26703 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0095 N82-18697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] m0097 N82-19781	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy classifier - A general maximum likelihood discriminant for remote sensing applications pol 28 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite oceanography polo3 A82-20344 Structure and variability of the Alboran Sea frontal system polo3 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data with Kazakhstan considered as an example/ polo3 A82-27628 MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment pol 29 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] pol 8 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping pol 3 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSRE-MEMO-3151] METEOROLOGICAL FLIGHT Photogrammetry from aircraft side camera movies winter MONEX Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for moterorlogical analysis	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmshatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer of 131 A82-28129 The microwave radiometer spacecraft. A design study: p0131 A82-28129 The microwave radiometer spacecraft. A design study: Executive summary Misson definition for a large-aperture microwave mi
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data by buoys, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 Photogrammetry from aircraft side camera movies winter MONEX Photogrammetry from aircraft side camera movies winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26701 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [P81-246035] Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLI-TRANS-1509-(9022 552)] p0097 N82-19786 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 MARINE RESOURCES Brazilian remote sensing activities, current and prospective needs	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSBE-MEMO-3151] p0122 N82-21499 METEOROLOGICAL FLIGHT Photogrammetry from aircraft side camera movies winter MONEX p0075 A82-26721 METEOROLOGICAL PARAMETERS Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis p0073 A82-19179 A study of model parameters associated with the urban	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements p0131 A82-28142 MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 The structure and basic parameters of a satellite system for the remote sensing of earth resources p0131 A82-28129 The microwave radiometer spacecraft, A design study: Executive summary p0131 N82-16154 Mission definition for a large-aperture microwave radiometer spacecraft and p0131 N82-16155
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data below, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diumal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-25700 Photogrammetry from aircraft side camera movies - Winter MONEX P0075 A82-26703 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0095 N82-18697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] m0097 N82-19781	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policities and policities and policities policities policities. Policities policities policities policities policities policities. Policities	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmshatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer of 131 A82-28129 The microwave radiometer spacecraft. A design study: p0131 A82-28129 The microwave radiometer spacecraft. A design study: Executive summary Misson definition for a large-aperture microwave mi
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data by busy, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700 Photogrammetry from aircraft side camera movies winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26739 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [P81-246035] p0095 N82-16697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022-552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] MARINE RESOURCES Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-18444 Technologies for oceanography: An assessment of Federal technologies for oceanography: An asses	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ p10102 A82-27463 MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSRE-MEMO-3151] p0122 N82-21499 METEOROLOGICAL FUIGHT Photogrammetry from aircraft side camera movies winter MONEX METEOROLOGICAL PARAMETERS Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis p0073 A82-19179 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160]	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements p0131 A82-28142 MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer y p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer y p0093 A82-24063 The structure and basic parameters of a satellite system for the remote sensing of earth resources p0131 A82-28129 The microwave radiometer spacecraft. A design study: Executive summary p0131 N82-16155 Imaging microwave radiometer. Phase A study. Volume 1: Executive summary instrument for the European Remote Sensing system payload
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data body, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diumal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700 Photogrammetry from aircraft side camera movies - Winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26721 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26739 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0095 N82-18697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854] p0097 N82-19781 MARINE RESOURCES Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Technology and oceanography: An assessment of Federal technologies for oceanogr	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns policy classifier - A general maximum likelihood discriminant for remote sensing applications pol 28 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite oceanography polo3 A82-20344 Structure and variability of the Alboran Sea frontal system polo3 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ polo3 A82-27628 MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment pol 29 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] pol 6 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping pol 3 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSRE-MEMO-3151] METEOROLOGICAL FLIGHT Photogrammetry from aircraft side camera movies pol 75 A82-28721 METEOROLOGICAL PARAMETERS Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis pol 703 A82-19179 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10186]	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21030 Some peculiarities of formutation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmshatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE ADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer y0093 A82-24063 The structure and basic parameters of a satellite system for the remote sensing of earth resources The microwave radiometer spacecraft. A design study. Executive summary P0131 N82-16154 Misson definition for a large-aperture microwave radiometer spacecraft. P0131 N82-16155 Imaging microwave radiometer hase A study. Volume 1: Executive summary instrument for the European Remote Sensing system payload [ESS/SS.1006]
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of gedid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data burship structure and variability of the Alboran Sea Irontal system p0093 A82-19139 Structure and variability of the Alboran Sea Irontal system p0093 A82-20447 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diumal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 Photogrammetry from aircraft side camera movies - Winter MONEX Photogrammetry from aircraft side camera movies - Winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/ radiometer p0105 A82-26709 An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [P81-246035] p0095 N82-16697 Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil [INPE-2307-TDL/074] p0097 N82-19778 Estimating ocean-air heat fluxes during cold air outbreaks by stellite [NASA-TM-83854] p0097 N82-19781 MARINE RESOURCES Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Technology and oceanographic research and monitoring [OTA-0-142] Ship and satellite bio-optical research in the California Bight	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ p10102 A82-27463 MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSRE-MEMO-3151] p0122 N82-21499 METEOROLOGICAL FUIGHT Photogrammetry from aircraft side camera movies winter MONEX METEOROLOGICAL PARAMETERS Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis p0073 A82-19179 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160]	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE IMAGERY MICROWAVE INAGERY MICROWAVE INAGERY MICROWAVE INAGERY MICROWAVE INAGERY Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer y 0093 A82-19560 Comparison of conventionally measured sea surface temperature and basic parameters of a satellite system for the remote sensing of earth resources p0131 A82-28129 The microwave radiometer spacecraft. A design study: p0131 N82-16154 Mission definition for a large-aperture microwave radiometer spacecraft Imaging microwave radiometer p0131 N82-16155 Imaging microwave radiometer p1548 Executive summary instrument for the European Remote Sensing system p30ad [ESS/SS-1006] Assessment of the quality of GATE area rainfall data from a Nimbus-5 radiometer
[E82-10058] p0065 N82-19633 MARINE ENVIRONMENTS Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583 MARINE METEOROLOGY Analyses of the Eastern Pacific without ship PAPA data by busy, radar and satellite to replace weathership p0093 A82-19139 Structure and variability of the Alboran Sea frontal p0093 A82-19139 Structure and variability of the Alboran Sea frontal p0093 A82-19139 Structure and variability of of mulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 Photogrammetry from aircraft side camera movies winter MONEX Photogrammetry from aircraft side camera movies winter MONEX Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26701 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/ladiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/ladiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26731 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26701 Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-26701 Remote sensing of rainfall rates using airborne microwave rain-s	Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 The logit classifier - A general maximum likelihood discriminant for remote sensing applications p128 A82-27591 MEDITERRANEAN SEA The use of Meteor-satellite image data in p0093 A82-20344 Structure and variability of the Alboran Sea frontal system p0093 A82-20447 MELTING The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data / with Kazakhstan considered as an example/ p0102 A82-27463 MERCATOR PROJECTION Implementation of the Space Oblique Mercator projection in a production environment p0129 A82-27628 MESOSCALE PHENOMENA Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 METAL VAPOR LASERS A shuttle scanning laser altimeter for topographic mapping p083 A82-27632 METEOROLOGICAL CHARTS The design and implementation of an operational computer-based weather radar system rainfall maps [RSBE-MEMO-3151] p0122 N82-21499 METEOROLOGICAL FLIGHT Photogrammetry from aircraft side camera movies winter MONEX p0075 A82-26721 METEOROLOGICAL PARAMETERS Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis p0073 A82-19179 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160] METEOROLOGICAL RADAR The design and implementation of an operational, or monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological manysis p0073 A82-19179 A study of model parameters associated with the urban climate using HCMM data analysis of St. Louis, Missouri infrared imagery [E82-10160]	radiative characteristics of soils and grounds at microwave frequencies Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034 Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 An optical model for the microwave properties of sea ice [NASA-TM-83865] p0095 N82-17561 Satellite-derived ice data sets no. 1: Antarctic monthly average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 MICROWAVE IMAGERY Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-radiometer measurements p0131 A82-28142 MICROWAVE RADIOMETERS Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIRI/ onboard Shaskara p0093 A82-19560 Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometer y p0093 A82-24063 The structure and basic parameters of a satellite system for the remote sensing of earth resources p0131 A82-28129 The microwave radiometer spacecraft, A design study, Executive summary p0131 N82-16155 Imaging microwave radiometer, Phase A study, Volume 1: Executive summary instrument for the European Remote Sensing system payload [ESS/SS-1006] p0132 N82-18564 Assessment of the quality of GATE area rainfall date

MICROWAVE SCATTERING		SUBJECT INDEX
Contact consitive formulations of antonna nattern	MISSOURI	Mapsat compared to other earth-sensing concepts
Context sensitive formulations of antenna pattern correction and side lobe compensation for NOSS/LAMMR	An investigation of the ozone plume from a small city	p0128 A82-27581
real time processing	p0074 A82-26329	MULTISPECTRAL PHOTOGRAPHY
[NASA-CR-166789] p0122 N82-21457	A study of model parameters associated with the urban	Exterior algebraic processing for remotely sensed
MICROWAVE SCATTERING Microwave radiation from a natural snow field	climate using HCMM data St. Louis, Missouri [E82-10140] p0079 N82-21667	multispectral and multitemporal images p0112 A82-21041
p0101 A82-19559	[E82-10140] p0079 N82-21667 A study of model parameters associated with the urban	Multispectral photographic remote sensing of green
The use of satellite data in rainfall monitoring Book	climate using HCMM data	vegetation biomass and productivity p0059 A82-22144
p0101 A82-22873	[E82-10159] p0080 N82-21683	Multispectral texture p0113 A82-25139
Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-27639	A study of model parameters associated with the urban	Imaging the earth. I - The troubled first decade of Landsat p0137 A82-27169
Coherent scatter of microwaves from moderately rough	climate using HCMM data analysis of St. Louis, Missouri	The possibility of determining snow-meltage fronts using
surfaces	infrared imagery [E82-10160] p0080 N82-21684	Meteor-satellite multispectral data /with Kazakhstan
[AD-A106133] p0095 N82-16331 Active microwave investigation of snowpacks:	MODULATION TRANSFER FUNCTION	considered as an example/ p0102 A82-27463 Survey and mapping of shallow water bodies and the
Experimental documentation, Colorado 1979-1980	An automatic optimum kernel-size selection technique	distribution of the river runoff of solids on the basis of
[NASA-CR-166727] p0107 N82-19646	for edge enhancement p0113 A82-26840	multispectral aerial and space photographs
Ground registration of data from an airborne	MOIRE EFFECTS Calibration and model reconstruction in analytical	p0103 A82-27467
scatterometer [E82-10084] p0068 N82-21636	close-range stereophotogrammetry. II - Special evaluation	Technologies for the multispectral mapping of earth resources p0128 A82-27580
MICROWAVE SENSORS	procedures for rasterstereography and moire topography	An approach to path radiance correction in MSS
Towards the definition of optimum sensor specifications	p0126 A82-22141	images p0115 A82-27629
for microwave remote sensing of snow p0125 A82-21035	MOISTURE CONTENT	Utilization of spatial complexity in computer classified Landsat MSS data for multi-factoral thematic mapping
Microwave remote sensing: Active and passive. Volume	Microwave radiometry of lands under natural and artificial moistening p0057 A82-21028	p0129 A82-27648
1 - Microwave remote sensing fundamentals and radiometry	Microwave radiation peculiarities of vegetative covers	Airborne remote sensing in east Greenland
Book p0126 A82-22877	p0058 A82-21029	p0090 A82-27695
The possibilities of microwave remote sensing for the	Investigation of the vegetative covers on ploughed areas	The atlas 'Geographical Results of Spaceborne Multispectral Experiments' p0077 A82-28133
study of water resources and their pollution p0102 A82-27458	by SLAR p0058 A82-21031	Construction of digital models of statistically uniform
Guidelines for spaceborne microwave remote sensors	Towards the definition of optimum sensor specifications for microwave remote sensing of snow	characteristics on the basis of multispectral space
[NASA-RP-1086] p0133 N82-19647	p0125 A82-21035	imagery p0117 A82-28144
MRSE: A Microwave Remote Sensing Experiment in Spacelab p0134 N82-20375	The estimation of the surface moisture of a vegetated	Automatic relocation of ground control points in LANDSAT imagery
MIDLATITUDE ATMOSPHERE	soil using aerial infrared photography p0058 A82-21093	[RAE-TR-81071] p0118 N82-18657
Ionospheric troughs in Antarctica p0073 A82-21217	Remote-sensing functions in the interpretation of moisture from aerial and space images	Automatic analysis of multispectral images
The development and testing of methods to infer	p0102 A82-27459	[INPE-2212-MD/009] p0133 N82-19520
midiatitude precipitation intensity from geosynchronous satellite infrared data	A gradient model of vegetation and climate utilizing	Data rate reduction. Impact of image data compression on end to end data management of a multispectral payload
[AD-A108881] p0120 N82-19788	NOAA satellite imagery. Phase 1: Texas transect	for satellite imagery
MINERAL DEPOSITS	[E82-10107] p0069 N82-21648 Applications of HCMM satellite data to the study of urban	[REPT-44/130] p0120 N82-19654
Relationship of hydrothermal phenomena within the	heating patterns	Selection of attributes applied to multispectral images
Leinster Granite to crustal fractures delineated from Landsat	[E82-10161] p0080 N82-21685	[INPE-2303-TDL/072] p0121 N82-19927
imagery p0089 A82-26015	MONGOLIA	Atlas of METEOSAT imagery [ESA-SP-1030] p0124 N82-21700
One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precambrian	The use of space photographs for hydrogeological studies of the Baikal region and Mongolia p0103 A82-27468	(EGA-07-1030) po 124 NO2-21700
metamorphics of Singhbhum, eastern India	MONOCHROMATORS	
p0089 A82-26017	Stratospheric instruments and analyses	N
Ore deposits in Africa and their relation to the underlying	p0133 N82-18776	
mantle p0090 A82-26604	MONSOONS Photogrammetry from aircraft side camera movies -	NASA PROGRAMS
Utilisation of remote sensing in resources identification		Climate observing system studies: An element of the
and land use in India - An integrated approach	Winter MONEX p0075 A82-26721	
and land use in India - An integrated approach p0076 A82-27701	Arabian sea project of 1980: Composites of infrared	NASA Climate Research Program: Workshop report
p0076 A82-27701 Integration of LANDSAT with geology and airborne	Arabian sea project of 1980: Composites of infrared images	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808
p0076 A82-27701 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567	NASA Climate Research Program: Workshop report
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system — the Bearlodge area of northeastern Wyoming	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon,	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program, Fiscal Year 1981
p0076 A82-27701 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon. Texas. Montana. Nebraska, Washington, Colorado, Kansas,	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program, Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system — the Bearlodge area of northeastern Wyoming	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program, Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimater algorithm specifications [NASA-RP-1083] p0095 N82-16683
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon. Texas. Montana. Nebraska, Washington, Colorado, Kansas,	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS
p0076 A82-27701 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program, Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimater algorithm specifications [NASA-RP-1083] p0095 N82-16683
p0076 A82-27701 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington. Colorado. Kansas. Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas / Morocco/ p0089 A82-26014 MOSAICS	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program, Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management Airborne remote sensing in east Greenland	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields ··· Oregon. Texas. Montana. Nebraska, Washington. Colorado. Kansas. Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program, Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas / Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [B82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park. Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area / Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Vugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kelmyk ASSR using space imagery
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p.0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p.0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p.0114 A82-27607 Airborne remote sensing in east Greenland p.0090 A82-27695 Earth-scanning satellites lead resource hunt p.0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p.0091 N82-16442	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Brazilian remote sensing activities, current and	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p.0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p.0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p.0114 A82-27607 Airborne remote sensing in east Greenland p.0090 A82-27695 Earth-scanning satellites lead resource hunt p.0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p.0091 N82-16442	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Application of Satellite data to analyze and predict meltage	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0991 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Bazilian remote sensing activities, current and prospective needs	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area //ugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [B82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p10102 A82-27461 Integration of Landsat, geological and geophysical data	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeasterm Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Beardodge area of northeastern Wyoming	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS ATONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area //ugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US mideontinent [E82-10049] p0991 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10028] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources Registration verification of SEA/AR fields Oregon.
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Technology and oceanography: An assessment of Federal	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Integration of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16883 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions NAVIGATION AIDS Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas,
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US mideontinent [E82-10049] p0991 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10028] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources Registration verification of SEA/AR fields Oregon.
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Application of HCMM data to regional geologic analysis	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27611 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US mideontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Application of satellite data to analyze and predict meltage runoff in a mountain basin integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27622 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0128 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] NEEDS (DATA SYSTEM) An information adaptive system study report and
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Integration of Satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-277461 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21091	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-1683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions NAVIGATION AIDS Satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10048] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation p0092 N82-21664	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Application of satellite data to analyze and predict meltage runoff in a mountain basin integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27622 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area //ugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas. Montana. Nebraska, Washington. Colorado. Kansas. Oklahoma. and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] MINES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oldahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-27611 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral seanner data p0129 A82-27633 MULTISPECTRAL BAND CAMERAS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21091 p0112 A82-21398 Analysis of the direction-dependent radiation behavior in multispectral scanning data p0125 A82-21399	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16883 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area //ugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebrasks and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska. Washington. Colorado. Kansas, Oklahoma, and North Dakota [E82-10083] p068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 NETHERLANDS
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-16446 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664 MINES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-226014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p10102 A82-27461 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27622 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21091 Digital photography techniques Analysis of the direction-dependent radiation behavior in multispectrations from Landsat-D	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS Exploration Po076 A82-27661 NATURAL GAS Exploration Po076 A82-27661 NATURAL GAS Exploration of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166788] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of Vegetation p0057 A82-271026
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664 MINNES (EXCAVATIONS) MINNES (EXCAVATIONS) MINNESOTA	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oldahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-27611 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral seanner data p0129 A82-27633 MULTISPECTRAL BAND CAMERAS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21091 p0112 A82-21398 Analysis of the direction-dependent radiation behavior in multispectral scanning data p0125 A82-21399	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166788] p0120 N82-19644 NETHORLANDS The Dutch ROVE program Radar Observation of VETWORK ANALYSIS
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10048] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Technologies for oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664 MINNES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27611 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27622 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21398 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat-Unispectral scanner data p0125 A82-21399 Digital photography techniques p0112 A82-21398 Analysis of the direction-dependent radiation behavior in multispectral scanning data p0125 A82-21399 Information expectations from Landsat-D p0128 A82-27583 Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27565	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area //ugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas. Montana. Nebraska. Washington. Colorado. Kansas. Oklahoma. and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of VEgetation P0057 A82-21026 NETWORK ANALYSIS The diagnosis settlement 1980 of the German main
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10048] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Technologies for oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664 MINNES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Olahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0102 A82-27623 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21398 Land cover classification accuracy as a function of sensor patial resolution p0128 A82-27583 Land cover classification accuracy as a function of sensor spatial resolution p076 A82-27583 The structure and basic parameters of a satellite system	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166788] p0120 N82-19644 NETHORLANDS The Dutch ROVE program Radar Observation of VETWORK ANALYSIS
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] P0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] Technologies for oceanography: An assessment of Federal rechnologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664 MINES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 MINESOTA Use of GOES and TIROS/NOAA satellite data for snow-cover mapping p0101 A82-22145	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas / Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources Pennsylvania p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas / Morocco/ p0089 A82-226014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27461 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27622 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom p1129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21399 Digital photography techniques p012 A82-21399 Analysis of the direction-dependent radiation behavior in multispectral scanning data p0125 A82-21399 Information expectations from Landsat-0 p0076 A82-27585 The structure and basic parameters of a satellite system for the remote sensing of earth resources	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area / Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 NETHERLANDS The diagnosis settlement 1980 of the German main triangulation network, Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 NEVADA
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] P0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] P0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management P0114 A82-27607 Airborne remote sensing in east Greenland P0090 A82-27695 Earth-scanning satellites lead resource hunt P0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] P0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] P0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] P0091 N82-16444 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] P0092 N82-16648 MINNES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat p0090 A82-27694 MINNESOTA Los POSS and Los program Marine Observation Satellite p0129 A82-27606	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Olahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0102 A82-27623 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21398 Land cover classification accuracy as a function of sensor patial resolution p0128 A82-27583 Land cover classification accuracy as a function of sensor spatial resolution p076 A82-27583 The structure and basic parameters of a satellite system	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA- Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE YSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166788] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of Vegetation P0057 A82-21026 NETWORK ANALYSIS The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectories [SGR-B-253-MITT-159-PT-2] p0085 N82-19648 NEVADA A relation between Landsat digital numbers, surface
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] MINES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 MINNESOTA Use of GOES and TIROS/NOAA satellite data for snow-cover mapping p0191 A82-22146 MISSION PLANNING The Japanese MOS and Los program Marine Observation Satellite The first ESA remote sensing satellite system ERS-1	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27651 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0125 A82-21399 Digital photography techniques p0125 A82-21399 Information expectations from Landsat-0 p0125 A82-21399 Information expectations from Landsat-0 p0128 A82-27683 Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27565 The structure and basic parameters of a satellite system for the remote sensing of earth resources.	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16883 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area //vgoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska. Washington. Colorado. Kansas. Oklahoma. and North Dakota [E82-10083] p068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of VEgetation p0057 A82-21026 NETWORK ANALYSIS The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 NEVADA A relation between Landsat digital numbers. surface reflectance, and the cosine of the solar zenith angle
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] Technology and oceanography: An assessment of Federal Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-16644 MINES (EXCAVATIONS) MINES (EXCAVATIONS) MINES (EXCAVATIONS) MINES (EXCAVATIONS) The Japanese MOS and Los program Marine Observation Satellite p0129 A82-27608 The Japanese MOS and Los program Marine Observation Satellite system ERS-1 p0094 A82-27608	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Olahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-22147 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p10102 A82-27481 Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21399 Information expectations from Landsat-D Digital photography techniques Analysis of the direction-dependent radiation behavior in multispectral scanning data p0125 A82-21399 Information expectations from Landsat-D p0128 A82-27833 Land cover classification accuracy as a function of sensor spatial resolution The structure and basic parameters of a satellite system for the remote sensing of earth resources p0131 A82-28129 Characterizing user requirements for future land observing satellites [NASA-TM-83867]	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska, Washington, Colorado, Kansas, Okláhoma, and North Dakota [E82-10083] p068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of Vegetation PNESS (DATA SYSTEM) The diagnosis settlement 1980 of the German main triangulation network, Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 NEVADA A relation between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] MINES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 MINNESOTA Use of GOES and TIROS/NOAA satellite data for snow-cover mapping p0191 A82-22146 MISSION PLANNING The Japanese MOS and Los program Marine Observation Satellite The first ESA remote sensing satellite system ERS-1	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27651 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0125 A82-21399 Digital photography techniques p0125 A82-21399 Information expectations from Landsat-0 p0125 A82-21399 Information expectations from Landsat-0 p0128 A82-27683 Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27565 The structure and basic parameters of a satellite system for the remote sensing of earth resources.	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16883 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area //vgoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska. Washington. Colorado. Kansas. Oklahoma. and North Dakota [E82-10083] p068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of VEgetation p0057 A82-21026 NETWORK ANALYSIS The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 NEVADA A relation between Landsat digital numbers. surface reflectance, and the cosine of the solar zenith angle
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10048] p0091 N82-18646 Use of Magsat anomaly data for crustal structure and mineral resources in the US mideontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation (E82-10137] p0092 N82-21664 MINNES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0099 A82-27694 MINNES (EXCAVATIONS) MISSION PLANNING The Japanese MOS and Los program Marine Observation Satellite p0094 A82-27608 Mission definition for a large-aperture microwave radiometer spacecraft p0131 N82-16155	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-20147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-276481 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27622 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0112 A82-21399 Digital photography techniques Analysis of the direction-dependent radiation behavior in multispectral scanning data p0112 A82-21398 Land cover classification accuracy as a function of sensor spatial resolution The structure and basic parameters of a satellite system for the remote sensing of earth resources [NASA-TM-83867] p0081 N82-17562 MULTISPECTRAL IMAGERY Passive bathymetric measurements in the Bruce Peninsula region of Ontario p0129 A82-27642	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE YSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166788] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of Vegetation network. Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 NEVADA A relation between Landsat digital numbers, surface reflectance, and the cosine of the sofar zenith angle p0114 A82-25841 Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite 1978 and 1980 p0105 A82-27634
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16444 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664 MINES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 MINNESOTA Use of GOES and TIROS/NOAA satellite data for snow-cover mapping p012 A82-27606 MISSION PLANNING The Japanese MOS and Los program Marine Observation Satellite p0129 A82-27606 Mission definition for a large-aperture microwave radiometer spacecraft p0131 N82-16155 MISSISSIPPI Application of remote sensing to state and regional	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington. Colorado. Kansas. Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources p0121 N82-20612 MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-22147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-226014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-27612 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p0129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21399 Information expectations from Landsat-D p0124 A82-27583 Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27585 The structure and basic parameters of a satellite system for the remote sensing of earth resources p0131 A82-28129 Characterizing user requirements for future land observing satellites [NASA-TM-83867] p0081 N82-17562 MULTISPECTRAL IMAGERY Passive bathymetric measurements in the Bruce peninsula region of Ontario p0129 A82-27642	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE SYSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16883 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park. Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/ p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon. Texas, Montana, Nebraska. Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of VEgetation p0057 A82-21026 NETWORK ANALYSIS The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectories [SSER-8-25-MITT-159-PT-2] p0085 N82-19648 NEVADA A relation between Landsat digital numbers. surface reflectance, and the cosine of the solar zenith angle p0114 A82-26841 Calcium carbonate precipitation in pryamid Lake, Nevada, as monitored by satellite - 1978 and 1980 p0105 A82-27634 NIGHT SKY
Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10048] p0091 N82-18646 Use of Magsat anomaly data for crustal structure and mineral resources in the US mideontinent [E82-10049] p0091 N82-19624 MINERAL EXPLORATION Towards an operational SPOT system - A preliminary assessment earth observation satellites for resources management p0114 A82-27607 Airborne remote sensing in east Greenland p0090 A82-27695 Earth-scanning satellites lead resource hunt p0117 A82-28343 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation (E82-10137] p0092 N82-21664 MINNES (EXCAVATIONS) Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0099 A82-27694 MINNES (EXCAVATIONS) MISSION PLANNING The Japanese MOS and Los program Marine Observation Satellite p0094 A82-27608 Mission definition for a large-aperture microwave radiometer spacecraft p0131 N82-16155	Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MONTANA Registration verification of SEA/AR fields Oregon, Texas. Montana. Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 MOROCCO Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 MOSAICS Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 MOTHS The Office for Remote Sensing of Earth Resources pennsylvania MOUNTAINS Landsat thermal imaging of alpine regions p0079 A82-20147 Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 Application of satellite data to analyze and predict meltage runoff in a mountain basin p0102 A82-276481 Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27622 MULTISPECTRAL BAND CAMERAS Spectritek - A multispectral electron-optic pushbroom camera p129 A82-27633 MULTISPECTRAL BAND SCANNERS Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0112 A82-21399 Digital photography techniques Analysis of the direction-dependent radiation behavior in multispectral scanning data p0112 A82-21398 Land cover classification accuracy as a function of sensor spatial resolution The structure and basic parameters of a satellite system for the remote sensing of earth resources [NASA-TM-83867] p0081 N82-17562 MULTISPECTRAL IMAGERY Passive bathymetric measurements in the Bruce Peninsula region of Ontario p0129 A82-27642	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808 NASA Oceanic Processes Program. Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801 NATIONAL OCEANIC SATELLITE YSTEM NOSS altimeter algorithm specifications [NASA-RP-1083] p0095 N82-16683 NATIONAL PARKS The utilization of orbital images as an adequate form of control of preserved areas Araguaia National Park, Brazil [E82-10065] p0078 N82-20588 NATURAL GAS Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia/p0076 A82-27661 NATURAL GAS EXPLORATION Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130 NAVIGATION AIDS Satellite photos can aid navigation on aerial photo missions p0126 A82-22148 NEBRASKA Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 NEEDS (DATA SYSTEM) An information adaptive system study report and development plan [NASA-CR-166788] p0120 N82-19644 NETHERLANDS The Dutch ROVE program Radar Observation of Vegetation network. Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 NEVADA A relation between Landsat digital numbers, surface reflectance, and the cosine of the sofar zenith angle p0114 A82-25841 Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite 1978 and 1980 p0105 A82-27634

SUBJECT INDEX OZONE

NITROGEN

Effects of nitrogen nutrition on the growth, yield and reflectance characteristics of corn canopies --- Purdue Agronomy Farm, Indiana [E82-10068]

p0067 N82-20591

[EBZ-10406]
NITROGEN DIOXIDE
Mid-latitude summertime measurements of stratospheric p0074 A82-25149

NORTH AMERICA

Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinen p0091 N82-19624 [F82-10049]

NORTH DAKOTA

Registration verification of SEA/AR fields ··· Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [F82-10083] n0068 N82-21635

NORTH SEA

Evaluation of Serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data

p0127 A82-26049

Experiments in satellite Doppler control positioning at p0086 N82-20581

Recent results of geoid determination by combination techniques in the North Sea test area p0086 N82-20583

NUCLEAR POWER PLANTS

Preliminary results of a study of mapping thermal discharge in the ocean, using remote sensing data
[INPE-2229-PRE/021] p0097 N82-19704

0

OCEAN BOTTOM

Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732

Some altimetric signatures from Seasat over the mid-Pacific Seamount Range

IAD-A1104191 a0099 N82-21691

OCEAN COLOR SCANNER

A method for the retrieval of phytoplankton and suspended sediment concentrations from remote measurements of water colour p0094 A82-27620

Study of Earth Resources Satellite (ERS) data reduction

[BAE-TP-7905] p0120 N82-19649 Development of a breadboard cooler for infrared remote sing payloads, phase 1 --- Earth Resources Satellite

[FOK-RV-R-81-064] nO134 NR2-19653

OCEAN CURRENTS

A formation process of an oceanic vortex analyzed by multi-temporal remote sensing p0095 A82-27674 The TOCIND experiment --- relation between surface and ocean currents

[CTAMN/81/R/10] p0098 N82-19805 Interaction between the Agulhas current and the

subtropical convergence [CSIR-RR-384] p0098 N82-20824

[CSIR-RR-384] P0098 NB2-2UB24
OCEAN DATA ACQUISITIONS SYSTEMS
Integrated sensor system for collection of wave data applied to coastal engineering design p0094 A82-27602
The first ESA remote sensing satellite system ERS-1
p0094 A82-27508

Response of the marine community to satellite-derived p0095 A82-27684 oceanic information Examination of the operational prospects for remote

rope

pO138 N82-18669 isA-Chrift (47g)
Technology and oceanography: An assessment of Federal chnologies for oceanographic research and monitoring DTA-0-142]

poogr N82-18844 technologies [OTA-O-142]

NASA Oceanic Processes Program, Fiscal Year 1981 (ASA-TM-84467) p0098 N82-19801 INASA-TM-84467]
PO098 N82-19801
An aerial survey of water turbidity and laser depth sounding performance along the Queensland Coast

p0098 N82-19802 Proposed digital cartridge recording system for WRELADS --- laser airborne depth sounder

[AD-A109484]

p0134 N82-20491 OCEAN DYNAMICS

Workshop on the application of existing satellite data to the study of ocean surface energetics, 19-21 November 1980, University of Wisconsin-Madison p0094 A82-24822

A formation process of an oceanic vortex analyzed by publi-temporal remote sensing p0095 A82-27674 multi-temporal remote sensing p0095 A82-27674
NASA Oceanic Processes Program, Fiscal Year 1981
[NASA-TM-84467] p0098 N82-19801 Interaction between the Agulhas current and the subtropical convergence

[CSIR-RR-384] p0098 N82-20824

OCEAN SURFACE

Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4

p0073 A82-19826

Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921

Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from stallite-borne microwave radiometry p0093 A82-24063 Workshop on the application of existing satellite data to the study of ocean surface energetics, 19-21 November 1980, University of Wisconsin-Madison

p0094 A82-24822 Optimal spatial filtering and transfer function for SAR p0094 A82-27596 ocean wave spectra

High precision radiometric temperature measure the ocean surface p0094 A82-27640
Thermal IR detection of submarine gas seepages in the

western Istra off-shore area /Yugoslavia/

estern istra on-shore area / rugosiavia/ p0076 A82-27661 Classification of Landsat MSS data for surface cover of nall areas p0116 A82-27677 small areas

Estimation of sea surface temperature from remote sensing in the 3.7 micron window region p0095 A82-28031

Polarimetric method for the remote sensing of oil slicks p0095 A82-28135 An experimental program to provide remote measurement

and analysis of ocean waves, sea level winds and balanced in support of Seasat-A p0095 N82-16697

Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection [PB82-113283] p009

B82-113283] p0096 N82-17805 Study of synthetic aperture radar in 2D - 2FS operation over the ocean --- European Remote Sensing system

SA-CR(P)-1475] p0132 N82-18481 Preliminary results of a study of mapping thermal discharge in the ocean, using remote sensing data [INPE-2229-PRE/021] p0097 N82-19704

[INPE-2229-PRE/021] p0097 N82-19704
Classification of the fields of anomaly in monthly water
temperature of the North Atlantic during the cold

[BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Surface wave statistics and spectra during high sea state conditions in the North Atlantic

[AD-A109832] 00098 N82-20827 Two-dimensional power spectra of SEASAT SAR imagery ocean waves p0098 N82-21469 --- ocean waves

Direct determination of the two dimensional image spectrum from raw synthetic aperture radar data p0122 N82-21474

OCEAN TEMPERATURE

Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 High precision radiometric temperature measurements the ocean surface p0094 A82-27640

Estimation of sea surface temperature from remote sensing in the 3.7 micron window region p0095 A82-28031

Preliminary results of a study of mapping thermal discharge in the ocean, using remote sensing data [INPE-2229-PRE/021] p0097 N82-19704

Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold

[BLL-TRANS-1509-(9022.552)] p0097 N82-19756 Estimating ocean-air heat fluxes during cold air outbreaks by satellite [NASA-TM-83854]

n0097 N82-19781

OCEANOGRAPHIC PARAMETERS

Mission definition for a large-aperture microwave p0131 N82-16155 radiometer spacecraft

The relationship among sea surface roughness variations, oceanographic analyses, and airborne remote sensing

analyses [NASA-CR-168444] o0096 N82-17798

OCEANOGRAPHY
The use of Meteor-satellite image data in p0093 A82-20344 oceanography SASS measurements of the Ku-band radar signature of pocean p0093 A82-21917 the ocean Land cover classification accuracy as a function of sensor patial resolution p0076 A82-27665

spatial resolution

Response of the marine community to satellite-derived reanic information p0095 A82-27684 oceanic information easat data utilization project

p0097 N82-18660 [NASA-CR-168557] Technology and oceanography: An assessment of Federal

technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 [OTA-O-142] Satellite-borne non-DOD sensors for terrestrial rvations

[AD-A109486] p0134 N82-20630

OFFSHORE ENERGY SOURCES

Thermal IR detection of submarine gas western Istra off-shore area / Yugoslavia/ gas seepages in the p0076 A82-27661

Towards an operational SPOT system - A preliminary assessment --- earth observation satellites for resources p0114 A82-27607 management

Comparisons of laser profilometer sea ice roughness statistics with surface truthed data and SLAR imagery nd SLAR imagery p0094 A82-27619

Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery n0131 A82-28130 OIL SLICKS

Polarimetric method for the remote sensing of oil slicks in the sea surface p0095 A82-28135 on the sea surface

OKLAHOMA

Registration verification of SEA/AR fields --- Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota

[E82-10083] p0068 N82-21635

ONBOARD DATA PROCESSING

An intelligent earth sensing information system p0137 A82-22149

The Seasat low rate data processing system D0093 A82-24061

Complex of units for the storage and automated occasing of research data p0131 A82-28140 processing of research data An information adaptive system study report and

[NASA-CR-166768] D0120 N82-19644 Study of Earth Resources Satellite (ERS) data reduction

Data rate reduction. Impact of image data compression on end to end data management of a multispectral payload for satellite imagery

n0120 N82-19654 [REPT-44/130]

ONTARIO

Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 Enhancement of Landsat data for Hudson Bay lowlands po114 A82-27623 vegetation

Passive bathymetric measurements in the Bruce Peninsula region of Ontario p0129 A82-27642

OPTICAL DATA PROCESSING

Methods for the processing of synthetic-aperture radar signals when solving problems of the national economy p0113 A82-26726 /Review/

OPTICAL DENSITY

Analog devices for the processing of aerial and space images for the study of water resources

p0104 A82-27476

OPTICAL EMISSION SPECTROSCOPY

Measurement of atmospheric emission using a balloon-borne cryogenic Fourier spectrometer

n0074 A82-21432

OPTICAL PROPERTIES

Influence of dissolved organic materials on turbid water optical properties and remote-sensing reflects p0093 A82-20445

Optical properties of snow p0101 A82-21922 An optical model for the microwave properties of sea

[NASA-TM-83865] p0095 N82-17561

OPTICAL RADAR

The use of the airborne lidar system 'ALEX F 1' for as p0073 A82-20226 tracing in the lower troposphere Airborne lidar measurements of smoke plume distribution vertical transmission, and particle size p0073 A82-21386 Error analysis of pulse location estimates for simulated

thymetric lidar returns p0096 N82-17803 [PB82-109448] Sounding the aerosol distribution over the Upper Rhine

Valley in the Valley in the Speyer area by means of lidar p0079 N82-20782

Characteristics of the use of laser-mirror scanners for image processing in cartography and aerial photograph p0117 A82-28143 OPTICAL THICKNESS

Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656

ORBIT CALCULATION

Orbital methods of celestial geodesy p0079 A82-25234

ORBITAL ASSEMBLY

The microwave radiometer spacecraft. A design study p0131 N82-16154 ORBITAL MANEUVERS

Topex orbit sustenance maneuver design --- Ocean Topography Experiment spacecraft [AIAA PAPER 82-0202] p0094 A82-27091

OREGON Seasat imagery for detection of coastal Wetlands

Registration verification of SEA/AR fields -- Oregon, Texas, Montane, Nebraska, Washington, Colorado, Kansas, Oklahoma and Next Detection Oklahoma, and North Dakota [E82-10083] p0068 N82-21635

OROGRAPHY

Spatial reasoning in remotely sensed data p0105 A82-27592 Integration of Landsat, geological and geophysical data

for use in thematic mapping at regional scale p0090 A82-27672

[AD-A110342]

Multidimensional aspects: Ozone, temperature and ansport p0081 N82-18772 Atlas of the global distribution of the total ozone

concentration according to satellite measurements n0078 N82-19740 Ozone measurements to 48Km with chemilumines ozone detectors

p0134 N82-21808 A-17

OZONOMETRY SUBJECT INDEX

OZONOMETRY	US corn and soybeans exploratory experiment [E82-10088] p0068 N82-21640	Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at
The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621	Interpretation of remotely sensed image data and impact	INPE
Stratospheric instruments and analyses p0133 N82-18776	of cluster compression impact of cluster compression; users	[E82-10024] p0091 N82-16442 Integration of LANDSAT with geology and airborne
Atlas of the global distribution of the total ozone	[REPT-44.2866] p0124 N82-21699	geophysics into an operational mineral exploration system
concentration according to satellite measurements [MITT-28] · p0078 N82-19740	PATTERN REGISTRATION Registration of heat capacity mapping mission day and	the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446
F 22,	night images p0113 A82-22146	Weather satellite interpretation: Introduction to weather
P	Automatic relocation of ground control points in	satellite imagery [P882-107657] p0118 N82-16677
	[RAE-TR-81071] p0118 N82-18657	Methodology of the interpretation of remote sensing data and applications in geomorphology
PACIFIC NORTHWEST (US) Applications systems verification and transfer project.	Registration verification of SEA/AR fields Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas,	[INPE-2209-MD/007] p0091 N82-19642
Volume 5: Operational applications of satellite snow-cover	Oklahoma, and North Dakota	Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and
observations, northwest United States [NASA-TP-1826] p0109 N82-20621	[E82-10083] p0068 N82-21635 Application of HCMM data to regional geologic analysis	southeast of the state of Sao Paulo Brazil
PACIFIC OCEAN Analyses of the Eastern Pacific without ship PAPA data	for mineral and energy resource evaluation	[E82-10076] p0092 N82-20599 San Juan National Forest Land Management Planning
buoys, radar and satellite to replace weathership	[E82-10137] p0092 N82-21664 Delineation of soil temperature regimes from HCMM	Support System (LMPSS) requirements definition [E82-10108] p0069 N82-21649
p0093 A82-19139 The use of Meteor-satellite image data in	data	PHOTOGRAMMETRY
oceanography p0093 A82-20344	[E82-10141] p0070 N82-21668 PEAT	The accuracy potential of the modern bundle block adjustment in aerial photogrammetry p0111 A82-20401
A formation process of an oceanic vortex analyzed by multi-temporal remote sensing p0095 A82-27674	Spectrometric studies of the water composition of Lake	Analytical triangulation of space photography
Investigations of medium wavelength magnetic anomalies in the Eastern Pacific using Magsat data	Mueggelsee p0104 A82-27474 PENNSYLVANIA	p0111 A82-20402 Calibration and model reconstruction in analytical
(E82-10047) p0119 N82-19622	Application of satellite frost forecast technology to other	close-range stereophotogrammetry, 1 - Mathematical fundamentals p0111 A82-20403
Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative	parts of the United States, phase 2 Pennsylvania, Michigan, and Florida	The location of three-dimensional linear objects by using
residual water depth anomaly	[NASA-CR-166827] p0121 N82-20607	multiple projections p0111 A82-20404 Accuracy of the normal case of close-range
[NASA-CR-168639] p0085 N82-19732 Ship and satellite bio-optical research in the California	Application of satellite frost forecast technology to other parts of the United States, phase 2, introduction	photogrammetry p0126 A82-22140
Bight	p0121 N82-20608	Calibration and model reconstruction in analytical close-range stereophotogrammetry. II - Special evaluation
[NASA-CR-168681] p0098 N82-20823 Compatibility study of the MAGSAT data and	Freeze prediction model Pennsylvania p0067 N82-20609	procedures for rasterstereography and moire topography
aeromagnetic data [E82-10136] p0123 N82-21663	The Office for Remote Sensing of Earth Resources	p0126 A82-22141 Spaceborne photography for the study of earth resources
Some altimetric signatures from Seasat over the	Pennsylvania p0121 N82-20612 PERFORMANCE TESTS	Russian book p0126 A82-22397 Area determination by means of the method of finite
mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691	An aerial survey of water turbidity and laser depth	elements p0082 A82-26048
PAMPAS	sounding performance along the Queensland Coast [AD-A109050] p0098 N82-19802	Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and
The Pampean Plain studied with Landsat images p0089 A82-26013	PERIODIC VARIATIONS	classification of multitemporal imagery data
PANORAMIC SCANNING Field-by-field multitemporal analysis of aerial scanner	Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data	p0127 A82-26049 A procedure for the interactive tracing of edges and lines
data geometrically corrected by means of a sliding model	[E82-10122] p0123 N82-21656	by means of digital image processing p0113 A82-26050 Photogrammetry from aircraft side camera movies
pO115 A82-27651 PARTICLE SIZE DISTRIBUTION	PERMAFROST Strategies for using remotely sensed data in hydrologic	Winter MONEX p0075 A82-26721
Airborne lidar measurements of smoke plume distribution, vertical transmission, and particle size p0073 A82-21386	models [E82-10156] p0109 N82-21680	Analytic methods of geodetic referencing of nontopographic images p0083 A82-28134
PARTICULATE SAMPLING	PERMITTIVITY	Complex examination of photorectifiers
Airbome in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis	Mixture formulas applied in estimation of dielectric and radiative characteristics of soils and grounds at microwave	p0131 A82-28466 Improving the quality of aerial photography / Concerning
		the 'Basic principles of aerial photography'/
p0073 A82-20999	frequencies p0058 A82-21030	
PATTERN RECOGNITION	PETROLOGY	p0117 A82-28467 Photogrammetry software. A package for everyone
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled	· · · · · · · · · · · · · · · · · · ·	Photogrammetry software. A package for everyone p0118 N82-17570
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY	Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 AB2-25140	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat	p0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book Use of Landsat-derived temporal profiles for com-soybean	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-25574	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program URA satellite imagery for earth observations	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029]	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-13099] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-2657 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program URA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] Preliminary evaluation of spectral, normal and	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Attitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSs image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery The use of digital multi-date Landsat imagery in terrain
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-2657 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from	PETROLOGY A data base of geologic field spectra p0090 AB2-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral. normal and meteorological crop stage estimation approaches [E82-10059] As-Buit documentation of programs to implement the Robertson and Doraiswamy/Thompson models PHOTOCHEMICAL OXIDANTS	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Attitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS improved p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409 Techniques for combining Landsat and ancillary data tor digital classification improvement p0111 A82-20419
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Pottawatomi Resservation, and Kickapoo Reservation [E82-10029] P0063 N82-16447 Preliminary evaluation of spectral. normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city	p0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409 Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26517 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26812 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0059 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE	PETROLOGY A data base of geologic field spectra p0090 AB2-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-25329 PHOTOCHEMICAL REACTIONS	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS mage p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D112 AB2-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] P0091 N82-16442 Remote sensing data applied to land-use survey at the	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] p0122 N82-21638 PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20409 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial phottographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-2657 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0090 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] p0122 N82-21638 PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport PHOTOGEOLOGY	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NNAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery in terrain classification in p0111 A82-20409 The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409 Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian pools po058 A82-2657 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26872 Automatic linear recognition and analysis using computer program URA satellite imagery for earth observations p0059 A82-27647 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 Automatic analysis of multispectral images	PETROLOGY A data base of geologic field spectra p0090 AB2-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 AB2-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 AB2-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Resservation, and Kickapoo Reservation [E82-10029] p0063 NB2-16447 Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut W0ff: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut W0ff's work p0084 N82-19605 National High-Altitude Photography (NNAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification improvement Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborner adar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled p0112 A82-21040
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from pione MSS of a forested region Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Remote sensing data applied to land-use survey at the Parsibb Valley Brazil [E82-10025] p0081 N82-16443 Automatic analysis of multispectral images [INPE-2212-MD/009] p0133 N82-19520	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral. normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] p0122 N82-21638 PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidim ensional aspects: Ozone. temperature and transport PHOTOGEOLOGY The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian Mediterranean fold bet	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NNAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery in terrain classification in p0111 A82-20409 The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409 Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26517 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26812 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0133 N82-19520 Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral. normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] p0122 N82-21638 PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport p0081 N82-18772 PHOTOGEOLOGY The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the Mediterranean fold belt p0089 A82-20341 Structural analysis of the basement of the East European platform by remote sensing methods p0088 A82-20342	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19803 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19805 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns A system for quantitative determination of species and
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-2657 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p009A82-27612 Digital analysis of spatial and spectral features from pione MSS of a forested region Construction of a mathematical model for the recognition of identical images on a pair of photographs Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] Automatic analysis of multispectral images [INPE-2212-MD/009] p0133 N82-19520 Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport PHOTOGEOLOGY The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian Mediterranean fold belt Structural analysis of the basement of the East European	Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19605 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409 Techniques for combining Landsat and ancillary date for digital classification accuracy assessment procedures p0137 A82-20412 Crop classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns 4 comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143 A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26517 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 Automatic analysis of multispectral images [INPE-2212-MD/009] p0133 N82-19520 Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil [INPE-2197-PRE/006] p066 N82-19639 Methodology of the interpretation of remote sensing data	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswarmy/Thompson models [E82-10086] p0122 N82-21638 PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidim ensional aspects: Ozone, temperature and transport pHOTOGEOLOGY The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian Mediterranean fold bet spo083 A82-20342 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20343	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillarly data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs p0074 A82-22458 Dip determinations in photogeology
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification feature extraction and classification p0059 A82-2682 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LAND SAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 Automatic analysis of multispectral images p0173 N82-19520 Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil [INPE-2197-PRE/006] p0066 N82-19639 Methodology of the interpretation of remote sensing data and applications in pedology	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] p0122 N82-21638 PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport p0081 N82-18772 PHOTOGEOLOGY The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the Mediterranean fold belt Structural analysis of the basement of the East European platform by remote sensing methods p0089 A82-20341 Structural analysis of the basement of the East European platform by remote sensing methods p0089 A82-20341 Dip determinations in photogeology p0089 A82-20343	Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NhAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22458 Dip determinations in photogeology p0089 A82-25453 Modeling misregistration and related effects on
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 AB2-21040 An airphoto key for major tropical crops D0058 AB2-22142 Building and road extraction from aerial photographs D0074 A82-25140 The spectral reflectance of certain soils Russian book D0059 A82-2657 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification D0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations D0090 A82-27612 Digital analysis of spatial and spectral features from pione MSS of a forested region Construction of a mathematical model for the recognition of identical images on a pair of photographs D017 A82-27847 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] Remote sensing data applied to land-use survey at the Parsiba Valley Brazil [E82-10025] D0081 N82-16443 Automatic analysis of multispectral images INPE-2212-MD/009] D0081 N82-19520 Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil [INPE-2197-PRE/006] Methodology of the interpretation of remote sensing data and applications in pedology [INPE-2211-MD/008] Methodology of the interpretation of remote sensing data and applications in pedology [INPE-2211-MD/008] Methodology of the interpretation of remote sensing data and applications in pedology	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-25329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian Mediterranean fold beit Structural analysis of the basement of the East European platform by remote sensing methods p0089 A82-20342 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20343 Geophysical and Landsat lineament mapping - An	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillarly data for digital classification improvement p0111 A82-20409 Techniques for combining Landsat and ancillarly data for digital classification improvement p0111 A82-20410 Landsat classification using airborne radar and Landsat data Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs Dip determinations in photogeology P0089 A82-25453 Modeling misregistration and related effects on multispectral classification in p0113 A82-25450
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 AB2-21040 An airphoto key for major tropical crops	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Potawatomi [E82-10029] Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10066] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL OXIDANTS Multidimensional aspects: Ozone, temperature and transport The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the Mediterranean fold beth p0089 A82-20342 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20342 Dip determinations in photogeology P0089 A82-25453 Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NhAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20409 Techniques for combining Landsat and ancillary data for digital classification improvement p0113 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0174 A82-21040 A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143 A system for quantitative determination of species and vitalities of urban trees on color-infrared photography D0089 A82-25453 Modeling misregistration and related effects on multispectral classification p0117 A82-25460 A procedure for the interactive tracing of edges and lines
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26827 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spetial and spectral features from airborne MSS of a forested region construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LAND SAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 Automatic analysis of multispectral images [INPE-2212-MD/009] Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil [INPE-2197-PRE/006] p0066 N82-19639 Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-2209-MD/007] Land use in the Paraiba Valley through remotely sensed	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Pottawatomi Resservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral. normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634 As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone. temperature and transport p0081 N82-18772 PHOTOGEOLOGY The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian Mediterranean fold belt Structural analysis of the basement of the East European platform by remote sensing methods p0089 A82-20341 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20343 Dip determinations in photogeology p0089 A82-25453 Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillarly data for digital classification improvement p0111 A82-20409 Techniques for combining Landsat and analiziny data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs p0074 A82-24958 Dip determinations in photogeology P0089 A82-25453 Modeling misregistration and related effects on multispectral classification A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26050
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 AB2-21040 An airphoto key for major tropical crops p0058 AB2-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26517 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26812 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-16443 Automatic analysis of multispectral images [INPE-2212-MD/009] p0086 N82-19639 Methodology of the interpretation of remote sensing data and applications in pedology [INPE-2211-MD/008] p0078 N82-19641 Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-220-MD/007] p0091 N82-19642	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas	P0117 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NhAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20409 Techniques for combining Landsat and ancillary data for digital classification improvement p0113 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0174 A82-21040 A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143 A system for quantitative determination of species and vitalities of urban trees on color-infrared photography D0089 A82-25453 Modeling misregistration and related effects on multispectral classification p0117 A82-25460 A procedure for the interactive tracing of edges and lines
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p0081 N82-19642 Automatic analysis of multispectral images [INPE-2212-MD/009] p0133 N82-19520 Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil [INPE-2197-PRE/006] p0066 N82-19639 Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-220-MD/007] p0091 N82-19642 Land use in the Paraiba Valley through remote sensed data Brazil [E82-10072] p0079 N82-20595 Relation of the activities of the IPDF/INPE project	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Potawatomi Reservation. and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-25329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone. temperature and transport The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the Mediterranean fold belt Structural analysis of the basement of the East European platform by remote sensing methods p0083 A82-20341 Structural analysis of the basement of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20342 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20343 Dip determinations in photogeology p0089 A82-20345 Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India p0089 A82-25453 Agplication of aerial and space photographic data in the study of subsurface water and tectonic structures p0090 A82-27466 A data base of geologic field spectra	Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19605 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NNAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery in classification p1111 A82-20409 Techniques for combining Landsat and ancillary data for digital classification p0111 A82-20410 Landsat classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 A comparison between aerial photographs and Landsat for computer land-cover mapping p074 A82-22143 A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs p0074 A82-22495 Dip determinations in photogeology p0089 A82-25453 Modeling misregistration and related effects on multispectral classification p0127 A82-25460 A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26505 Evaluation of the state of crops from satellite data p0059 A82-27393 Remote-sensing functions in the interpretation of
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spetial and spectral features from airborne MSS of a forested region construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LAND SAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Automatic analysis of multispectral images [INPE-2212-MD/009] Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil [INPE-2197-PRE/006] p0066 N82-19639 Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-2211-MD/008] p0078 N82-19641 Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-2209-MD/007] Land use in the Paraiba Valley through remotely sensed data Brazil [E82-10072] p0091 N82-19642 Land use in the Paraiba Valley through remotely sensed data Brazil [E82-10072] p00979 N82-20595 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 Mato	PETROLOGY A data base of geologic field spectra p0090 A82-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 A82-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 A82-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands, Prairie Potawatomi Resservation, and Kickapoo Reservation [E82-10029] p0063 N82-16447 Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10086] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian Mediterranean fold belt Structural analysis of the basement of the p0089 A82-20341 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20343 Dip determinations in photogeology P0089 A82-25453 Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India p0089 A82-25460 Application of aerial and space photography p0090 A82-27466 A data base of geologic field spectra p0090 A82-274660 The atlas 'Geographical Results of Spacebome	Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NhAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification accuracy assessment procedures p0137 A82-20410 Landsat classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143 A system for quantitative determination of species and vitalities of urban trees on color-infrared photography and Landsat p0074 A82-22143 Dip determinations in photogeology p0089 A82-25453 Modeling misregistration and related effects on multispectral classification p0113 A82-25450 Satellite photograph interpretation p0127 A82-25460 A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26506 Evaluation of the state of crops from stellite data p0059 A82-27333
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 AB2-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for com-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program URA satellite imagery for earth observations p0059 A82-27612 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Remote sensing data applied to land-use survey at the Paraiba Valley Brazil [E82-10025] p081 N82-16443 Automatic analysis of multispectral images [INPE-2212-MD/008] p0133 N82-19639 Methodology of the interpretation of remote sensing data and applications in pedology [INPE-2211-MD/008] p0078 N82-19639 Methodology of the interpretation of remote sensing data and applications in pedology [INPE-2211-MD/008] p0078 N82-19641 Methodology of the interpretation of remote sensing data and applications in pedology [INPE-2209-MD/007] p0091 N82-19642 Land use in the Paraiba Valley through remotely sensed data Brazil [E82-10078] p0079 N82-20595 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 Mato Grosso do Sul, Brazil [E82-10078]	PETROLOGY A data base of geologic field spectra p0090 AB2-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 AB2-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 AB2-27664 The application of remote sensing to resource management and environmental quality programs in Kansas	Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] p0084 N82-19605 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work p0084 N82-19605 National High-Altitude Photography (NNAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Manual and automatic crop identification with airborne radar imagery p0057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification p1111 A82-20409 Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Landsat classification accuracy assessment procedures p0137 A82-20412 Crop classification using airborne radar and Landsat data p0058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns p0112 A82-21040 A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143 A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs p0074 A82-24958 Dip determinations in photogeology p0089 A82-25453 Modeling misregistration and related effects on p0113 A82-26505 Satellite photograph interpretation and related effects on p0113 A82-25455 Satellite photograph interpretation and p0113 A82-25455 Setulation of the state of crops from satellite data p0059 A82-27393 Remote-sensing functions in the interpretation of moisture from aerial and space images The use of space photographs for hydrogeological studies
PATTERN RECOGNITION Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns D0112 A82-21040 An airphoto key for major tropical crops p0058 A82-22142 Building and road extraction from aerial photographs p0074 A82-25140 The spectral reflectance of certain soils Russian book p0059 A82-26577 Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Automatic linear recognition and analysis using computer program LIRA satellite imagery for earth observations p0090 A82-27612 Digital analysis of spetial and spectral features from airborne MSS of a forested region construction of a mathematical model for the recognition of identical images on a pair of photographs p0117 A82-28146 Report on a short course in remote sensing and the geological applications of LAND SAT MSS imagery at INPE [E82-10024] p0091 N82-16442 Automatic analysis of multispectral images [INPE-2212-MD/009] Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas Rio Grande do Sul, Brazil [INPE-2197-PRE/006] p0066 N82-19639 Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-2211-MD/008] p0078 N82-19641 Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-2209-MD/007] Land use in the Paraiba Valley through remotely sensed data Brazil [E82-10072] p0091 N82-19642 Land use in the Paraiba Valley through remotely sensed data Brazil [E82-10072] p00979 N82-20595 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 Mato	PETROLOGY A data base of geologic field spectra p0090 AB2-27600 PHENOLOGY Evaluation of the state of crops from satellite data p0059 AB2-27393 Automatic and semi-automatic classification of Landsat agricultural crops p0061 AB2-27664 The application of remote sensing to resource management and environmental quality programs in Kansas Cimarron National Grasslands. Prairie Potawatomi [E82-10029] Preliminary evaluation of spectral normal and meteorological crop stage estimation approaches [E82-10059] As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models [E82-10066] PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL OXIDANTS An investigation of the ozone plume from a small city p0074 A82-26329 PHOTOCHEMICAL REACTIONS Multidimensional aspects: Ozone, temperature and transport profile of the Anatolian-Caucasian-Iranian segment of the Anatolian-Caucasian-Iranian plotos A82-20342 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20342 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20342 Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0090 A82-25453 Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India p0089 A82-26016 Application of aerial and space photographic data in the study of subsurface water and tectonic structures p0090 A82-27466 A data base of geologic field spectra FOOTO A82-27600 The atlas 'Geographical Results of Spacebome Multispectral Experiments' p0097 A82-27600	Pol 17 A82-28467 Photogrammetry software. A package for everyone [AD-A108098] pol 18 N82-17570 Helmut Wolf: On the occasion of his 70th birthday [SER-E-18] po084 N82-19603 Mathematical and stochastic models in photogrammetry relating to Helmut Wolf's work po084 N82-19603 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] pol 134 N82-21703 PHOTOINTERPRETATION Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image po057 A82-20349 Manual and automatic crop identification with airborne radar imagery po057 A82-20408 The use of digital multi-date Landsat imagery in terrain classification Techniques for combining Landsat and ancillary data for digital classification improvement pol 111 A82-20410 Landsat classification accuracy assessment procedures pol 117 A82-20412 Crop classification using airborne radar and Landsat data po058 A82-21033 Maximum likelihood estimation of label imperfection probabilities and its use in the identification of mislabeled patterns A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs Dip determinations in photogeology Po089 A82-25455 Satellite photograph interpretation pol 17 A82-25460 A procedure for the interactive tracing of edges and lines by means of digital image processing pol 113 A82-26505 Evaluation of the state of crops from satellite data po059 A82-27393 Remote-sensing functions in the interpretation of moisture from aerial and space images

SUBJECT INDEX POWER SPECTRA

Wheat stress indicator model, Crop Condition Assessment Division (CCAD) data base interface driver, user's manual [E82-10031] p0064 N82-19607 Remote sensing of the structure of taiga landscapes --ussian book p0059 A82-27397 Analog devices for the processing of aerial and space images for the study of water resources Survey and mapping of shallow water bodies and the p0104 A82-27476 [E82-10031] Investigation of the earth on the basis of space totographic data p0082 A82-27507 river runoff of solids on the basis of AgRISTARS: Soil moisture/early warning and crop multispectral aerial and space photographs photographic data condition assessment. Interface control docum p0103 A82-27467 Context dependent modeling --- for remote sensing data occssing p0114 A82-27587 [E82-10053] p0065 N82-19628 Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Investigation of silting and currents in Lake Balaton by Remote sensing of sulfur dioxide effects on vegetation. processing Summary Spatial reasoning in remotely sensed data p0105 A82-27592 [PB82-115122] p0066 N82-19715 hydraulic models and aerial and soa Application of side-looking color infrared photography for structure detection in subtle topography Atlas of the global distribution of the total ozone oncentration according to satellite measurements p0104 A82-27472 photographs Interpretation of multispectral aerial photographs of Lake ueggelsee p0104 A82-27473 p0078 N82-19740 p0082 A82-27611 [MITT-28] Mueagelsee Dryland pasture and crop conditions as seen by HCMM Land cover classification accuracy as a function of sensor Investigation of the earth on the basis Investigation of the earth on the basis of space notographic data p0082 A82-27507 Technologies for the multispectral mapping of earth sources spatial resolution p0076 A82-27665 Washita River watershed [F82-10074] n0067 N82-20597 An autodigitizing procedure for ground-data labelling of As-Built documentation of programs to implement the Landsat pixels p0062 A82-27682 Inventory of eroded areas in the state of Guanajuato Spatial reasoning in remotely sensed date Robertson and Doraiswamy/Thompson models [E82-10086] p0122 N82-21638 p0105 A82-27592 Mexico, by automatic analysis of Landsat imag An evaluation of the utility of smaller Landsat resolution Soybean canopy reflectance as influenced by cultural actices --- West Lafayette, Indiana p0076 A82-27690 elements / Resolution of Landsat resolution/ p0114 A82-27625 The atlas 'Geographical Results of Spaceborne jultispectral Experiments' p0077 A82-28133 [E82-10105] p0068 N82-21647 Multispectral Experiments' Spatial resolution and geometric potential of planned Spatial resolution end general satellite missions poll30 A82-27005 Natural resolutes inventories by computer-satellite mapping techniques in Chaco State, Argentine Republic, poll6 A82-27688 poll6 A82-27688 Wheat stress indicator model, Early Warning (EW) data The use of space photographs to p0106 A82-28137 terface driver, user's manual water-amelioration mans p0069 N82-21652 [E82-10115] Characteristics of the use of laser-mirror scanners for A look at the commonly used LANDSAT vegetation image processing in cartography and aerial photography p0117 A82-28143 Assessment of change in Bangladesh coastal regions p0076 A82-27696
Potential use of space photographs obtained from the [E82-10123] Construction of a mathematical model for the recognition o0070 N82-21657 Construction of a mathematical model is supported by the construction of identical images on a pair of photographs p0117 A82-28146 Spectral-agronomic relationships of wheat canopies
[E82-10143] manned orbital station Salyut-5 in order to compile a set p0070 N82-21670 of small-scale thematic maps of mountain Wetland mapping from digitized aerial photography --- heboygan Marsh, Wisconsin PLANTS (ROTANY) p0083 A82-28139 s of Central Asia Sheboygan Ma [E82-10019] Spectral reflectance of hydrophytes p0102 A82-24960 Characteristics of the use of laser-mirror scanners for nO118 N82-16437 **PLOTTERS** Weather satellite interpretation: Introduction to weather image processing in cartography and aerial photo A digital technique for constructing variable-width lines [AD-A110287] satellite imagery [PB82-107657] p0118 N82-16677 Earth-scanning satellites lead resource hunt PLUMES p0117 A82-28343 Arabian sea project of 1980: Composites of infrared Airborne in-situ measurement of particulate sulfur and Applications systems verification and transfer project. sulfuric acid with flame photometry and th p0096 N82-17567 [AD-A107910] Volume 1: Operational applications of satellite snow cover Automatic analysis of multispectral images
NPE-2212-MD/009] p0133 NB2-19520
Utilization of Aerochrome 2443 film for identification
and estimating wheat growing areas --- Rio Grande do observations: Executive summary --- usefulness of satellite Airborne lidar measurements of smoke plume distribution, -cover data for water yield prediction [INPE-2212-MD/009] vertical transmission, and particle size p0073 A82-21386 ASA-TP-1822] p0108 N82-20617
Applications systems verification and transfer project. An investigation of the ozone plume Volume 2: Operational applications of satellite sno Applications of HCMM satellite data to the study of urban [INPE-2197-PRE/006] observations and data-collection systems in the Arizona n0066 N82-19639 eating patterns Method of interpretation of remote sensing data and p0080 N82-21685 [NASA-TP-1823] applications to vegetation
[INPE-2215-MD/010] p0066 N82-19640
Methodology of the interpretation of remote sensing data and applications in pedology
[INPE-2211-ML/008] p0078 N82-19641 n0108 N82-20618 **POLAR REGIONS** Applications systems verification and transfer project.
Volume 6: Operational applications of satellite snow-cover lonospheric troughs in Antarctica p0073 A82-21217 POLARIMETRY Polarimetric method for the remote sensing of oil slicks the sea surface p0095 A82-28135 observations NOAA/NESS support study [NASA-TP-1827] n0109 N82-20622 on the sea surface Computer-assisted photo interpretation research at Methodology of the interpretation of remote sensing data POLITICA MONITORING and applications in geomorphology
[INPE-2209-MD/007] The use of the airborne lidar system 'ALEX F 1' for a [AD-A109366] nO121 NR2-2062R p0091 N82-19642 tracing in the lower troposphere p0073 A82-20226 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] p0134 N82-21703 Land use in the Paraiba Valley through remotely sensed Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal p0079 N82-20595 p0073 A82-20999 Study project of intrusive rocks: States of Espirito Santo Aerospace methods for the study of water resources and and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo --- Brazil [E82-10076] p0092 N82-20599 Aerospace metrious for the study of water resources and eir pollution --- Russian book p0102 A82-27457
Evaluation of snow-cover pollution in industrial regions sing satellite TV images p0103 A82-27464 Satellite photos can aid navigation on aerial photo n0126 A82-22148 [E82-10076] AgRISTARS: Interim catalog ground data summary, data using satellite TV images Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 --- Mato Grosso do Sul, Brazil Monitoring of the thermal pollution of natural channels of water using infrared aerial photography acquisition year 1979 [E82-10032] p0064 N82-19608 p0104 A82-27471 PHOTOMETRY [F82-10078] n0067 N82-20601 photometric method for depth determination by aerial tography p0101 A82-19831 Noncontact methods for the quality control of water The Office for Remote Sensing of Earth Resources p0121 N82-20612
Applications systems verification and transfer project. p0104 A82-27475 photography Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 Investigation of earth resources using rocket and space policy po technology Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center Possibilities of using experience gained from the thematic mapping of the moon in studies of earth resources by remote sensing methods p0083 A82-28138 Optimal network density for atmosp observations. Col [NASA-TP-1825] p0079 N82-20776 p0108 N82-20620 POLLUTION TRANSPORT Applications systems verification and transfer project. An investigation of the ozone plume from a small city **PHOTORECONNAISSANCE** p0074 A82-26329 LANDSAT imagery of the Venetian Lagoon: A Valu me 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] Satellite photograph interpretation p0127 A82-25460 PIEDMONTS p0109 N82-20624 multitemporal analysis Computer-assisted photo interpretation research at Potential use of space photographs obtained from the [E82-10036] nO119 N82-19612 USAETL [AD-A109366] manned orbital station Salyut-5 in order to compile a set of small-scale thematic maps of mountain and piedmont regions of Central Asia p0083 A82-28139 Applications of HCMM satellite data to the study of urban p0121 N82-20628 heating patterns **PHOTOMAPPING** [E82-10161] p0080 N82-21685 Analysis of space imagery to compile a geomorphological map of the world p0089 A82-20338 PLAINS POSITION (LOCATION) ATION (LOCATION)
The location of three-dimensional linear objects by using of third projections policy A82-20404 Precipitation assessment from environmental satellite Analytical triangulation of space photography data for northwest Libya including the Gefara plan [RSC-4] p0107 N82-19790 multiple projections p0111 A82-20402 of the normal case Mapping in tropical forests - A new approach using the p0126 A82-22140 PLANETARY BOUNDARY LAYER POSITION ERRORS Observation of the turbulent structure in the planetary boundary layer with a kytoon-mounted ultrasonic anemometer system p0125 A82-21082 laser APR --- Airborne Profile Recorder p0081 A82-20407 An evaluation of ISOCLS and CLASSY clustering Sampling for thematic map accuracy testing p0111 A82-20411 algorithms for forest classification in northern Idaho --- Elk River quadrange of the Clearwater National Forest [E82-10109] p0069 N82-21650 LANETARY MAPPING Towards the definition of optimum sensor specifications p0069 N82-21650 A shuttle scanning laser altimeter for topographic POSITION INDICATORS for microwave remote sensing of snow p0083 A82-27632 manping p0125 A82-21035 Experiments in satellite Doppler control positioning PLANETARY WAVES Exterior algebraic processing for remotely sensed p0086 N82-20581 Interaction between the Agulhas current and the multispectral and multitemporal images POTATOES ubtropical convergence p0112 A82-21041 A timely and accurate potato acreage estimate from Landsat - Results of a demonstration p0060 A82-27621 [CSIR-RR-384] p0098 N82-20824 Remote sensing for natural resources: An international PLANKTON POTENTIAL FIELDS view of problems, promises and accomplishments A method for the retrieval of phytoplankton and suspended sediment concentrations from remote Continuation of potential field data to a common altitude p0137 A82 Book pullar Mozzaloru
A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143
Use of GOES and TIROS/NOAA satellite data for

measurements of water colour

[NASA-CR-168681]

PLANT STRESS

Use of GOLD and p0101 A82-22140 snow-cover mapping p0101 A82-22140 A procedure for the interactive tracing of edges and lines by means of digital image processing p0113 A82-26050 The spectral reflectance of certain soils -- Russian p0059 A82-26577

Ship and satellite bio-optical research in the California

NT STRESS
Humidity measurement by infrared thermometry
p0075 A82-26844

p0123 N82-21665

p0081 A82-21036

Application and experimental verification of an empirical

Harmonic structure of Pc 3-4 pulsations p0082 A82-26266

backscattering cross section model for the earth's surface

--- magsat data [E82-10138]

POWER SPECTRA

p0094 A82-27620

p0098 N82-20823

Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] n0098 N82-20827 vo-dimensional power spectra of SEASAT SAR i p0098 N82-21469 PRECIPITATION (METEOROLOGY) patterns associated with Satellite observed xcessive precipitation outbreaks [PB80-215130] p0073 A82-19177

Precipitation measurements from space - Workshop summary 28 April-1 May 1981, Greenbelt, MD p0077 A82-28295

Dryland pasture and crop conditions as seen by HCMM - Washita River watershed [E82-10074] p0067 N82-20597 PRECIPITATION PARTICLE MEASUREMENT

The development and testing of methods to infer midlatitude precipitation intensity from geosynchronous satellite infrared data AD. A 108881 n0120 N82-19788

PREDICTION ANALYSIS TECHNIQUES Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of

[E82-10057] p0065 N82-19632 PRESSURE DISTRIBUTION

An experimental program to provide remote measurement

and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PR81-246035] p0095 N82-16697 PROCUREMENT MANAGEMENT

Remote sensing procurement package: A management report for state and local governments [E82-10052] p0138 N82-19627

p0138 N82-19627 PROFILOMETERS Comparisons of laser profilometer sea ice roughness

statistics with surface truthed data and SLAR ima p0094 A82-27619 Electromagnetic subsurface measurements

p0106 N82-18469 AD-A1081921

PROJECT MANAGEMENT
AgRISTARS: Soil moisture/early warning and crop condition assessment. Interface control docum p0065 N82-19628 [E82-10053] AgRISTARS: Yield model develop nent/soil moisture.

Interface control document [E82-10054] n0065 NR2-19629 Project communications/documentation standards

manı [E82-10093] p0068 N82-21645

PULSED LASERS

Error analysis of pulse location estimates for simulated bathymetric lidar returns [PRR2.109448] p0096 N82-17803

PUSHBROOM SENSOR MODES p0112 A82-21398

Digital photography techniques po Spectritek - A multispectral electronon-optic pushbroom p0129 A82-27633

p0105 A82-27634

PYRAMID LAKE (NV) Calcium carbonate precipitation in Pyramid Lake, Nevada as monitored by satellite - 1978 and 1980

Q

QUALITY CONTROL

Image quality control in the Meteosat ground processing p0125 A82-21090

RADAR CROSS SECTIONS

Comparison of sigma/deg/ obtained from the conventional definition with sigma/deg/ appearing in the radar equation for randomly rough surface: p0112 A82-21039

RADAR DATA

NOSS altimeter algorithm specifications

[NASA-RP-1083] p0095 N82-16683 Study of synthetic aperture radar in 2D - 2FS operation over the ocean --- European Remote Sensing system [ESA-CR(P)-1475] p0132 N82-18481

Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107 N82-19646

The design and implementation of an operational, mputer-based weather radar system rainfall mans [RSRE-MEMO-3151] p0122 N82-21499

RADAR ECHOES

Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection p0096 N82-17805 [PB82-113283]

RADAR GEOLOGY

f and slope topography of part of the Grand Canyon. Arizona as characterized on a Seasat radar image p0082 A82-26843

Comparisons of laser profilometer sea ice roughness statistics with surface truthed data and SLAR imagery p0094 A82-27619

Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635

Land cover classification accuracy as a function of s p0076 A82-27665 spatial resolution

RADAR IMAGERY

Manual and automatic crop identification with airborne p0057 A82-20408 radar imagery Classification of ice radar imagery p0113 A82-22891

Analysis of two Seasat synthetic aperture p0074 A82-25452 of an urban scene

Spaceborne radar observation of the earth surface p0127 A82-27578 Overview of digital processing of SAR data --- from p0128 A82-27589

Seasat-A Simulation and studies of spaceborne synthetic aperture radar image quality with reduced bit rate

p0128 A82-27594 Wide area, coarse resolution imaging with satellite-borne synthetic aperture radars in low-earth and geosynchro p0082 A82-27631

The use of wave contrast measurements in the evaluation p0130 A82-27675 of SAR/gravity models Seasat imagery for detection of coastal Wetlands

p0063 A82-27700

Digital correlation of DDRS data p0118 N82-16452 [NASA-CR-167494]

SAR image quality --- conference, Frascati, Italy, 11-12 Dec. 1980; synthetic aperture radar (SAR)
[ESA-SP-172] p01 p0122 N82-21458

Two-dimensional power spectra of SEASAT SAR imagery ocean waves p0098 N82-21469

Direct determination of the two dimensional image spectrum from raw synthetic aperture radar data p0122 N82-21474 Relief effects and the use of terrain models in SAR image

processing --- Anderson River test site, British Columl p0086 N82-21475

Observation of the Earth by radar [NASA-TM-76830] pO124 N82-21687

RADAR MEASUREMENT

Airborne lidar measurements of smoke plume distribution, vertical transmission, and particle size p0073 A82-21386 Precipitation measurements from space - Workshop summary 28 April-1 May 1981, Greenbelt, MD

p0077 A82-28295 measurement with a two frequency Sea state scatterometer (theory) [ESA-TT-710] n0096 N82-17802

Electromagnetic subsurface measurem
[AD-A108192] pt p0106 N82-18469 Sea ice movements from synthetic aperture rada p0097 N82-19435 [AD-A109002]

RADAR SCATTERING

The Dutch ROVE program --- Radar Observation of p0057 A82-21026 VEgetation ma/deg/ signature of the Amazon rain forest obta p0125 A82-21027 from the Seasat scatterometer Investigation of the vegetative covers on ploughed areas p0058 A82-21031 Volumetric effects in cross-polarized airborne radar p0058 A82-21032 data Crop classification using airborne radar and Landsat

Application and experimental verification of an empirical backscattering cross section model for the earth's surface p0081 A82-21036

On randomly absorbing and scattering surface layers p0079 A82-21037 A radar signature model for partially coherent scatterin A radar signature model for partiany outliers scalaring from irregular surfaces p0079 A82-21038 Comparison of sigma/deg/ obtained from the conventional definition with sigma/deg/ appearing in the radar equation for randomly rough surfaces and appearing and appearing the radar equation for randomly rough surfaces.

p0112 A82-21039

RADAR SIGNATURES

A radar signature model for partially coherent scatterion mirregular surfaces p0079 A82-210 om irregular surfaces
SASS measurements of the Ku-band radar signature of p0093 A82-21917

RADIANCE

of emission using a atmospheric balloon-borne cryogenic Fourier spectrometer p0074 A82-21432

Dew and vapor pressure as complicating factors in the interpretation of spectral radiance from crops n0060 A82-27617

An approach to path radiance correction in MSS ages p0115 A82-27629 High precision radiometric temperature measurement

the ocean surface p0094 A82-27640
Usage and limitations of characteristic vector analysis p0094 A82-27640 of remote sensing multispectral data for the identification and quantification of water quality parameters

p0118 N82-18656 As-built design specification for the CLASFYG program [E82-10092] n0068 N82-21644 Laboratory upwelled radiance and reflectance spectra of

Kerr reservoir sediment waters [NASA-TP-1993] pO110 N82-21774 RADIANT FLUX DENSITY

Regional properties of angular reflectance models

p0083 N82-17599 RADIATION COUNTERS

Ozone measurements to 48Km with chemiluminescent one detectors [AD-A110342] nO134 N82-21808 RADIATION MEASURING INSTRUMENTS

Analysis of the direction-deper ent radiation behavior in multispectral scanning data p0125 A82-21399 RADIATIVE TRANSFER

Simple radiative transfer model for relationships canopy biomass and reflectance p0057 A82-20422 Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 Mixture formulas applied in estimation of dielectric and radiative characteristics of soils and grounds at microway

Some peculiarities of formulation and solution of inverse problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921 p0093 A82-21921

Optical properties of snow p0101 A82-21922 Microwave remote sensing: Active and passive. Volume Microwave remote sensing fundamentals and radiometr p0126 A82-22877

Passive bathymetric measurements ts in the Bruce p0129 A82-27642 Peninsula region of Ontario p0129 A82-27642 Simplified algorithm for calculating radiative transfer in satellite images

[INPE-2169-RPE/385] nO118 N82-16450 A study of model parameters associated with the urban climate using HCMM data --- St. Louis, Missouri [E82-10140] n0079 N82-21667

RADIO ALTIMETERS

The structure and basic parameters of a satellite system for the remote sensing of earth resources

p0131 A82-28129 NOSS altimeter algorithm specification

p0095 N82-16683 [NASA-RP-1083] Study of a radar altimeter for the European remote sensing program. Volume 1: Executive summary --- Earth Resources Satellite (ERS 1)

[SPAR-R.1090-ISSUE-A] p0133 N82-19652 RADIO RECEPTION

A low cost NOAA/TIROS AVHRR receiving station ---Advanced Very High Resolution Radiometer

n0130 A82-27681

RADIOMETERS Microwave remote sensing: Active and passive. Volume 1 - Microwave remote sensing fundamentals and radiometry

p0126 A82-22877 Stratospheric instruments and analyses p0133 N82-18776

A multiband radiometer and data acquisition system for ote sensing field research

p0134 N82-21669 [E82-10142] Cloud Top Scanning radiometer [NASA-TM-83887] (CTS): Hser's auide p0135 N82-21826

RADIOMETRIC CORRECTION

Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Context sensitive formulations of antenna pattern correction and side lobe compensation for NOSS/LAMMR real time processing p0122 N82-21457 [NASA-CR-166789]

RADIOMETRIC RESOLUTION

Image quality control in the Meteosat ground proce p0125 A82-21090

Technologies for the multispectral mapping of earth sources p0128 A82-27580 Operational resampling for correcting images to a geocoded format --- in remote sensing

Relief effects and the use of terrain models in SAR image processing --- Anderson River test site, British Columbia p0086 N82-21475

The use of satellite data in rainfall monitoring p0101 A82-22873

Remote sensing of rainfall rates using airborne microwave rain-scatterometer/radiometer p0105 A82-27639 A vegetation response model applied to range inventory

and monitoring using Landsat MSS data p0060 A82-27643 Convergence zones in the South Atlantic and their

influence on the precipitation regime in Northeastern [INPE-2307-TDL/074] n0097 N82-19778 Precipitation assessment from environmental satellite

data for northwest Libya including the Gefara plan p0107 N82-19790 [RSC-4] Assessment of the quality of GATE area rainfall data

from a Nimbus-F radiometer [NASA-CR-168512] p0109 N82-20807

RAIN FORESTS

Mapping in tropical forests - A new approach using the laser APR --- Airborne Profile Recorder

n0081 A82-20407

Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027

RANDOM PROCESSES

On randomly absorbing and scattering surface layers D0079 A82-21037

RANDOM SAMPLING

Using known map category marginal frequencies to improve estimates of thematic map accuracy p0113 A82-25456

Development of rotation sample designs for the

estimation of crop acreages [E82-10117] n0070 N82-21654

SUBJECT INDEX	
RANGE LANDS	
A vegetation response model applie	
and monitoring using Landsat MSS da	eta -
	p0060 A82-2764
RANGELANDS	
Assessing mesquite-grass vegeta	tion condition from
Landsat	p0059 A82-2545
Landsat MSS applied to rangelan	d management i
Western Canada	p0063 A82-2769
The application of remote ser	sing to resourc
management and environmental quality	programs in Kansa
Cimarron National Grasslands,	
Reservation, and Kickapoo Reservation	
[E82-10029]	p0063 N82-1644
San Juan National Forest Land Ma	
Support System (LMPSS) requirement	
[E82-10108]	p0069 N82-2164
RECLAMATION	
Application of remote sensing to	state and regions
problems mississippi	
[E82-10033]	p0078 N82-1960
RECREATION	
San Juan National Forest Land Ma	
Support System (LMPSS) requirement	
[E82-10108]	p0069 N82-2164
RECTIFIERS	
Complex examination of photorectif	
	p0131 A82-2846
REFERENCE STARS	
Correlation identification of stella	
purposes of the coordinate referencing	of aerial and spac p0117 A82-2814
images	pull/ A82-2814
REFLECTANCE	
Simple radiative transfer model for re	
canopy biomass and reflectance	p0057 A82-2042
Contrast reduction by the atmosph	
nonuniform surface reflectance	p0112 A82-2042
Soybean canopy reflectance as a for	
illumination geometry	p0061 A82-2764
Regional properties of angular reflect	
The second section and the second	p0083 N82-1759
The effect of finite field size on	classification an

ospheric correction [NASA-TM-83818] n0120 N82-19645

A look at the commonly used LANDSAT vegetation p0070 N82-21657 [E82-10123]

A multiband radiometer and data acquisition system for remote sensing field research [E82-10142] p0134 N82-21669

Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] p0123 N82-21678

REFRACTED WAVES

An optical model for the microwave properties of sea

[NASA-TM-83865]

p0095 N82-17561 REGIONAL PLANNING

The application of remote sensing to resource management and environmental quality programs in Kansas

Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation p0063 N82-16447

REGRESSION ANALYSIS

Evaluation of large area crop estimation techniques p0061 A82-27662 Potential utility of thematic mapper data in estimating op areas p0061 A82-27663

crop areas
RELAY SATELLITES

General configuration and internal disposition of equipment in a satellite for collecting environmental data [INPE-2240-PRE/026] p0078 N82-19256 RELIEF MAPS

The use of digital terrain model in the rectification of satellite-borne imagery p0115 A82-27626 Experiences with digital terrain elevation data contouring

[AD-A110280] p0087 N82-21690 Computer based technique for converting a contour map into an equispaced grid of points

p0087 N82-21697 [RAE-TR-80110] REMOTE SENSING

Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data

p0125 A82-21091 Remote sensing and international law

n0137 A82-24343 Land cover classification accuracy as a function of sensor patial resolution p0076 A82-27665
Remote sensing of sulfur dioxide effects on vegetation. spatial resolution

Volume 2: Data [PB82-115130] n0066 N82-19716 REMOTE SENSORS

Advanced aerospace remote sensing systems for global resource applications p0127 A82-27577 Earth resources data, module U-3 [E82-10035]

[R82-10035] p0119 N82-19611
Cloud Top Scanning radiometer (CTS): User's guide [NASA-TM-83887] p0135 N82-21826 RESCUE OPERATIONS

Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466

RESERVOIRS

Geotechnical applications of Landsat image analysis of Bhakra Dam Reservoir, India p0102 A82-26838 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images Brazil

[E82-10082] 82-10082] p0108 N82-20605 Laboratory upwelled radiance and reflectance spectra of Kerr reservoir sediment waters

RESOURCES MANAGEMENT

[NASA-TP-1993]

Remote sensing for natural resources: An international view of problems, promises and accomplishments

Now or problems, promises and accomplishments ...

Book p0137 A82-21875

Towards an operational SPOT system - A preliminary assessment -- earth observation satellites for resources amanagement g0114 A82-27667

Strategies and uses of small distributed analysis centers as in the natural resource inventors of Menandal

as in the natural resource inventory of Venezuela p0115 A82-27636

Remote sensing applications to resource problems in pO132 N82-16445 [E82-10027]

Resourceful decisions: LANDAT in Michig p0078 N82-19601

[E82-10037] RETROREFLECTION

Interaction between the Agulhas current and the subtropical convergence [CSIR-RR-384] RING CURRENTS p0098 N82-20824

Investigations of medium wavelength magnetic anomalies in the Fastern Pacific using Magsat data [E82-10047] p0119 N82-19622 harmonic representation Spherical harmonic representation of the main geomagnetic field for world charting and investigations of some fundamental problems of physics and geophysics [E82-10075]

RIVER BASINS

Application of satellite data to analyze and predict meltage moff in a mountain basin p0102 A82-27461

Dynamics of snow cover in mountain regions of the Aral runoff in a mountain basin

Sea basin, studied using satellite photographs p0102 A82-27462

A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy [E82-10038] p0119 N82-19613

Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images

p0108 N82-20605

Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center

[NASA-TP-1825] n0108 N82-20620

RIVERS

Monitoring of the thermal pollulum common of water using infrared aerial photography p0104 A82-27471

Measurement of river sediments

Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inertia soil moisture measurements --- Delaware Bay, Cooper River, and the Potomac River estuaries: Luverne, Minnesota, soil moisture. and water temperature of Lake Anna, Virginia
[E82-10064] p0108 N82-20587

p0107 N82-18670

ROADS

NDS

Building and road extraction from aerial photographs
p0074 A82-25140

ROCK INTRUSIONS

Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo --- Brazil
[E82-10076] p0092 N82-20599

ROCK MECHANICS

Ore deposits in Africa and their relation to the underlying p0090 A82-26604

ROCKET-BORNE PHOTOGRAPHY

Investigation of earth resources using rocket and space technology DO130 A82-28127

ROCKS One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precambrian metamorphics of Singhbhum, eastern India

p0089 A82-26017 Heat Capacity Mapping Mission (HCMM) program: Study

of geological structure of Sicily and other Italian areas --Sardinia and the Gulf of Orosei [E82-10073] p0091 N82-20596 p0091 N82-20596

RUST FUNGI

Sonora exploratory study for the detection of wheat-leaf [E82-10133] p0070 N82-21661

SACRAMENTO VALLEY (CA)

HCMM: Soil moisture in relation to geologic structure dithology, northern California --- Northern Coast Range, decramento Valley, and the Modoc Plateau p0092 N82-21662 Sacramento V [E82-10135]

SAFETY FACTORS
AgRISTARS: Agriculture and Resources Inventory Surveys Through Aerospace Remote Sensing, Enumerator's nanual, 1981 ground data survey [E82-10116] p0069 N82-21653

SAHARA DESERT (AFRICA)

ARA DESERT (AFRICA)
Dust from the Sahara in satellite images
p0079 N82-20802

DO110 N82-21774

Remote sensing of salinity in the San Francisco Bay Delta nO102 A82-26839

SAMPLING

Evaluation of a segment-based LANDSAT full-frame approach to corp area estimation
[E82-10067] p0066 N82-20590

SAN FRANCISCO BAY (CA)

Remote sensing of salinity in the San Francisco Bay Delta pO102 A82-26839

Dust from the Sahara in satellite images

n0079 N82-20802 SATELLITE ATTITUDE CONTROL

Spaceborne photography for the study of earth resources
--- Russian book p0126 A82-22397

SATELLITE CONFIGURATIONS

The microwave radiometer spacecraft. Executive summary pC pO131 N82-16154 Mission definition for a large-aperture microwave p0131 N82-16155 radiometer spacecraft General configuration and internal disposition of equipment in a satellite for collecting environmental data [INPE-2240-PRE/026] p0078 N82-19256

SATELLITE NAVIGATION SYSTEMS

Remote sensing techniques suitable for exploration and navigation in and under sea ice
[FOA-REPT-VOL-15-NO-2] p0096 N82-17566

SATELLITE OBSERVATION

n0075 A82-27040 Satellite Earth resources data, module U-3

p0119 N82-19611 [E82-10035]

SATELLITE ORBITS

Orbital methods of celestial geodesy p0079 A82-25234

SATELLITE-BORNE INSTRUMENTS

The Landsat program - Moving ahead p0137 A82-21280

Superconducting tensor gravity gradiometer

p0126 A82-23045

Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 International Symposium on Remote Sensing of Environment, 15th, University of Michigan, Ann Arbor, MI, May 11-15, 1981, Proceedings, Volumes 1, 2 & 3 po127 A82-27576

Advanced aerospace remote sensing systems for global police applications p0127 A82-27577 resource applications A concept for an advanced earth resources satellite p0127 A82-27579

The Japanese MOS and Los program · Marine
Observation Satellite p0129 A82-27606
The first ESA remote sensing satellite system ERS-1
p0094 A82-27608
Orbital performance of a 1.6 micrometer DMSP
snow/cloud discrimination sensor p0130 A82-27653 The structure and basic parameters of a satellite system for the remote sensing of earth resources

p0131 A82-28129

Seasat data utilization project p0097 N82-18660 [NASA-CR-168557] p0097 N82-18660 General configuration and internal disposition of equipment in a satellite for collecting environmental data

[INPE-2240-PRE/026] p0078 N82-19256 Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p0133 N82-19647 c Processes Program, Fiscal Year 1981 NASA Ocean

IASA-TM-84467] p0098 N82-19801 Satellite-borne non-DOD sensors for terrestrial [NASA-TM-84467] observations

p0134 N82-20630

SATELLITE-BORNE PHOTOGRAPHY

Spaceborne photography

Spaceborne photography for the study of earth resources
--- Russian book n0126 A82-22397 Russian book p0126 A82-22397
The effect of anthropogenic factors on the dynamics of lakes in the plains of Central Asia /studied on the basis of space photographs/ p0103 A82-27469

lakes in the plattis or our of space photographs/
Present and future studies of natural resources and the pollak A82-27506 po environment from space p0138 A82-27506 Investigation of the earth on the basis of space

Photographic data p0082 A82-27507
Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980

p0105 A82-27634
University of Dundee satellite image data acquisition and chiving facility p0130 A82-27659 archiving facility p0130
Satellite Earth resources data, module U-3

[E82-10035] Atlas of METEOSAT imagery [ESA-SP-1030] p0119 N82-19611

p0124 N82-21700 SATELLITE ROBNE RADAR

Spaceborne radar observation of the earth surface p0127 A82-27578

SURJECT INDEX SCANNERS

SCANNERS		SUBJECT INDEX
SCANNERS	SEAMOUNTS	Dust from the Sahara in satellite images
A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632	Some altimetric signatures from Seasat over the mid-Pacific Seamount Range	p0079 N82-20802 Delineation of soil temperature regimes from HCMM
Cloud Top Scanning radiometer (CTS): User's guide	[AD-A110419] p0099 N82-21691	data
[NASA-TM-83887] p0135 N82-21826 SCATTERING COEFFICIENTS	SEARCH RADAR Evaluation of two AN/APS-94 side-looking airborne radar	[E82-10141] p0070 N82-21668 SLOPES
Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027	systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466	Cliff and slope topography of part of the Grand Canyon, Arizona as characterized on a Seasat radar image
SCATTERING CROSS SECTIONS Application and experimental verification of an empirical	SEASAT-A SATELLITE	p0082 A82-26843
backscattering cross section model for the earth's surface p0081 A82-21036	Seasat data utilization project [NASA-CR-168557] p0097 N82-18660	Airborne lidar measurements of smoke plume distribution, vertical transmission, and particle size p0073 A82-21386
SCATTEROMETERS	SECULAR VARIATIONS Studies related to Magsat Backus effect and the	SNOW
SASS measurements of the Ku-band radar signature of the ocean p0093 A82-21917	westward drift	Optical properties of snow p0101 A82-21922 Orbital performance of a 1.6 micrometer DMSP
Sea state measurement with a two frequency	[E82-10050] p0085 N82-19625 SEDIMENT TRANSPORT	snow/cloud discrimination sensor p0130 A82-27653
scatterometer (theory) [ESA-TT-710] p0096 N82-17802	Investigation of silting and currents in Lake Balaton by	Spectral reflectances of freshwater ice and snow from 340 through 1100 nm p0106 N82-17601
Satellite scatterometer feasibility study. Volume 1:	use of hydraulic models and aerial and space photographs p0104 A82-27472	Dielectric properties of snow
Technical results Earth Resources Satellite (ERS 1) [ESA-CR(P)-1492-VOL-1] p0133 N82-19650	Measurement of river sediments	[NASA-CR-166764] p0107 N82-19638 The development and testing of methods to infer
Satellite scatterometer feasibility study. Volume 2: Data	[WMO-561] p0107 N82-18670	midlatitude precipitation intensity from geosynchronous
extraction algorithm and error simulation for wind sensor Earth Resources Satellite (ERS 1)	Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images	satellite infrared data [AD-A108881] p0120 N82-19788
[ESA-CR(P)-1492-VOL-2] p0133 N82-19651	Brazil	SNOW COVER
MRSE: A Microwave Remote Sensing Experiment in Spacelab p0134 N82-20375	[E82-10082] p0108 N82-20605 SEDIMENTS	Microwave radiation from a natural snow field p0101 A82-19559
SCENE ANALYSIS	A method for the retrieval of phytoplankton and	Theoretical and experimental studies of microwave
Building and road extraction from aerial photographs p0074 A82-25140	suspended sediment concentrations from remote measurements of water colour p0094 A82-27620	emission signatures of snow p0125 A82-21034 Towards the definition of optimum sensor specifications
 Scene analysis for wildland fire-fuel characteristics in a 	Laboratory upwelled radiance and reflectance spectra of	for microwave remote sensing of snow
Mediterranean climate p0060 A82-27624 A technique for automatic labeling of Landsat agricultural	Kerr reservoir sediment waters [NASA-TP-1993] p0110 N82-21774	p0125 A82-21035 Use of GOES and TIROS/NOAA satellite data for
scene elements by analysis of temporal-spectral patterns	SERVICES por 10 NB2-21774	snow-cover mapping p0101 A82-22145
p0062 A82-27678 The Office for Remote Sensing of Earth Resources	National High-Altitude Photography (NHAP) of the	Aerospace methods for the study of water resources and their pollution Russian book p0102 A82-27457
Pennsylvania p0121 N82-20612	Tennessee Valley Region, volume 1, no. 1 [PB82-130899] p0134 N82-21703	Remote-sensing determination of the characteristics of
SCIENTISTS Helmut Wolf: On the occasion of his 70th birthday	SHALLOW WATER Survey and mapping of shallow water bodies and the	hydrological objects p0102 A82-27460 Application of satellite data to analyze and predict meltage
[SER-E-18] p0084 N82-19603	distribution of the river runoff of solids on the basis of	runoff in a mountain basin p0102 A82-27461
SCOTLAND University of Dundee satellite image data acquisition and	multispectral aerial and space photographs p0103 A82-27467	Dynamics of snow cover in mountain regions of the Aral Sea basin, studied using satellite photographs
archiving facility p0130 A82-27659	SIBERIA	p0102 A82-27462
SEA ICE Comparisons of laser profilometer sea ice roughness	Remote sensing of the structure of taiga landscapes Russian book p0059 A82-27397	The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakhstan
statistics with surface truthed data and SLAR imagery	Application of satellite data to analyze and predict meltage	considered as an example/ p0102 A82-27463
p0094 A82-27619 The use of data from satellite-borne microwave scanning	runoff in a mountain basin p0102 A82-27461 The use of space photographs for hydrogeological studies	Evaluation of snow-cover pollution in industrial regions using satellite TV images p0103 A82-27464
radiometers for the automated compilation of operational	of the Baikal region and Mongolia p0103 A82-27468	Albedo and brightness coefficients of snow cover
maps of ice cover for the Arctic Ocean p0095 A82-28145	SICILY Remote SO2 emission measurements with correlation	p0103 A82-27465 Snow cover monitoring using AVHRR data from TIROS
An optical model for the microwave properties of sea	spectrometers from volcanoes p0077 A82-27704	and NOAA satellites Advanced Very High Resolution
ice [NASA-TM-83865] p0095 N82-17561	Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas	Radiometer p0105 A82-27614 Spectral albedos of midlatitude snowpacks
Satellite-derived ice data sets no. 1: Antarctic monthly	Sardinia and the Gulf of Orosei	[NASA-TM-83858] p0106 N82-18663
average microwave brightness temperatures and sea-ice concentrations, 1973 - 1976	[E82-10073] p0091 N82-20596 SIDE-LOOKING RADAR	Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980
[NASA-TM-83812] p0096 N82-17563	Investigation of the vegetative covers on ploughed areas	[NASA-CR-166727] p0107 N82-19646
Remote sensing techniques suitable for exploration and navigation in and under sea ice	by SLAR p0058 A82-21031 Classification of ice radar imagery p0113 A82-22891	Applications systems verification and transfer project. Volume 1: Operational applications of satellite snow cover
[FOA-REPT-VOL-15-NO-2] p0096 N82-17566	Application of side-looking color infrared photography	observations: Executive summary usefulness of satellite
Sea ice movements from synthetic aperture radar [AD-A109002] p0097 N82-19435	for structure detection in subtle topography p0082 A82-27611	snow-cover data for water yield prediction [NASA-TP-1822] p0108 N82-20617
SEA ROUGHNESS	The structure and basic parameters of a satellite system	Applications systems verification and transfer project.
Workshop on the application of existing satellite data to the study of ocean surface energetics, 19-21 November	for the remote sensing of earth resources p0131 A82-28129	Volume 2: Operational applications of satellite snow-cover observations and data-collection systems in the Arizona
1980, University of Wisconsin-Madison	The relationship among sea surface roughness variations,	test site
p0094 A82-24822 An experimental program to provide remote measurement	oceanographic analyses, and airborne remote sensing analyses	[NASA-TP-1823] p0108 N82-20618 Applications systems verification and transfer project.
and analysis of ocean waves, sea level winds and balanced	[NASA-CR-168444] p0096 N82-17798 Evaluation of two AN/APS-94 side-looking airborne radar	Volume 3: Operational applications of satellite snow cover
pressure in support of Seasat-A [PB81-246035] p0095 N82-16697	systems in the detection of search and rescue targets	observations in California [NASA-TP-1824] p0108 N82-20619
The relationship among sea surface roughness variations,	[AD-A108404] p0132 N82-18466 SIDELOBE REDUCTION	Applications systems verification and transfer project.
oceanographic analyses, and airborne remote sensing analyses	Context sensitive formulations of antenna pattern	Volume 4: Operational applications of satellite snow cover
[NASA-CR-168444] p0096 N82-17798	correction and side lobe compensation for NOSS/LAMMR real time processing	observations: Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620
Recovering ocean waveheight from HF radar sea echoes	[NASA-CR-166789] p0122 N82-21457	Applications systems verification and transfer project.
distorted by imperfect ionospheric reflection [PB82-113283] p0096 N82-17805	SIERRA NEVADA MOUNTAINS (CA) Applications systems verification and transfer project.	Volume 5: Operational applications of satellite snow-cover observations, northwest United States
Observation of the Earth by radar	Volume 3: Operational applications of satellite snow cover	[NASA-TP-1826] p0109 N82-20621
[NASA-TM-76830] p0124 N82-21687 SEA STATES	observations in California [NASA-TP-1824] p0108 N82-20619	Applications systems verification and transfer project. Volume 6: Operational applications of satellite snow-cover
Some peculiarities of formulation and solution of inverse	SIGNAL ANALYSIS	observations NOAA/NESS support study
problems in microwave radiometry of the ocean surface and atmosphere p0093 A82-21921	Sea state measurement with a two frequency scatterometer (theory)	[NASA-TP-1827] p0109 N82-20622
Sea state measurement with a two frequency	[ESA-TT-710] p0096 N82-17802	Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on
scatterometer (theory) [ESA-TT-710] p0096 N82-17802	SIGNAL PROCESSING Methods for the processing of synthetic-aperture radar	operational applications of satellite snow-cover
[ESA-TT-710] p0096 N82-17802 Surface wave statistics and spectra during high sea state	signals when solving problems of the national economy	observations [NASA-TP-1828] p0109 N82-20623
conditions in the North Atlantic	/Review/ p0113 A82-26726 Recovering ocean waveheight from HF radar sea echoes	Applications systems verification and transfer project.
[AD-A109832] p0098 N82-20827	distorted by imperfect ionospheric reflection	Volume 8: Satellite snow mapping and runoff prediction handbook
Comparisons of laser profilometer sea ice roughness	[PB82-113283] p0096 N82-17805 Study of a radar altimeter for the European remote sensing	[NASA-TP-1829] p0109 N82-20624
statistics with surface truthed data and SLAR imagery p0094 A82-27619	program. Volume 1: Executive summary Earth	Strategies for using remotely sensed data in hydrologic models
SEA WATER	Resources Satellite (ERS 1) [SPAR-R.1090-ISSUE-A] p0133 N82-19652	[E82-10156] p0109 N82-21680
Influence of dissolved organic materials on turbid water optical properties and remote-sensing reflectance	SIGNAL TO NOISE RATIOS	SOIL EROSION The potential of remote sensing to monitor soil erosion
p0093 A82-20445	Simulation and studies of spaceborne synthetic aperture radar image quality with reduced bit rate	on cropland p0061 A82-27656
Structure and variability of the Alboran Sea frontal system p0093 A82-20447	p0128 A82-27594	SOIL MAPPING
	SIGNATURE ANALYSIS	A comparison between aerial photography and Landsat
Brazilian remote sensing activities, current and	AgRISTARS: Foreign commodity production forecasting.	for computer land-cover mapping p0074 A82-22143
Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444		for computer land-cover mapping p0074 A82-22143 The spectral reflectance of certain soils Russian book p0059 A82-26577

SUBJECT INDEX SPECTRAL REFLECTANCE

Remote sensing of the structure of taiga landscapes --ussian book p0059 A82-27397 Sonora exploratory study for the detection of wheat-leaf US corn and soybeans exploratory experim [£82-10088] p0068 p0068 N82-21640 Russian book Soybean canopy reflectance as influenced by cultural practices --- West Lafayette, Indiana [E82-10105] p0068 N82-21647 [E82-10133] Flexible processing of remote sensing data through integration of image processing and geobased information systems p0116 A82-27667 p0070 N82-21661 HCMM: Soil moisture in relation to geological and lithology, northern California --- Northern Coast Range, Sacramento Valley, and the Modoc Plateau systems Inventory of eroded areas in the state of Guanajuato The 1981 Argentina ground data collection 82-10127] p0070 N82-21658 p0092 N82-21662 [E82-10135] Mexico, by automatic analysis of Landsat images p0076 A82-27690 [E82-10127] A study of model parameters associated with the urban climate using HCMM data --- St. Louis, Missouri [E82-10140] p0079 N82-21667 Spectral-agronomic relationships of com, soybean and Machine implementation of algorithms for the mapping wheat canopies [E82-10143] DO070 N82-21670 of soil moisture on the basis of microwave-radiometer measurements p0131 A82-28142 Strategies for using remotely sensed data in hydrologic Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21672 Delineation of soil temperature regimes from HCMM Use of thermal inertia determined by HCMM to predict nocturnal cold prone areas in Florida --- The Everglades agricultural area, Lake Okeechobee, and the Suwanee River p0119 N82-19617 Determination of the optimal level for combining area Taxonomic classification of world map units in crop roducing areas of Argentina and Brazil with representative and yield estimates [£82-10146] p0071 N82-21673 US soil series and major land resource areas in which they [E82-10157] p0071 N82-21681 SPACE SHUTTLES Advanced aerospace remote sensing systems for global resource applications p0127 A82-27577 SOILS [E82-10058] n0065 N82-19633 Landsat feature enhancement - Or, can we separate egetation from soil p0060 A82-27622 Methodology of the interpretation of remote sensing data SPACEBORNE PHOTOGRAPHY vegetation from soil and applications in pedology [INPE-2211-MD/008] An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 Analytical triangulation of space photography p0111 A82-20402 p0078 N82-19641
Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas --- Brazil p0078 N82-19641 Satellite Earth resources data, module U-3 92-10035] p0119 N82-19611 Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they JF82-100351 SPACECRAFT PERFORMANCE [E82-10069] n0078 N82-20592 LANDSAT-2 and LANDSAT-3 flight evaluation report. Delineation of soil temperature regimes from HCMM 23 January to 23 July 1980 [E82-10022] p0065 N82-19633 [E82-10058] [E82-10058] p.0065 NB2-19633 Notes for Brazil sampling frame evaluation trip [E82-10060] p.0066 NB2-19635 The effect of finite field size on classification and atmospheric correction [NASA-TM-83818] p.0120 NB2-19645 p0132 N82-16440 [E82-10024]
SPACELAB PAYLOADS
MRSE: A Microwave Remote Sensing Experiment in
p0134 N82-20375 [F82-10141] p0070 N82-21668 SOIL MOISTURE Soil moisture determination - Experiments with passive incrowave radiometers p0057 A82-19529 Soil moisture document p005/ A02-100-1
The Dutch ROVE program --- Radar Observation of p0057 A02-21026
p0057 A02-21026 SPATIAL DISTRIBUTION On the accuracy of thermal inertia mapping by infrared Use of GOES and TIROS/NOAA satellite data for p0101 A82-22145 snow-cover mapping imagery [SAAB-REPR-AE-10] Microwave radiometry of lands under natural and artificial Stochastic models of cover class dynamics --- remote poops and of vegetation p0059 A82-27586 p0120 N82-19656 moistening p0057 A82-21028
Mixture formulas applied in estimation of dielectric and Delineation of soil temperature regimes from HCMM sensing of vegetation Data base requirements in support of crop models p0060 A82-27588 data radiative characteristics of soils and grounds at microwave E82-10141) p0070 N82-21668 frequencies p0058 A82-21030
Volumetric effects in cross-polarized airborne radar SOLAR POSITION Utilization of spatial complexity in computer classified A relation between Landsat digital numbers, surface A relation between Landsat digital numbers, someous reflectance, and the cosine of the solar zenith angle p0114 A82-26841 Landsat MSS data for multi-factoral thematic mapping p0129 A82-27648 data p0058 A82-21032 The estimation of the surface moisture of a vegetated in using serial infrared photography p0058 A82-21093
HCMM detection of high soil moisture areas --- by diurnal mperature observation p0059 A82-24963 Sea ice movements from synthetic aperture radar D-A109002] p0097 N82-19435 Simulated response of a multispectral scanner over wheat IAD-A1090021 [AD-A109002] p0097 N82-19435
Recommended data sets, corn segments and spring
wheat segments, for use in program development
[E82-10034] p0064 N82-19610
AgRISTARS: Early warning and crop condition
assessment. Patch image processor user's manual
[E82-10054] p0065 N82-19630 The possibilities of microwave remote sensing for the study of water resources and their pollution a function of wavelength and view/illumination [F82-10144] p0071 N82-21671 SONIC ANEMOMETERS p0102 A82-27458
Remote-sensing functions in the interpretation of Observation of the turbulent structure in the planetary boundary layer with a kytoon-mounted ultrasonic Remote-sensing functions in the many moisture from aerial and space images p0102 A82-27459 p0065 N82-19630 [E82-10055] [E82-10055] p.0065 N82-19630
Methodology of the interpretation of remote sensing data and applications in geomorphology [INPE-2209-MD/007] p.0091 N82-19642
An algorithm for spatial heirarchy clustering [E82-10081] p0125 A82-21082 anemometer system SOUTH AMERICA Machine implementation of algorithms for the mapping Remote sensing in Latin America: Technology and markets for the 1980's of soil moisture on the basis of microwave-radiometer measurements p0131 A82-28142 Precipitation measurements from space - Workshop summary 28 April-1 May 1981, Greenbelt, MD [AD-A108784] n0138 N82-20626 Registration verification of SEA/AR fields -- Oregon.
Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota [E82-10083] p0068 N82-21635 SOUTH CAROLINA Multiresource inventory methods pilot test --- for prests p0060 A82-27601 p0077 A82-28295 Mission definition for a large-aperture microwave forests Forest change detection SOUTH DAKOTA mission delimination for a large-aperture microwave moderate spacecraft policition of remote sensing to resource management and environmental quality programs in Kansas ... Climarron National Grasslands, Prairie Potewatomi p0061 A82-27644 SPATIAL FILTERING
Optimal spatial filtering and transfer function for SAR Use of Landsat imagery to delineate glaciofluvial aquifers in southeast South Dakota p0105 A82-27637 southeast South Dakota p0105 A82-27637 Remote sensing applications to resource problems in p0094 A82-27596 ocean wave spectra n, and Kickapoo Reservation SPATIAL RESOLUTION p0063 N82-16447 South Dakota [E82-10027] Spatial reasoning in remotely sensed data p0132 N82-16445 p0105 A82-27592 Wheat stress indicator model, Crop Condition Assessment SOUTHEAST ASIA Division (CCAD) data base interface driver, user's manual [E82-10031] p0064 N82-19607
Use of thermal inertia determined by HCMM to predict An evaluation of the utility of smaller Landsat resolution elements / Resolution of Landsat resolution/ Photogrammetry from aircraft side camera
Winter MONEX p0075 At p0075 A82-26721 p0114 A82-27625 SOUTHERN CALIFORNIA Digital analysis of spatial and spectral features from pithorne MSS of a forested region p0061 A82-27647 Land cover classification accuracy as a function of sensor p0076 A82-27665 nocturnal cold prone areas in Florida Analysis of two Seasat synthetic aperture radar images an urban scene p0074 A82-25452 [E82-10040] p0064 N82-19615 Interactive initialization of heat flux parameters for numerical models using satellite temperature of an urban scene Scene analysis for wildland fire-fuel characteristics in a spatial resolution editerranean climate p0060 A82-27624
Ship and satellite bio-optical research in the California Spatial resolution and geometric potential of planned easurements [E82-10048] p0120 N82-19623 earth satellite missions p0130 A82-27683 AgRISTARS: Soil moisture/early warning and crop Characterizing user requirements for future land observing [NASA-CR-168681] n0098 N82-20823 condition assessment. Interface control document satellites [E82-10053] p0065 N82-19628 p0081 N82-17562 [NASA-TM-83867] Use of Landsat-derived temporal profiles for com-soybean AgRISTARS: Yield model development/soil moisture. SPECTRAL BANDS p0059 A82-26842 feature extraction and classification Interface control document Soybean canopy reflectance as a function of view and umination geometry p0061 A82-27645 Characterizing user requirements for future land observing [E82-10054] n0065 N82-19629 satellites Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of illumination geometry [NASA-TM-83867] p0081 N82-17562 Potential utility of thematic mapper data in estimating pool 1 A82-27663 A multiband radiometer and data acquisition system for crop areas remote sensing field research p0065 N82-19632 p0134 N82-21669 [EB2-10057] Crop area estimates using ground-gathered and Landsat 682.101421 p0062 A82-27676 SPECTRAL CORRELATION Evaluation of HCMM satellite data for estuarine tidal data A multitemporal approach Influence of solar illumination angle on soybean canopy plectance p0063 A82-28153 Remote SO2 emission measurements with correlation pectrometers from volcanoes p0077 A82-27704 circulation patterns and thermal inertia soil moisture p0077 A82-27704 measurements --- Delaware Bay, Cooper River, and the Potomac River estuaries: Luverne, Minnesota, soil moisture, and water remperature of Lake Anna, Virginia p0108 N82-20587 p0108 N82-20587 SPECTRAL EMISSION

Methods of editing cloud and atmospheric layer affected AgRISTARS: Foreign commodity production forecasting. Minutes of the annual formal project manager's review, including preliminary technical review reports of FY80 pixels from satellite data Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada
[E82-10070] p0079 N82-2059 10046 p0119 N82-19621 experiments wheat/barley and corn/soybean SPECTRAL RECONNAISSANCE Watershed model study using LANDSAT data p0079 N82-20593 p0064 N82-19614 p0106 N82-17602 Dryland pasture and crop conditions as seen by HCMM
--- Washita River watershed
[E82-10074] p0067 N82-20597 AgRISTARS: Foreign commodity production forecasting.
Com/soybean decision logic development and testing
[E82-10056] p0065 N82-19631 The estimation of the surface moisture of a vegetated p0067 N82-20597
Ground registration of data from an airborne scatterometer The estimation of the surface moisture of a vegetated soil using earial infrared photography p0058 A82-21093 Multispectral photographic remote sensing of green vegetation biomass and productivity p0059 A82-22144 Spectral reflectance of hydrophytes p0102 A82-24980 Influence of illumination and viewing geometry and atmospheric composition on the 'tasseled cap' transformation of Landsat MSS data p0059 A82-24981. Notes for Brazil sampling frame evaluation trip [E82-10060] p0066 N82-19635 [E82-10084] p0068 N82-21636 Segment-level evaluation of the simulated aggregation As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson models Soybean canopy reflectance as influenced by cultural actices -- West Lafayette, Indiana 82-10105] US com and soybean exploratory experiment [E82-10061] n0066 N82-19636

Evaluation of a segment-based LANDSAT full-frame

p0066 N82-20590

oach to corp area estimation

[E82-10067]

[E82-10105]

The spectral reflectance of certain soils --- Russian pok p0059 A82-26577

SPECTRAL RESOLUTION SUBJECT INDEX

SPECTROMETERS

measurements

SPECTROPHOTOMETERS

CTROMETERS
Instrumentation for remote reflectance and radiance p0130 A82-27652

on Nimbus 7 - A proposed adjustment Stratospheric instruments and analyses p0127 A82-26963 p0133 N82-18776 Albedo and brightness coefficients of snow cover p0103 A82-27465 SPECTROSCOPY Interpretation of multispectral aerial photographs of Lake p0104 A82-27473 Color characteristics of the earth's surface determined on the basis of spectroscopy results from om salyut 4 p0073 A82-19826 Mueggelsee ectrometric studies of the water SPECTRUM ANALYSIS p0104 A82-27474 Mueage MAGSAT anomaly profiles of the eastern Indian Ocean A data base of geologic field spectra [E82-10066] p0086 N82-20589 n0090 A82-27600 Direct determination of the two dimensional image Dew and vapor pressure as complicating factors in the spectrum from raw synthetic aperture radar data interpretation of spectral radiance from crops p0122 N82-21474 D0060 A82-27617 Landsat feature enhancement - Or r, can we separate p0060 A82-27622 SPECULAR REFLECTION Contrast reduction by the atmosphere nonuniform surface reflectance p0 vegetation from soil An approach to path radiance correction in MSS DO112 A82-20423 p0115 A82-27629 SPHERICAL HARMONICS Some new methods in geomagnetic field modeling applied to the 1960 - 1980 epoch Passive bathymetric measurements nts in the Bruce p0129 A82-27642 Peninsula region of Ontario A vegetation response model applied to range inventory and monitoring using Landsat MSS data p0083 N82-17714 NASA-TM-83868] SPOT (FRENCH SATELLITE) p0060 A82-27643 Towards an operational SPOT system - A preliminary assessment --- earth observation satellites for resources management p0114 A82-27607 The influence of illumination and viewing geometry on the reflectance factor of agricultural targets management p0061 A82-27646 The potential of remote sensing to monitor soil erosion cropland p0061 A82-27656 Instrumentation for remote reflectance and radiance measurements pulso real emergence An invertible coniferous forest canopy reflectance p0062 A82-27679 STANDARDS Project communications/documentation standards Ground level reflectance measurement techniques - An advantage with emphasis on the importance of spectral [882-10093] p0068 N82-21645 evaluation with emphasis on the importance of spectral calibration p0116 A82-27689 TATIONKEEPING
Topex orbit sustenance maneuver design ··· Ocean
Topography Experiment spacecraft
[AIAA PAPER 82-0202] p0094 A82-27091 calibration Influence of solar illumination angle on soybean canopy reflectance p0063 A82-28153 pectral reflectances of freshwater ice and snow from p0106 N82-17601 STATISTICAL ANALYSIS 340 through 1100 nm Spectral albedos of midlatitude sno p0113 A82-25139 Multispectral texture [NASA-TM-83858] p0106 N82-18663 Using known map category marginal frequencies to estimates of thematic map accuracy Methods of editing cloud and atmospheric layer affected p0113 A82-25456 pixels from satellite data An experiment in probabilistic relaxation for terrain cover [E82-10046] nO119 N82-19621 classification of Kuwait from Landsat imagery p0062 A82-27680 Effects of nitrogen nutrition on the growth, yield and reflectance characteristics of corn canopies --- Purdue Surface wave statistics and spectra during high sea state my Farm, Indiana conditions in the North Atlantic [E82-10068] 82-10068] p0067 N82-20591 As-built design specification for PARHIS [AD-A109832] p0098 N82-20827 [E82-10089] p0122 N82-21641 Soybean canopy reflectance as influenced by cultural practices — West Lafayette, Indiana [E82-10105] Landscape physical-geographical mapping classification of the eastern part of the Checher ASSR using space imagery
STEREOPHOTOGRAPHY p0073 A82-20339 Spectral-agronomic relationships of corn, soybean and Calibration and model reconstruction in analytical close-range stereophotogrammetry. I - Mathematical fundamentals p0111 A82-20403 wheat canopies [E82-10143] - Mathematical D0070 N82-21670 Simulated response of a multispectral scanner over wheat Calibration and model reconstruction in analytical function of wavelength and view/illumination close-range stereophotogrammetry. II - Special evaluation procedures for rasterstereography and moire topography [E82-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type STOCHASTIC PROCESSES Stochastic models of cover class dynamics --- remote nsing of vegetation p0059 A82-27586 [E82-10145] p0071 N82-21672 p0059 A82-27586 Laboratory upwelled radiance and reflectance spectra of STRATIFICATION Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 Notes for Brazil sampling frame evaluation trip ediment waters p0111 A82-20410 [NASA-TP-1993] DO110 N82-21774 SPECTRAL RESOLUTION p0066 N82-19635 [E82-10060] Digital analysis of spatial and spectral features airborne MSS of a forested region p0061 A82-2 p0061 A82-27647 Evaluation of a segment-based LANDSAT full-frame pproach to corp area estimation SPECTRAL SENSITIVITY CTRAL SENSITIVITY
Landsat thermal imaging of alpine regions
p0079 A82-22147 p0066 N82-20590 [E82-10067] Determination of the optimal level for combining area and vield estimates Imaging the earth. I - The troubled first decade of p0137 A82-27169 p0071 N82-21673 Landsat STRATIGRAPHY Technologies for the multispectral mapping of earth sources p0128 A82-27580 One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precambrian resources SPECTRAL SIGNATURES metamorphics of Singhbhum, eastern India Environmental studies by multispectral scanner under DO089 A82-26017 Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 large-scale civil engineering construction p0063 A82-27691 Remote sensing data applied to land-use survey at the STRATOSPHERE [E82-10025] p0081 N82-16443 id-latitude summertime measurem p0074 A82-25149 Thermal vegetation canopy model studies NO₂ [AD-A106422] p0064 N82-16455 Multidimensional aspects: Ozone, temperature and AgRISTARS: Soil moisture/early warning and crop p0081 N82-18772 Stratospheric instruments and analy condition asse [E82-10053] sessment. Interface control docur pO133 N82-18776 p0065 N82-19628 STRIP MINING Data rate reduction. Impact of image data compression on end to end data management of a multispectral payload Application of remote sensing to state and regional problems -- mississippi for satellite imagery [E82-10033] p0078 N82-19609 p0120 N82-19654 STRUCTURAL PROPERTIES (GEOLOGY) AgRISTARS: Foreign commodity production forecasting The relationship between seismicity and lineaments of cet test reports document, volume 1 ··· using North ota, South Dakota, Montana, and Minnesota 2-10087] p0068 N82-21639 Anatolian-Caucasian-Iranian segment

Mediterranean fold belt

interpretation

Dip determinations in photogeology

A structural synthesis of Brazil, based on the study of

Geophysical and Landsat lineament mapping - An

major lineaments derived from remote sensing imagery interpretation p0079 A82-26012

approach illustrated from west-central and south India p0089 A82-26016

p0089 A82-20341

p0089 A82-25453

A relation between Landsat digital numbers, surface flectance, and the cosine of the solar zenith angle p0114 A82-26841 Radiometric calibration of the Coastal Zone Color Scanner

One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precambria metamorphics of Singhbhum, eastern India p0089 A82-26017 Application of aerial and space photographic data in the study of subsurface water and tectonic structures p0090 A82-27466 Application of side-looking color infrared photography for structure detection in subtle topography DO082 A82-27611 Seasat satellite investigation of the structure of Western Nebraska and its application to the evaluation of geotherma p0090 A82-27635 resources Ring structures in the earth's crust, and their significance for geology and methods for their investigation p0091 A82-28136 Report on a short course in remote sensing and the eological applications of LANDSAT MSS imagery at p0091 N82-16447 [E82-10024] Integration of LANDSAT with geology and airborn geophysics into an operational mineral exploration system the Bearlodge area of northeastern Wyoming [E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California --- Northern Coast Range, Sacramento Valley, and the Modoc Plateau p0092 N82-21662 [E82-10135] Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data p0087 N82-21674 [E82-10147] Use of MAGSAT anomaly data for crustal structure and mineral resources in the US midcontinent p0092 N82-21677 [F82-10152] SUBARCTIC REGIONS Enhancement of Landsat data for Hudson Bay lowlands egetation p0114 A82-27623 vegetation SUBURBAN AREAS A study of model parameters associated with the urban climate using HCMM data [F82-10159] DO080 N82-21683 SUGAR CANE Use of Landsat data for automatic classification and area Brazil plantation in Sao Paulo state, p0058 A82-21092 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 --- maps, Brazil [E82-10071] p0067 N82-20594 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] SULFUR DIOXIDES A regional air quality model for the Kwinana industrial area of Western Australia p0075 A82-26403 p0075 A82-26403 onts with correlation p0077 A82-27704 Remote SO2 emission measuren spectrometers from volcanoes Remote sensing of sulfur dioxide effects on vegetation. [PB82-115122] p0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. olume 2: Data Volume 2: Data [P882-115130] n0066 N82-19716 SULFURIC ACID Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999 SUMMER and the Tropical Eastern Atlantic during 1974 and 1978
p0075 A82-26700 Soybean canopy reflectance as a function of view and illumination coon n0061 A82-27645 SUPERCONDUCTIVITY Superconducting tensor gravity gradiomete p0126 A82-23045 SURFACE LAYERS On randomly absorbing and scatt surface lave p0079 A82-21037 SURFACE NAVIGATION Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-REPT-VOL-15-NO-2] n0096 N82-17566 Experiments in satellite Doppler control positioning at p0086 N82-20581 SURFACE ROUGHNESS Volumetric effects in cross-polarized airborne radar data p0058 A82-21032 A radar signature model for partially coherent scattering om irregular surfaces p0079 A82-21038 from irregular surfaces Comparison of sigma/deg/ obtained from the conventional definition with sigma/deg/ radar equation for randomly rough surface eg/ appearing in the

p0112 A82-21039

p0094 A82-27619

p0095 N82-16331

Comparisons of laser profilometer sea ice roughness statistics with surface truthed data and SLAR imagery

Coherent scatter of microwaves from moderately rough

A study of model parameters associated with the urban climate using HCMM data --- St. Louis, Missouri [E82-10140] p0079 N82-21667

[AD-A106133]

[E82-10087]

nd Oklahoma

Transition year labeling error characterization study -

Kansas, Minnesota, Montana, North Dakota, South Dakota,

AgRISTARS: Supporting research, Classification of corn:

Badhwar profile similarity technique ··· us corn belt [E82-10150] p0071 N82-21676

p0069 N82-21651

SUBJECT INDEX THEMATIC MAPPING

Simulation and studies of spaceborne synthetic aperture SURFACE TEMPERATURE TEMPORAL DISTRIBUTION Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 radar image quality with reduced bit rate Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 p0128 A82-27594 Features of a generalized digital Synthetic Aperture Radar Field-by-field multitemporal analysis of aerial scanner Thermal infrared data from the Heat Capacity Mapping ission p0127 A82-24964 n0128 A82-27595 data geometrically corrected by means of a sliding me Optimal spatial filtering and transfer functi p0115 A82-27651 Crop area estimates using ground-gathered and Landsat hts A multitemporal approach p0062 A82-27676 ocean wave spectra p0094 A82-27596 Analysis of a discrete-time linear model for geothermal Wide area, coarse resolution imaging with satellite-borne flux reconnaissance from two or three aircraft infrared data A multitemporal approach synthetic aperture radars in low-earth and geosynchrono orbits p0082 A82-2763 measurements D0075 A82-27627 High precision radiometric temperature measurements the ocean surface p0094 A82-27640 Satellite and surface geophysical expression of anomalous Seasat satellite investigation of the structure of Western of the ocean surface crustal structure in Kentucky and Ter Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635 Estimation of sea surface temperature from remote sensing in the 3.7 micron window region [NASA-TM-82163] p0084 N82-17715 TENNESSEE VALLEY (AL-KY-TN) The use of wave contrast measurements in the evaluation p0095 A82-28031 National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 of SAR/gravity models
Digital correlation of DDRS data
[NASA-CR-167494] p0130 A82-27675 Use of thermal inertia determined by HCMM to predict p0134 N82-21703 octurnal cold prone areas in Florida [PB82-130899] n0118 N82-16452 n0064 N82-19615 The relationship among sea surface roughness variations, oceanographic analyses, and airborne remote sensing TERRAIN Delineation of soil temperature regimes from HCMM Precision in the evaluation of Landsat autocorrelation p0116 A82-27686 The terrain effect data [E82-10042] [NASA-CR-168444] p0119 N82-19617 p0096 N82-17798 Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 Study of synthetic aperture radar in 2D - 2FS operation over the ocean --- European Remote Sensing system [ESA-CR(P)-1475] p0132 N82-18481 Interactive initialization of heat flux parameters for [FOA-C-30240-E1/E3] p0133 N82-18672 models using numerical satellite temperature asurements Experiences with digital terrain elevation data contouring ents from synthetic aperture radar p0097 N82-19435 (EB2-10048) p0120 N82-19623 Sea (ce movements ... p009/ No2-10-00 MRSE: A Microwave Remote Sensing Experiment in p0134 N82-20375 ... 11.12 programs [AD-A110280] On the accuracy of thermal inertia mapping by infrared p0087 N82-21690 TERRAIN ANALYSIS imagery [SAAB-REPR-AE-10] p0120 N82-19656 The use of digital multi-date Landsat imagery in terrain SAR image quality --- conference, Frascati, Italy, 11-12 The TOCIND experiment --- relation between surface otherms and ocean currents classification p0111 A82-20409 Dec. 1980; synthetic aperture radar (SAR)
[ESA-SP-172] p01 ec. 1980: synthetic aperture radar (SAH) SA-SP-172 NB2-21458 Two-dimensional power spectra of SEASAT SAR imagery ocean waves Direct determination of the two dimensional image Remote sensing of the structure of taiga landscapes p0098 N82-19805 [CTAMN/81/R/10] Russian book p0059 A82-27397 HCMM hydrological analysis in Utah --- Utah lake Airborne laser systems use in terrain mapping [E82-10063] n0107 N82-20586 n0082 A82-27584 Heat Capacity Mapping Mission (HCMM): Interpretation Spatial reasoning in remotely sensed data spectrum from raw synthetic aperture radar data of imagery over Canada [E82-10070] p0122 N82-21474 Relief effects and the use of terrain models in SAR image p0105 A82-27592 p0079 N82-20593 The use of digital terrain model in the rectification of political imagery political A82-27626 Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas --- Sardinia and the Gulf of Orosei processing --- Anderson River test site, British Columb satellite-borne imagery p0086 N82-21475 Locating prehistoric archaeological sites using Landsat SYSTEMS ANALYSIS
CNPq/INPE: LANDSAT system p0129 A82-27638 [E82-10073] n0091 N82-20596 Dryland pasture and crop conditions as seen by HCMM - Washita River watershed Non-parametric classification of abandoned coal mine operations at the Cuiaba station and the electronic processing and photo features using multipriented and ratio transformed Landsat laboratories p0090 A82-27694 [E82-10074] n0067 N82-20597 data p0118 N82-16441 Delineation of soil temperature regimes from HCMM Utilisation of remote sensing in resources identification SYSTEMS INTEGRATION data [E82-10141] and land use in India - An integrated approach Flexible processing of remote sensing data through integration of image processing and geobased information p0070 N82-21668 p0076 A82-27701 Use of thermal inertia determined by HCMM to predict octurnal cold prone areas in Florida --- The Everglades Construction of digital models of statistically uniform characteristics on the basis of multispectral space imagery p0117 A82-28144 p0116 A82-27667 nocturnal cold prone areas in Florida --- The Everglades agricultural area, Lake Okeechobee, and the Suwanee River systems Classification of systems for digital terrain simulation p0117 A82-28468 T [E82-10157] n0071 N82-21681 A study of model parameters associated with the urban climate using HCMM data Matrix data analysis: Color/B and W coding is not always TAXONOMY Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they [E82-10159] p0080 N82-21683 [AD-A108406] p0084 N82-18930 A study of model parameters ated with the urban Profiling sensitivity to image quality [AD-A108405] climate using HCMM data --- analysis of St. Louis, Missouri infrared imagery p0084 N82-18931 [E82-10160] p0080 N82-21684 [F82-10058] A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface p0065 N82-19633 Applications of HCMM satellite data to the study of urban TECHNOLOGY TRANSFER Remote sensing in Latin America: Technology and narkets for the 1980's
AD-A108784] p0138 N82-20626 heating patterns conditions in Basilicata, Southern Italy (F82-10161) p0080 N82-21685 p0119 N82-19613 Relief effects and the use of terrain models in SAR image processing --- Anderson River test site, British Columbia SURFACE WATER TECHNOLOGY UTILIZATION The possibilities of microwave remote sensing for the study of water resources and their pollution Some problems concerning the effective use of re p0086 N82-21475 Sensing policy over sensing policy over the sensing from space - Commercial and international policy A82-27669 p0102 A82-27458 TERRESTRIAL RADIATION Interpretation of Heat Capacity Mapping Mission images p0116 A82-27671 Methods of editing cloud and atmospheric layer affected pixels from satellite data over Canada [E82-10046] Remote sensing procurement package: A management p0119 N82-19621 TEXAS report for state and local governments [E82-10052] n0138 N82-19627 Assessing mesquite-grass vegetation condition from [E82-10082] p0108 N82-20605 ndsat p0059 A82-25457
Methods of editing cloud and atmospheric layer affected Program on stimulating operational private sector use of Earth observation satellite information Methods of editing cloud and atmospheric layer affected xels from satellite data pixels from satellite data [E82-10046] [E82-10131] pixels from sa [E82-10154] p0138 N82-21660 p0123 N82-21678 DO119 N82-19621 TECTONICS Registration verification of SEA/AR fields --- Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Strategies for using remotely sensed data in hydrologic A structural synthesis of Brazil, based on the study of [E82-10156] major lineaments derived from remote sensing imagery p0109 N82-21680 Oklahoma, and North Dakota interpretation n0079 A82-26012 [E82-10083] p0068 N82-21635
A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect SURFACE WAVES The Pampean Plain studied with Landsat images Surface wave statistics and spectra during high sea state conditions in the North Atlantic D0089 A82-26013 Remote sensing applied to base calcareous High Atlas / Morocco/ [E82-10107] p0069 N82-21648 [AD-A109832] n0098 N82-20827 ent tectonics of the p0089 A82-26014 TEXTURES Mapping of water quality using Landsat imagen Geophysical and Landsat lineament mapping - An Automation of the processing of aerial and space images p0106 A82-27692 p0057 A82-20350 p0113 A82-25139 approach illustrated from west-central and south India for forest inventory Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980
[FOA-C-30240-E1/E3] p0133 N82-18672 DO089 A82-26016 Multispectral texture One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precambrian metamorphics of Singhbhum, eastern India p0089 A82-26017 Monitoring forest land cover alteration in Thailand with SWITZERLAND the analysis of ancillary and digital Landsat data

Application of aerial and space photographic data in the

MAGSAT anomaly profiles of the eastern Indian Ocean

Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the

Interaction between the Agulhas current and the

p0090 A82-27466

p0086 N82-20589

p0087 N82-21679

p0106 N82-18663

p0098 N82-20824

study of subsurface water and tectonic structures

regional emplacement of crustal resources [E82-10155]

TEMPERATE REGIONS
Spectral albedos of midlatitude snowpacks

[EB2-10066]

TELLURIC CURRENTS

[NASA-TM-83858]

[CSIR-RR-384]

ropical convergence

soil moisture determination - Experiments with pas-

A system for quantitative determination of species and

Classification of ice radar imagery p0113 A82-22891 Methods for the processing of synthetic-aperture radar

spaceborne radar observation of the earth surface p0127_A82-27578

signals when solving problems of the national econom

Overview of digital processing of SAR data

vitalities of urban trees on color-infrared photographs p0074 A82-24958

p0057 A82-19529

p0073 A82-19177

p0113 A82-26726

p0128 A82-27589

cloud patterns associated with

microwave radiometers

SYNOPTIC METEOROLOGY

[PB80-215130]

Satellite observed cloud pa excessive precipitation outbreaks

SYNTHETIC APERTURE RADAR

A-25

p0137 A82-21280

p0062 A82-27673

Analysis of space imagery to compile a geomorphological map of the world p0089 A82-20338

Map of the world
Landscape mapping and physical-geographical classification of the eastern part of the Chechen-Ingush, ASSR using space imagery p0073 ABZ-20339
The use of digital multi-date Landsat imagery in terrain p0111 ABZ-20409

Sampling for thematic map accuracy testing p0111 A82-20411

Landsat classification accuracy assessment procedures p0137 A82-20412

Use of Landsat data for automatic classification and area estimation of sugar-cane plantation in Sao Paulo state, p0058 A82-21092

The Landsat program - Moving ahead

THEMATIC MAPPING

THERMAL MAPPING SUBJECT INDEX

Remote sensing for natural resources: An international THERMAL POLLUTION Humidity measurement by infrared thermometr view of problems, promises and accomplishments Monitoring of the thermal pollution of natural channels n0137 A82-21875 of water using infrared aerial photograph Advanced aerospace remote sensing systems for global p0104 A82-27471 Use of GOES and TIROS/NOAA satellite data for p0127 A82-27577 resource applications p0101 A82-22145 Preliminary results of a study of mapping thermal Analysis of a discrete-time linear model for geothermal flux reconnaissance from two or three aircraft infrared ow-cover mapping p0101 A82-22145 Using known map category marginal frequencies to discharge in the ocean, using remote sensing data [INPE-2229-PRE/021] p0097 N82-19704 improve estimates of thematic map accuracy measurements p0075 A82-27627 p0113 A82-25456 TIDAL FLATS Imaging the earth, I - The troubled first decade of p0137 A82-27169 HCMM night-time thermal IR imaging experiment in Evaluation of serial photogrammetric camera and aircraft Michigan --- Heat Capacity Mapping Mission scanner pictures from tidal ianos - organismos classification of multitemporal imagery data p0127 A82-26049 p0115 A82-27655 n satellite data p0059 A82-27393 Evaluation of the state of crops from : Thermal IR detection of submarine gas seepages in the western Istra off-shore area /Yugoslavia Investigation of the earth on the basis of space p0076 A82-27661 DES
Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inertia soil moisture measurements --- Delaware Bay, Cooper River, and the Potomac River estuaries; Luverne, Minnesota, soil moisture, photographic data policy and provided in the photographic part of the photographic data policy and provided international Symposium on Remote Sensing of Environment, 15th, University of Michigan, Ann Arbor, MI. Interpretation of Heat Capacity Mapping Mission images ver Canada p0116 A82-27671 May 11-15, 1981, Proceedings. Volumes 1, 2 & 3 Potomac River estuaries; Luverne, militaria and water temperature of Lake Anna, Virginia p0108 N82-20587 Application of machine processing of visible and thermal p0127 A82-27576 Application of machine processing of visible and chermal data to the study of the geothermal area of Cerro Prieto, Mexico p0117 A82-27693 Advanced aerospace remote sensing systems for global resource applications p0127 A82-27577 Information expectations from Landsat-D Mexico TIMBER IDENTIFICATION Visual and digital analysis of H.C.M.M. data over eastern A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs p0074 A82-24958 Canada --- thermal imagery by Heat Capacity Mapping Mission p0117 A82-27698 p0128 A82-27583
Utilization of spatial complexity in computer classified Development of a Canadian thermal infrared forest fire Landsat MSS data for multi-factoral thematic mappi Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests mapping operational program n0063 A82-27699 p0129 A82-27648 Thermal vegetation canopy model studies
[AD-A106422] p0064 The potential of remote sensing to monitor soil eros p0062 A82-27668 p0064 N82-16455 p0061 A82-27656
Potential utility of thematic mapper data in estimating op areas p0061 A82-27663 Thermal vegetation canopy model studi The severity of the Brazilian freeze of July 1981, as [AD-A106422] TIMBER INVENTORY p0064 N82-16455 monitored by satellite [INPE-2231-RPE/399] crop areas p0061 A82-27663 ELAS - A geobased information system that is transferable to several computers --- Earth resources Laboratory Applications Software p0115 A82-27666 p0064 N82-17746 Automation of the processing of aerial and space images for forest inventory p0057 A82-20350
A system for quantitative determination of species and Use of thermal inertia determined by HCMM to predict octurnal cold prone areas in Florida Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale [E82-10040] p0064 N82-19615 vitalities of urban trees on color-infrared photographs Delineation of soil temperature regimes from HCMM or use in thematic mapping at regional scale p.0090 A82-27672 p.0090 A82-27672 Classification of Landsat MSS data for surface cover of mall areas p0116 A82-27677 An analysis of user requirements for operational land stellite data p0116 A82-27685 Multiresource inventory methods pilot test ... for rests p0060 A82-27601
Potential utility of thernatic mapper data in estimating DO119 N82-19617 Interactive initialization of heat flux parameters for pop areas p0061 A82-27663 Monitoring forest land cover alteration in Thailand with satellite models using temperature umerical m leasurements Satellite data pull 10 A02-2-7003
Natural resources inventories by computer-satellite mapping techniques in Chaco State. Argentine Republic, South America p0116 A82-27688 DO120 N82-19623 [E82-10048] the analysis of ancillary and digital Landsat data n0062 A82-27673 An invertible coniferous forest canopy reflectance p0062 A82-27679 Method of interpretation of remote sensing data and buth America
Mapping of water quality using Landsat imagery
p0106 A82-27692 applications to vegetation [INPE-2215-MD/010] p0066 N82-19640 Method of interpretation of remote sensing data and On the accuracy of thermal inertia mapping by infrared applications to vegetati [INPE-2215-MD/010] Utilisation of remote sensing in resources identification diland use in India - An integrated approach imagery [SAAB-REPR-AE-10] and land use in India - An integrated app AAB-REPR-AE-10] p0120 N82-19656 Preliminary results of a study of mapping thermal [INPE-2215-MD/010]
Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 ... Mato p0076 A82-27701 Experience with a variety of studies on a in the Kalmyk ASSR using space imagery p0131 A82-28130 p0131 A82-28130 discharge in the ocean, using remote sensing dat Grosso do Sul, Brazil [E82-10078] [INPE-2229-PRE/021] p0097 N82-19704 The TOCIND experiment --- relation between surface p0067 N82-20601 San Juan National Forest Land Management Planning Support System (LMPSS) requirements definition [E82.10108] The use of space photographs isotherms and ocean currents
[CTAMN/81/R/10]
HCMM hydrological analysis in Utah
[E82-10063] ater-amelioration maps p0106 A82-28137
Possibilities of using experience gained from the thematic DO098 N82-19805 p0107 N82-20586 TIMBER VIGÓR mapping of the moon in studies of earth resources by remote sensing methods p0083 A82-28138 A system for quantitative determination of species and Evaluation of HCMM satellite data for estuarine tidal A system for quantitative determination of appelled since vitalities of urban trees on color-infrared photographs p0074 A82-24958 ising methods

Potential use of space photographs obtained from the inned orbital station Salyut-5 in order to compile a set circulation patterns and thermal inertia soil moisture measurements --- Delaware Bay, Cooper River, and the Potomac River estuaries; Luverne, Minnesota, soil moisture. Environmental studies by multispectral scanner under of small-scale thematic maps of mountain and piedm of Central Asia n0083 A82-28139 large-scale civil engineering construction nd water temperature of Lake Anna, Virginia E82-10064] p0108 N82-20587 Heat Capacity Mapping Mission (HCMM): Interpretation Earth-scanning satellites lead resource hunt p0117 A82-28343 p0063 A82-27691 [E82-10064] Remote sensing applications to resource problems in Wetland mapping from digitized aerial photography --heboygan Marsh, Wisconsin South Dakota of imagery over Canada n0132 N82-16445 [F82-10027] [E82-10070] o0079 N82-20593 [E82-10019] p0118 N82-16437 Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas --- Sardinia and the Gulf of Orosei TOMOGRAPHY A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 n0091 N82-20596 ditions in Basilicata, Southern Italy [E82-10073] TOPEX [E82-10038] p0119 N82-19613 Dryland pasture and crop conditions as seen by HCMM Topex orbit sustenance maneuver design --- Ocean Topography Experiment spacecraft [AIAA PAPER 82-0202] Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas --- Rio Grande do Washita River watershed n0094 A82-27091 [E82-10074] p0067 N82-20597 Application of satellite frost forecast technology to other parts of the United States, phase 2 --- Pennsylvania, TOPOGRAPHY [INPE-2197-PRE/006] Calibration and model reconstruction in analytical p0066 N82-19639 Remote sensing of sulfur dioxide effects on vegetation.
Volume 1: Summary igan, and Florida close-range stereophotogrammetry. II - Special evaluation procedures for rasterstereography and moire topography [NASA-CR-166827] n0121 N82-20607 Application of satellite frost forecast technology to other p0126 A82-22141 [PB82-115122] n0066 N82-19715 Landsat thermal imaging of alpine regions p0079 A82-22147 parts of the United States, phase 2, introduction Atlas of the global distribution of the total ozone n0121 N82-20608 centration according to satellite measureme Applicability of satellite freeze forecasting and cold climate mapping to the other parts of the United States A structural synthesis of Brazil, based on the study of p0078 N82-19740 major lineaments derived from remote sensing imagery interpretation p0079 A82-26012 The utilization of orbital images as an adequate form of --- Michigan p0068 N82-20613
HCMM: Soil moisture in relation to geologic structure and lithology, northern California --- Northern Coast Range.
Secramento Valley, and the Modoc Plateau control of preserved areas --- Araguaia National Park, Area determination by means of the method of finite ements p0082 A82-26048 [E82-10065] n0078 N82-20588 p0092 N82-21662 Cliff and slope topography of part of the Grand Canyon, Amazonas project: Application of remote sensing [E82-10135] techniques for the integrated survey of natural resources in Amazonas --- Brazil Arizona as characterized on a Seasat radar image p0082 A82-26843 Application of HCMM data to regional geologic analysis Airborne laser systems use in terrain mapping p0082 A82-27584 for mineral and energy resource evaluation [E82-10137] p00 [E82-10069] n0078 N82-20592 p0092 N82-21664 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 ··· maps, Brazil A study of model parameters associated with the urban climate using HCMM data --- St. Louis, Missouri [E82-10140] p0079 N82-21667 Application of side-looking color infrared photography [E82-10140] for structure detection in subtle topography [E82-10071] n0067 N82-20594 Delineation of soil temperature regimes from HCMM DO082 A82-27611 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Topographic mapping using Landsat data p0082 A82-27615 Use of thermal inertia determined by HCMM to predict A shuttle scanning laser altimeter for topographic nocturnal cold prone areas in Florida --- The Everglades agricultural area, Lake Okechobee, and the Suwanee River THERMAL MAPPING p0083 A82-27632 Thermal viewing system for studying the earth's sources p0125 A82-21022 Spatial resolution and geometric potential of planned resources p0130 A82-27683 earth satellite missions [E82-10157] n0071 N82-21681 Registration of heat capacity mapp oing mission day and p0113 A82-22146 A study of model parameters associated with the urban climate using HCMM data Coherent scatter of microwaves from moderately rough night images climate using HCMM data [E82-10159] Landsat thermal imaging of alpine p0095 N82-16331

[AD-A106133]

Matrix data analysis: Color/B and W coding is not always

Profiling sensitivity to image quality [AD-A108405]

g0084 N82-18930

p0084 N82-18931

n0080 NR2-21683

p0080 N82-21685

p0135 N82-21826

ns of HCMM satellite data to the study of urban

Scanning radiometer (CTS):

temperature observation

p0079 A82-22147

heating patterns [E82-10161]

[NASA-TM-83887]

Cloud Tor

HCMM detection of high soil moisture areas --- by diurnal mperature observation p0059 A82-24963

Thermal infrared data from the Heat Capacity Mapping ission p0127 A82-24964

SUBJECT INDEX VEGETATION GROWTH AgRISTARS: Early warning and crop condition assessment. Patch image processor user's manual [E82-10055] The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakhstan Methodology of the interpretation of remote sensing data and applications in pedology [INPE-2211-MD/008] /with Kazakhstan p0102 A82-27463 n0078 NR2-19641 considered as an example/ n0065 N82-19630 Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20593 Evaluation of snow-cover pollution in industrial regions using satellite TV images p0103 A82-27464 As-Built design specification for UNIV4VEC [E82-10085] 00122 n0122 N82.21637 sing sateritie 17 images pU103 A82-27464
Albedo and brightness coefficients of snow cover pO103 A82-27465
Experience with a variety of studies of earth resources As-built design specification for PARCLS
[E82-10090] p0123 N82-21642 Observation of the Earth by radar [NASA-TM-76830] pO124 N82-21687 As-built design specification for the CLASFYG program [E82-10092] p0068 N82-21644 in the Kalmyk ASSR using space imagery p0131 A82-28130 Some altimetric signatures from Seasat over the mid-Pacific Seamount Range Wheat stress indicator model, Early Warning (EW) data Ring structures in the earth's crust, and their significance for geology and methods for their investigation p0091 A82-28136 [AD-A110419] p0099 N82-21691 base interface driver, user's manual TRANSFER FUNCTIONS [ER2-10115] n0069 NR2-21652 Optimal spatial filtering and transfer ocean wave spectra er function for SAR p0094 A82-27596 USER REQUIREMENTS The use of space photographs p0106 A82-28137 vater-amelioration maps p0106 A82-28137
Sample selection in foreign similarity regions for multicrop Response of the marine community to satellite-derived oceanic information p0095 A82-27684 TRANSPORT PROPERTIES An analysis of user requirements for operational land stellite data p0116 A82-27685
Characterizing user requirements for future land observing Multidimensional aspects: Ozone, temperature and [E82-10118] U.S.S.R. SPACE PROGRAM transport p0081 N82-18772 o0070 N82-21655 TREES (PLANTS) Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary Scientific lectures on aviation and astronautics 1980 -satellites Present and future studies of natural resources and the vironment from space p0138 A82-27506 p0081 N82-17562 [NASA-TM-83867] Russian book [PB82-115122] Remote sensing procurement package: A management report for state and local governments p0066 N82-19715 environment from space p0138 A82-27506 Investigation of the earth on the basis of space photographic data p0082 A82-27507 Development of cooperation between CMEA member TRIANGULATION Analytical triangulation of space photography p0111 A82-20402 [F82-10052] n0138 NR2-19627 Future Earthnet Dissemination Systems (FEDS) study. Executive summary --- remote sensing data transmission [RFPT-3318] p0124 N82-21698 The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectories [SER-B-253-MITT-159-PT-2] p0085 N82-19648 [REPT-3318] p0124 N82-21698 Interpretation of remotely sensed image data and impact of cluster compression --- impact of cluster compression: countries in the development and utilization of space-based systems for the remote sensing of earth resources and the The earth resources program for the long-term orbital p0131 A82-28132 TROPICAL METEOROLOGY Diurnal variation of summer convection over West Africa [REPT-44.2866] p0124 N82-21699 and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700 ULTRASONIC SCANNERS Thermal infrared data from the Heat Capacity Mapping lission p0127 A82-24964 HCMM hydrological analysis in Utah --- Utah lake Observation of the turbulent structure in the planetary Low-latitude cloudiness and climate feedback boundary layer with a kytoon-mounted anemometer system p0125 A

ULTRAVIOLET SPECTROMETERS Low-latitude cloudiness and communication comparative estimates from satellite data p0075 A82-26980 p0125 A82-21082 h --- Utah lake p0107 N82-20586 [E82-10063] TROPICAL REGIONS
Mapping in tropical forests - A new approach using the laser APR --- Airborne Profile Recorder Remote SO2 emission measurements with correlation spectrometers from volcanoes p0077 A82-27704 Atlas of the global distribution of the total ozone V p0081 A82-20407 concentration according to satellite measurements
[MITT-28] p0078 N82-19740 An airphoto key for major tropical crops VALLEYS p0058 A82-22142
Digital processing of tropical forest habitat in Bangladesh UNDERWATER ACOUSTICS Spatial reasoning in remotely sensed data Remote sensing techniques suitable for exploration and navigation in and under sea ice
[FOA-REPT-VOL-15-NO-2] p0096 N82-17566 p0105 A82-27592 and the development of a low cost processing facility at the National Zoo, Smithsonian Institution Land use in the Paraiba Valley through remotely sensed data --- Brazil p0063 A82-27687 UNDERWATER OPTICS Remote sensing techniques suitable for exploration and navigation in and under sea ice
[FOA-REPT-VOL-15-NO-2] p0096 N82-17566
UNITED KINGDOM [E82-10072] DO079 N82-20595 The utilization of orbital images as an adequate form of VAPOR PRESSURE control of preserved areas --- Araguaia National Park. Humidity measurement by infrared thermometry p0075 A82-26844 VECTOR ANALYSIS ECTOR ANALYSIS
Usage and limitations of characteristic vector analysis
of remote sensing multispectral data for the identification
and quantification of water quality parameters
p0118 N82-18656 Interaction between the Agulhas current and the The use of contextual information to improve land cover subtropical convergence classification of digital remotely sensed data [CSIR-RR-384]
TROPICAL STORMS p0112 A82-21094 p0098 N82-20824 UNITED STATES OF AMERICA AgRISTARS: Interim catalog ground data summary, data acquisition year 1979
[E82-10032] p0064 N82-19608 Seasat data utilization project [NASA-CR-168557] VEGETATION p0097 N82-18660 The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409
The Dutch ROVE program --- Radar Observation of TROPOSPHERE The NASA participation in the 1980 EPA PEPE/NEROS Use of Magsat anomaly data for crustal structure and p0075 A82-26621 mineral resources in the US midcontinent
[E82-10049] p0091 N82-19624 measurements program WEgetation peculiarities of vegetative covers p0058 A82-210219 Inland water quality assessment from Landsat data Application of satellite frost forecast technology to other parts of the United States, phase 2 --- Pennsylvania, p0105 A82-27610 Change detection in the Peace-Athabasca Delta using Mapping of water quality using Landsat imagery p0106 A82-27692 digital Landsat data p0101 A82-24959
Remote-sensing functions in the interpretation of moisture from serial and space images Michigan, and Florida [NASA-CR-166827] n0121 N82-20607 LANDSAT imagery of the Venetian Lagoon: AgRISTARS: Foreign commodity production forecasting.
Project test reports document, volume 1 --- using North
Dakota, South Dakota, Montana, and Minnesota n0102 A82-27459 Stochastic models of cover class dynamics --- remote p0059 A82-27586 [E82-10036] Stochastic moures of the sensing of vegetation p0059 A82-27500 An experiment in probabilistic relaxation for terrain cover classification of Kuwait from Landsat imagery p0062 A82-27680 An aerial survey of water turbidity and laser depth p0068 N82-21639 sounding performance along the Queensland Coast US corn and soybeans exploratory experiment [E82-10088] p0068 N82-21640 p0098 N82-19802 TURBULENT BOUNDARY LAYER Compatibility study of the MAGSAT data and Observation of the turbulent structure in the planetary bundary layer with a kytoon-mounted ultrasonic memometer system p0125 A82-21082 Wetland mapping from digitized aerial photography --aeromagnetic data [E82-10136] boundary Neboygan Marsh, Wisconsin
[E82-10019] p0118 N82-16437
A comparison of unsupervised classification procedures
on LANDSAT MSS data for an area of complex surface p0123 N82-21663 Use of MAGSAT anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10152] p0092 N82-21677 TURKEY The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian Mediterranean fold belt on LANDSAI MSS data for an area of complex surface conditions in Basilicata, Southern Italy [E82-10038] p0119 N82-19613 Method of interpretation of remote sensing data and segment of the p0089 A82-20341 UPWELLING WATER Influence of dissolved organic materials on turbid water optical properties and remote-sensing reflectance p0093 A82-20445 TWO FLUID MODELS Passive bathymetric m Peninsula region of Ontario mention of interpretation of remote sensing data and applications to vegetation [INPE-2215-MD/010] p.0066 N82-19640
The utilization of orbital images as an adequate form of control of preserved areas --- Araguaia National Park, p0129 A82-27642 Coastal upwelling ecosystems analysis. Atlas of the JOINT I aircraft winds for the 500 foot level . [PB82-114703] p0097 N82-19796 **TYPHOONS** A formation process of an oceanic multi-temporal remote sensing p0095 A82-27674 Laboratory upwelled radiance and reflectance spectra of Kerr reservoir sediment waters [E82-10065] p0078 N82-20588 Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas --- Brazil [E82-10069] U [NASA-TP-1993] p0110 N82-21774 URBAN RESEARCH S.S.R.

Landscape mapping and physical-geographical classification of the eastern part of the Chechen-Inquish, p.0073 A82-20339

The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the p.0089 A82-20341 U.S.S.R. An investigation of the ozone plume from a small city A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 p0074 A82-26329 Resourceful decisions: LANDAT in Michigan 82-10037] p0078 N82-19601 A look at the commonly used LANDSAT vegetation A study of model parameters associated with the urban climate using HCMM data --- St. Louis, Missour [E82-10140] p0079 N p0079 N82-21667 HCMM: Soil moisture in relation to geologic structure and lithology, northern California --- Northern Coast Range. Sacramento Valley, and the Modoc Plateau [E82-10135] p0092 N82-21662 Applications of HCMM satellite data to the study of urban noff of the Aral sea basin using space photography
p0101 A82-20343
Experimental evaluation of methods of the automated runoff of the Aral sea basin using space heating patterns [E82-10161] p0080 N82-21685 US.S.R. SPACE PROGRAM VEGETATION GROWTH interpretation of crops from a Fragment MSS image p0057 A82-20349 Evaluation of the state of crops from satellite data p0059 A82-27393

The effectiveness of instrumented visual studies of the earth from space p0114 A82-27505

Wheat stress indicator model, Crop Condition Assessment
Division (CCAD) data base interface driver, user's manual
[E82-10031] p0064 N82-19607

USER MANUALS (COMPUTER PROGRAMS)

Dynamics of snow cover in mountain. See Sea basin, studied using satellite photographs p0102 A82-27462 Dynamics of snow cover in mountain regions of the Aral p0114 A82-27505

The use of contextual information to improve land cover classification of digital remotely sensed data p0112 A82-21094

Multispectral photographic remote sensing of green vegetation.biomass and productivity Spectral reflectance of hydrophytes p0102 A82-24960

VENEZUELA SUBJECT INDEX

Assessing mesquite-grass vegetation condition from Measurement of river sediments Dynamics of snow cover in mountain regions of the Aral Dynamics of show cover in mountain. See basin, studied using satellite photographs p0102 A82-27462 p0059 A82-25457 [WMO-561] n0107 NB2-18670 vegetation response model applied to range inventory WATER DEPTH The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakhstan considered as an example/ p0102 A82-27463
Applications systems verification and transfer project. and monitoring using Landsat MSS data etric method for depth dete nination by aerial n0060 A82-27643 photography p0101 AB2-19831 Effects of nitrogen nutrition on the growth, yield and reflectance characteristics of corn canopies --- Purdue nts in the Bruce p0129 AS2-27642 Passive bathymetric measinsula region of Ontario Agronomy Farm, Indiana Volume 1: Operational applications of satellite snow Classification of Landsat MSS data [E82-10068] for surface cover of p0067 N82-20591 observations: Executive summary --- usefulness of satellite snow-cover data for water yield prediction p0116 A82-27677 VENEZUELA Dynamic study of the upper Sao Francisco River and [NASA-TP-1822] (NASA-TP-1822) p0108 N82-20617
Applications systems verification and transfer project.
Volume 2: Operational applications of satellite snow-cover Mapping in tropical forests - A new approach using the laser APR --- Airborne Profile Recorder Tres Marias reservoir using MSS/LANDSAT images p0081 A82-20407 Brazil [F82-10082] o0108 NB2-20605 Strategies and uses of small distributed analysis centers observations and data-collection systems in the Arizona WATER MANAGEMENT as in the natural resource inventory of Venezuela Geotechnical applications of Landsat image analysis of Bhakra Dam Reservoir, India p0102 A62-26838 [NASA-TP-1823] p0115 A82-27636 p0108 N82-20618 p0102 A82-26838 VERTICAL DISTRIBUTION Applications systems verification and transfer project. Volume 3: Operational applications of satellite snow cover observations in California Snow cover monitoring using AVHRR data from TIROS and NOAA satellites --- Advanced Very High Resolution Mid-latitude summertime measurements of stratospheric VERY LONG BASE INTERFEROMETRY
Session III of the VI III III ery High Resolution p0105 A82-27614 p0108 N82-20619 Radiometer [NASA-TP-1824] The use of space photographs to compile vater-amelioration maps p0106 A82-28137 Session III of the VLBI/Laser intercomparison task of the NASA crustal dynamics project Applications systems verification and transfer project. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center p0083 N82-17708 [NASA-CR 168427] p0083 N82-17708 Applications to Earth physics: Very-long-baseline WATER POLLUTION observations. Col. [NASA-TP-1825] AFTER POLLUTION

Aerospace methods for the study of water resources and their pollution --- Russian book p0102 A82-27457 p0108 N82-20620 interferometry and data analysis [NASA-CR-168743] Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States p0088 N82-21796 The possibilities of microwave remote sensing for the VIÈTNAM study of water resources and their pollution Applications of aircraft and satellite data for the study p0102 A82-27458 [NASA-TP-1826] p0109 N82-20621 of archaeology and environment - Meke kong Delta, Vietnam p0091 A82-27705 Applications systems verification and transfer project. Remote-sensing determination of the characteristics of p0102 A82-27460 hydrological objects Volume 6: Operational applications of satellite soc observations NOAA/NESS support study **VIEW EFFECTS** Analysis of the direction-dependent radiation behavior in multispectral scanning data p0125 A82-21399 The effect of anthropogenic factors on the dynamics of observations NOA/ [NASA-TP-1827] p0109 N82-20622 takes in the plains of Central Asia /studied on the bas multispectral scanning data
Influence of illumination and viewing geometry and the tasseled cap Applications systems verification and transfer project.

Solume 7: Cost/benefit analysis for the ASVT on

Derational applications of satellite snow-cover p0103 A82-27469 of space photographs/ Monitoring of the thermal pollution of natural channels mospheric composition on the tasseled cap ansformation of Landsat MSS data p0059 A82-24961 Analysis of two Seasat synthetic aperture radar images an urban scene p0074 A82-25452 water using infrared aerial photography operational p0104 A82-27471 [NASA-TP-1828] p0109 N82-20623 Polarimetric method for the remote sensing of oil slicks not be sea surface p0095 A82-28135 of an urban scene Soybean canopy reflectance as a function of vie Applications systems verification and transfer project.

olume 8: Satellite snow mapping and runoff prediction on the sea surface illumination geometry p0061 A82-27645
The influence of illumination and viewing geometry on LANDSAT imagery of the Venetian Lagoon: multitemporal analysis [E82-10036] p0119 N82-196 handbook p0109 N82-20624 the reflectance factor of agricultural targets [NASA-TP-1829] p0119 N82-19612 p0061 A82-27646 WATER TEMPERATURE WATER PRESSURE Ground level reflectance measurement techniques - An HCMM hydrological analysis in Utah --- Utah lake [E82-10063] p0107 N82-2 Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of evaluation with emphasis on the importance of spectral p0107 N82-20586 libration p0116 A82-27689
Geometric correction of airborne multispectral scanner p0130 A82-27706 calibration Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inertia soil moisture measurements --- Delaware Bay. Cooper River, and the Potomac River estuaries; Luverne, Minnesota, soil moisture. [E82-10057] p0065 N82-19632 images WATER QUALITY Influence of solar illumination angle on soybean canop Influence of dissolved organic materials on turbid water flectance p0063 A82-28153
Simulated response of a multispectral scanner over wheat and water temperature of Lake Anna, Virginia E82-10064] p0108 N82-20587 optical properties and remote-sensing reflectance [E82-10064] p0093 A82-20445 as a function of wavelength and view/illumination WATER VAROR Remote sensing of salinity in the San Francisco Bay A study of model parameters associated with the urban climate using HCMM data --- analysis of St. Louis, Missouri p0071 N82-21671 p0102 A82-26839 [E82-10144] Delta Variability of reflectance measurements with sensor altitude and canopy type Investigation of silting and currents in Lake Balaton by infrared imagery hydraulic models and and snace p0080 N82-216R4 [E82-10160] [ER2.10146] p0071 N82-21672 photographs p0104 A82-27472 WATER WAVES VIRGIN ISLANDS Interpretation of multispectral aerial photographs of Lake lueggelsee p0104 A82-27473 Optimal spatial filtering and transfer function for SAR Effect of aerosols on optical remotely sensed data p0094 A82-27596 ocean wave spectra p0115 A82-27654 Spectrometric studies of the water composition of Lake Integrated sensor system for collection of wave data VISUAL DISCRIMINATION p0104 A82-27474 Remote sensing data applied to land-use survey at the Paraiba Valley --- Brazil applied to coastal engineering design p0094 A82-27602 Noncontact methods for the quality control of water p0104 A82-27475 The use of wave contrast measurements in the evaluation [F82-10025] p0081 N82-16443 of SAR/gravity models p0130 A82-27675 Inland water quality assessment fro m Landsat data VISUAL OBSERVATION p0105 A82-27610 An experimental program to provide remote measurement The effectiveness of instrumented visual studies of the earth from space p0114 A82-27505 VOLCANOES and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A An approach to path radiance correction in MSS p0115 A82-27629 p0095 N82-16697 Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980 IPB81-2460351 Detection of volcanic ash fall area from Landsat MSS Sea state measurement with a two frequency CCT data Eruption of Mt. Ontake in 1979 nO105 A82-27634 scatterometer (theory) p0076 A82-27650 A formation process of an oceanic ulti-temporal remote sensing vortex analyzed by p0095 A82-27674 [ESA-TT-710] p0096 N82-17802 VOLCANOLOGY Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection Remote SO2 emission measurements with correlation Mapping of water quality using Landsat imagery p0106 A82-27692 neters from volcanoes p0077 A82-27704 p0096 N82-17805 Multidisciplinary research on the application of remote WATERSHEDS A formation process of an oceanic vortex analyzed by sensing to water resources problems [E82-10021] Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography multi-temporal remote sensing nO106 N82-16439 WATER RESOURCES p0101 A82-20343 Aerospace methods for the study of W A comparison between aerial photography and Landsat computer land-cover mapping p0074 A82-22143 p0102 A82-27457 their pollution --- Russian book for computer land-cover mapping The use of space photographs for hydrogeological studi Aerospace methods for the study of water resources and eir pollution --- Russian book p0102 A82-27457 the Baikal region and Mongolia p0103 A82-27468
The effect of anthropogenic factors on the dynamics of WARNING SYSTEMS their pollution --- Russian book forecasting --- and damage control Application of satellite data to analyze and predict meltage noff in a mountain basin p0102 A82-27461 lakes in the plains of Central Asia /studied on the basis p0103 A82-27469 space photographs/ p0103 A82-Noncontact methods for the quality control of runoff in a mountain basin [WMO-577] p0107 N82-18671 Analog devices for the processing of aerial and space nages for the study of water resources Dynamics of snow cover in mou ntain regions of the Aral WASHINGTON Registration verification of SEA/AR fields --- Oregon,
Texas, Montana, Nebraska, Washington, Colorado, Kansas,
Oklahoma, and North Dakota
[E82-10083] p0068 N82-21635 Sea basin, studied using satellite photographs p0102 A82-27462 Soatial reasoning in remotely sensed data p0105 A82-27592 Satellite sensing for extraction of groundwater resources formation p0105 A82-27613 Strategies for using remotely sensed data in hydrologic Multidisciplinary research on the application of remote WATER vater resources problems - Wisconsin The effect of finite field size on classification and [E82-10021] p0106 N82-16439 atmospheric correction nodels [NASA-TM-83818] n0120 N82-19645 Remote sensing applications to resource problems in p0109 N82-21680 [E82-10156] WATER CIRCULATION Observation of the [NASA-TM-76830] of the Earth by radar [E82-10027] Evaluation of HCMM satellite data for estuarine tidal n0132 N82-16445 p0124 N82-21687

Remote sensing for water resources and hydrology: An assessment of the Corps of Engineers' program [P882-137142] pO110 N82-21704

Investigation of the dynamics of the regional underground runoff of the Aral sea basin using space photography p0101 A82-20343

p0102 A82-27461

Application of satellite data to analyze and predict melt

WATER RUNOFF

Watershed model study using LANDSAT data

Washita River watershed

[E82-10074]

[E82-10082]

Dryland pasture and crop conditions as seen by HCMM

Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images

p0106 N82-17602

n0067 N82-20597

p0108 N82-20605

WATER COLOR

suspended sediment

circulation patterns and thermal inertia soil moisture

measurements --- Delaware Bay, Cooper River, and the Potomac River estuaries; Luverne, Minnesota, soil moisture,

and water temperature of Lake Anna, Virginia
[E82-10064] p0108 N82-20587

suspended sediment concentrations measurements of water colour

A method for the retrieval of phytoplankton and

from

p0094 A82-27620

ZENITH

SUBJECT INDEX Applications systems verification and transfer project. Volume 2: Operational applications of satellite snow-cover observations and data-collection systems in the Arizona test site [NASA-TP-1823] n0108 N82-20618 Applications systems verification and transfer project. Volume 3: Operational applications of satellite snow cover bservations in California [NASA-TP-1824] p0108 N82-20619 Applications systems verification and transfer project. Applications systems verification and transfer project.

Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620 p0108 N82-20620 Applications systems verification and transfer project.
Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations [NASA-TP-1828] p0109 N82-20623 WEATHER as a function direction Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [£82-10059] p0065 N82-19634 WILDLIFE WEATHER FORECASTING Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 Application of satellite frost forecast technology to other parts of the United States, phase 2 --- Pennsylvania, Michigan, and Florida [NASA-CR-166827] p0121 N82-20607 Freeze prediction model --- Pennsylvania p0067 N82-20609 Applicability of satellite freeze forecasting and cold climate mapping to the other parts of the United States --- Michigan p0068 N82-20613 [PB81-246035] MSII test of P-model n0121 N82-20614 A satellite frost forecasting system for Florida p0079 N82-20615 The design and implementation of an operational,

WEST GERMANY

Sounding the aerosol distribution over the Upper Rhine Valley in the Valley in the Speyer area by means of lidar by means of lidar p0079 N82-20782

Optimal network density for atmospheric recording

p0122 N82-21499

p0079 N82-20776

WEST VIRGINIA

Spatial reasoning in remotely sensed data p0105 A82-27592

WETLANDS

Change detection in the Peace-Athabasca Delta using digital Landsat data p0101 A82-24959 Spectral reflectance of hydrophytes p0102 A82-24960 Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Seasat imagery for detection of coastal Wetlands p0063 A82-27700

Wetland mapping from digitized aerial photography ...
Sheboygan Marsh, Wisconsin
[E82-10019] p0118 N82-16437
Application of remote sensing to state and regional

computer-based weather radar system
[RSRE-MEMO-3151] p0
WEATHER STATIONS

--- mississippi [E82-10033] p0078 N82-19609

Use of thermal inertia determined by HCMM to predict nocturnal cold prone areas in Florida --- The Everglades agricultural area, Lake Okeechobee, and the Suwanee River [E82-10157] p0071 N82-21681

Influence of illumination and viewing geometry and mospheric composition on the 'tasseled cap' atmospheric composition on the tasseled cap transformation of Landsat MSS data p0059 A82-24961 Dew and vapor pressure as complicating factors in the interpretation of spectral radiance from crops

n0060 A82-27617

Crop area estimates using ground-gathered and Landsat data A multitemporal approach p0062 A82-27676 Documentation of computer procedures for labeling spring grains and discriminating between spring wheat and barley using LANDSAT data

[E82-10030] p0063 N82-16448 Wheat stress indicator model, Crop Condition Assessment (CCAD) data base interface driver, user's manual 031] p0064 N82-19607 [E82-10031]

[E82-10031] p0084 N82-19607 Recommended data sets, corn segments and spring wheat segments, for use in program development [E82-10034] p0684 N82-19610 AgRISTARS: Foreign commodity production forecasting.

Minutes of the annual formal project manager's revieincluding preliminary technical review reports of FY experiments wheat/barley and com/soybean

p0064 N82-19614

evaluation of spectral, normal and Preliminary meteorological crop stage estimation approaches

[E82-10059] p0065 N82-19634 Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas --- Rio Grande do Sul, Brazil [INPE-2197-PRE/006]

Dryland pasture and crop conditions as seen by HCMM
- Washita River watershed [E82-10074] p0067 N82-20597

Registration verification of SEA/AR fields --- Oregon, Texas, Montana, Nebraska, Washington, Colorado, Kansas, Oklahoma, and North Dakota
[E82-10083] p0068 N82-21635

As-Built documentation of programs to implement the Robertson and Doraiswamy/Thompson model:

Wheat stress indicator model, Early Warning (EW) data base interface driver, user's manual

[E82-10115] p0069 N82-21652 The 1981 Argentina ground data collection [E82-10127] p0070 N82-21658 The 1981 A

Sonora exploratory study for the detection of wheat-leaf

[E82-10133] p0070 N82-21661 Spectral-agronomic relationships of corn, soybean and

Simulated response of a multispectral scanner over wheat of wavelength and view/illumination

[E82-10144] p0071 N82-21671

Digital processing of tropical forest habitat in Bangladesh and the development of a low cost processing facility at the National Zoo, Smithsonian Institution

The application of remote sensing to resource management and environmental quality programs in Kansas — Cimarron National Grasslands, Prairie Potawatomi Reservation, and Kickapoo Reservation [582-10029]

WIND (METEOROLOGY)

An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A n0095 N82-16697

Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern Brazil

p0097 N82-19778 [INPE-2307-TDL/074]

WIND DIRECTION

An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0095 N82-16697

p0095 N82-16697 measurement with a two frequency Sea state measur scatterometer (theory) [ESA-TT-710]

p0096 N82-17802 Satellite scatterometer feasibility study. Volume 1: Technical results --- Earth Resources Satellite (ERS 1) [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 Satellite scatterometer feasibility study. Volume 2: Data

extraction algorithm and error simula
--- Earth Resources Satellite (ERS 1)
[ESA-CR(P)-1492-VOL-2] lation for wind sensor p0133 N82-19651

WIND PROFILES

IND PROFILES
SASS measurements of the Ku-band radar signature of the ocean p0093 A82-21917
Coastal upwelling ecosystems analysis. Atlas of the JOINT I aircraft winds for the 500 foot level [PB82-114703] p0097 N82-19796

WIND VELOCITY

Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093-A82-24063 WIND VELOCITY MEASUREMENT

Observation of the turbulent structure in the planetary boundary layer with a kytoon-mounted ultrasonic anemometer system pol125 A82-21082 Satellite scatterometer feasibility study. Volume 1: Technical results --- Earth Resources Satellite (ERS 1) [ESA-CR[P]-1492-VOL-1] pol133 N82-19950 Satellite scatterometer feasibility study. Volume 2: Data stratistics described agrees stratistics for wind agrees. Satemes scatteriometer reasoning study. Volume 2: Data extraction algorithm and error simulation for wind sensor --- Earth Resources Satellite (ERS 1)
[ESA-CR(P)-1492-VOL-2] p0133 N82-19651

Photogrammetry from aircraft side camera movies Winter MONEY p0075 A82-26721

Classification of the fields of anomaly in monthly water temperature of the North Atlantic during the cold half-year [BLL-TRANS-1509-(9022.552)]

p0097 N82-19756

SCONSIN

A comparison between aerial photography and Landsat comparison between aerial photography and Landsat p.0074 A82-22143 for computer land-cover mapping Wetland mapping from digitized aerial photography --Sheboygan Marsh, Wisconsin [E82-10019] p0118 N82-16437

Multidisciplinary research on the application of remote sensing to water resources problems --- Wisconsin [E82-10021] p0106 N82-16439

WORLD METEOROLOGICAL ORGANIZATION

Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for meteorological analysis p0073 A82-19179

WRANGELL MOUNTAINS (AK)

ANGELL MOUNTAINS (AR.) Landsat thermal imaging of alpine regions p0079 A82-22147 WYOMING

Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system

e Bearlodge area of northeastern Wyoming 10028] p0091 N82-16446 [E82-10028]

X

X RAY SPECTRA

Spectral reflectances of freshwater ice and snow from 340 through 1100 nm p0106 N82-17601

YIELD

AgRISTARS: Yield model development/soil moisture.
Interface control document
[E82-10054] p0065 N82-19629 n0065 N82-19629 VIIGOSI AVIA

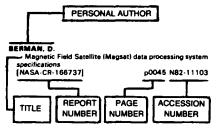
Thermal IR detection of submarine gas seepages in the western lstra off-shore area /Yugoslavia/ p0076 A82-27661

Z

7FNITH

A relation between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle

Typical Personal Author Index Listing



Listings in this index are arranged alphabetically by personal author. The title of the document provides the user with a brief description of the subject matter. The report number helps to indicate the type of document listed (e.g., NASA report, translation, NASA contractor report). The page and accession numbers are located beneath and to the right of the title, e.g., p0045 N82-11103. Under any one author's name the accession numbers are arranged in sequence with the AIAA accession numbers appearing first.

ABBOT, R. H.
An aerial survey of water turbidity and laser depth sounding performance along the Queensland Coast p0098 N82-19802 [AD-A109050]

ABBOTT, E. A.

A data base of geologic field spectra

p0090 A82-27600

ABDEL-AZIZ, Y. I. Accuracy of photogrammetry of the normal case close-range p0126 A82-22140

ABDELRAZIK, M.

Active microwave investigation of snowpacks: Experimental documentation, Colorado 1979-1980 p0107 N82-19646 [NASA-CR-166727]

ABOTTEEN, K. M.
AgRISTARS: Foreign commodity production forecasting. Com/soybean decision logic development and testing [E82-10056] p0065 N82-19631

ADAMS, T. R. Proposed digital cartridge recording system for WRELADS

[AD-A109484]

nO134 N82-20491 AGHASSY, J.

Application of side-looking color infrared photography for structure detection in subtle topography p0082 A82-27611

The influence of illumination and viewing geometry on the reflectance factor of agricultural targets

p0061 A82-27646 Landsat MSS applied to rangeland management in p0063 A82-27697 Western Canada

AKOVETSKII, V. I.

Analytic methods of geodetic nontopographic images c referencing of p0083 A82-28134

ALBEROTANZA, L.
LANDSAT imagery of the Venetian Lagoon: A
multitemporal analysis p0119 N82-19612 [F82-10036]

ALDERMAN, P. K. Experiences with digital terrain elevation data contouring

programs [AD-A110280] n0087 N82-21690

The role of computer graphics in geographic research

p0117 A82-27923 ALEKSEEV. A. S.

Automation of the processing of aerial and space image p0057 A82-20350 for forest inventory

Structure of hardware and software at a regional center the automated processing of aerial aerial and space p0130 A82-28128 remote-sensing images

ALEXANDER, S. J.

Study of a radar altimeter for the European remote sensing faradar altimeter for the European Volume 1: Executive summary 1000-ISSUE-AI p0133 N82-19652 program. Volume 1: Exec (SPAR-R.1090-ISSUE-A) ALI. M. E. O.

Analytical triangulation of space photography p0111 A82-20402

ALLEN, L. H., JR.
Use of thermal inertia determined by HCMM to predict octurnal cold prone areas in Florida

[E82-10040] n0064 N82-19615 Use of thermal inertia determined by HCMM to predict nocturnal cold prone areas in Florida

[E82-10157] p0071 N82-21681

ALLEY, R. E.

A data base of geologic field spectra p0090 A82-27600

ALVAREZ. R.

Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto, Mexico p0117 A82-27693

ALVES, E. C. M.

Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979
[E82-10078] p0067 N82-20601

AMBROSETTI, E.

Examination of the operational prospects for remote

p0138 N82-18669 [ESA-ČR(P)-1476]

AMIS. M. L.

Evaluation of large area crop estimation technique p0061 A82-27662

ANDERS. R.

Satellite scatterometer feasibility study. Volume 1: Technical results [ESA-CR(P)-1492-VOL-1] n0133 N82-19650

ANUSKIEWICZ, T.

Resourceful decisions: LANDAT in Michigan p0078 N82-19601 [E82-10037]

ARKHIPOV. V. V.

The earth resources program for the long-term orbital station Salyut 6 p0131 A82-28132

ARMAND, N. A.

Machine implementation of algorithms for the mapping of soil moisture on the basis of microwave-rad p0131 A82-28142 measurements

ARP, H.

Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407

ARTLEY, J. A.

Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches [E82-10059] p0065 N82-19634

Agricultural soil moisture experiment, Colby, Kansas 1978: Measured and predicted hydrological properties of n0065 N82-19632

ÁSLAM, A. microwave investigation snowpacks:

Experimental documentation, Colorado 1979-1980 p0107 N82-19646 [NASA-CR-166727] ATARAS, W. S.

An information adaptive system study report and development plan [NASA-CR-166768] DO120 N82-19644

Precipitation measurements from specific summary 28 April-1 May 1981, Greenbelt, MD p0077 A82-28295 Estimating ocean-air heat fluxes during cold air outbreaks

by satellite [NASA-TM-83854] n0097 N82-19781

ATTEMA, E. P. W.
The Dutch ROVE program p0057 A82-21026 A radar signature model for partially coherent scattering pm irregular surfaces p0079 A82-21038 from irregular surfaces

AUSTIN, W. W.

Use of Landsat-derived temporal profiles for corn-soybear feature extraction and classification p0059 A82-26842 p0059 A82-26842

Recommended data sets, corn segments and spring wheat segments, for use in program development [E82-10034] p0064 N82-19610

Registration verification of SEA/AR fields [E82-10083] p0068 N82-21635

AgRISTARS: Supporting research. Classification of corn: Badhwar profile similarity technique [E82-10150] n0071 NR2-21676

AXELSSON, S. R. J.

On the accuracy of thermal inertia mapping by infrared imagery [SAAB-REPR-AE-10]

p0120 N82-19656

В

BADHWAR, G. D.
Use of Landsat-derived temporal profiles for com-soybean
p0059 A82-26842 BAHMAD, A.

Remote sensing applied to basement tectonics of the p0089 A82-26014 calcareous High Atlas / Morocco/

BAILEY, T. Remote sensing applications to resource problems in

South Dakota [E82-10027]

BAKAI, G. G.

Potential use of space photographs obtained from the manned orbital station Salvut-5 in order to compile a set of small-scale thematic maps of mountain and piedm regions of Central Asia

BAKER, D. J.
Recent auroral measurements using a field-widened p0126 A82-21434

BAKER, K. S.

Ship and satellite bio-optical research in the California Bight [NASA-CR-168681]

p0098 N82-20823

RNASA-th-19000-;
BAKLASHOV, N. I.

Complex of units for the storage and automated processing of research data p0131 A82-28140

processing of research data

BALASUBRAMANIAN. S.

Microwave britishess temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard p0093 A82-19560

BALL, A. P.

The design and implementation of an operational, computer-based weather radar system [RSRE-MEMO-3151] p0122 N82-21499

BALMINO, G. Gradio: Project proposal for satellite gradiometry
[NASA-TM-76796] p0134 N82-20606

BARBOS, M. P.

Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [EB2-10076] p0092 N82-20599

BARBOSA, M. N. CNPQ/INPE: LANDSAT system

[E82-10023]

p0118 N82-16441 LANDSAT system operated in Brazil by CNPq/INPE results obtained in the area of mapping and future perspectives [E82-10080] DO121 N82-20603

BARILLER, F.
Gradio: Project proposal for satellite gradiometry
[NASA-TM-76796] p0134 N82-2 p0134 N82-20606

Information expectations from Landsat-D

p0128 A82-27583 Characterizing user requirements for future land observing satellites [NASA-TM-83867]

p0081 N82-17562 BARNES, J. C.

Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook NASA-TP-18291 o0109 N82-20624

BARR, B. G. The application of remote sensing to resource

management and environmental quality programs in [E82-10029] p0063 N82-16447

BARRACLOUGH, D. R.
Spherical harmonic representation of the main geomagnetic field for world charting and investigations of ome fundamental problems of physics and geophysics [E82-10075] p0086 N82-20598

BARRETT, E. C. The use of satellite data in rainfall monitoring

ρ0101 A82-22873

BARRINGER, T. H. Stochastic models of cover class dynam

n0059 A82-27586

		PERSUNAL AUTHUR INDEX
BARTHOLIC, J. F.	BERGER, Z.	BRIEN, M. J.
Application of satellite frost forecast technology to other	Application of side-looking color infrared photography	The design and implementation of an operational,
parts of the United States, phase 2 [NASA-CR-166827] p0121 N82-20607	for structure detection in subtle topography p0082 A82-27611	computer-based weather radar system [RSRE-MEMO-3151] p0122 N82-21499
BARTSCHI, B. Y.	BERLIN. G. L.	BRIMACOMBE, C. A.
Recent auroral measurements using a field-widened	Cliff and slope topography of part of the Grand Canyon,	Atlas of METEOSAT imagery
interferometer spectrometer p0126 A82-21434 BASHENINA, N. V.	Arizona as characterized on a Seasat radar image	[ESA-SP-1030] p0124 N82-21700 BRISCO, B.
Analysis of space imagery to compile a geomorphological	p0082 A82-26843 BERNARD, A.	Manual and automatic crop identification with airborne
map of the world p0089 A82-20338	Gradio: Project proposal for satellite gradiometry	radar imagery p0057 A82-20408
BAUER, B.	[NASA-TM-76796] p0134 N82-20606	BRIVIO, P. A.
An automatic optimum kernel-size selection technique for edge enhancement p0113 A82-26840	BERNIER, M.	Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas
BAUER, M. E.	Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698	[E82-10073] p0091 N82-20596
Soybean canopy reflectance as a function of view and	BERTHOLD, G.	BROCHU, R.
illumination geometry p0061 A82-27645 Influence of solar illumination angle on soybean canopy	Sigma/deg/ signature of the Amazon rain forest obtained	Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698
reflectance p0063 A82-28153	from the Seasat scatterometer p0125 A82-21027	BROOKS, J.
Evaluation of a segment-based LANDSAT full-frame	BEST, R. G. Spectral reflectance of hydrophytes p0102 A82-24960	Implementation of the Space Oblique Mercator projection
approach to corp area estimation [E82-10067] p0066 N82-20590	Remote sensing applications to resource problems in	in a production environment p0129 A82-27628 BROWN, A. J.
Effects of nitrogen nutrition on the growth, yield and	South Dakota	Applications systems verification and transfer project.
reflectance characteristics of corn canopies	[E82-10027] p0132 N82-16445	Volume 3: Operational applications of satellite snow cover
[E82-10068] p0067 N82-20591 Soybean canopy reflectance as influenced by cultural	BIEHL, L. L.	observations in California [NASA-TP-1824] p0108 N82-20619
practices	Soybean canopy reflectance as a function of view and illumination geometry p0061 A82-27645	BROWN, J. W.
[E82-10105] p0068 N82-21647	Simulated response of a multispectral scanner over wheat	The Seasat low rate data processing system
A multiband radiometer and data acquisition system for remote sensing field research	as a function of wavelength and view/illumination	p0093 A82-24061 BROWN, K. S.
[E82-10142] p0134 N82-21669	direction [E82-10144] p0071 N82-21671	Cloud Top Scanning radiometer (CTS): User's guide
Spectral-agronomic relationships of corn, soybean and	BILLINGSLEY, F. C.	[NASA-TM-83887] p0135 N82-21826
wheat canopies [E82-10143] p0070 N82-21670	Modeling misregistration and related effects on	BROWN, P. M. As-built design specification for MISMAP
Simulated response of a multispectral scanner over wheat	multispectral classification p0113 A82-25455 BIRRER, I. J.	[E82-10091] p0123 N82-21643
as a function of wavelength and view/illumination	Sigma/deg/ signature of the Amazon rain forest obtained	BROWN, R. J.
direction [E82-10144] p0071 N82-21671	from the Seasat scatterometer p0125 A82-21027	A timely and accurate potato acreage estimate from Landsat - Results of a demonstration p0060 A82-27621
[E82-10144] p0071 N82-21671 Determination of the optimal level for combining area	BLANCHARD, A. J. Volumetric effects in cross-polarized airborne radar	The influence of illumination and viewing geometry on
and yield estimates	data p0058 A82-21032	the reflectance factor of agricultural targets
[E82-10146] p0071 N82-21673	BLANCHARD, B. J.	p0061 A82-27646 Landsat MSS applied to rangeland management in
BAYUS, P. E.	Dryland pasture and crop conditions as seen by HCMM [E82-10074] p0067 N82-20597	Western Canada p0063 A82-27697
University of Dundee satellite image data acquisition and archiving facility p0130 A82-27659	BODECHTEL, J.	BRUECK, P. M.
BEAL, R. C.	Geotechnical applications of Landsat image analysis of	Relationship of hydrothermal phenomena within the Leinster Granite to crustal fractures delineated from Landsat
Optimal spatial filtering and transfer function for SAR	Bhakra Dam Reservoir, India p0102 A82-26838 BOGORODSKII, V. V.	imagery p0089 A82-26015
ocean wave spectra p0094 A82-27596	The use of data from satellite-borne microwave scanning	BRYAN, M. L.
BEAUDET, P. R. Context dependent modeling . p0114 A82-27587	radiometers for the automated compilation of operational	Analysis of two Seasat synthetic aperture radar images of an urban scene p0074 A82-25452
An information adaptive system study report and	maps of ice cover for the Arctic Ocean p0095 A82-28145	BRYANT, E,
development plan	BOLSENGA, S. J.	Fanning - A classification algorithm for mixture
[NASA-CR-166768] p0120 N82-19644	Spectral reflectances of freshwater ice and snow from	landscapes applied to Landsat data of Maine forests p0062 A82-27668
Context sensitive formulations of antenna pattern correction and side lobe compensation for NOSS/LAMMR	340 through 1100 nm p0106 N82-17601	BUGLIOSI, E. F.
real time processing	BOLSHAKOV, V. D. Investigation of the earth on the basis of space	Use of Landsat imagery to delineate glaciofluvial aquifers
[NASA-CR-166789] p0122 N82-21457	photographic data p0082 A82-27507	in southeast South Dakota p0105 A82-27637 BURKE, F. A. C.
BELIAEV, B. I. Color characteristics of the earth's surface determined	BOMMAS, G.	Study of Earth Resources Satellite (ERS) data reduction
Color characteristics of the earth's surface determined		
	Satellite scatterometer feasibility study. Volume 1: Technical results	unit
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826	Technical results [ESA-CR(P)-1492-VOL-1] pO133 N82-19650	[BAE-TP-7905] p0120 N82-19649
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E.	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P.
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process	Technical results [ESA-CR(P)-1492-VOL-1] pO133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E.	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C.
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometeor distribution data [AD-A109929] p0109 N82-20822 BELL, R. E.	Technical results [ESA-CR(P)-192-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometeor distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN. F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII. G. I. Evaluation of the state of crops from satellite data p0059 A82-27393	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C.
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometeor distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN. F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII. G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A.
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometeor distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L E. Development and applications of techniques to process hydrometeor distribution data [AD-A 109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBBO-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS	Technical results [ESA-CR[P-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada p017 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA. R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-26621 BENITEZ O., A.	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN. F. Visual and digital analysis of H.C.M.M. data over eastern canada p0171 A82-27698 BORISOGLEBSKII. G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN. G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L.
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA. R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O A. Inventory of eroded areas in the state of Guanajuato Mexico. by automatic analysis of Landsat images p0076 A82-27690	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN. F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN. P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN. G. M. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico. by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R.	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0171 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT, C.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA. R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O A. Inventory of eroded areas in the state of Guanajuato Mexico. by automatic analysis of Landsat images p0076 A82-27690	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN. F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN. P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN. G. M. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPF/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H.	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN. F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII. G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN. P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN. G. M. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT. C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605 BOWIN. C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605 BOWIN. C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPF/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H.	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA. R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT. J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-B1071] p0118 N82-18657 BENTLEY, C. R.	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0171 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-17M-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-19732]	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-B1071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using	Technical results [ESA-CR[P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-26621 BENITEZ O A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0171 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-17M-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-19732]	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-B1071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. M. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard Bhaskara p0093 A82-19560 CALOZ, R.
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-26621 BENITEZ O A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-8-1071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0171 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p019 N82-20624	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara CALOZ, R. Soil moisture determination - Experiments with passive
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] p0086 N82-20585 Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10147] p0087 N82-21674	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p017 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p0109 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard 8haskara p0093 A82-19560 CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers p00957 A82-19529
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] BENTLEY, C. R. Investigation of Antarctic crust and MAGSAT and other geophysical data [E82-10147] BENTON, E. R. Investigation of geomagnetic field forecasting and fluid	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605 BOWIN, C. Gravity and gooid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p019 N82-20624 BRACALENTE, E. M. Sigma/deg/signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara CALOZ, R. Soil moisture determination - Experiments with passive
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPF/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground LANDSAT imagery [RAE-TR-81071] BENTLEY, C. R. Investigation of Antarctic crust and MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and MAGSAT and other geophysical data [E82-10147] BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core	Technical results [ESA-CRIP)-1492-VOL-1] p0133 N82-19650 BONN. F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN. P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN. G. M. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p0199 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACHET, G.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers p0057 A82-19529 CAMARA, G. Simplified algorithm for calculating radiative transfer in satellite images
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPF/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10147] BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605 BOWIN, C. Gravity and gooid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p019 N82-20624 BRACALENTE, E. M. Sigma/deg/signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers CAMARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] p0086 N82-20585 Investigation of antarctic crust and MAGSAT and other geophysical data [E82-10062] p0087 N82-21674 BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686	Technical results [ESA-CR[P-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p017 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p0109 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACHET, G. Towards an operational SPOT system - A preliminary assessment p0114 A82-27607 BRANDENBERGER, A. J.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers p0057 A82-19529 CAMARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 CAMPBELL, J.
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] p0109 N82-20822 BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor BENNETT, J. R. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] p0086 N82-20585 Investigation of antarctic crust and MAGSAT and other geophysical data [E82-10147] BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686 BERG, C. P. Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p019 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACHET, G. Towards an operational SPOT system - A preliminary assessment GRR, A. J. Analytical triangulation of space photography	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers CAMARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPF/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-B1071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and MAGSAT and other geophysical data [E82-10147] BENTLEY, C. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10147] p0087 N82-21674 BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686 BERG, C. P. Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605 BOWIN, C. Gravity and gooid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p019 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACHET, G. Towards an operational SPOT system - A preliminary assessment BRANDENBERGER, A. J. Analytical triangulation of space photography p0111 A82-20402	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers p0057 A82-19529 CAMPARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 CAMPBELL J. Spatial reasoning in remotely sensed data p0105 A82-27592
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPE/ NEROS field measurements program p0075 A82-19177 BENDURA, R. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-1R-81071] BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10147] BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] BERG, C. P. Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980 p0105 A82-27634	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern Canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PB80-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. A pplications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p109 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seass ascatterometer p0125 A82-21027 BRACHET, G. Towards an operational SPOT system - A preliminary assessment p0114 A82-27607 BRANDENBERGER, A. J. Analytical triangulation of space photography p0111 A82-20402 BRAUN, O. P. G.	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers CAMARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 CAMURBELL, J. Spatial reasoning in remotely sensed data p0105 A82-27592 CAMUS, J. P. Data rate reduction. Impact of image data compression
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPF/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-B1071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and MAGSAT and other geophysical data [E82-10147] BENTLEY, C. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10147] p0087 N82-21674 BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686 BERG, C. P. Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980	Technical results [ESA-CRI(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p017 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20606 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p0109 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACHET, G. Towards an operational SPOT system - A preliminary assessment p0114 A82-27607 BRANDERGER, A. J. Analytical triangulation of space photography p0111 A82-20402 BRAUN, O. P. G. A structural synthesis of Brazil, based on the study of major lineaments derived from remote sensing imagery	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara p0093 A82-19560 CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers p0057 A82-19529 CAMPARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 CAMPBELL J. Spatial reasoning in remotely sensed data p0105 A82-27592
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor BENNETT, J. R. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] BENTLEY, C. R. Investigation of Antarctic crust and unper mantle using MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and unper mantle using MAGSAT and other geophysical data [E82-10147] BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] BERG, C. P. Calcium carbonate precipitation in Pyramid Lake. Nevada. as monitored by satellite - 1978 and 1980 p0105 A82-27692 BERG, D. W. Integrated sensor system for collection of wave data applied to coastal engineering design p0094 A82-27602	Technical results [ESA-CR(P)-1492-VOL-1] BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada poll of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0073 A82-19177 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p0109 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACLET, G. Towards an operational SPOT system - A preliminary assessment p0111 A82-27607 BRANDENBERGER, A. J. Analytical triangulation of space photography p0111 A82-20402 BRAUN, O. P. G. A structural synthesis of Brazil, based on the study of major lineaments derived from remote sensing imagery interpretation p0079 A82-26012	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara Soil moisture determination - Experiments with passive microwave radiometers CAMARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 CAMPBELL, J. Spatial reasoning in remotely sensed data p0105 A82-27592 CAMUS, J. P. Data rate reduction. Impact of image data compression on end to end data management of a multispectral payload [REPT-44/130] p0120 N82-19654
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor p0128 A82-27595 BENNY, A. H. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] p0118 N82-18657 BENTLEY, C. R. Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062] p0086 N82-20585 Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10162] p0087 N82-21674 BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686 BERG, C. P. Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980 p0105 A82-27634 BERG, D. W. Integrated sensor system for collection of wave data applied to coastal engineering design p0094 A82-27602	Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada p0117 A82-27698 BORISOGLEBSKII, G. I. Evaluation of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-188557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0134 N82-20605 BOWIN, C. Gravity and gooid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p0109 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACHET, G. Towards an operational SPOT system - A preliminary assessment BRANDENBERGER, A. J. Analytical triangulation of space photography p0111 A82-20402 BRAUN, O. P. G. A structural synthesis of Brazil, based on the study of major lineaments derived from remote sensing imagery interpretation p0079 A82-26012	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara CALOZ, R. Soil moisture determination - Experiments with passive microwave radiometers p0095 A82-19560 CALOZ, R. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 CAMPBEL, J. Spatial reasoning in remotely sensed data p0105 A82-27592 CAMUS, J. P. Data rate reduction. Impact of image data compression on end to end data management of a multispectral payload [REPT-44/130] p0120 N82-19654
on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 BELKSY, L. E. Development and applications of techniques to process hydrometer of distribution data [AD-A109929] BELL, R. E. Satellite observed cloud patterns associated with excessive precipitation outbreaks [PBB0-215130] BENDURA, R. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 BENITEZ O., A. Inventory of eroded areas in the state of Guanajuato Mexico, by automatic analysis of Landsat images p0076 A82-27690 BENNETT, J. R. Features of a generalized digital Synthetic Aperture Radar processor BENNETT, J. R. Automatic relocation of ground control points in LANDSAT imagery [RAE-TR-81071] BENTLEY, C. R. Investigation of Antarctic crust and unper mantle using MAGSAT and other geophysical data [E82-10062] Investigation of antarctic crust and unper mantle using MAGSAT and other geophysical data [E82-10147] BENTON, E. R. Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] BERG, C. P. Calcium carbonate precipitation in Pyramid Lake. Nevada. as monitored by satellite - 1978 and 1980 p0105 A82-27692 BERG, D. W. Integrated sensor system for collection of wave data applied to coastal engineering design p0094 A82-27602	Technical results [ESA-CR(P)-1492-VOL-1] BONN, F. Visual and digital analysis of H.C.M.M. data over eastern canada poll of the state of crops from satellite data p0059 A82-27393 BORMANN, P. Some problems concerning the effective use of remote sensing p0137 A82-26123 BORN, G. H. Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 BORNEMAN, R. Satellite observed cloud patterns associated with excessive precipitation outbreaks [P880-215130] p0073 A82-19177 BOUZAT, C. Gradio: Project proposal for satellite gradiometry [NASA-TM-76796] p0073 A82-19177 BOWIN, C. Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative residual water depth anomaly [NASA-CR-168639] p0085 N82-19732 BOWLEY, C. J. Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction handbook [NASA-TP-1829] p0109 N82-20624 BRACALENTE, E. M. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 BRACLET, G. Towards an operational SPOT system - A preliminary assessment p0111 A82-27607 BRANDENBERGER, A. J. Analytical triangulation of space photography p0111 A82-20402 BRAUN, O. P. G. A structural synthesis of Brazil, based on the study of major lineaments derived from remote sensing imagery interpretation p0079 A82-26012	[BAE-TP-7905] p0120 N82-19649 BURNS, J. P. Mapping in tropical forests - A new approach using the laser APR p0081 A82-20407 BURROWS, C. Study of Earth Resources Satellite (ERS) data reduction unit [BAE-TP-7905] p0120 N82-19649 BUZNIKOV, A. A. Polarimetric method for the remote sensing of oil slicks on the sea surface p0095 A82-28135 BYER, R. L. Model studies of laser absorption computed tomography for remote air pollution measurement p0077 A82-28152 C CAGLE, B. J. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 CALLA, O. P. N. Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer / SAMIR/ onboard Bhaskara Soil moisture determination - Experiments with passive microwave radiometers CAMARA, G. Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 CAMPBELL, J. Spatial reasoning in remotely sensed data p0105 A82-27592 CAMUS, J. P. Data rate reduction. Impact of image data compression on end to end data management of a multispectral payload [REPT-44/130] p0120 N82-19654

PERSONAL AUTHOR INDEX COLWELL R. N.
The 1981 Argentina ground data collection
[E82-10127] p0070 N82-21658 CARD D H Elevation of a cane-growing area of the state of Sao Using known map category marginal frequencies to improve estimates of thematic map accuracy p0113 A82-25456 Paulo using LANDSAT data [E82-10077] n0067 N82-20600 COOK, V. L. AgRISTARS: Interim catalog ground data summary, data CHENEY, R. É. Structure and variability of the Alboran Sea frontal p0093 A82-20447 A low cost NOAA/TIROS AVHRR receiving station acquisition year 1979 DO130 A82-27681 CHENG. D. E. [E82-10032] As-built design specification for MISMAP CARLEIAL A. B. COSENTINO M. J. [E82-10091] CHERNOV, V. IU. p0123 N82-21643 General configuration and internal disposition of equipment in a satellite for collecting environmental data [INPE-2240-PRE/026] p0078 N82-19256 Scene analysis for wildland fire-fuel characteristics in a Mediterranean climate p0060 A82-27624 Dynamics of snow cover in mountain regions of the Aral Flexible processing of remote sensing data through integration of image processing and geobased information systems p0116 A82-27667 Dynamics of snow cover in mountain regions

Sea basin, studied using satellite photographs
p0102 A82-27462 CARLSON, C. T. An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0095 N82-16697 CHERVANEV, I. G. Possibilities of using experience gained from the thematic mapping of the moon in studies of earth resources by remote sensing methods p0083 A82-28138 An analysis of user requirements for operational land stellite data p0116 A82-27685 satellite data Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection [PB82-113283] p0096 N82-17805 COTTRELL D. A.

Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas
[INPE-2197-PRE/006] p0066 N82-19639 CHIAVIELLO. A. The Landsat program - Moving ahead n0137 A82-21280 CARLSON, D. L.
Weather satellite interpretation: Introduction to weather An information adaptive system study report and development plan [NASA-CR-166768] p0120 N82-19644 COUNSELMAN, C. C., HI
Applications to Earth physics: Very-long-baseline satellite imagery [PB82-107657] pO118 N82-16677 interferometry and data analysis [NASA-CR-168743] CARLSON, T. N.
Interactive initialization of heat flux parameters for CHIN. R. T. Context sensitive formulations of antenna pattern correction and side lobe compensation for NOSS/LAMMR COUPLAND, D. H. models using satellite Automatic linear recognition and analysis using computer numerical temperature program LIRA p0000 A62 2...
HCMM night-time thermal IR imaging experiment in p0115 A82-27655 measurements real time processing p0122 N82-21457 p0120 N82-19623 NASA-CR-166789) CHITTINENI, C. B. Applications of HCMM satellite data to the study of urban Maximum likelihood estimation of label imperfection CRAIG. M. probabilities and its use in the identification of mislabeled Potential utility of thematic mapper data in estimating rop areas p0061 A82-27663 patterns CHONG, Y. J. CARMICHAEL, R. S.
Use of Magsat anomaly data for crustal structure and CRAIG. R. G. Precision in the evaluation of Landsat autocorrelation
The terrain effect p0116 A82-2768
CRAWFORD, M. F. Classification of Landsat MSS data for surface cover of mineral resources in the US midcontinent p0116 A82-27677 p0091 N82-19624 [F82-10049] CHOU, S. H. Use of MAGSAT anomaly data for crustal structure and Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system [E82_10028] p0091 N82-16446 Estimating ocean-air heat fluxes during cold air outbreaks mineral resources in the US midcontinent by satellite [NASA-TM-83854] p0092 N82-21677 [E82-10152] p0097 N82-19781 CARNES, J. G. CHOUDHURY, B.
Spectral albedos of midlatitude snowpacks
[NASA-TM-83858] p0106 N82-18663 CRESSY, P. J. Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842 Characterizing user requirements for future land observing satellites [NASA-TM-83867] p0081 N82-17562 US corn and soybeans exploratory experiment [E82-10088] p0068 N82-21640 CRIST. F. Remote sensing and international law CARPENTER, D. J. A technique for automatic labeling of Landsat agricultural p0137 A82-24343 Inland water quality assessment from Landsat data scene elements by analysis of temporal-spectral patterns p0062 A82-27678 CHUKHLANTSEV, A. A. n0105 A82-27610 Microwave radiation peculiarities of vegetative cover CARROLL, W. p0058 A82-21029 A low cost NOAA/TIROS AVHRR receiving station Documentation of computer procedures for labeling CHUMACHENKO R A spring grains and discriminating between spring wheat and barley using LANDSAT data [E82-10030] p0063 N82-16448 CUMMING. I. G. p0130 A82-27681 Development of cooperation between CMEA member countries in the development and utilization of space-based CASSINIS. R. Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas [E82-10073] p0091 N82-20596 systems for the remote sensing of earth resources and the p0138 A82-27543 environment Features of a generalized digital Synthetic Aperture Radar CIHLAR, J. CASTRUCCIO, P Applications systems verification and transfer project.
Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover observations otential of remote sensing to monitor soil of p0061 A82-27656 on cropland The estimation of the surface moisture of a vegetated Multispectral photographic remote sensing of green vegetation biomass and productivity p0059 A82-22144 Interpretation of Heat Capacity Mapping Mission images ver Canada p0116 A82-27671 Landsat MSS applied to rangeland management in [NASA-TP-1828] nO109 N82-20623 Western Canada p0063 A82-27697 CUSTER J Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20593 Locating prehistoric archaeological sites using Landsat p0129 A82-27638 ary evaluation of spectral, normal and ical crop stage estimation approaches 9] p0065 N82-19634 Preliminary CLARK. J. D.
Satellite observed cloud patterns associated with CESS, R. D. D Low-latitude cloudiness and climate feedback -Comparative estimates from satellite data excessive precipitation outbreaks p0073 A82-19177 DACOSTA, J. M. [PB80-215130] p0075 A82-26980 Particle precipitation and atmospheric X-and Gamma-rays in the South Atlantic magnetic anomaly by balloon CLARK, J. R. CHAKRABORTI, D. K. Application of remote sensing to state and regional One orogenic belt or two - A structural reinterpretation supported by Landsat data products of the Precambrian metamorphics of Singhbhum, eastern India problems [E82-10033] [INPE-2119-RPE/343] p0078 N82-19609 DAILEY, C. L.
AgRISTARS: Foreign commodity production forecasting. n0089 A82-26017 CLARKE, J. L. The design and implementation of an operational. CHANG, T. P. Com/soybean decision logic development [EB2-10056] p0065 computer-based weather radar system [RSRE-MEMO-3151] Watershed model study using LANDSAT data p0122 N82-21499 p0106 N82-17602 CLINTON, N. J.

Transition year labeling error characterization
[E82-10111] p0069 N82-2 Applications systems verification and transfer project. CHARIAI, H. Remote sensing applied to basement tectonics of th calcareous High Atlas /Morocco/ p0089 A82-2601-CHAVEZ, P., JR. Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center p0089 A82-26014 p0069 N82-21651 observations. Colo [NASA-TP-1825] COBOURN, W. G. Airborne in-situ measurement of particulate sulfur and An automatic optimum kernel-size selection technique DARCOS, J.-C. Ricub, J.-C.
Field-by-field multitemporal analysis of aerial scanner data geometrically corrected by means of a sliding model p0115 A82-27651 for edge enhancement p0113 A82-26840
Cliff and slope topography of part of the Grand Canyon,
Arizona as characterized on a Seasat radar image sulfuric acid with flame photometry and thermal analyp0073 A82-20999 DAUBNER, L
Instrumentation for remote reflectance and radiance
p0130 A82-27652 Instruments watch for impending earthquakes p0131 A82-28342 p0082 A82-26843 CHEN, D. T. Surface wave statistics and spectra during high sea state conditions in the North Atlantic COLLINS, C. J.
Study of Earth Resources Satellite (ERS) data reduction measurements p0130 A82-27652 Remote S02 emission measurements with correlation spectrometers from volcanoes

DAUGHTRY, C. S. T. [AD-A109832] p0098 N82-20827 [BAE-TP-7905] CHEN. E. p0120 N82-19649 Use of thermal inertia determined by HCMM to predict Influence of solar illumination angle on soybean canopy COLLINS, J. G. nocturnal cold prone areas in Florida [E82-10040] Airborne laser systems use in terrain mapping p0082 A82-27584 Effects of nitrogen nutrition on the growth, yield and DO064 N82-19615 Application of satellite frost forecast technology to other parts of the United States, phase 2
[NASA-CR-166827] p0121 N82-20607 COLOMBESKI, N. C. Image quality control in the Meteosat ground processing p0125 A82-21090 reflectance characteristics of corn canopies 82-10068] p0067 N82-20591 Soybean canopy reflectance as influenced by cultural [82-10068] Use of thermal inertia determined by HCMM to predict system

COLVOCORESSES, A. P.

Mapsat compared to other earth-sensing concepts
p0128 A82-27581 practices

COLWELL, J. E.

Forest change detection

Landsat feature enhancement - Or, can we separate vegetation from soil p0060 A82-27622

p0061 A82-27644

nocturnal cold prone areas in Florida

Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume

n0067 N82-20594

82-10157]

[E82-10071]

CHEN, S. C.

n0064 N82-19608

n0088 N82-21796

p0128 A82-27595

n0083 N82-17711

p0065 N82-19631

p0108 N82-20620

p0077 A82-27704

p0063 A82-28153

n0068 N82-21647

p0070 N82-21670

DO071 N82-21672

rements with sensor

Spectral-agronomic relationships of corn, soybean and

Variability of reflectance measure

altitude and canopy type [E82-10145]

[E82-10105]

[E82-10143]

DAVE, J. V.	Elevation of a case growing area of the state of Con-	DODALCWAMY D. O.
Influence of illumination and viewing geometry and	Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data	DORAISWAMY, P. C. Preliminary evaluation of spectral, normal and
atmospheric composition on the 'tasseled cap'	[E82-10077] p0067 N82-20600	meteorological crop stage estimation approaches
transformation of Landsat MSS data p0059 A82-24961	DEMEDEIROS, J. S.	[E82-10059] p0065 N82-19634
DAVIDSON, S. A. Segment-level evaluation of the simulated aggregation	Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979	DOS ANJOS, C. E. Study project of intrusive rocks: States of Espirito Santo
test: US corn and soybean exploratory experiment	[E82-10078] p0067 N82-20601	and Rio de Janeiro, south and east of Minas Gerais and
[E82-10061] p0066 N82-19636	DEMENTEV, V. N.	southeast of the state of Sao Paulo
DAVIES, J.	Structure of hardware and software at a regional center	[E82-10076] p0092 N82-20599
Instrumentation for remote reflectance and radiance measurements p0130 A82-27652	for the automated processing of aerial and space	DOSSANTOS, A. P. Utilization of Aerochrome 2443 film for identification
Remote SO2 emission measurements with correlation	remote-sensing images p0130 A82-28128	and estimating wheat growing areas
spectrometers from volcanoes p0077 A82-27704	DEMORAESNOVO, E. M. L. Remote sensing data applied to land-use survey at the	[INPE-2197-PRE/006] p0066 N82-19639
DAVIS, J. M.	Paraiba Valley	DOSSANTOS, A. R.
Regional properties of angular reflectance models p0083 N82-17599	[E82-10025] p0081 N82-16443	Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and
DAVIS, P. A.	DENEAU, M.	southeast of the state of Sao Paulo
Development of a surface isolation estimation technique	Snow cover monitoring using AVHRR data from TIROS and NOAA satellites p0105 A82-27614	[E82-10076] p0092 N82-20599
suitable for application of polar orbiting satellite data	DENNERT-MOELLER, E.	DOSSANTOS, J. R.
[E82-10122] p0123 N82-21656 DAVIS. S. M.	Evaluation of serial photogrammetric camera and aircraft	Method of interpretation of remote sensing data and applications to vegetation
Evaluation of a segment-based LANDSAT full-frame	scanner pictures from tidal lands - Digital correlation and	[INPE-2215-MD/010] p0066 N82-19640
approach to corp area estimation	classification of multitemporal imagery data	The utilization of orbital images as an adequate form of
[E82-10067] p0066 N82-20590	p0127 A82-26049	control of preserved areas
DAVISON, G. J. An introduction to image processing at Royal Aircraft	DEOLIVEIRA, J. R. Data collection platforms: Applications to hydrology	[E82-10065] p0078 N82-20588 DOYLE, H. M.
Establishment, Farnborough, England	[INPE-2246-PRE/030] p0107 N82-19304	AgRISTARS: Interim catalog ground data summary, data
[RAE-TR-80107] p0122 N82-21565	DEOLIVEIRA, L. L.	acquisition year 1979
DAY, R. L.	Convergence zones in the South Atlantic and their	[E82-10032] p0064 N82-19608
Delineation of soil temperature regimes from HCMM data	influence on the precipitation regime in Northeastern	DUCHOSSOIS, G. The first ESA remote sensing satellite system ERS-1
[E82-10042] p0119 N82-19617	Brazil [INPE-2307-TDL/074] p0097 N82-19778	p0094 A82-27608
Delineation of soil temperature regimes from HCMM	DESANTANA, C. C.	DUCRUIX, J.
data	Relation of the activities of the IPDF/INPE project	Preliminary models of the core field
[E82-10141] p0070 N82-21668	(reforestation subproject) during the year 1979	[E82-10129] p0087 N82-21659
DE LOOR, G. P. The Dutch ROVE program p0057 A82-21026	[E82-10078] p0067 N82-20601	Continuation of potential field data to a common altitude
DEALMEIDA, F. C.	DESOUZA, R. C. M.	[E82-10138] p0123 N82-21665
System of forecasting agricultural crops using satellite	Automatic analysis of multispectral images [INPE-2212-MD/009] p0133 N82-19520	Separation of internal and external fields: A new
observations of Earth	DEUELL, R. L.	technique of data screening
[E82-10079] p0067 N82-20602 DEAN, A. M., JR.	Use of GOES and TIROS/NOAA satellite data for	[E82-10139] p0123 N82-21666 DUDENEY, J. R.
Electromagnetic subsurface measurements	snow-cover mapping p0101 A82-22145	Ionospheric troughs in Antarctica p0073 A82-21217
[AD-A108192] p0106 N82-18469	DEWITT, D. P.	DUGGIN, M. J.
DEERING, D. W.	A multiband radiometer and data acquisition system for	Ground level reflectance measurement techniques - An
Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422	remote sensing field research [E82-10142] p0134 N82-21669	evaluation with emphasis on the importance of spectral calibration p0116 A82-27689
DEJESUSPARADA, N.	DEY, B.	DUTRA, L. V.
CNPq/INPE: LANDSAT system	The Canadian north - Utility of remote sensing for	Automatic analysis of multispectral images
[E82-10023] p0118 N82-16441	environmental monitoring p0074 A82-24962	[INPE-2212-MD/009] p0133 N82-19520
Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at	DIAS, L. A. V.	DUVAL, W. P.
INPE	Simplified algorithm for calculating radiative transfer in satellite images	Coastal upwelling ecosystems analysis. Atlas of the
[E82-10024] p0091 N82-16442		JOINT I aircraft winds for the 500 foot level
Remote sensing data applied to land-use survey at the	[INPE-2169-RPE/385] p0118 N82-16450	[PB82-114703] p0097 N82-19796
Remote sensing data applied to land-use survey at the Paraiba Valley	[INPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite	[PB82-114703] p0097 N82-19796
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443	[INPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth	
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and	[INPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602	[PB82-114703] p0097 N82-19796
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR.	[PB82-114703] p0097 N82-19796 E EASTWOOD, L. F., JR.
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p.0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p.0132 N82-16444 The utilization of orbital images as an adequate form of	[INPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602	[PB82-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602	[PB82-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R.	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 Amazonas project: Application of remote sensing	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance	[PB82-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance	[PB82-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G.
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image	[PB82-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN. W. G. Effect of aerosols on optical remotely sensed data
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R.	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [A0-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKINSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G., Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea EMLERS, M.
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N.	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. DICK, R. DICK, R. Digital analysis of spatial and spectral features from ariborne MSS of a forested region p0061 N82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from ariborne MSS of a forested region p0061 N82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] DIETZ, R. N. Demonstration of a long-range atmospheric tracer system	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N.	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 EValuation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10079] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICK, INSTOM, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICK, SON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons	[P882-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p015 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multiemporal imagery data
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, G. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICK, R. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project.	E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo using LANDSAT data [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. DICK, R. DICK, R. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover	[PB82-114703] p0097 N82-19796 E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN. W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICK, R. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States	E EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo using LANDSAT data [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p0109 N82-20621	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICK, R. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 EValuation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from eirborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p0109 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 EVAIUATION of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p109 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593	[PB82-114703] p0097 N82-19796 EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EKAPERIMENT OF THE TOTAL OF T
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, G. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKINSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p0109 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A.	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A.
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10079] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 The LANDSAT system operated in Brazil by CNPq/INPE results obtained in the area of mapping and future	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p109 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p015 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital fiftering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20601 The LANDSAT system operated in Brazil by CNPQ/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from ariborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] DJERNARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 EValuation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume [E82-10071] p0067 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo using LANDSAT data [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 The LANDSAT system operated in Brazil by CNPq/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICK, R. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICK, SON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 DJUKIC-HUSAR, J. Airborne in-situ measurement of particulate sulfur and	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [A0-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 ELACHI, C. Spaceborne radar observation of the earth surface
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 The LANDSAT system operated in Brazil by CNPq/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering [E82-10081]	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p0109 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Attas /Morocco/ p0089 A82-26014 DJUKIC-HUSAR, J. Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS. N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN. W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS. M. Increase in correlation accuracy of remote sensing imagery by digital fiftering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 ELACHI, C. Spaceborne radar observation of the earth surface p0127 A82-27578
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20601 The LANDSAT system operated in Brazil by CNPQ/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20604 Dynamic study of the upper Sao Francisco River and	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK. R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from eirborne MSS of a forested region p0061 A82-27657 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKISON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLIARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p019 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ DJUKIC-HUSAR, J. Airbome in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [A0-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 ELACHI, C. Spaceborne radar observation of the earth surface
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 The LANDSAT system operated in Brazil by CNPq/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering [E82-10081]	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p0109 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Attas /Morocco/ p0089 A82-26014 DJUKIC-HUSAR, J. Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A-108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 ELACHI, C. Spaceborne radar observation of the earth surface p0127 A82-27578 A shuttle scanning laser altimeter for topographic p0083 A82-27632
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 The LANDSAT system operated in Brazil by CNPq/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering [E82-10080] p0121 N82-20605 DELIMA, A. M.	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p1019 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 DJUKIC-HUSAR, J. Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0127 A82-25758 A shuttle scanning laser altimeter for topographic mapping p0083 A82-27582 p0089 A82-27582 (NAS-2TM-76830)
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo (E82-10076) Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10079] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 The LANDSAT system operated in Brazil by CNPq/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering [E82-10081] p0121 N82-20604 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images [E82-10082]	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, S. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICK, R. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICK, S. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p019 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ DJURIC-HUSAR, J. Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999 DOBLAR, R. A. Structure and variability of the Alboran Sea frontal system p0093 A82-20447	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital fiftering p0113 A82-25454 EValuation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 ELKOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ ELACHI, C. Spaceborne radar observation of the earth surface p0127 A82-27578 A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 Observation of the Earth by radar [NASA-TM-76830]
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20601 The LANDSAT system operated in Brazil by CNPQ/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering [E82-10081] p0121 N82-20605 DELIMA, A. M. Utilization of Aerochrome 2443 film for identification and estimating whest growing areas	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK. R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from eirborne MSS of a forested region p0061 A82-27657 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKISON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p019 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas / Morocco/ DJUNIC-HUSAR, J. Airbome in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999 DOBLAR, R. A. Structure and variability of the Alboran Sea frontal system DOME, G. J. Sigma/deg/ signature of the Amazon rain forest obtained	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 EVAIUATION of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0098 A82-26014 ELACHI, C. Spaceborne radar observation of the earth surface p0127 A82-27578 A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 Observation of the Earth by radar [NASA-TM-76830] p0124 N82-21687
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo (E82-10076) p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 The LANDSAT system operated in Brazil by CNPQ/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20604 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images [E82-10081] p018 N82-20605 DELIMA, A. M. Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27652 DICKINSON, K. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p019 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0093 A82-26014 DJUKIC-HUSAR, J. Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999 DOBLAR, R. A. Structure and variability of the Alboran Sea frontal system p0093 A82-20107 DOME, G. J. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 EL KOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 ELACHI, C. Spaceborne radar observation of the earth surface p0127 A82-27578 A shuttle scanning laser altimeter for topographic mapping Observation of the Earth by radar [NASA-TM-76830] p0124 N82-21687 ELLIOTT, D. Spatial reasoning in remotely sensed data p0105 A82-27592
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 A mazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20595 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20601 The LANDSAT system operated in Brazil by CNPQ/INPE results obtained in the area of mapping and future perspectives [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering [E82-10081] p0121 N82-20605 DELIMA, A. M. Utilization of Aerochrome 2443 film for identification and estimating whest growing areas	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKISON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] p019 N82-20621 DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] p0079 N82-20593 DIXON, R. G. Remote sensing applied to basement tectonics of the calcareous High Attas /Morocco/ p0089 A82-26014 DJUKIC-HUSAR, J. Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999 DBLAR, R. A. Structure and variability of the Alboran Sea frontal system p0084 A82-200447 DOME, G. J. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027 DOMONGOSH, D. Monitoring of the thermal pollution of natural channels	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS, N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN, W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at sea p0086 N82-20581 EHLERS, M. Increase in correlation accuracy of remote sensing imagery by digital filtering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 ELXOCHRI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014 ELACHI, C. Spaceborne radar observation of the earth surface p0127 A82-27578 A shuttle scanning laser altimeter for topographic mapping p0083 A82-27632 Observation of the Earth by radar [NASA-TM-76830] p0124 N82-21687 ELLIOTT, D. Spatial reasoning in remotely sensed data p0105 A82-27592 ELVARTYNOV, I. N. Experience with a variety of studies of earth resources
Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remote sensing activities, current and prospective needs [E82-10026] p0132 N82-16444 The utilization of orbital images as an adequate form of control of preserved areas [E82-10065] p0078 N82-20588 Amazonas project: Application of remote sensing techniques for the integrated survey of natural resources in Amazonas [E82-10069] p0078 N82-20592 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume 2 [E82-10071] p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed data [E82-10072] p0079 N82-20594 Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 [E82-10078] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20601 System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20603 An algorithm for spatial heirarchy clustering [E82-10080] p0121 N82-20603 An algorithm for spatial heirarchy clustering [E82-10081] p0121 N82-20605 DELIMA, A. M. Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas [INPE-2197-PRE/006] p0066 N82-19639 Survey of the cane-growing area of the state of Sao	[IMPE-2169-RPE/385] p0118 N82-16450 DIAS, M. R. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DIAS, O. P., JR. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] p0067 N82-20602 DICK, R. Instrumentation for remote reflectance and radiance measurements p0130 A82-27652 DICKINSON, K. Digital analysis of spatial and spectral features from eriborne MSS of a forested region p0061 A82-27647 Relief effects and the use of terrain models in SAR image processing p0086 N82-21475 DICKSON, C. R. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DIETZ, R. N. Demonstration of a long-range atmospheric tracer system using perfluorocarbons [P882-106246] p0081 N82-16613 DILLARD, J. P. Applications systems verification and transfer project. Volume 5: Operational applications of satellite snow-cover observations, northwest United States [NASA-TP-1826] DIXON, R. G. Heat Capacity Mapping Mission (HCMM): Interpretation of imagery-over Canada [E82-10070] DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0099 A82-20593 DJERRARI, A. Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0093 A82-20014 DJUKIC-HUSAR, J. Airbome in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis p0073 A82-20999 DOBLAR, R. A. Structure and variability of the Alboran Sea frontal system p0093 A82-20447 DOME, G. J. Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027	EASTWOOD, L. F., JR. Program on stimulating operational private sector use of Earth observation satellite information [E82-10131] p0138 N82-21660 EDWARDS. N. C., JR. Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 EGAN. W. G. Effect of aerosols on optical remotely sensed data p0115 A82-27654 EGGE, D. Experiments in satellite Doppler control positioning at p0086 N82-20581 EHLERS. M. Increase in correlation accuracy of remote sensing imagery by digital fiftering p0113 A82-25454 Evaluation of serial photogrammetric camera and aircraft scanner pictures from tidal lands - Digital correlation and classification of multitemporal imagery data p0127 A82-26049 EHRICH, R. W. Spatial reasoning in remotely sensed data p0105 A82-27592 EIDENSHINK, J. C. Remote sensing applications to resource problems in South Dakota [E82-10027] p0132 N82-16445 ELOCTRI, C. Spaceborne radar observation of the earth surface p0127 A82-27578 A shuttle scanning laser altimeter for topographic mapping Observation of the Earth by radar [NASA-TM-76830] p0124 N82-21687 ELUOTT, D. Spatial reasoning in remotely sensed data p0105 A82-27592 ELVARTYNOV, I. N.

ELVARTYNOV, I. N.
Experience with a variety of studies of earth resources in the Kalmyk ASSR using space imagery p0131 A82-28130

GREEGOR, D.

PERSONAL AUTHOR INDEX Relation of the activities of the IPDF/INPE project GARCIA, G. EMORI. Y. Application of machine processing of visible and thermal omena modelling of remotely sensed data by image (reforestation subproject) during the year 1979 p0067 N82-20601 DO076 A82-27670 [F82-10078] data to the study of the geothermal area of Cerro Prieto, p0117 A82-27693 FINKLER, J. A ENDERRERG N P. Development of a breadboard cooler for infrared remote sensing payloads, phase 1
[FOK-RV-R-81-064] p0134 N82-19653 Documentation of computer procedures for labeling GARZA, M spring grains and discriminating between spring wheat and barley using LANDSAT data [E82-10030] p0063 N82-16448 FITZPATRICK-LINS, K. Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto, Mexico p0117 A82-27693 ENDLICH, R. M. An experimental program to provide remote measurement GASPAROVIC, R. F. SPAROVIC, R. F.
High precision radiometric temperature measurements
p0094 A82-27640 natic map accuracy testing Sampling for their and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0111 A82-20411 of the ocean surface p0095 N82-16697 FLIEGEL, H. Session III of the VLBI/Laser intercomparison task of the NASA crustal dynamics project [NASA-CR-168427] p0083 N82-17708 GAUTIER, C. Workshop on the application of existing satellite data the study of ocean surface energetics, 19-21 November An information adaptive system study report and development plan FORESTI C 1980 University of Wisconsin-Madison p0120 N82-19644 (NASA-CR-166768) Remote sensing data applied to land-use survey at the araiba Valley 00094 A82-24822 EDIDHANIO I C N GELLER. A. G Methodology of the interpretation of remote sensing data and applications in pedology
[INPE-2211-MD/008] p0078 N82-19641 p0081 N82-16443 A. G.
stigation of the vegetative covers on ploughed areas
R p0058 A82-21031 [E82-10025] Investig by SLAR Land use in the Paraiba Valley through remotely sensed data [E82-10072] ERISMANN, K. H.
A system for quantitative determination of species and GEORGES, T. M. p0079 N82-20595 Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection [PB82-113283] p0096 N82-17805 FORMAGGIO, A. R Methodology of the interpretation of remote sensing data and applications in pedology
[INPE-2211-MD/008] p0078 N82-19641 vitalities of urban trees on color-infrared photo p0074 A82-24958 GHAZI, A.

Atlas of the global distribution of the total ozone ERKIN, A. N.

Methods for the processing of synthetic-aperture radar FORSYTHE, R. G.
NOSS altimeter algorithm specificatio
[NASA-RP-1083] p Methods for the processing of the national economy signals when solving problems of the national economy p0113 A82-26726 concentration according to satellite measurem p0078 N82-19740 [MITT-28] p0095 N82-16683 FORTUNE, M. A.

The severity of the Brazilian freeze of July 1981, as monitored by satellite
[INPE-2231-RPE/399] p0064 N82-17746 GIFRATHS W ESTES, J. E. Satellite scatterometer feasibility study. Volume 1: Technical results
[ESA-CR(P)-1492-VOL-1] p0133 N82-19650 Flexible processing of remote sensing data through integration of image processing and geobased informati p0116 A82-27667 Program on stimulating operational private sector use of Earth observation satellite information GILG, W. Satellite scatterometer feasibility study. Volume 1: ESTES I M Digital correlation of DDRS data [NASA-CR-167494] Technical results DO118 N82-16452 pO138 N82-21660 p0133 N82-19650 [F82-10131] [ESA-CR(P)-1492-VOL-1] ESTES, R. H. FRANCIS, C. R. Some new methods in geomagnetic field modeling applied to the 1960 - 1980 epoch Imaging microwave radiometer. Phase A study. Volume 1: Executive summary GLOBA G. IA. Construction of digital models of statistically uniform Construction of digital models of multispectral space p0117 A82-28144 [NASA-TM-83868] n0083 N82-17714 p0132 N82-18564 [ESS/SS-1006] EVANS, W. F. J. FRANKLIN, J.

Scene analysis for wildland fire-fuel characteristics in a GLOERSEN, P. Mid-latitude summertime measurements of stratospheric An optical model for the microwave properties of sea NO2 DO074 A82-25149 p0060 A82-27624 Mediterranean climate FRASER, R. S.

The effect of finite field size on classification and EVERSON N A [NASA-TM-83865] p0095 N82-17561 Publications and reports on contracts and grants, 1980 [PB82-103219] p0138 N82-17792 GLUSHKO, E. V. atmospheric correction [NASA-TM-83818] Reconstruction of a present-day landscape map of a EVSIUKOV, N. N.

Possibilities of using experience gained from the thematic p0120 N82-19645 central part of Italy using space images FRIDMAN, SH. D. n0081 A82-20340 Evaluation of snow-cover pollution in industrial region p0103 A82-27464 methods p0083 A82-28138 using satellite TV images
FRIEDMAN, A. L. GODA. L Investigation of silting and currents in Lake Balaton by use of hydraulic models and aerial and space photographs p0104 A82-27472 Airborne remote sensing in east Greenland F p0090 A82-27695 FRIEDMANN, D. E GOETZ, A. F. H. Operational resampling for correcting images to a eccoded format p0114 A82-27590 A data base of geologic field spectra FAINTICH, M. B.
Matrix data analysis: Color/B and W coding is not always n0090 A82-27600 geocoded format The use of digital terrain model in the rectification polling imagery polling A82-276 GOLDBLATT, I. A. enough [AD-A108406] pO115 A82-27626 p0084 N82-18930 An evaluation of the utility of smaller Landsat resolution FROBIN, W. FARAH, J. L. elements / Resolution of Landsat resolution p0114 A82-27625 Analysis of a discrete-time linear model for geothermal Calibration and model reconstruction in analytical close-range stereophotogrammetry. I - Mathematical fundamentals p0111 A82-20403 flux reconnaissance from two or three aircraft infrared GOLDFINGER, A. D. measurements p0075 A82-27627
Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto, Mexico Optimal spatial filtering and transfer function for SAR Calibration and model reconstruction in analytical ocean wave spectra close-range stereophotogrammetry. II - Special evaluation procedures for rasterstereography and moire topography GOMEZ, G.
Program on stimulating operational private sector use of Earth observation satellite information p0117 A82-27693 p0126 A82-22141 Development and implementation of a low cost micro FRUTKIN, A. W. [F82-10131] p0138 N82-21660 computer system for Landsat analysis and ge Earth sensing from space - Commercial and interr GONFREVILLE, P. p0129 A82-27649 p0138 A82-27669 Towards an operational SPOT system - A preliminary political polit FAVARD, J.-C. FUGONO. N Airborne remote sensing in east Greenland Remote sensing of rainfall rates using airbo GONIN G B p0090 A82-27695 rain-scatterometer/radiometer p0105 A82-27639 Spaceborne photography for the study of earth sources p0126 A82-22397 resources A system for quantitative determination of species and A system for quantitative determination of species and vitalities of urban trees on color-infrared oh vitalities of urban trees on color-infrared photo p0074 A82-24958 Towards the definition of optimum sensor specifications DO074 A82-24958 for microwave remote sensing of snow FUJIMURA. S. p0125 A82-21035 An intelligent earth sensing information system Exterior algebraic processing for remotely sensed multispectral and multitemporal images p0137 A82-22149 GOODENOUGH, D. G. Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 FEDCHENKO, P. P. nO112 A82-21041 The spectral reflectance of certain soils DO059 482-26577 Relief effects and the use of terrain models in SAR image Microwave remote sensing: Active and passive. Volume p0086 N82-21475 FEDINA, A. E. processing

GOODFELLOW, L. C.

The use of digital multi-date Landsat imagery in terrain p0111 A82-20409 1 - Microwave remote sensing physical-geographical mapping and radiometry p0126 A82-22877 classification of the eastern part of the Checker ASSR using space imagery p0073 A8 p0073 A82-20339 FURMAN, M. D. Development and implementation of a low cost micro GOODIER, B. G. Demonstration of a long-range atmospheric tracer system computer system for Landsat analysis and geographic data base application p0129 A82-27649 Methods of editing cloud and atmospheric layer affected using perfluorocarbons [PB82-106246] nixels from satellite data DO081 N82-16613 [E82-10046] p0119 N82-19621 FETT, W. GRAHAM, M. H.
ELAS - A geobased information transferable to several computers pi Optimal network density for atmospheric recording G p0079 N82-20776 on system that is p0115 A82-27666 FILHO, L. G. M. GAGE, S. H. System of forecasting agricultural crops using satellite observations of Earth [E82-10079] Application of satellite frost forecast technology to other Some peculiarities of formulation and solution of inverse

parts of the United States, phase 2

Preliminary models of the core field [E82-10129]

Calcium carbonate precipitation in Pyramid Lake, Nevada, as monitored by satellite - 1978 and 1980

p0121 N82-20607

p0105 A82-27634

p0087 N82-21659

[NASA-CR-166827]

GALAT, D. L.

GALDEANO, A.

n0067 N82-20602

p0078 N82-19641

n0066 N82-19640

Methodology of the interpretation of remote sensing data

Method of interpretation of remote sensing data and

FILHO, M. V.

and applications in pedology [INPE-2211-MD/008]

applications to vegetation [INPE-2215-MD/010]

p0093 A82-21921

id radar signature of p0093 A82-21917

p0069 N82-21648

problems in microwave radiometry of the ocean surface

A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect

SASS measurements of the Ku-band radar

GRANTHAM, W. L.

the ocean

GREEGOR, D.

[E82-10107]

Methods for the processing of synthetic-aperture radar signals when solving problems of the national economy /Review/ p0113 A82-26726

I. viewing system for studying the earth's p0125 A82-21022

GREEN, K. M. HARLAN, J. C. HOELZL H. Dryland pasture and crop conditions as seen by HCMM [E82-10074] p0067 N82-20597 Satellite scatterometer feasibility study. Volume 1: Digital processing of tropical forest habitat in Bangladesh and the development of a low cost processing facility at Technical results p0133 N82-19650 SA-CR(P)-1492-VOL-1] the National Zoo, Smithsonian Institution HARRIS, R. DO063 A82-27687 An experiment in probabilistic relaxation for terrain cover HÖFER, R. An experiment in probabilistic remaching in the classification of Kuwait from Landsat imagery p0062 A82-27680 GRIESBACH, J. C.
Mapping in tropical forests - A new ap laser APR Comparison of conventionally measured sea surface temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 approach using the p0081 A82-20407 HARRISON, C. G. A. GRIFFIN, C. R.
Digital correlation of DDRS data
[NASA-CR-167494] HOFMAN, D. J. Ozone measurements to 48Km with chemiluminescent nO118 N82-16452 ozone detectors p0134 N82-21808 [AD-A110342] GRUEN, A. HARRISS, R. C. Influence of dissolved organic materials on turbid water The accuracy potential of the modern bundle block HÖFMANN, O. Digital photography techniques HOLGUIN, O. J. adjustment in aerial photogrammetry p0111 A82-20401 optical properties and remote-sensing reflectance p0093 A82-20445 GUENTHER G C Error analysis of pulse location estimates for simulated bathymetric lidar returns Partially processed multispectral scanner LANDSAT high-density tapes reformatting system (HDT-AM/AMC) HART, W. D. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 DO096 N82-17803 ion specifications [PB82-109448] GUIGNARD, J. P [E82-10020] nO118 N82-16438 HONEY, F. R. Overview of digital processing of SAR data HATAKEYAMA, Y. p0128 A82-27589 A vegetation response model applied to range inventory A formation process of an oceanic GUINDON B vortex analyzed by p0095 A82-27674 and monitoring using Landsat MSS data Digital analysis of spatial and spectral features from airborne M\$S of a forested region p0061 A82-276 multi-temporal remote sensino A low cost NOAA/TIROS AVHRR receiving station p0130 A82-27681 20060 A82.27643 p0061 A82-27647 HAUSE, D. Relief effects and the use of terrain models in SAR image Remote sensing applications to resource problems in processing GUPTA, R. P. DO086 N82-21475 South Dakota HONVALUT, C. pO132 N82-16445 The first ESA remote sensing satellite : [E82-10027] p0094 A82-27608 Geotechnical applications of Landsat image analysis of hakra Dam Reservoir, India 00102 A82-26838 HÄWK, J. R. HOOGEBOOM, P.
The Dutch ROVE program
HOOPER, N. J. Bhakra Dam Resi Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 GURGANUS, E. A. n0057 A82-21026 uence of dissolved organic materials on turbid water HEFFTER, J. L. p0095 A82-27684 for operational in optical properties and remote-sensing reflectance Response of the marine community to satellite-derived Demonstration of a long-range atmospheric tracer system p0093 A82-20445 Laboratory upwelled radiance and reflectance spectra of oceanic information
An analysis of using perfluorocarbons [PB82-106246] on user requirements for operational land p0116 A82-27685 n0081 N82-16613 satellite data Kerr reservoir sediment waters HEILMAN, J. L. INASA-TP-1993] nO110 N82-21774 HORITA, M. GURNEY, C. M.

The use of contextual information to improve land cover HCMM detection of high soil moisture areas without ship PAPA p0093 A82-19139 Analyses of the Eastern Pacific p0059 A82-24963 HELD, D. HORTON, C. L. classification of digital remotely sensed data p0112 A82-21094 Simulation and studies of spaceborne synthetic aperture radar image quality with reduced bit rate As-built des [E82-10092] design specification for the CLASFYG program GUSEV. A. V. p0068 N82-21644 p0128 A82-27594 HÖRVATH, R. Classification of systems for digital terrain si Documentation of computer procedures for labeling spring grains and discriminating between spring wheat and barley using LANDSAT data [E82-10030] p0063 N82-16448
Notes for Brazil sampling frame evaluation trip HELD, D. N. o0117 A82-28468 GUSTIN, A. V Seasat data utilization project [NASA-CR-168557] p0097 N82-18660 Natural resources inventories by computer-satellite mapping techniques in Chaco State, Argentine Republic, HERBERT, P. Snow cover monitoring using AVHRR data from TIROS and NOAA satellites p0105 A82-27614 p0116 A82-27688 | Notes for place | 2000 | 00066 NB2-19030 | 00066 NB2-19030 | 00070 NB2-21658 | 000 GUTTERIDGE, L Features of a generalized digital Synthetic Aperture Radar ocessor p0128 A82-27595 HERMANCE, J. F. Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the processor HOUGHTON, W. M.
Influence of dissolved organic materials on turbid water regional emplacement of crustal resources н p0084 N82-19618 [E82-10043] optical properties and remote-sensing reflectance Electromagnetic deep-probing (100-100 KMS) of the Benth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources [E82-10044] p0085 N82-19619 p0093 A82-20445 H-MILLER, S. Application of HCMM data to regional geologic analysis for mineral and energy resource evaluation [E82-10137] p0092 N82-21664 Evaluation of two AN/APS-94 side-looking airborne radar systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 Electromagnetic deep-probing (100-1000 KMS) of the HOWARTH, P. J. HAAS R. H. Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources Change detection in the Peace-Athabasca Delta using gital Landsat data p0101 A82-24959 Assessing mesquite-grass vegetation condition p0087 N82-21679 Landsat p0059 A82-25457 [E82-10155] HAERING, P. HERNANDEZ. R. Analyses of the Eastern Pacific without ship PAPA p0093 A82-19139 Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto, Mexico p0117 A82-27693 HOWE, R. C. data Non-parametric classification of abandoned coal mine features using multipriented and ratio transformed Landsat HAIMERL, M. Satellite scatterometer feasibility study. Volume 1: Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 HERSCHY, R. W p0090 A82-27694 Detection of natural disasters via Meteosat HUCKLE, H. F. o0075 A82-27040 Taxonomic classification of world map units in crop oducing areas of Argentina and Brazil with representative HAIVALA, H. HICKS, D. Remote sensing applications to resource problems in South Dakota 1981 Argentina ground data collection US soil series and major land resource areas in which they [E82-10127] p0070 N82-21658 [E82-10058] HUMMER-MILLER, S. [F82-10027] nO132 NR2-16445 p0065 N82-19633 HICKS, D. R. HALL, A. J. Notes for Brazil sampling frame evaluation trip Registration of heat capacity mapping mission day and Flash flood forecasting p0066 N82-19635 [E82-10060] [WMO-577] p0107 N82-18671 p0113 A82-22146 HIDE. R. HUNEYCUTT, B. HALLADA, W. A. Spherical harmonic representation of the main geomagnetic field for world charting and investigations of Flexible processing of remote sensing data through integration of image processing and geobased information systems p0116 A82-27667 Simulation and studies of spaceborne synthetic aperture radar image quality with reduced bit rate some fundamental problems of physics and geophysics p0128 A82-27594 [E82-10075] p0086 N82-20598 HUSAR, R. B. HANCOCK, D. W. HIERHOLZER F Airborne in-situ measurement of particulate sulfur and sulfuric acid with flame photometry and thermal analysis NOSS altimeter algorithm specifications [NASA-RP-1083] n00 Calibration and model reconstruction in analytical close-range stereophotogrammetry. I - Mathematical fundamentals p0111 A82-20403 p0095 N82-16683 p0073 A82-20999 HANNAFORD, J. F. HUTCHINSON, C. F. Applications systems verification and transfer project.
Volume 3: Operational applications of satellite snow cover
observations in California
[NASA-TP-1824] p0108 N82-20619 Calibration and model reconstruction in analytical Techniques for combining Landsat and ancillary data for digital classification improvement p0111 A82-20410 close-range stereophotogrammetry. II - Special evaluation procedures for rasterstereography and moire topography p0126 A82-22141 HYDE, R. F. ation of the utility of smaller Landsat resolution HANS, P.
Satellite scatterometer feasibility study. Volume 1: HILAU, E. A. elements / Resolution of Landsat resolution/ Remote sensing applied to baser calcareous High Atlas / Morocco/ nent tectonics of the p0089 A82-26014 p0114 A82-27625 Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650 HIXSON, M. M.
Evaluation of a segment-based LANDSAT full-frame Satellite scatterometer feasibility study. Volume 2: Data extraction algorithm and error simulation for wind sensor [ESA-CR[P]-1492-VOL-2] p0133 N82-19651 ı approach to corp area estimation [E82-10067] n0066 N82-20590 HANSEN, R. F. Determination of the optimal level for combining area IABLONSKII, L. I. Wheat stress indicator model, Crop Condition Assessment Division (CCAD) data base interface driver, user's manual and yield estimates Complex examination of photorectifiers n0071 N82-21673 p0131 A82-28466 [E82-10031] p0064 N82-19607 IANOVICH, A. V.

HODGES, T. Preliminary

spectral,

p0065 N82-19634

US crop calendars

DO072 N82-21682

IASINSKII, G. I. Thermal vie

resources

evaluation of

meteorological crop stage estimation approac [E82-10059] o0065

82-10039j AgRISTARS: Supporting research.

in support of the early warning project [E82-10158]

[E82-10115]

HARALICK, R. M.

Wheat stress indicator model, Early Warning (EW) data

ALICK, n. m. Spatial reasoning in remotely sensed data p0105 A82-27592

p0069 N82-21652

base interface driver, user's manual

PERSONAL AUTHOR INDEX KOVALENOK, V. V.

JUSTICE, C. KIRBY, M. E. IDSO, S. B. Comparisons of laser profilometer sea ice roughness statistics with surface truthed data and SLAR imagery p0094 A82-27619 Humidity measurement by infrared thermometry Information extraction from remotely sensed data Ar view p0112 A82-21089
A comparison of unsupervised classification procedures p0075 A82-26844 of attributes applied to multis on LANDSAT MSS data for an area of complex surface KIRKPATRICK, B.
Program on stimulating operational private sector use of Earth observation satellite information [INPE-2303-TDL/072] conditions in Basilicata, Southern Italy p0121 N82 19927 [E82-10038] p0119 N82-19613 IISAKA, J. p0138 N82-21660 Phenomena modelling of remotely sensed data by image [F82-10131] rationing p0076 A82-27670 KISELEVSKII, L. I. Κ Color characteristics of the earns and a salvut 4 on the basis of spectroscopy results from Salyut 4 p0073 A82-19826 Exterior algebraic processing for remotely sensed KAHLE, A. B. multispectral and multitemporal images p0112 A82-21041 A data base of geologic field spectra n0090 A82-27600 Detection of volcanic ash fall area from Landsat MSS CCT data Eruption of Mt. Ontake in 1979 INOMATA, H. Remote sensing of rainfall rates using a p0076 A82-27650 A regional air quality model for the Kwinana industria rain-scatterometer/radiometer p0105 A82-27639 p0075 A82-26403 area of Western Australia KLEINTZ. M. KANE, R. P.
Comparison of storm-time changes of geomagnetic field Sea state measurement with a two frequency scatterometer (theory)
[ESA-TT-710] p0096 N82-17802 The Japanese MOS and Los program DO129 A82-27606 at ground and at MAGSAT altitudes p0087 N82-21675 [F82-10148] Scientific lectures on aviation and astronautics 1980 KLEMAS, V. KAPLAN, F. B. p0137 A82-27501 Locating prehistoric archaeological sites using Landsat Development and applications of techniques to process nO129 A82-27638 IUNG, E. hydrometeor distribution data KLOSE, J. C.
The Seasat low rate data processing system Interpretation of multispectral aerial photographs of Lake AD-A109929 p0109 N82-20822 p0104 A82-27473 Mueggelsee KARAKHANIAN, A. S. p0093 A82-24061 The relationship between seismicity and lineaments of the Anatolian-Caucasian-Iranian segment of the lediterranean fold belt p0089 A82-20341 the KLUMPH, S. G. Landsat MSS applied to rangeland management in Western Canada p0063 A82-27697 J KASISCHKE, E. S. The use of wave contrast measurem of SAR/gravity models
KATERGIANNAKIS, U. KNAPP, M. JACKSON, R. D. p0130 A82-27675 ermal IR detection of submarine gas seepages in the Dew and vapor pressure as complicating factors in the Dew and vapor pressure as complicating interpretation of spectral radiance from crops p0060 A82-27617 western Istra off-shore area /Yugoslavia/ DO076 A82-27661 Dust from the Sahara in satellite images p0079 N82-20802 KNIZHNIKOV, IU. F. Survey and mapping of shallow water bodies and the distribution of the river runoff of solids on the basis of multispectral aerial and space photographs Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 Utilisation of remote sensing in resources identification and land use in India - An integrated approap0075 A82-26700 p0076 A82-27701 p0103 A82-27467 KAUFMAN, Y. J. JAIN, S. C. The atlas 'Geographic Results s of Spaceborne p0077 A82-28133 Passive bathymetric measurements in the Bruce Contrast reduction by the atmosphere and retrieval of Multispectral Experiments' pouniform surface reflectance p0112 A82-20423
The effect of finite field size on classification and insula region of Ontario p0129 A82-27642 Assessment of the quality of GATE area rainfall data Ionospheric troughs in Antarctica p0073 A82-21217 atmospheric correction NASA-TM-83818] p0120 N82-19645 from a Nimbus-5 radiometer JAWORSKI, E. [NASA-Im-660..., KAZMIN, A. S. The use of Meteor-satellite [NASA-CR-168512] p0109 N82-20807 CMM night-time thermal IR imaging experiment in poll15 A82-27655 KOBRICK, M. image data in p0093 A82-20344 A shuttle scanning laser altimeter for topographic apping p0083 A82-27632 JEAN. B. R oceanography
KEAFER, L. S., JR.
Mission definition for a large-aperture microwave
p0131 N82-16155 Volumetric effects in cross-polarized airborne rader ata p0058 A82-21032 mapping KOBZEV. V. N. JEANSOULIN. R. Correlation identification of stellar configurations for Field-by-field multitemporal analysis of aerial scanner data geometrically corrected by means of a sliding model p0115 A82-27651 KECHICHIAN, J. A.

Topex orbit sustenance
[AIAA PAPER 82-0202] purposes of the coordinate referencing of aerial and space p0117 A82-28141 ce maneuver design 2] p0094 A82-27091 KOHLI, S. JINICH, A. KEEFER, T. N. Airborne in-situ measurement of particulate sulfur and Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto, Mexico p0117 A82-27693 Strategies for using remotely sensed data in hydrologic sulfuric acid with flame photometry and nd thermal analysis p0073 A82-20999 [E82-10156] n0109 N82-21680 KOLLENKARK, J. C. JOBUSCH, C. D. KEENE, G. T.
A concept for an advanced earth res Influence of solar illumination angle on soybe flectance p0063 A82-28153
Soybean canopy reflectance as influenced by cultural Determination of the optimal level for combining area p0127 A82-27579 and yield estimates [E82-10146] p0071 N82-21673 KELLER, H. J. JOHNSON, D. R. A system for quantitative determination of species and vitalities of urban trees on color-infrared photographs p0074 A82-24958 [E82-10105] DO068 N82-21647 KOLTSOV, I. M. The development and testing of methods to infer midlatitude precipitation intensity from geosynchronous Characteristics of the use of laser-mirror scanners for atellite infrared data image processing in cartography and aerial photo [AD-A108881] p0117 A82-28143 p0120 N82-19788 Modern methods for monitoring and controlling the JOHNSON, E. R. KONDIURIN, V. D. timeliness, accuracy, and completeness meteorological analysis p00 A photometric method for depth determination by aerial photography p0101 A82-19831 KONDO, S. Strategies for using remotely sensed data in hydrologic p0073 A82-19179 KERR, J. B. 82-10156] p0109 N82-21680 Mid-latitude summertime measurements of stratos JOHNSON, M. P. NO2 n0074 A82-25149 The location of three-dimensional linear objects by using Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10046] p0119 N82-19621 p0111 A82-20404 multiple projections KEYDEL, W. Application and experimental verification of an empirical The spectral reflectance of certain soils Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] p0123 N82-21678 backscattering cross section model for the earth's surface p0059 A82-26577
The possibilities of microwave remote sensing for the p0081 A82-21036 KHORRAM, S. study of water resources and their pollution Remote sensing of salinity in the San Francisco Bay p0102 A82-27458 JOHNSTON, I. L. p0102 A82-26839 Enhancement of Landsat data for Hudson Bay lowlands KONDRATOVA, IU. I. KIEFER, A. W. Wetland mapping from digitized [E82-10019] Landscape mapping and physical-geographical classification of the eastern part of the Chechen-Ingush, p0114 A82-27623 JONES, M. the Chechen-Ingush, p0073 A82-20339 p0118 N82-16437 ASSR using space imagery Image quality control in the Meteosat ground processi Multidisciplinary research on the application of remote p0125 A82-21090 JONES, P. H. Program on stimulating operational private sector use of Earth observation satellite information ensing to water resources problems [E82-10021] Use of thermal inertia determined by HCMM to predict n0106 N82-16439 nocturnal cold prone areas in Florida KIENKO, IU. P. [FR2-10131] p0138 N82-21660 p0064 N82-19615 KORNEEV, IU. N. Present and future studies of natural resources and the Use of thermal inertia determined by HCMM to predict environment from space p0138 A82-27506 Analytic methods of geodetic ontopographic images p referencina nocturnal cold prone areas in Florida Experience with a variety or studies ...
in the Kalmyk ASSR using space imagery p0131 A82-28130 p0083 A82-28134 p0071 N82-21681 JONES, R. M. The relationship between seismicity and lineaments of Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection [PB82-113283] p0096 N82-17805 Anatolian-Caucasian-Iranian KIMBALL, A. W. Mediterranean fold belt p0089 A82-20341 Orbital performance of a 1.6 micrometer snow/cloud discrimination sensor p0130 Al p0130 A82-27653 KOSCEC, B Thermal IR detection of submarine gas seepages in the JORDON, L E., III KINDELAN, M. Development and implementation of a low cost micro computer system for Landsat analysis and geographic data base application p0129 A82-27649 western Istra off-shore area /Yugoslavia/ p0076 A82-27661 Geometric correction of airborne multispectral scanne

p0130 A82-27706

p0117 A82-28343

p0065 N82-19634

evaluation of spectral, normal and

KINNUCAN, P.

KINSLER, M. C.

p0074 A82-26329

Earth-scanning satellites lead resource hun-

Preliminary evaluation of spectral, meteorological crop stage estimation approx [E82-10059]

JOSEPH. D. W.

JUNGMAN, L. J.

n investigation of the ozone plume from

Remote sensing in Latin America: Technology and markets for the 1980's [AD-A108784] p0138 N82-20626

KOVAL, A. D.

earth from space

The effectiveness of instrumented visual studies of the The enterune earth from space program for the long-term orbital polising for the long-

KOVALENOK, V. V.
The effectiveness of instrumented visual stu

p0114 A82-27505

LIANG, T. An airphoto key for major tropical crops p0058 A82-22142 The earth resources program for the long-term orbital ation Salyut 6 p0131 A82-28132 LAMOIS DOWNS A Use of GOES and TIROS/NOAA satellite data ow-cover mapping p0101 A82-221 p0101 A82-22145 KOVALEV. A. A. LANGEL, R. A. Color characteristics of the earth's surface determined on the basis of spectroscopy results from Salyut 4
p0073 A82-19826 Some new methods in geomagnetic field modeling applied to the 1960 - 1980 epoch Detailed land use classification based of andsat-MSS-data p0 p0076 A82-27657 KOWALIK, W. S. [NASA-TM-83868] n0083 N82-17714 LICHY, D. E. A relation between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle p0114 A82-26841 Integrated sensor system for collection of wave data applied to coastal engineering design p0094 A82-27602 LANZ, K. NAC. n. Strategies and uses of small distributed analysis centers as in the natural resource inventory of Venezuela p0115 A82-27636 LIFANOV, P. S. Methods for the processing of synthetic-aperture radar signals when solving problems of the national economy KOZAK, R. C.
Cliff and slope topography of part of the Grand Canyon.
Arizona as characterized on a Seasat radar image
p0082 A82-26843 LARABEE, J. K. p0113 A82-26726 An optical model for the microwave properties of sea LILLESAND, T. M. ESAND, T. W.
Use of GOES and TIROS/NOAA satellite data for now-cover mapping p0101 A82-22145 KOZHEVNIKOV, B. K. [NASA-TM-83865] p0095 N82-17561 Structure of hardware and software at a regional center for the automated processing of aerial and space LAUTENSCHLAGER, L. LILLEY, F. E. M. aerial and space p0130 A82-28128 Registration verification of SEA/AR fields
[E82-10083] p0068 N82-21635 remote-sensing images p0130 A82-2
KOZODEROV. V. V.
Evaluation of the state of crops from satellite data Ideal phase in estimating the spatial gradient of magnetic daily variations recorded by magnetometer arrays LAVKUUCH, L M.
The use of digital multi-date Landsat imagery in terrain
p0111 A82-20409 neter arrays p0127 A82-26000 n0059 A82-27393 LIND A Applications of aircraft and satellite data for the study of archaeology and environment - Mekong Delta, Vietnam p0091 A82-27705 KRASNIKOV, D. N. Thermal viewing system for studying the earth's sources p0125 A82-21022 LAVROVA, N. P. Construction of digital models of statistically uniform LINDELL, L. T. characteristics on the basis of multispectral space imagery p0117 A82-28144 KRASNOPEVTSEVA, B. V. Mapping of water quality using Landsat imagery p0106 A82-27692 The use of spac-water-amelioration maps p0106 A82-28137 LAZAREWICZ A R MAGSAT anomaly profiles of the eastern Indian Ocean 82-10066] p0086 N82-20589 KRASNOV. V. I. LINDER, R. L. Optimal methods of computerized image conversion p0111 A82-19833 Spectral reflectance of hydrophytes p0102 A82-24960 [E82-10066] UNDNER, A. J.
Satellite observed cloud patterns associated with LEAF, C. F. KRAVCHENKO, IU. A. Applications systems verification and transfer project. excessive precipitation outbreaks [PB80-215130] Classification of systems for digital terrain simulation Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center p0117 A82-28468 p0073 A82-19177 observations. Col [NASA-TP-1825] KRAVTSOVA, V. I. p0108 N82-20620 LING, H. S. Survey and mapping of shallow water bodies and the distribution of the river runoff of solids on the basis of multispectral aerial and space photographs Sampling for thematic map accuracy testing LEATON, B. R.

Spherical harmonic representation of the main geomagnetic field for world charting and investigations of p0111 A82-20411 n0103 A82-27467 Airhorne laser systems use in terrain manning some fundamental problems of physics and [E82-10075] p0086 N The atlas 'Geographical Results s of Spaceborne p0077 A82-28133 p0082 A82-27584 p0086 N82-20598 Multispectral Experiments'
KRESSMAN, R. I. Thermal vegetation canopy model stu LECHL G. p0064 N82-16455 [AD-A106422] Heat Capacity Mapping Mission (HCMM) program: Study UNO, C. D.

General configuration and internal disposition of equipment in a satellite for collecting environmental data [INPE-2240-PRE/026] p0078 N82-19256 heric troughs in Antarctica p0073 A82-21217 of geological structure of Sicily and other Italian areas [E82-10073] Demonstration of a long-range atmospheric tracer system LEDESMA, L. L. using perfluorocarbons LIPES, R. G.
Seasat data utilization project
[NASA-CR-168557] p0081 N82-16613 Natural resources inventories by computer-satellite mapping techniques in Chaco State, Argentine Republic, South America p0116 A82-27688 KRIULKOV, V. A. p0116 A82-27688 p0097 N82-18660 Noncontact methods for the quality control of water p0104 A82-27475 LEF. D. C. L. LITMAN, V. Utilization of Aerochrome 2443 film for identification lines for spaceborne microwave remote sensors
RP-10861 p0133 N82-19647 Guide A radar signature model for partially coherent scattering and estimating wheat growing areas [INPE-2197-PRE/006] [NASA-RP-1086] from irregular surfaces p0079 A82-21038 p0066 N82-19639 UU. H.-S. LOV. S. L. Optimal methods of computerized image conversion p0111 A82-19833 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume Ore deposits in Africa and their relation to the underlying p0090 A82-26604 LIUBOVNYI, N. D. KUEHNLE, A [E82-10071] p0067 N82-20594 The use of data from satellite-borne microwave scanning radiometers for the automated compilation of operational maps of ice cover for the Arctic Ocean Satellite scatterometer feasibility study. Volume 1: Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] Technical results [ESA-CR(P)-1492-VOL-1] nO133 N82-19650 p0067 N82-20600 p0095 A82-28145 KULKOV, N. V.

Structure of hardware and software at a regional center LEMOUEL, J. L. Preliminary models of the core field [E82-10129] Applications systems verification and transfer project. for the automated processing of p0130 A82-28128 p0087 N82-21659 Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover Volume mote-sensing images Continuation of potential field data to a common Implementation of the Space Oblique Mercator projection a production environment p0129 A82-27628 bservations [E82-10138] [NASA-TP-1828] nO123 N82-21665 p0109 N82-20623 in a production environment Separation of internal and external fields: A new LOATS, H. KUMAR, S. S. rique of data screening Applications systems verification and transfer project. Satellite sensing for extraction of groundwater rese p0123 N82-21666 [F82-10139] Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover information nO105 A82-27613 LENNINGTON, R. K. KUPRHANOV, V. V. Aerospace methods for the study of water resources and their pollution p0102 A82-27457 Evaluation of large area crop estimation technic bservations p0061 A82-27662 [NASA-TP-1828] p0109 N82-20623 LEPRIEUR. C. LODWICK, G. D. KUZMICHEV V. V. Topographic mapping using Landsat data Snow cover monitoring using AVHRR data from TIROS and NOAA satellites p0105 A82-27614 Remote sensing of the structure of taiga landscapes p0059 A82-27397 p0082 A82-27615 LESNIK, IU. N. LOMBARDO M. A. The effect of anthropogenic factors on the dynamics of lakes in the plains of Central Asia /studied on the basis emote sensing data applied to land-use survey at the Primary processing of and possibilities of using data from the meteorological satellite TIROS-N p0103 A82-27470 Paraiba Valley n0081 N82-16443 p0103 A82-27469 of space photographs/ [E82-10025] LEVINE, D. M. Comparison Land use in the Paraiba Valley through remotely sensed Comparison of sigma/deg/ obtained from the conventional definition with sigma/deg/ appearing in the radar equation for randomly rough surfaces [E82-10072] DO079 N82-20595 LOPATIN. D. V. тасеs p0112 A82-21039 LABUTINA, I. A.
Experimental evaluation of methods of the automated interpretation of crops from a Fragment MSS image p0057 A82-20349 Structural analysis of the basement of the East European platform by remote sensing methods p0089 A82-20342 Implementation of the Space Oblique Mercator projection a production environment p0129 A82-27628 LOPEZ. A. Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto.

Mexico p0117 A82-27693 LEVITSKII, I. IU. Survey and mapping of shallow water bodies and the Possibilities of using experience gained from the thematic mapping of the moon in studies of earth resources by remote sensing methods p0083 A82-28138 distribution of the river runoff of solids on the basis of multispectral aerial and space photograph: LOUGEAY, R. GEAY, R.
Landsat thermal imaging of alpine regions
p0079 A82-22147 p0103 A82-27467 LAIRET, R. Simulation and studies of spaceborne synthetic aperture radar image quality with reduced bit rate Strategies and uses of small distributed analysis centers LOVELACE, U. M. as in the natural resource inventory of Venezuela p0128 A82-27594 The microwave radiometer spacecraft. A design study p0115 A82-27636 p0131 N82-16154 Executive summary U. R. Y. LAKHTANOV, G. A. Crop classification using airborne radar and Landsat p0058 A82-21033 LOWES, F. J. Polarimetric method for the remote sensing of oil slicks Spherical harmonic representation of the main geomagnetic field for world charting and investigations of data U, T. C. on the sea surface o0095 A82-28135 emission using a LALLY, J. P. Measurement of atmospheric some fundamental problems of physics and geophysics E82-10075] p0086 N82-20598 Measurement of authosphienc summer balloon-borne cryogenic Fourier spectrometer p0074 A82-21432 [F82-10075] Development and applications of techniques to process hydrometeor distribution data [AD-A109929] LOWITZ, G. E. nO109 N82-20822 LIAN M. S. Data rate reduction. Impact of image data compression

Low-latitude cloudiness and climate feedback

p0075 A82-26980

Comparative estimates from satellite data

on end to end data management of a multispectral

p0120 N82-19654

[REPT-44/130]

Seasat data utilization project [NASA-CR-168557]

p0097 N82-18660

LUCHT, L. A. M.

Utilization of Aerochrome 2443 film for identification and estimating wheat growing areas
[INPE-2197-PRE/006] p0066 N82-19639 MARINI A MCMILLAN J D Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas [E82-10073] p0091 N82-20596 NOSS altimeter algorithm specifications
[NASA-RP-1083] p0095 N82-16683 MCPHERRON R I HERRON, R. L. Harmonic structure of Pc 3-4 pulsations p0082 A82-26266 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume MARINO, C. M. Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 E82-100711 p0067 N82-20594 Some new methods in geomagnetic field modeling applied to the 1960 - 1980 epoch MARKHAM, B. L. Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 Land cover classification accuracy as a function of sensor patial resolution p0076 A82-27665 p0083 N82-17714 [NASA-TM-83868] spatial resolution MEAD, R. A. LUCY, R. F.
Spectritek - A multispectral electron-optic pushbroom
p0129 A82-27633 MARSH S F Landsat classification accuracy assessment procedures p0137 A82-20412 relation between Landsat digital numbers, surface reflectance, and the cosine of the solar zenith angle p0114 A82-26841 MEADOR R Resourceful decisions: LANDAT in Michigan
[E82-10037] p0078 N82-19601 LUKES, G. E. MARTIN, D. W. Computer-assisted photo interpretation research at monitoring p0101 A82-22873 The use of satellite data in rainfall m USAFTI MEISNER, D. E.
Use of GOES and TIROS/NOAA satellite data for [AD-A109366] p0121 N82-20628 MARTIN, M. V. LULLA K Evaluation of large area crop estimation technique snow-cover mapping p0101 A82-22145 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 p0061 A82-27662 MARTIN. P. Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 Direct determination of the two dimensional image spectrum from raw synthetic aperture radar data p0122 N82-21474 MELYKUTI, G. Experimental evaluation of methods of the automated Area determination by means of the method of finite interpretation of crops from a Fragment MSS image p0057 A82-20349 MARTINKO, E. A. p0082 A82-26048 The application of remote sensing to resource management and environmental quality programs in MENDEZ R Application of machine processing of visible and thermal data to the study of the geothermal area of Cerro Prieto. Mexico p0117 A82-27693 LUTJENARMS, J. R. E. Interaction between the Agulhas current and the Kansas [E82_10020] n0063 N82-16447 subtropical convergence [CSIR-RR-384] MARTSOLF, J. D. MENDONCA, F. J. p0098 N82-20824 Use of thermal inertia determined by HCMM to predict LYCTHUAN-LEE, T. G. Use of Landsat data for automatic classification and area nocturnal cold prone areas in Florida estimation of sugar-cane plantation in Sao Paulo state, Brazil p0058 A82-21092 Utilization of Aerochrome 2443 film for identification Development of rotation sample designs for the estimation of crop acreages [E82-10040] p0064 N82-19615
Application of satellite frost forecast technology to other [E82-10117] p0070 N82-21654 parts of the United States, phase 2 parts of the United Season policy | p0121 N82-2000. | N8A-CR-166827| p0121 N82-2000. | A satellite frost forecasting system for Florida p0079 N82-20615 | p0079 N82-20615 LYON .I G and estimating wheat growing areas [INPE-2197-PRE/006] p0066 N82-19639 Seasat imagery for detection of coastal Wetlands Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume p0063 A82-27700 LYON, R. J. P.
A relation between Landsat digital numbers, surface Use of thermal inertia determined by HCMM to predict Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data
[E82-10077] nocturnal cold [E82-10157] cold prone areas in Florida reflectance, and the cosine of the solar zenith angle p0071 N82-21681 p0114 A82-26841 MASUKO, H. Strategies and uses of small distributed analysis centers Remote sensing of rainfall rates using airborne microway rain-scatterometer/radiometer p0105 A82-2763 as in the natural resource inventory of Venezuela p0105 A82-27639 MENVIELLE, M.
Separation of internal and external fields: A new technique of data screening
[EB2-10139] p0123 NB2-21666 p0115 A82-27636 Integration of LANDSAT with geology and airborne Evaluation of HCMM satellite data for estuarine tidal ion of LANDSAT with geology and a into an operational mineral exploration system p0091 N82-16446 circulation patterns and thermal inertia soil moisture measurements geophysics int [E82-10028] MERCHANT, J. W.
Utilization of spatial complexity in computer classified
Landsat MSS data for multi-factoral thematic mapping p0108 N82-20587 LYONS, T. J.

A regional air quality model for the Kwinana industrial area of Western Australia p0075 A82-26403 [E82-10064] MATZLER, CH.
Soil moisture determination - Experiments riments with passive p0057 A82-19529 p0129 A82-27648 MERGERSON, J. W. microwave radiometers MAUSEL P W Crop area estimates using ground-gathered and Landsat data A multitemporal approach p0062 A82-27676 Non-parametric classification of abandoned coal mine features using multioriented and ratio transformed Landsat data p0090 A82-27694 M MERTZ, F. C.
Flexible processing of remote sensing data through MAYHEW M A MACINTYRE M Satellite and surface geophysical expression of anomalous crustal structure in Kentucky and Tennessee [NASA-TM-82163] p0084 N82-17715 Suture Earthnet Dissemination Systems (FEDS) study. p0116 A82-27667 Executive summary MEUNIER, J. F. [REPT-3318] n0124 N82-21698 Relief effects and the use of terrain models in SAR image pocessing p0086 N82-21475 MACMEDAN, M. L. MAYNARD, P. F.
The logit classifier - A general maximum likelihood The Seasat low rate data processing system discriminant for remote sensing applications p0093 A82-24061 Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647 p0128 A82-27591 MAETZLER, C. MAZOUR, T. J.
Evaluation of two AN/APS-94 side-looking airborne radar Towards the definition of optimum sensor specifications for microwave remote sensing of snow MEYLAN, P. CAN, P.
Soil moisture determination - Experiments with passive icrowave radiometers p0057 A82-19529 systems in the detection of search and [AD-A108404] p013 MCCARTHY, J. F. p0125 A82-21035 p0132 N82-18466 MAIA E C' S MIGLIO G Integration of Landsat, geological and geophysical data for use in thematic mapping at regional scale p0090 A82-27672 Utilization of Aerochrome 2443 film for identification Seasat imagery for detection of coastal Wetlands and estimating wheat growing areas [INPE-2197-PRE/006] p0063 A82-27700 p0066 N82-19639 MIKHAILOV, A. E.
Ring structures in the earth's crust, and their significance for geology and methods for their investigation p0091 A82-28136 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, yolume Surface wave statistics and spectra during high sea state conditions in the North Atlantic [L62-10071] p0067 N82-20594

Flevation of a cane-growing area of the state of Seo
Paulo using LANDSAT data
[E82-10077] p0067 N82-2066 [AD-A109832] p0098 N82-20827 MIKHAILOV, V. A. MCCONNELL, D. Workshop on the application of existing satellite data to the study of ocean surface energetics, 19-21 November 1980, University of Wisconsin-Madison Albedo and brightness coefficients of snow cover p0103 A82-27465

Analog devices for the processing of serial and space images for the study of water resources MALILA, W. p0094 A82-24822 A technique for automatic labeling of Landsat agricultural p0104 A82-27476 MCCONNELL, P. R. scene elements by analysis of temporal-spectral patterns p0062 A82-27678 Features of a generalized digital Synthetic Aperture Radar processor MIKHEEV, V. P. Characteristics of the use of laser-mirror scanners for image processing in cartography and aerial photography p0117 A82-28143 Sample selection in foreign similarity regions for multicrop MCDANIEL K.C. Assessing mesquite-grass vegetation Landsat experiments ion condition from p0059 A82-25457 MILLAN, M.
Remote SO2 emission measurements spectrometers from volcanoes p0 [E82-10118] p0070 N82-21655 nts with correlation p0077 A82-27704 MCELROY, C. T. Spherical harmonic representation of the main Mid-latitude summertime measurements of stratospheric NO2 p0074 A82-25149 geomagnetic field for world charting and investigations of some fundamental problems of physics and geophysics [E82-10075] p0086 N82-20598 MILLER, G. F. A look at the commonly used LANDSAT vegetation indices
[E82-10123] p0070 N82-21657 MCEVOY, N. Study of Earth Resources Satellite (ERS) data reduction MARCHENKO, V. V. MILLER, J. R.
An approach to path radiance correction in MSS pol15 A82-27629 Development of cooperation between CMEA member countries in the development and utilization of space-based systems for the remote sensing of earth resources and the [BAE-TP-7905] p0120 N82-19649 MCGINNIS, D. F., JR.
Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inertia soil moisture Passive bathymetric measurements in the Bruce eninsula region of Ontario p0129 A82-27642

p0138 A82-27543

p0096 N82-17805

measurements

[F82-10064]

MCGUIRE, W. G.

Evaluation of large area crop estimation techn

MCLAUGHLIN, B.
A timely and accurate potato acreage estimate from Landsat - Results of a demonstration p0060 A82-27621

Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection

An experimental program to provide remote measurement and analysis of ocean waves, sea level winds and balanced pressure in support of Seasat-A [PB81-246035] p0095 N82-16697

[PB82-113283] . MARESCA, J. W., JR.

p0078 N82-19609

Peninsula region of Ontario

Monitoring forest land cover alteration in Thailand with the analysis of ancillary and digital Landsat data p0062 A82-27673

Application of remote sensing to state and regional

MILLER, L. D.

MILLER, W. F.

[E82-10033]

p0108 N82-20587

p0061 A82-27662

MILOSER, T. L MURCRAY, F. J. Land use in the Paraiba Valley through remotely sensed Integrated sensor system for collection of wave data oplied to coastal engineering design p0094 A82-27602 Measurement of atmospheric emission using a data balloon-borne cryogenic Fourier spectrometer p0074 A82-21432 [E82-10072] p0079 N82-20595 MISEZHNIKOV, G. S. NUALCHAWEE, K. Monitoring forest land cover alteration in Thailand with the analysis of ancillary and digital Landsat data p0062 A82-27673 Methods for the processing or symmetric approach signals when solving problems of the national economy p0113 A82-26726 MURPHY, L A. A timely and accurate potato acreage esti /Review/ MISHIN, V. P. Landsat - Results of a demonstration p0060 A82-27621 MYERS, V. I. Investigation of earth resources using rocket and space policy p0130 A82-28127 Remote sensing applications to resource problems in 0 South Dakota [E82-10027] pO132 N82-16445 SASS measurements of the Ku-band radar signature of MYHRE, R. J.
Satellite photos can aid navigation on aerial photo
p0126 A82-22148 OBEDKOV, IU. L. the ocean MITSUO, F. A., II The use of space photographs for hydrogeological studies p0103 A82-27468 Automatic analysis of multispectral images [INPE-2212-MD/009] p0133 MKRTCHIAN, F. A. of the Baikal region and Mongolia p0133 N82-19520 OCONNOR P. J. Relationship of hydrothermal phenomena within the Leinster Granite to crustal fractures delineated from Landsat N Machine implementation of algorithms for the mapping of soil moisture on the basis of micro imagery DO089 A82-26015 p0131 A82-28142 OERTEL, G. F. NAUMOV, M. I MOELLMAN, D. E. The relationship among sea surface roughness variations, oceanographic analyses, and airborne remote sensing Investigation of the vegetative covers on ploughed areas by SLAR p0058 A82-21031 Profiling sens [AD-A108405] nsitivity to image quality p0084 N82-18931 analyses [NASA-CR-168444] NAZEMETZ, J. MÒERL, P. n0096 NR2-17798 An intelligent earth sensing information system The use of the airborne lidar system 'ALEX F 1' for aeroso p0137 A82-22149 OGAWA, Y. tracing in the lower troposphere p0073 A82-20226
Sounding the aerosol distribution over the Upper Rhine p0073 A82-20226 Observation of the turbulent structure in the planetary NETO, J. B. boundary layer with a kytoon-anemometer system A microcomputer for control of data collection platforms
[INPE-2104-RPE/331] p0133 N82-18881 Valley in the Valley in the Speyer area by means of lidar p0125 A82-21082 p0079 N82-20782 OHARA, T. MONTGOMERY, D. R. Observation of the turbulent structure in the planetary Seasat data utilization project [NASA-CR-168557] Applications systems verification and transfer project.

Volume 7: Cost/benefit analysis for the ASVT on operational applications of satellite snow-cover boundary layer with a kytoon-mounted ultrasonic anemometer system p0125 A82-21082 p0097 N82-18660 MOORE, D. G.
HCMM detection of high soil moisture areas OHBA, R. The location of three-dimensional linear objects by using observations p0059 A82-24963 p0111 A82-20404 multiple projections [NASA-TP-1828] p0109 N82-20623 MOORE, R. K. OHTA, K. Microwave remote sensing: Active and passive. Volume

1 - Microwave remote sensing fundamentals and NEWTON, R. W. An approach to path radiance correction in MSS Volumetric effects in cross-polarized airborne rada images p0115 A82-27629 p0058 A82-21032 radiometry p0126 A82-22877 data QJIMA. T. MORAVEC, G. F. NGUYEN, D. Remote sensing of rainfall rates using rain-scatterometer/radiometer Applications systems verification and transfer project. Thermal vegetation canopy model studies Volume 4: Operational applications of satellite snow cover observations. Colorado Field Test Center p0105 A82-27639 [AD-A 106422] p0064 N82-16455 observations. Col [NASA-TP-1825] OKAMI, N. NICHOLAS, J. p0108 N82-20620 An approach to path radiance correction in Guidelines for [NASA-RP-1086] spaceborne micro MOREIRA, J. C. images DO115 A82-27629 p0133 N82-19647 Automatic analysis of multispectral images
[INPE-2212-MD/009] p0133 N82-19520
MOREIRA, M. A.
Utilization of Aerochrome 2443 film for identification ОКАМОТО, К. NIELSEN, N. B. Remote sensing of rainfall rates using airborne microwave Airborne fidar measurements of smoke plume distribution p0105 A82-27639 rain-scatterometer/radiometer transmission, and particle size p0073 A82-21386 ONITSUKA, M. and estimating wheat growing areas [INPE-2197-PRE/006] Remote sensing data applied to land-use survey at the An approach to path radiance correction in MSS [INPE-2197-PRE/006] p0066 N82-19639 Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume Paraiba Valley p0115 A82-27629 images p0081 N82-16443 ORTH, R. Land use in the Paraiba Valley through remotely sensed The use of digital terrain model in the rectification of satellite-borne imagery p0115 A82-27626 data [E82-10071] p0067 N82-20594 [E82-10072] p0079 N82-20595 OSHIMA, T. Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data [E82-10077] p0067 N82-20600 NIÈVES, M. J. Environmental studies by multispectral scanner under AgRISTARS: Early warning and crop condition large-scale civil engineering construction assessment Patch image processor user's n0063 A82-27691 MÒRENO, V p0065 N82-19630 OSMER, S. R. Geometric correction of airborne multispectral scanner NIKITIN, A. M. p0130 A82-27706 Evaluation of two AN/APS-94 side-looking airborne radar The effect of anthropogenic factors on the dynamics of lakes in the plains of Central Asia /studied on the basis of space photographs/ p0103 A82-27469 systems in the detection of search and rescue targets [AD-A108404] p0132 N82-18466 MORGAN, J. Detection of natural disasters via Meteosat p0075 A82-27040 OTOOLE, T. NIKITIN, P. A. MORITZ, H. Development and applications of techniques to process use of data from satellite-borne microwave scar Developments in geodesy within the scope of Helmut hydrometeor distribution data radiometers for the automated compilation of operational Wolf's work p0084 N82-19604 (AD-A109929) n0109 N82-20822 maps of ice cover for the Arctic Ocean MORLEY, B. M. p0095 A82-28145 OTTERMAN, J. Airborne lidar measurements of smoke plume distribution NIKOLAEVA, E. M.
Potential use of space photographs obtained from the Effects of the atmosphere on the detection of surface changes from Landsat multispectral scanner data p0125 A82-21091 vertical transmission, and particle size p0073 A82-21386 MORONE, J. J. manned orbital station Salvut-5 in order to compile a set OVERBOSCH, E. G.

Development of a breadboard cooler for infrared remote sensing payloads, phase 1

[FOK-RV-R-81-064] p0134 N82-19653 An information adaptive system study report and of small-scale thematic maps of mountain and p development plan of Central Asia DO083 A82-28139 p0120 N82-19644 [NASA-CR-166768] NISHIMURA, T. A formation process of an oceanic vortex analyzed by Application of space remote sensing data in forestry ulti-temporal remote sensing p0095 A82-27674 OZGA, M. DO063 A82-28131 An autodigitizing procedure for ground-data labelling of MOROZ, V. A. Methods of editing cloud and atmospheric layer affected Landsat pixels p0062 A82-27682 Complex examination of photorectifiers oixels from satellite data p0131 A82-28466 [E82-10046] p0119 N82-19621 MORRIS, W. D.
Influence of dissolved organic materials on turbid water Methods of editing cloud and atmospheric layer affected P nixels from satellite data optical properties and remote-sensing reflectance E82-101541 nO123 N82-21678 p0093 A82-20445 NJOKU, E. G. PAIK, H. J. Comparison of conventionally measured sea surface Laboratory upwelled radiance and reflectance spectra of Superconducting tensor gravity gradiometer Kerr reservoir sedi [NASA-TP-1993] temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 p0126 A82-23045 p0110 N82-21774 PALEY, H. N. MORROW, C. T.

Application of satellite frost forecast technology to other NORRIS. P. A data base of geologic field spectra Future Earthnet Dissemination Systems (FEDS) study.
Executive summary
[REPT-3318] p0124 N82-21698 p0090 A82-27600 parts of the United States, phase 2 PANKRATOVA F I p0121 N82-20607 The possibility of determining snow-meltage fronts using Meteor-satellite multispectral data /with Kazakhstan considered as an example/ p0102 A82-27463 [NASA-CR-166827] NORWINE, J. Freeze prediction model p0067 N82-20609 A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 MORZIER, C. PARK, A. B. Soil moisture determination - Experiments with passive [E82-10107] microwave radiometers p0057 A82-19529 Data base requirements in support of crop models NOVAES, R. A. p0060 A82-27588 MOZALEVSKII, V. G. Utilization of Aerochrome 2443 film for identification Automation of the processing of aerial and space image PARK, J. K. and estimating wheat growing areas [INPE-2197-PRE/006] System of forecasting agricultural observations of Earth for forest inventory p0057 A82-20350 Simple radiative transfer model for relationships betwe canopy biomass and reflectance p0057 A82-204 n0066 N82-19639 p0057 A82-20422 MURATA, K. crops using satellite

PARRISH, J. B.

Michigan

PASOTTI, P.

p0067 N82-20602

p0091 N82-19642

NOVO, E. M. L. D.

Methodology of the interpretation of remote sensing data

and applications in geomorphology [INPE-2209-MD/007]

[E82-10079]

RISH, J. B. HCMM night-time thermal IR imaging experiment in p0115 A82-27655

p0089 A82-26013

The Pampean Plain studied with Landsat images

The location of three-dimensional linear objects by using multiple projections p0111 A82-20404

emission using a

p0074 A82-21432

MURCRAY, F. H. Measurement of atmospheric

balloon-borne cryogenic Fourier spectrometer

ROSENFIELD, G. H.

PERSONAL AUTHOR INDEX PAVATE, T. V. Utilisation of remote sensing in resources identification and land use in India - An integrated approach p0076 A82-27701 PAYNE, R. W. Sonora exploratory study for the detection of wheat-leaf [EB2-10133] p0070 N82-21661 PEACOCK, K.
High precision radiometric temperatu of the ocean surface p0094 A82-27640 PEARCE, C. M.
Landsat MSS applied to rangeland management
Western Canada p0063 A82-276 p0063 A82-27697 PEARSON, R. W. ELAS - A geobased information transferable to several computers po system that p0115 A82-27666 PECK. E. L. Strategies for using remotely sensed data in hydrologic models [E82-10156] p0109 N82-21680 PEEBLES, C. Satellite photograph interpretation p0127 A82-25460 PELLETIER, R. T.
Multiresource inventory methods pilot test p0060 A82-27601 Some criteria for the accuracy and the reliability of pools N82-20580 PENGELLY, J. W. Study of Earth Resources Satellite (ERS) data reduction [BAE-TP-7905] p0120 N82-19649 PENN, L. M.

Development of a surface isolation estimation technique Suitable for application of polar orbiting satellite data [F82-10122] p0123 N82-21656 [ER2-10122] PEREIRA, A. E. C.
Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450 [INPE-2-103-FF-2-7-05-7]
PERLOV, V. V.
Thermal viewing system for studying the earth's p0125 A82-21022 Report on a short course in remote sensing and the

INPE [E82-10024] n0091 N82-16442 PETERSEN, G. W.
Delineation of soil temperature regimes from HCMM

data [£82-10042] p0119 N82-19617 Delineation of soil temperature regimes from HCMM

geological applications of LANDSAT MSS imagery at

data [E82-10141] p0070 N82-21668 PFEIFFER, B.

Analysis of the direction-dependent radiation behavior in multispectral scanning data p0125 A82-21399 PHILIPSON, W. R.

An airphoto key for major tropical crops

p0058 A82-22142
Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral p0116 A82-27689 Calibration

An aerial survey of water turbidity and laser depth sounding performance along the Queensland Coast [AD-A109050] p0098 N82-19802 Proposed digital cartridge recording system for WRELADS

AD-A1094841 n0134 NR2-20491

PMINNEY, D. E.
Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches 00065 NB2-19634 p0065 N82-19634 AgRISTARS: Foreign commodity production forecasting.

Project test reports document, volume 1 [£82-10087] n0068 NR2-21639 Project communications/documentation standards

manual [882-10093] p0068 N82-21645

PIATKIN, V. P Automation of the processing of aerial and space images

for forest inventory p0057 A82-20300
Structure of hardware and software at a regional center p0057 A82 20350 for the automated processing of remote-sensing images serial and space p0130 A82-28128 PINNOCK, M.

Ionospheric troughs in Antarctica p0073 A82-21217
PINTER, P. J., JR.

Dew and vapor pressure as complicating factors in the

Dew and vapor pressure as community interpretation of spectral radiance from crops p0060 A82-27617

PLIUTA, V. E. Color characteristics of the earth's surface determined

on the basis of spectroscopy results from Salyut 4
p0073 A82-19826 POLCYN. F. C.

nent of change in Bangladesh coastal regions p0076 A82-27696 POLETAEV, IU. I.

Improving the quality of aerial photography /Concerning the 'Basic principles of aerial photography'/ p0117 A82-28467

POLLARA, V. J.

Variability of reflectance measurements with sensor altitude and canopy type
[E82-10145] p0071 N82-21672 DO071 N82-21672

POOLE, L. R.
Influence of dissolved organic materials on turbid water optical properties and remote-sensing reflectance n0093 A82-20445

POWERS, J. S.
Application of remote sensing to state and regional problems

[FR2-10033] n0078 N82-19609 PRAMANIK, M. A. H. Assessment of change in Bangladesh coastal regions

DO076 A82-27696 Measurement of atmospheric emission using a

balloon-borne cryogenic Fourier spectrometer D0074 A82-21432

PRITCHARD, J. A.
Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inertia soil moisture pO108 N82-20587

[E82-10064]

PROKACHEVA, V. G.

Evaluation of snow-cover pollution in industrial regions using satellite TV images p0103 A82-27464

Albedo and brightness coefficients of snow cover p0103 A82-27465

PROTZ, R.
Manual and automatic crop identification with airborne p0057 A82-20408

\mathbf{Q}

QUIRK, B. K. A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143 Wetland mapping from digitized aerial photography [E82-10019] p0118 N82-16437

QURESHY, M. N. Geophysical and Landsat lineament mapping - An approach illustrated from west-central and south India p0089 A82-26016

R

RABINOVICH, IU. I. The possibilities of microwave remote sensing for the study of water resources and their pollution

p0102 A82-27458

Application of serial and space photographic data in the study of subsurface water and tectonic stru p0090 A82-27466

Microwave brightness temperature pattern over the Microwave originates temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard Bhaskara p0093 A82-19560

RANA, S. S.

Microwave brightness temperature pattern over the Indian subcontinent and the surrounding oceans as observed by the satellite microwave radiometer /SAMIR/ onboard p0093 A82-19560

Applications systems verification and transfer project. Volume 1: Operational applications of satellite snow cover observations: Executive summary [NASA-TP-1822] p0108 N82-20617

Applications systems verification and transfer project, Volume 8: Satellite snow mapping and runoff prediction handbook

[NASA.TP.1829] p0109 N82-20624

RANSON, K. J. Soybean canopy reflectance as a function of view and illumination geometry p0061 A82-27645
Thermal vegetation canopy model studies p0061 A82-27645

p0064 N82-16455 IAD-A1084221 RATZ. D.

Remote sensing applied to basement tectonics of the calcareous High Atlas /Morocco/ p0089 A82-26014

REDSTONE, P. Study of Earth Resources Satellite (ERS) data reduction

[BAE-TP-7905] o0120 N82-19649 REED, R. J.

Diurnal variation of summer convection over West Africa and the Tropical Eastern Atlantic during 1974 and 1978 p0075 A82-26700

REINHARDT, M. E.
The use of the airborne lider system 'ALEX F tracing in the lower troposphere p0073 A82-20226
Sounding the aerosol distribution over the Upper Rhine Valley in the Valley in the Speyer area by means of lidar

p0079 N82-20782 REMSBERG. E. The NASA participation in the 1980 EPA PEPE/NEROS field measurements program p0075 A82-26621 RENGER. W.

The use of the airborne lidar system 'ALEX F 1' for aerosol tracing in the lower troposphere

Sounding the aerosol distribution over the Upper Rhine Valley in the Valley in the Speyer area by means of lidar p0079 N82-20782

RELITOV E M

Mixture formulas applied in estimation of dielectric and radiative characteristics of soils and grounds at microwave p0058 A82-21030 frequencies

RICCI, M.

Dip determinations in photogeology

p0089 A82-25453 RICH. E. I.

HCMM: Soil moisture in relation to geologic structure and lithology, northern California
[E82-10135] p0092 N82-21662

RICHARDS, J. H.

HARDS, J. n.
The Canadian north - Utility of remote sensing for poortal monitoring p0074 A82-24962 environmental monitoring RICHARDSON, A. J.

Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10046] p0119 N82-19621

Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154] p0123 N82-21678

RICHTER, J. C. Ground registration of data from an airborne scatteromete

[E82-10084] p0068 N82-21636 RIGAL G.

Field-by-field multitemporal analysis of aerial scanner data geometrically corrected by means of a sliding model p0115 A82-27651

SIKIMABU A Environmental studies by multispectral scanner under large-scale civil engineering construction

o0063 A82-27691

Recovering ocean waveheight from HF radar sea echoes distorted by imperfect ionospheric reflection [PB82-113283] p0096 N82-17805 p0096 N82-17805

RIVIERA, G.
Gradio: Project proposal for satellite gradiometry
[NASA-TM-76796] p0134 N82-20606

ROBERTS, D. K.

Development and applications of techniques to process hydrometeor distribution data [AD-A109929]

p0109 N82-20822

ROBERTS, P. A.
Computer based technique for converting a contour map

into an equispaced grid of points
[RAE-TR-80110]
ROBERTSHAW, G. A. p0087 N82-21697

Coherent scatter of microwaves from moderately rough surfaces [AD-A106133] p0095 N82-16331

ROBINOVE, C. J. Effects of the atmosphere on the detection of surface

changes from Landsat multispectral scanner data p0125 A82-21091

ROBINSON, B. F. Soybean canopy reflectance as a function of view and illumination geometry p0061 A82-27645 A multiband radiometer and data acquisition system for remote sensing field research

[E82-10142] n0134 N82-21669 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction

[F82-10144] n0071 N82-21671

[E82-10144]
ROBINSON, V. B.
Stochastic models of cover class dynamics
p0059 A82-27586

ROBSON, A JSON, A.
Detection of natural disasters via Meteosat
p0075 A82-27040

Ionospheric troughs in Antarctica p0073 A82-21217 RODZIN, V. I.

Noncontact methods for the quality control of water p0104 A82-27475 ROLLER, N. E. G.

Assessment of change in Bangladesh coastal region p0076 A82-27696

ROMANOVA, E. P.
Reconstruction of a present-day landscape map of a central part of Italy using space images p0081 A82-20340

RONZHIN, L A. The earth resources program for the long-term orbital station Salyut 6 p0131 A82-28132 ROSEN, J. M.

Ozone measurements to 48Km with chemiluminescent ozone detectors [AD-A110342] p0134 N82-21808 ROSENBLUETH, J.

Application of machine processing of visible and thermal Application of machine processing of visible and the study of the geothermal area of Cerio Prieto.

Mexico p0117 A82-27693 ROSENFELD. A.

ENFELD. A.
Multispectral texture p0113 A82-25130
Building and road extraction from aerial photographs p0074 A82-25140

ROSENFIELD, G. H. Sampling for thematic map accuracy testing

ROSENTHAL, R. L.	SCARPACE, F. L.	SERGEEV, L. V.
A digital technique for constructing variable-width lines [AD-A110287] p0087 N82-21689	A comparison between aerial photography and Landsat for computer land-cover mapping p0074 A82-22143	Complex of units for the storage and automated processing of research data p0131 A82-28140
ROSENTHAL, W. D.	Wetland mapping from digitized aerial photography	SERGEEV, V. P.
Dryland pasture and crop conditions as seen by HCMM	[E82-10019] p0118 N82-16437	Thermal viewing system for studying the earth's
[E82-10074] p0067 N82-20597	SCHABER, G. C.	resources p0125 A82-21022
ROSSI, P. M. Integration of Landsat, geological and geophysical data	Cliff and slope topography of part of the Grand Canyon,	SESTAK, M. L. Preliminary evaluation of spectral, normal and
for use in thematic mapping at regional scale	Arizona as characterized on a Seasat radar image p0082 A82-26843	meteorological crop stage estimation approaches
p0090 A82-27672	SCHANDA, E.	[E82-10059] p0065 N82-19634
ROTHROCK, D. A.	Soil moisture determination - Experiments with passive	SEYFARTH, B. R.
Sea ice movements from synthetic aperture radar [AD-A109002] p0097 N82-19435	microwave radiometers p0057 A82-19529	ELAS - A geobased information system that is transferable to several computers p0115 A82-27666
ROY, B. H.	Towards the definition of optimum sensor specifications	transferable to several computers p0115 A82-27666 SHAFER, B. A.
Data rate reduction. Impact of image data compression	for microwave remote sensing of snow	Applications systems verification and transfer project.
on end to end data management of a multispectral	p0125 A82-21035	Volume 4: Operational applications of satellite snow cover
payload [REPT-44/130] p0120 N82-19654	On randomly absorbing and scattering surface layers p0079 A82-21037	observations. Colorado Field Test Center [NASA-TP-1825] p0108 N82-20620
ROZOV, B. S.	SCHELLHASE, R.	SHANMUGAN, K. S.
Characteristics of the use of laser-mirror scanners for	The use of the airborne lidar system 'ALEX F 1' for aerosol	Crop classification using airborne radar and Landsat
image processing in cartography and aerial photography	tracing in the lower troposphere p0073 A82-20226	data p0058 A82-21033
p0117 A82-28143 RUBINCAM. D. P.	Sounding the aerosol distribution over the Upper Rhine	SHAPIRO, I. I.
Information theory lateral density distribution for Earth	Valley in the Valley in the Speyer area by means of lidar p0079 N82-20782	Applications to Earth physics: Very-long-baseline interferometry and data analysis
inferred from global gravity field	SCHENKE, H. W.	[NASA-CR-168743] p0088 N82-21796
[NASA-TM-83825] p0085 N82-19731	Experiments in satellite Doppler control positioning at	SHAW, A. H.
RUNAVOT, J. Gradio: Project proposal for satellite gradiometry	sea p0086 N82-20581	The design and implementation of an operational,
[NASA-TM-76796] p0134 N82-20606	SCHMER, F. A.	computer-based weather radar system
RYERSON, R. A.	Remote sensing applications to resource problems in South Dakota	[RSRE-MEMO-3151] p0122 N82-21499
A timely and accurate potato acreage estimate from	[E82-10027] p0132 N82-16445	SHAW, G. E. Effect of aerosols on optical remotely sensed data
Landsat - Results of a demonstration p0060 A82-27621 RYGH, P. J.	SCHMID, H.	p0115 A82-27654
Seasat data utilization project	Mathematical and stochastic models in photogrammetry	SHAW, H. J. W.
[NASA-CR-168557] p0097 N82-18660	relating to Helmut Wolf's work p0084 N82-19605	Development of a Canadian thermal infrared forest fire
	SCHMIDT, R. The disposite cottlement 1990 of the Cormon main	mapping operational program p0063 A82-27699
S	The diagnosis settlement 1980 of the German main triangulation network. Part 2: Trajectories	SHEFFNER, E. The 1981 Argentina ground data collection
•	[SER-B-253-MITT-159-PT-2] p0085 N82-19648	[E82-10127] p0070 N82-21658
SAILOR, R. V.	SCHNEIDER, S. R.	SHEN, S. S.
MAGSAT anomaly profiles of the eastern Indian Ocean	Calcium carbonate precipitation in Pyramid Lake, Nevada,	Evaluation of large area crop estimation techniques
[E82-10066] p0086 N82-20589	as monitored by satellite - 1978 and 1980 p0105 A82-27634	p0061 A82-27662
SAINT, G. Snow cover monitoring using AVHRR data from TIROS	Applications systems verification and transfer project.	SHERMAN, J. W., III
and NOAA satellites p0105 A82-27614	Volume 6: Operational applications of satellite snow-cover	Response of the marine community to satellite-derived oceanic information p0095 A82-27684
SAKAI, H.	observations NOAA/NESS support study	SHEVELEY, S. L.
Measurement of atmospheric emission using a	[NASA-TP-1827] p0109 N82-20622	Structure of hardware and software at a regional center
balloon-borne cryogenic Fourier spectrometer p0074 A82-21432	SCHNETZLER, C. C.	for the automated processing of aerial and space
SALAVATOV, R. M.	Characterizing user requirements for future land observing satellites	remote-sensing images p0130 A82-28128
Structure of hardware and software at a regional center	[NASA-TM-83867] p0081 N82-17562	SHIMABUKURO, Y. E. Method of interpretation of remote sensing data and
for the automated processing of aerial and space	SCHREIER, H.	applications to vegetation
remote-sensing images p0130 A82-28128 SALOMONSON, V. V.	The use of digital multi-date Landsat imagery in terrain classification p0111 A82-20409	[INPE-2215-MD/010] p0066 N82-19640
Information expectations from Landsat-D	SCHROEDER, L. C.	Survey of the cane-growing area of the state of Sao
pO128 A82-27583	SASS measurements of the Ku-band radar signature of	Paulo using LANDSAT data, Safra Year 1979/80, volume 2
Characterizing user requirements for future land observing	the ocean p0093 A82-21917	[E82-10071] p0067 N82-20594
satellites [NASA-TM-83867] p0081 N82-17562	SCHUESSLER, H. Satellite scatterometer feasibility study. Volume 1:	Elevation of a cane-growing area of the state of Sao
SANCHEZ S., R.	Technical results	Paulo using LANDSAT data
Inventory of eroded areas in the state of Guanajuato	[ESA-CR(P)-1492-VOL-1] p0133 N82-19650	[E82-10077] p0067 N82-20600
Mexico, by automatic analysis of Landsat images p0076 A82-27690	SCHULTZ, H. Microwave radiation from a natural snow field	Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979
SANDFORD, D. M.	p0101 A82-19559	[E82-10078] p0067 N82-20601
An intelligent earth sensing information system	SCHULZ, BS.	SHLIAKHOVA, L. A.
p0137 A82-22149	A procedure for the interactive tracing of edges and lines	Noncontact methods for the quality control of water
SAPP, C. D.	by means of digital image processing p0113 A82-26050 SCHUMANN, H. H.	resources p0104 A82-27475 SHTEINSHLEIGER, V. B.
Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary	Applications systems verification and transfer project.	Methods for the processing of synthetic-aperture radar
[PB82-115122] p0066 N82-19715	Volume 2: Operational applications of satellite snow-cover	signals when solving problems of the national economy
Remote sensing of sulfur dioxide effects on vegetation.	observations and data-collection systems in the Arizona	/Review/ p0113 A82-26726
Volume 2: Data	test site [NASA-TP-1823] p0108 N82-20618	SHUCHMAN, R. A. The use of wave contrast measurements in the evaluation
[PB82-115130] p0066 N82-19716	SCOTT, J. F.	of SAR/gravity models p0130 A82-27675
SAQALLI, T. Remote sensing applied to basement tectonics of the	Seasat data utilization project	SHULGINA, E. M.
calcareous High Atlas /Morocco/ p0089 A82-26014	[NASA-CR-168557] p0097 N82-18660 SCRAGG, P.	The possibilities of microwave remote sensing for the
SARDAR, M. G.	Future Earthnet Dissemination Systems (FEDS) study.	study of water resources and their pollution
Utilisation of remote sensing in resources identification and land use in India - An integrated approach	Executive summary	p0102 A82-27458 SHUTKO, A. M.
p0076 A82-27701	[REPT-3318] p0124 N82-21698 SEDYKH, V. N.	Microwave radiometry of lands under natural and artificial
SARKAR, A. N.	Automation of the processing of aerial and space images	moistening p0057 A82-21028
One orogenic belt or two - A structural reinterpretation	for forest inventory p0057 A82-20350	Microwave radiation peculiarities of vegetative covers
supported by Landsat data products of the Precambrian	SEEBER, G.	p0058 A82-21029
metamorphics of Singhbhum, eastern India p0089 A82-26017	Experiments in satellite Doppler control positioning at sea p0086 N82-29581	Mixture formulas applied in estimation of dielectric and radiative characteristics of soils and grounds at microwave
SAULSKII, V. K.	SEICHTER, H.	frequencies p0058 A82-21030
Diffusion model of cloud cover and its use in the analysis	Two-dimensional power spectra of SEASAT SAR	Some peculiarities of formulation and solution of inverse
of satellite operations p0111 A82-20347	imagery p0098 N82-21469 SEIDEL. K.	problems in microwave radiometry of the ocean surface
SAUSEN, T. M. Methodology of the interpretation of remote sensing data	Detailed land use classification based on multitemporal	and atmosphere p0093 A82-21921 Machine implementation of algorithms for the mapping
Methodology of the interpretation of remote sensing data and applications in geomorphology	Landsat-MSS-data p0076 A82-27657	of soil moisture on the basis of microwave-radiometer
[INPE-2209-MD/007] p0091 N82-19642	SELIVANOV, A. S.	measurements p0131 A82-28142
Dynamic study of the upper Sao Francisco River and	The structure and basic parameters of a satellite system for the remote sensing of earth resources	SIDOROVA, V. S.
the Tres Marias reservoir using MSS/LANDSAT images	p0131 A82-28129	Automation of the processing of aerial and space images
[E82-10082] p0108 N82-20605 SAVELEV, B. I.	SELLMAN, B.	for forest inventory p0057 A82-20350 SIGMAN, R.
Optimal methods of computerized image conversion	The 1981 Argentina ground data collection [E82-10127] p0070 N82-21658	Potential utility of thematic mapper data in estimating
p0111 A82-19833	SEMINA, N. 3.	crop areas p0061 A82-27663
SAWATZKY, D. L.	Investigation of the dynamics of the regional underground	An autodigitizing procedure for ground-data labelling of
Registration of heat capacity mapping mission day and night images p0113 A82-22146		Landsat pixels p0062 A82-27682
	runoff of the Aral sea basin using space photography	SILVA D. M.
SCANVIC, J. F.	p0101 A82-20343	SILVA, D. M. System of forecasting agricultural crops using satellite
Airborne remote sensing in east Greenland	p0101 A82-20343 SERGEEV. A. S. Analytic methods of geodetic referencing of	System of forecasting agricultural crops using satellite observations of Earth
	p0101 A82-20343 SERGEEV, A. S.	System of forecasting agricultural crops using satellite

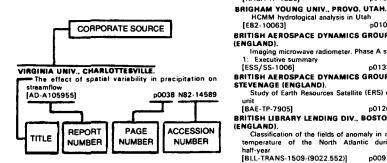
	· ENGOINTE AUTHON MOEX		TOTTIONEND, C. N. G.
	SILVA, L. F. A multiband radiometer and data acquisition system for remote sensing field research	STUART, D. W. Coastal upwelling ecosystems analysis. Atlas of the JOINT Laircraft winds for the 500 foot level	THIELE, O. W. Precipitation measurements from space - Workshop summary 28 April-1 May 1981, Greenbelt, MD
	[E82-10142] p0134 N82-21669 SITNIKOVA, M. V.	[PB82-114703] p0097 N82-19796 STUERZENHOFAECKER, P.	p0077 A82-28295 THIRUVENGADACHARI, S.
	Dynamics of snow cover in mountain regions of the Aral Sea basin, studied using satellite photographs p0102 A82-27462	Satellite scatterometer feasibility study. Volume 1: Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650	Satellite sensing for extraction of groundwater resources information p0105 A82-27613 THOMAS, A. R.
	SIVILLO, C. A. As-Built design specification for UNIV4VEC	SUKHANOVA, K. N. Reconstruction of a present-day landscape map of a	Modern methods for monitoring and controlling the timeliness, accuracy, and completeness of data for
	[E82-10085] p0122 N82-21637 SKLIAROV, V. E.	central part of Italy using space images p0081 A82-20340	meteorological analysis p0073 A82-19179 THOMAS, G.
	The use of Meteor-satellite image data in oceanography 5 p0093 A82-20344	SUME, A. Observations with an imaging 35 GHz radiometer of	The 1981 Argentina ground data collection [E82-10127] p0070 N82-21658
	SLAVIK, D. Spectrometric studies of the water composition of Lake	terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672	THOMAS, H. H. Satellite and surface geophysical expression of anomalous
	Mueggelsee p0104 A82-27474 SLOANE, M. N.	SUTTON, J. T. Comparisons of laser profilometer sea ice roughness	crustal structure in Kentucky and Tennessee [NASA-TM-82163] p0084 N82-17715
	Ideal phase in estimating the spatial gradient of magnetic daily variations recorded by magnetometer arrays	statistics with surface truthed data and SLAR imagery p0094 A82-27619 SWEET, J.	THOMAS, R. W. L. Error analysis of pulse location estimates for simulated
	p0127 A82-26000	Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027	bathymetric (idar returns [PB82-109448] p0096 N82-17803
	Thermal vegetation canopy model studies [AD-A106422] p0064 N82-16455	SWEET, J. L. SASS measurements of the Ku-band radar signature of	THOMPSON, A. Study of a radar altimeter for the European remote sensing
	SMITH, R. C.	the ocean p0093 A82-21917 SZAJGIN, J.	program. Volume 1: Executive summary [SPAR-R.1090-ISSUE-A] p0133 N82-19652
	Ship and satellite bio-optical research in the California Bight [NASA-CR-168681] p0098 N82-20823	Landsat classification accuracy assessment procedures p0137 A82-20412	THOMSON, K. P. B. Landsat MSS applied to rangeland management in
	SOLODIKHIN, G. M. Complex of units for the storage and automated	<u> </u>	Western Canada p0063 A82-27697 THOREN, R.
	processing of research data p0131 A82-28140 SOLOMON, J. L.	Τ	Remote sensing techniques suitable for exploration and navigation in and under sea ice
	Application of remote sensing to state and regional problems	TAKAHASHI, K. Harmonic structure of Pc 3-4 pulsations	[FOA-REPT-VOL-15-NO-2] p0096 N82-17566 THORNDIKE, A. S.
	[E82-10033] p0078 N82-19609 SPAGNOL J.	p0082 A82-26266 TAKASHIMA, T.	Sea ice movements from synthetic aperture radar [AD-A109002] p0097 N82-19435
	Analyses of the Eastern Pacific without ship PAPA' data p0093 A82-19139	Estimation of sea surface temperature from remote sensing in the 3.7 micron window region	THYRSTED, T. Airborne remote sensing in east Greenland
	SPANN, G. W. An analysis of user requirements for operational land	p0095 A82-28031 TAKAYAMA, Y.	TILL, S. M.
	satellite data p0116 A82-27685 SPICER, C. W.	Estimation of sea surface temperature from remote sensing in the 3.7 micron window region	Instrumentation for remote reflectance and radiance policy and pol
	An investigation of the ozone plume from a small city p0074 A82-26329	p0095 A82-28031 TAKEUCHI, S.	Optimal spatial filtering and transfer function for SAR
	STAENZ, K. The influence of illumination and viewing geometry on	Environmental studies by multispectral scanner under large-scale civil engineering construction p0063 A82-27691	ocean wave spectra p0094 A82-27596 TINNEY, L. R. Flexible processing of remote sensing data through
	the reflectance factor of agricultural targets p0061 A82-27646	TALAY, T. A. Usage and limitations of characteristic vector analysis	integration of image processing and geobased information systems p0116 A82-27667
	Landsat MSS applied to rangeland management in Western Canada p0063 A82-27697	of remote sensing multispectral data for the identification and quantification of water quality parameters	TISHCHENKO, A. A. The effectiveness of instrumented visual studies of the
	STAIR, A. T., JR. Recent auroral measurements using a field-widened	p0118 N82-18656 TALSKAIA, N. N.	earth from space p0114 A82-27505 The earth resources program for the long-term orbital
	interferometer spectrometer p0126 A82-21434 STANLEY, D. J.	Analysis of space imagery to compile a geomorphological map of the world . p0089 A82-20338	station Salyut 6 p0131 A82-28132 TIURI, M.
	Interpretation of remotely sensed image data and impact of cluster compression	Remote sensing applied to basement tectonics of the	Microwave radiation from a natural snow field pO101 A82-19559
	[REPT-44.2866] p0124 N82-21699 STEED, A. J.	calcareous High Atlas /Morocco/ p0089 A82-26014 TAMBAY, JL. A timely and accurate potato acreage estimate from	Tiuri, M. E. Theoretical and experimental studies of microwave emission signatures of snow p0125 A82-21034
	Recent auroral measurements using a field-widened interferometer spectrometer p0126 A82-21434 STEFFEN. C. A.	Landsat - Results of a demonstration -p0060 A82-27621 TANAKA, S.	TIURIN, IU. A. Development of cooperation between CMEA member
	Preliminary results of a study of mapping thermal discharge in the ocean, using remote sensing data	A formation process of an oceanic vortex analyzed by multi-temporal remote sensing p0095 A82-27674	countries in the development and utilization of space-based systems for the remote sensing of earth resources and the
٠.	[INPE-2229-PRE/O21] p0097 N82-19704 STEIN, R.	. TANEJA, V. An intelligent earth sensing information system	environment pO138 A82-27543 TOLLINGER, V.
	Program on stimulating operational private sector use of Earth observation satellite information	p0137 A82-22149 TANG, G. Y.	Primary processing of and possibilities of using data from the meteorological satellite TIROS-N pO103 A82-27470
	[E82-10131] p0138 N82-21660 STENSTROEM, G.	Classification of ice radar imagery p0113 A82-22891 TAPLEY, I. J.	TOM, C. H Monitoring forest land cover alteration in Thailand with
	Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980	A vegetation response model applied to range inventory and monitoring using Landsat MSS data	the analysis of ancillary and digital Landsat data p0062 A82-27673
	[FOA-C-30240-E1/E3] . p0133 N82-18672 STEPHENS, P. R.	p0060 A82-27643 TARANIK, J. V.	TOMIYASU, K. Wide area, coarse resolution imaging with satellite-borne synthetic aperture radars in low-earth and geosynchronous
	The potential of remote sensing to monitor soil erosion on cropland p0061 A82-27656 STERN, D. P.	Advanced aerospace remote sensing systems for global resource applications p0127 A82-27577	orbits p0082 A82-27631 TOMPKINS, M. A.
	Studies related to Magsat [E82-10050] p0085 N82-19625	TARDIN, A. T. Utilization of Aerochrome 2443 film for identification	As-Built design specification for UNIV4VEC [E82-10085] p0122 N82-21637
	STEVENSON, M. R. Preliminary results of a study of mapping thermal	and estimating wheat growing areas [INPE-2197-PRE/006] p0066 N82-19639	As-built design specification for PARHIS [E82-10089] p0122 N82-21641
	discharge in the ocean, using remote sensing data [INPE-2229-PRE/021] p0097 N82-19704	Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume	As-built design specification for PARCLS [E82-10090] pO123 N82-21642
	STICKSEL, P. R. An investigation of the ozone plume from a small city	2 [E82-10071] p0067 N82-20594	As-built design specification for MISMAP [E82-10091] p0123 N82-21643
	STILES, W. H. p0074 A82-26329	Elevation of a cane-growing area of the state of Sao Paulo using LANDSAT data	As-built design specification for segment map (Sgmap) program
	Dielectric properties of snow [NASA-CR-166764] p0107 N82-19638 Active microwave investigation of snowpacks:	[E82-10077] p0067 N82-20600 TASSAN, S.	[E82-10094] p0123 N82-21646 TOSI, N. Heat Capacity Mapping Mission (HCMM) program: Study
	Experimental documentation, Colorado 1979-1980 [NASA-CR-166727] p0107, N82-19646	A method for the retrieval of phytoplankton and suspended sediment concentrations from remote	of geological structure of Sicily and other Italian areas [E82-10073] p0091 N82-20596
	STIX, J. Seasat satellite investigation of the structure of Western	measurements of water colour p0094 A82-27620 TAVAKOLI, M.	TOVIZI, G. Remote-sensing determination of the characteristics of
	Nebraska and its application to the evaluation of geothermal resources p0090 A82-27635	Building and road extraction from aerial photographs p0074 A82-25140 TEILLET, P. M.	hydrological objects p0102 A82-27460 TOWNSHEND, J.
	STOIBER, R. Remote SO2 emission measurements with correlation spectrometers from volcances p.0077, A82-27704	Digital analysis of spatial and spectral features from airborne MSS of a forested region p0061 A82-27647	Information extraction from remotely sensed data - A user view
	spectrometers from volcances p0077 A82-27704 STRAHLER, A. H. The logit classifier A general maximum likelihood	Relief effects and the use of terrain models in SAR image processing p0086 N82-21475	A comparison of unsupervised classification procedures on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy
	discriminant for remote sensing applications p0128 A82-27591	TELEGADAS, K. Demonstration of a long-range atmospheric tracer system	[E82-10038] p0119 N82-19613
	An invertible coniferous forest canopy reflectance model p0062 A82-27679	using perfluorocarbons [PB82-106246] p0081 N82-16613	Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665
		* *	

CORPORATE SOURCE INDEX

EARTH RESOURCES / A Continuing Bibliography (Issue 34)

JULY 1982

Typical Corporate Source Index Listing



The title of the document is used to provide a brief description of the subject matter. The page number and the accession number are included in each entry to assist the user in locating the abstract in the abstract section. If applicable, a report number is also included as an aid in identifying the document.

Δ

AGRICULTURAL RESEARCH SERVICE, WESLACO,

.
Methods of editing cloud and atmospheric layer affected. [E82-10046] p0119 N82-19621

Methods of editing cloud and atmospheric layer affected pixels from satellite data [E82-10154]

ANALYSIS AND TECHNOLOGY, INC., NORTH STONINGTON, CONN.
Evaluation of two AN/APS-94 side-looking airborne radar

systems in the detection of search and rescue targets p0132 N82-18466

ANALYTIC SCIENCES CORP., READING, MASS. MAGSAT anomaly profiles of the eastern Indian

[E82-10066] p0086 N82-20589

ARMY COLD REGIONS RESEARCH AND

ENGINEERING LAB., HANOVER, N. H.
Electromagnetic subsurface measurements
[AD-A108192] p0106 N82-18469 Ground-truth observations of ice-covered North Slope

Lakes imaged by radar [NASA-TM-84127]

p0107 N82-18664

p0123 N82-21678

ARMY ENGINEER TOPOGRAPHIC LABS., FORT BELVOIR, VA.

Computer-assisted photo interpretation research at USAETL

[AD-A109366] p0121 N82-20628 A digital technique for constructing variable-width lines

R

BAYERISCHE AKADEMIE DER WISSENSCHAFTEN, MUNICH (WEST GERMANY).

Some criteria for the accuracy and the reliability of p0086 N82-20580

Experiments in satellite Doppler control positioning at p0086 N82-20581 Recent results of geoid determination by combination

techniques in the North Sea test area p0086 N82-20583

BELL TELEPHONE LABS., INC., HOLMDEL, N. J.

Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027

BONNEVILLE POWER ADMINISTRATION, PORTLAND,

OREG.
Applications systems verification and transfer project.
Volume 5: Operational applications of satellite snow-cover

[F82-10063] BRITISH AFROSPACE DYNAMICS GROUP, BRISTOL

Imaging microwave radiometer, Phase A study. Volume

observations, northwest United States
[NASA-TP-1826] p0109 N82-20621

n0107 N82-20586

Executive summary [ESS/SS-1006] nO132 N82-18564

BRITISH AEROSPACE DYNAMICS GROUP.

STEVENAGE (ENGLAND).
Study of Earth Resources Satellite (ERS) data reduction

(BAE-TP-7905) p0120 N82-19649

BRITISH LIBRARY LENDING DIV., BOSTON SPA (ENGLAND).

Classification of the fields of anomaly in monthly water emperature of the North Atlantic during the cold

half-year [BLL-TRANS-1509-(9022.552)] p0097 N82-19756

BROWN UNIV., PROVIDENCE, R. I.

Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources [E82-10043] p0084 N82-19618

regional emplacement of crustal resources [E82-10043] p0084 N82-19618 Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources [E82-10044] p0085 N82-19619 Electromagnetic deep-probing (100-1000 KMS) of the Earth's interior from artificial satellites: Constraints on the regional emplacement of crustal resources

regional emplacement of crustal resources n0087 N82-21679 [F82-10155]

BUNDESGESUNDHEITSAMT, BERLIN (WEST GERMANY).

Optimal network density for atmospheric recording p0079 N82-20776

BUSINESS AND TECHNOLOGICAL SYSTEMS, INC., SEABROOK, MD. Equivalent source modeling of the main field using Magsat

[E82-10041] p0084 N82-19616

Magsat science investigations [E82-10045] p0085 N82-19620 An information adaptive system study report and

Context sensitive formulations of antenna pattern correction and side lobe compensation for NOSS/LAMMR real time processing [NASA-CR-166789] nO122 NR2-21457

C

CALIFORNIA STATE DEPT. OF WATER RESOURCES, SACRAMENTO.

Applications systems verification and transfer project. Volume 3: Operational applications of satellite snow cover observations in California
[NASA-TP-1824] p0108 N82-20619

CALIFORNIA UNIV., BERKELEY.

emote sensing of salinity in the San Francisco Bay a p0102 A82-26839 The 1981 Argentina ground data collection

[EB2-10127] p0070 N82-21658

CALIFORNIA UNIV., LA JOLLA.

Ship and satellite bio-optical research in the California

[NASA-CR-168681] p0098 N82-20823

CALIFORNIA UNIV., LOS ANGELES.

Harmonic structure of Pc 3-4 pulsations p0082 A82-26266

CANADA CENTRE FOR REMOTE SENSING, OTTAWA

(ONTARIO).
Heat Capacity Mapping Mission (HCMM): Interpretation of imagery over Canada [E82-10070] p0079 N82-20593

Relief effects and the use of terrain models in SAR image p0086 N82-21475

CENTRE DE RECHERCHES EN PHYSIQUE DE ENVIRONNEMENT, ISSY-LES-MOULINEAUX

(FRANCE).
Direct determination of the two dimensional image spectrum from raw synthetic aperture radar radar data p0122 N82-21474

COLOGNE UNIV. (WEST GERMANY).

Atlas of the global distribution of the total ozone oncentration according to satellite measurements easurements p0078 N82-19740 [MITT-28]

COLORADO STATE UNIV., FORT COLLINS.

Thermal vegetation canopy model studies p0064 N82-16455 [AD-A106422] Regional properties of angular reflectance models

p0083 N82-17599 Watershed model study using LANDSAT data p0106 N82-17602

COLORADO UNIV., BOULDER.

Investigation of geomagnetic field forecasting and fluid dynamics of the core [E82-10162] p0087 N82-21686

CÒNSIGLIO NAZIONALE DELLE RICERCHE, MILAN

Heat Capacity Mapping Mission (HCMM) program: Study of geological structure of Sicily and other Italian areas p0091 N82-20596

CONSIGLIO NAZIONALE DELLE RICERCHE, VENICE

(ITALY).

LANDSAT imagery of the Venetian Lagoon: multitemporal analysis [E82-10036] p0119 N82-19 p0119 N82-19612

Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p0116 A82-27689

D

DARTMOUTH COLL, HANOVER, N.H.
Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests p0062 A82-27668

DEFENSE MAPPING AGENCY AEROSPACE CENTER. ST LOUIS MO

Matrix data analysis: Color/B and W coding is not always

enough [AD-A108406] p0084 N82-18930

Profiling sensitivity to image quality [AD-A108405] p0084 N82-18931 Experiences with digital terrain elevation data contouring

programs [AD-A110280] p0087 N82-21690

DEPARTMENT OF AGRICULTURE, HOUSTON, TEX. AgRISTARS: Soil moisture/early warning and crop condition assessment. Interface control document [E82-10053] p0065 N82-19628

AgRISTARS: Yield model development/soil moisture. Interface control document

pQQ65 N82-19629 [E82-10054]

Taxonomic classification of world map units in crop producing areas of Argentina and Brazil with representative US soil series and major land resource areas in which they [E82-10058]

[E82-10058] p0065 N82-19633 DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.

A gRISTARS: Agriculture and Resources Inventory Surveys Through Aerospace Remote Sensing. Enumerator's manual, 1981 ground data survey n0069 N82-21653

[F82-10116]

DEUTSCHE FORSCHUNGS- UND VERSUCHSANSTALT FUER LUFT- UND RAUMFAHRT, OBERPFAFFENHOFEN (WEST GERMANY).

Sounding the aerosol distribution over the Upper Rhine Valley in the Valley in the Speyer area by means of lidar p0079 N82-20782

Two-dimensional power spectra of SEASAT SAR p0098 N82-21469 imagery
DEUTSCHES GEODAETISCHES

FORSCHUNGSINSTITUT, MUNICH (WEST

GERMANY).
Helmut Wolf: On the occasion of his 70th birthda
p0084 N82-1960 p0084 N82-19603 [SER-E-18] p0084 N82-19603
Developments in geodesy within the scope of Helmut
Wolf's work
Mathematical and stochastic models in photogrammetry
relating to Helmut Wolf's work
The diagnosis settlement 1980 of the German main
triangulation network. Parl 2: Trajectories
[SER-B-253-MITT-159-PT-2]

[JOER-B-203-MITI-159-F1-2] DUUBS NBZ-19548 DIGITAL PROGRAMMING SERVICES, INC.. WALTHAM, MASS. Development and applications of techniques to process hydrometeor distribution data

[AD-A109929] p0109 N82-20822

DORNIER-WERKE G.M.B.H., FRIEDRICHSHAFEN (WEST GERMANY).
Imaging microwave radiometer. Phase A study. Volume
1: Executive summary [ESS/SS-1006] p0132 N82-18564
Satellite scatterometer feasibility study. Volume 1:
Technical results [ESA-CR(P)-1492-VOL-1] p0133 N82-19650
Satellite scatterometer feasibility study. Volume 2: Data extraction algorithm and error simulation for wind sensor
extraction algorithm and error simulation for wind sensor [ESA-CR(P)-1492-VOL-2] p0133 N82-19651
Study of a radar altimeter for the European remote sensing
program. Volume 1: Executive summary [SPAR-R.1090-ISSUE-A] p0133 N82-19652
,
E
-
ECOLE NATIONALE SUPERIEURE DES MINES, VALBONNE (FRANCE).
The TOCIND experiment
[CTAMN/81/R/10] p0098 N82-19805 ECOSYSTEMS INTERNATIONAL, INC., GAMBRILLS,
MD.
Applications systems verification and transfer project. Volume 7: Cost/benefit analysis for the ASVT on
operational applications of satellite snow-cover
observations [NASA-TP-1828] p0109 N82-20623
EG AND G WASHINGTON ANALYTICAL SERVICES
CENTER, INC., ROCKVILLE, MD. Error analysis of pulse location estimates for simulated
bathymetric lidar returns
[PB82-109448] p0096 N82-17803 ELECTRONICS RESEARCH LAB., ADELAIDE
(AUSTRALIA). An aerial survey-of water turbidity and laser depth
sounding performance along the Queensland Coast
[AD-A109050] p0098 N82-19802 Proposed digital cartridge recording system for
WRELADS
[AD-A109484] p0134 N82-20491 ENGINS MATRA, VELIZY (FRANCE).
Data rate reduction. Impact of image data compression
on end to end data management of a multispectral payload
[REPT-44/130] p0120 N82-19654
ENVIRONMENTAL RESEARCH AND TECHNOLOGY, INC., CONCORD, MASS.
Applications systems verification and transfer project. Volume 8: Satellite snow mapping and runoff prediction
handbook
[NASA-TP-1829] p0109 N82-20624 ENVIRONMENTAL RESEARCH INST. OF MICHIGAN,
ANN ARBOR.
Documentation of computer procedures for labeling spring grains and discriminating between spring wheat and
barley using LANDSAT data
[E82-10030] p0063 N82-16448 Notes for Brazil sampling frame evaluation trip
[E82-10060] p0066 N82-19635
The 1981 Argentina ground data collection [E82-10127] p0070 N82-21658
EUROPEAN SPACE AGENCY, PARIS (FRANCE).
Sea state measurement with a two frequency scatterometer (theory)
[ESA-TT-710] p0096 N82-17802
MRSE: A Microwave Remote Sensing Experiment in Spacelab p0134 N82-20375
SAR image quality [ESA-SP-172] p0122 N82-21458
[ESA-SP-172] p0122 N82-21458 Atlas of METEOSAT imagery
[ESA-SP-1030] p0124 N82-21700
EUROSPACE, PARIS (FRANCE). Examination of the operational prospects for remote
sensing [ESA-CR(P)-1476] p0138 N82-18669
from outstand borne was 1900a
F
•
FLORIDA STATE UNIV., TALLAHASSEE.
Coastal upwelling ecosystems analysis. Atlas of the

[ESA-SP-172]	p0122 N82-21458
Atlas of METEOSAT imagery	
[ESA-SP-1030]	p0124 N82-21700
EUROSPACE, PARIS (FRANCE).	
Examination of the operational sensing	prospects for remote
[ESA-CR(P)-1476]	p0138 N82-18669
F	
FLORIDA STATE UNIV., TALLAHA	ASSEE.
Coastal upwelling ecosystems	analysis. Atlas of the
JOINT I aircraft winds for the 500	DO097 N82-19796
[PB82-114703]	po097 N82-19796
FLORIDA UNIV., GAINESVILLE.	
Use of thermal inertia determin	
nocturnal cold prone areas in Flori	
[E82-10040]	p0064 N82-19615
Application of satellite frost fored parts of the United States, phase 2	
[NASA-CR-166827]	p0121 N82-20607
Application of satellite frost fore	
parts of the United States, phase 2	
	p0121 N82-20608
A satellite frost forecasting system	
	n0079 N82-20615

Use of thermal inertia determined by HCMM to predict

n0071 N82-21681

nocturnal cold prone areas in Florida

```
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, ROME (ITALY).
                                                                             Amazonas project: Application of remote sensing
                                                                           techniques for the integrated survey of natural resources
     Precipitation assessment from environmental satellite
   Precipitation assessment from environmental Science data for northwest Libya including the Gefara plan IRSC-4| p0107 N82-19790
FREIE UNIV., BERLIN (WEST GERMANY).

Dust from the Sahara in satellite images
                                                                          [E82-10071]
                                              nO079 N82-20802
                                                                          [E82-10072]
                               G
GENERAL ELECTRIC CO., PHILADELPHIA, PA
   Wide area, coarse resolution imaging with satellite-borne synthetic aperture radars in low-earth and geosynchronous orbits p0082 A82-27631
     LANDSAT-2 and LANDSAT-3 flight evaluation report,
  23 January to 23 July 1980
[E82-10022]
                                              pO132 N82-16440
GEOLOGICAL SURVEY, DENVER, COLO.
     Registration of heat capacity mapping mission day and obt images p0113 A82-22146
                                                                           observations of Earth
   night images
                                                                          [E82-10079]
      Application of HCMM data to regional geologic analysis
   for mineral and energy resource evaluation [E82-10137] p00
                                             n0092 N82-21664
GEOLOGICAL SURVEY, PHOENIX, ARIZ.
                                                                          perspectives
[E82-10080]
     Applications systems verification and transfer project.
   Volume 2: Operational applications of satellite snow-cover observations and data-collection systems in the Arizona
                                                                          [E82-10081]
   (NASA-TP-1823)
                                              p0108 N82-20618
                                                                          [E82-10082]
                                                                          [E82-10148]
HUNTER COLL, NEW YORK
                                                                        HOUSTON, TEX.
     Stochastic models of cover class dynamics
                                              p0059 A82-27586
HYDEX CORP., FAIRFAX, VA.
     Strategies for using remotely sensed data in hydrologic
  (F82-10156)
                                              00109 N82-21680
                                                                          [AD-A108784]
```

INSTITUTO DE PESQUISAS ESPACIAIS, SAO JOSE DOS CAMPOS (BRAZIL). CNPq/INPE: LANDSAT-system [E82-10023]

p0118 N82-16441 Report on a short course in remote sensing and the geological applications of LANDSAT MSS imagery at [E82-10024] p0091 N82-16442

Remote sensing data applied to land-use survey at the Paraiba Valley [E82-10025] p0081 N82-16443 Brazilian remo prospective needs remote sensing activities, current [F82-10026] nO132 NR2-16444

Simplified algorithm for calculating radiative transfer in satellite images [INPE-2169-RPE/385] p0118 N82-16450

Particle precipitation and atmospheric X-and Gamma-rays in the South Atlantic magnetic anomaly by balloon

experiments [INPE-2119-RPE/343] p0083 N82-17711 The severity of the Brazilian freeze of July 1981, as monitored by satellite [INPE-2231-RPE/399] p0064 N82-17746 -2231-RPE/399] p0064 N82-17746 microcomputer for control of data collection

platforms [INPE-2104-RPE/331] p0133 N82-18881 General configuration and internal disposition of equipment in a satellite for collecting environmental data [INPE-2240-PRE/026] p0078 N82-19256

Data collection platforms: Applications to hydrology [INPE-2246-PRE/030] p0107 NB2-19304 Automatic analysis of multispectral images p0133 NB2-19520 Utilization of Aerochrome 2443 film for identification

and estimating wheat growing areas [INPE-2197-PRE/006] p0066 N82-19639 Method of interpretation of remote sensing data and

applications to vegetation
[INPE-2215-MD/010] p0066 N82-19640
Methodology of the interpretation of remote sensing data ns in pedology and application p0078 N82-19641 [INPE-2211-MD/008] Methodology of the interpretation of remote sensing data

nd applications in geomorphology
NPE-2209-MD/007] p0091 N82-19642
Preliminary results of a study of mapping thermal and applicatio

discharge in the ocean, using remote sensing data [INPE-2229-PRE/021] p0097 N82-19704 Convergence zones in the South Atlantic and their influence on the precipitation regime in Northeastern

[INPE-2307-TDL/074] p0097 N82-19778

Survey of the cane-growing area of the state of Sao Paulo using LANDSAT data, Safra Year 1979/80, volume p0067 N82-20594 Land use in the Paraiba Valley through remotely sensed Study project of intrusive rocks: States of Espirito Santo and Rio de Janeiro, south and east of Minas Gerais and southeast of the state of Sao Paulo [E82-10076] p0092 N82-20599 [E82-10076] p0092 N82-20599
Elevation of a cane-growing area of the state of Sao
Paulo using LANDSAT data
[E82-10077] p0067 N82-20600
Relation of the activities of the IPDF/INPE project (reforestation subproject) during the year 1979 p0067 N82-20601 System of forecasting agricultural crops using satellite p0067 N82-20602 The LANDSAT system operated in Brazil by CNPg/INPE results obtained in the area of mapping and future p0121 N82-20603 An algorithm for spatial heirarchy clustering p0121 N82-20604 Dynamic study of the upper Sao Francisco River and the Tres Marias reservoir using MSS/LANDSAT images p0108 N82-20605 Comparison of storm-time changes of geomagnetic field nd and at MAGSAT altitudes p0087 N82-21675 INTER-AMERICAN GEODETIC SURVEY, FORT SAM Photogrammetry software. A package for everyone [AD-A108098] p0118 N82-17570 Remote sensing in Latin America: Technology and markets for the 1980's p0138 N82-20626

L

Use of Magsat anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10049] p0091 N82-19624 Use of MAGSAT anomaly data for crustal structure and mineral resources in the US midcontinent [E82-10152] p0092 N82-21677

JET PROPULSION LAB., CALIFORNIA INST. OF TECH., PASADENA.

IOWA UNIV., IOWA CITY.

The Seasat low rate data processing system

p0093 A82-24061 Comparison of conventionally measured sea surface

temperature and wind speed with data retrieved from satellite-borne microwave radiometry p0093 A82-24063 Analysis of two Seasat synthetic aperture radar images p0074 A82-25452 of an urban scene

Modeling misregistration and related effects on multispectral classification p0113 A82-25455 Topex orbit sustenance maneuver design p0094 A82-27091 [AIAA PAPER 82-0202] Spaceborne radar observation of the earth surface

p0127 A82-27578 Technologies for the multispectral mapping of earth p0128 A82-27580

Simulation and studies of spaceborne synthetic aperture radar image quality with reduced bit rate p0128 A82-27594

A data base of geologic field spectra

p0090 A82-27600

A shuttle scanning laser altimeter for topographic p0083 A82-27632 Integration of LANDSAT with geology and airborne geophysics into an operational mineral exploration system [E82-10028] p0091 N82-16446 Session III of the VLBI/Laser intercomparison task of the NASA crustal dynamics project [NASA-CR-168427] p0083 N82-17708

Seasat data utilization project [NASA-CR-168557]

p0097 N82-18660 OHNS HOPKINS UNIV., LAUREL, MD.

Optimal spatial filtering and transfer function for SAR ocean wave spectra p0094 A82-27596

KANSAS UNIV., LAWRENCE.

Microwave remote sensing: Active and passive. Volume - Microwave remote sensing fundamentals and p0126 A82-22877 The application of remote sensing to resource management and environmental quality programs in [E82-10029] n0063 N82-16447

[E82-10157]

COMPONATE SOURCE INDEX	NATIONAL ALMONAUMO	O AND OF ACE ADMINISTRATION: LEWIS
KANSAS UNIV. CENTER FOR RESEARCH, INC., LAWRENCE. Sigma/deg/ signature of the Amazon rain forest obtained	Sample selection in foreign similarity regions for multicrop experiments [E82-10118] p0070 N82-21655	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, GODDARD SPACE FLIGHT CENTER, GREENBELT, MD.
from the Seasat scatterometer p0125 A82-21027	A look at the commonly used LANDSAT vegetation indices	Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422
Crop classification using airborne radar and Landsat data p0058 A82-21033	[E82-10123] p0070 N82-21657	Contrast reduction by the atmosphere and retrieval of
Dielectric properties of snow	Sonora exploratory study for the detection of wheat-leaf	nonuniform surface reflectance p0112 A82-20423
[NASA-CR-166764] p0107 N82-19638 Active microwave investigation of snowpacks:	[E82-10133] p0070 N82-21661	Structure and variability of the Alboran Sea frontal system p0093 A82-20447
Experimental documentation, Colorado 1979-1980	AgRISTARS: Supporting research. Classification of corn: Badhwar profile similarity technique	Comparison of sigma/deg/ obtained from the conventional definition with sigma/deg/ appearing in the
[NASA-CR-166727] p0107 N82-19646 KENT STATE UNIV., OHIO.	[E82-10150] p0071 N82-21676 AgRISTARS: Supporting research. US crop calendars	radar equation for randomly rough surfaces
Precision in the evaluation of Landsat autocorrelation - The terrain effect p0116 A82-27686	in support of the early warning project	p0112 A82-21039 Ore deposits in Africa and their relation to the underlying
KENTRON INTERNATIONAL, INC., HAMPTON, VA.	[E82-10158] p0072 N82-21682 LOGICA LTD., LONDON (ENGLAND).	mantle p0090 A82-26604
SASS measurements of the Ku-band radar signature of the ocean p0093 A82-21917	Future Earthnet Dissemination Systems (FEDS) study.	Information expectations from Landsat-D p0128 A82-27583
the ocean pooss A62-21317	Executive summary [REPT-3318] p0124 N82-21698	Land cover classification accuracy as a function of sensor
1	Interpretation of remotely sensed image data and impact of cluster compression	spatial resolution p0076 A82-27665 Precipitation measurements from space - Workshop
L	[REPT-44.2866] p0124 N82-21699	summary 28 April-1 May 1981, Greenbelt, MD
LIVERPOOL UNIV. (ENGLAND).		p0077 A82-28295 An optical model for the microwave properties of sea
Spherical harmonic representation of the main geomagnetic field for world charting and investigations of	M	ice
some fundamental problems of physics and geophysics [E82-10075] p0086 N82-20598	MARYLAND UNIV., COLLEGE PARK.	[NASA-TM-83865] p0095 N82-17561 Characterizing user requirements for future land observing
LOCKHEED ENGINEERING AND MANAGEMENT	Superconducting tensor gravity gradiometer	satellites
SERVICES CO., INC., HOUSTON, TEX. Use of Landsat-derived temporal profiles for corn-soybean	p0126 A82-23045 MASSACHUSETTS INST. OF TECH., CAMBRIDGE.	[NASA-TM-83867] p0081 N82-17562 Satellite-derived ice data sets no. 1: Antarctic monthly
feature extraction and classification p0059 A82-26842	Applications to Earth physics: Very-long-baseline	average microwave brightness temperatures and sea-ice
Evaluation of large area crop estimation techniques p0061 A82-27662	interferometry and data analysis [NASA-CR-168743] p0088 N82-21796	concentrations, 1973 - 1976 [NASA-TM-83812] p0096 N82-17563
Partially processed multispectral scanner LANDSAT	MIAMI UNIV., FLA.	Some new methods in geomagnetic field modeling
high-density tapes reformatting system (HDT-AM/AMC) design specifications	Investigations of medium wavelength magnetic anomalies in the Eastern Pacific using Magsat data	applied to the 1960 - 1980 epoch [NASA-TM-83868] p0083 N82-17714
[E82-10020] p0118 N82-16438	[E82-10047] p0119 N82-19622	Satellite and surface geophysical expression of anomalous crustal structure in Kentucky and Tennessee
Wheat stress indicator model, Crop Condition Assessment Division (CCAD) data base interface driver, user's manual	MICHIGAN ENERGY AND RESOURCE RESEARCH ASSOCIATION, DETROIT.	[NASA-TM-82163] p0084 N82-17715
[E82-10031] p0064 N82-19607	Resourceful decisions: LANDAT in Michigan [E82-10037] p0078 N82-19601	Spectral albedos of midlatitude snowpacks [NASA-TM-83858] p0106 N82-18663
AgRISTARS: Interim catalog ground data summary, data acquisition year 1979	MICHIGAN STATE UNIV., EAST LANSING.	Multidimensional aspects: Ozone, temperature and
[E82-10032] p0064 N82-19608 Recommended data sets, corn segments and spring	Application of satellite frost forecast technology to other parts of the United States, phase 2	transport p0081 N82-18772
wheat segments, for use in program development	[NASA-CR-166827] p0121 N82-20607	Stratospheric instruments and analyses p0133 N82-18776
[E82-10034] p0064 N82-19610 AgRISTARS: Early warning and crop condition	Applicability of satellite freeze forecasting and cold climate mapping to the other parts of the United States	Climate observing system studies: An element of the
assessment. Patch image processor user's manual	p0068 N82-20613	NASA Climate Research Program: Workshop report [NASA-TM-84040] p0078 N82-18808
[E82-10055] p0065 N82-19630 AgRISTARS: Foreign commodity production forecasting.	MSU test of P-model p0121 N82-20614 MICHIGAN UNIV., ANN ARBOR.	A comparison of unsupervised classification procedures
Corn/soybean decision logic development and testing [E82-10056] p0065 N82-19631	Spectral reflectances of freshwater ice and snow from	on LANDSAT MSS data for an area of complex surface conditions in Basilicata, Southern Italy
Agricultural soil moisture experiment, Colby, Kansas	340 through 1100 nm p0106 N82-17601 MISSISSIPPI STATE UNIV., MISSISSIPPI STATE	[E82-10038] p0119 N82-19613 Studies related to Magsat
1978: Measured and predicted hydrological properties of the soil	Application of remote sensing to state and regional	[E82-10050] p0085 N82-19625
[E82-10057] p0065 N82-19632	problems [E82-10033] p0078 N82-19609	The effect of finite field size on classification and atmospheric correction
Preliminary evaluation of spectral, normal and meteorological crop stage estimation approaches	MITRE CORP., BEDFORD, MASS.	[NASA-TM-83818] p0120 N82-19645
[E82-10059] p0065 N82-19634 Segment-level evaluation of the simulated aggregation	Coherent scatter of microwaves from moderately rough surfaces	Information theory lateral density distribution for Earth inferred from global gravity field
test: US corn and soybean exploratory experiment	[AD-A106133] p0095 N82-16331 MORGAN STATE UNIV., BALTIMORE, MD.	[NASA-TM-83825] p0085 N82-19731
[E82-10061] p0066 N82-19636 Registration verification of SEA/AR fields	Assessment of the quality of GATE area rainfall data	Estimating ocean-air heat fluxes during cold air outbreaks by satellite
[E82-10083] p0068 N82-21635 Ground registration of data from an airborne	from a Nimbus-5 radiometer [NASA-CR-168512] p0109 N82-20807	[NASA-TM-83854] p0097 N82-19781 Applications systems verification and transfer project.
scatterometer		Volume 1: Operational applications of satellite snow cover
[E82-10084] p0068 N82-21636 As-Built design specification for UNIV4VEC	Ń	observations: Executive summary [NASA-TP-1822] p0108 N82-20617
[E82-10085] p0122 N82-21637 As-Built documentation of programs to implement the	•••	Cloud Top Scanning radiometer (CTS): User's guide [NASA-TM-83887] p0135 N82-21826
Robertson and Doraiswamy/Thompson models	NATIONAL ACADEMY OF SCIENCES - NATIONAL RESEARCH COUNCIL, WASHINGTON, D. C.	NATIONAL AERONAUTICS AND SPACE
[E82-10086] p0122 N82-21638 AgRISTARS: Foreign commodity production forecasting.	Remote sensing for water resources and hydrology: An	ADMINISTRATION. LYNDON B. JOHNSON SPACE CENTER, HOUSTON, TEX.
Project test reports document, volume 1 [E82-10087] p0068 N82-21639	assessment of the Corps of Engineers' program [PB82-137142] p0110 N82-21704	Use of Landsat-derived temporal profiles for corn-soybean feature extraction and classification p0059 A82-26842
US corn and soybeans exploratory experiment	NATIONAL AERONAUTICS AND SPACE	AgRISTARS: Foreign commodity production forecasting.
[E82-10088] p0068 N82-21640 As-built design specification for PARHIS	ADMINISTRATION, WASHINGTON, D. C. Advanced aerospace remote sensing systems for global	Minutes of the annual formal project manager's review, including preliminary technical review reports of FY80
[E82-10089] p0122 N82-21641	resource applications p0127 A82-27577	experiments
As-built design specification for PARCLS [E82-10090] p0123 N82-21642	Satellite Earth resources data, module U-3 [E82-10035] p0119 N82-19611	[E82-10039] p0064 N82-19614 NATIONAL AERONAUTICS AND SPACE
As-built design specification for MISMAP [E82-10091] p0123 N82-21643	NASA Oceanic Processes Program, Fiscal Year 1981 [NASA-TM-84467] p0098 N82-19801	ADMINISTRATION. LANGLEY RESEARCH CENTER, HAMPTON, VA.
As-built design specification for the CLASFYG program	[NASA-TM-84467] p0098 N82-19801 Gradio: Project proposal for satellite gradiometry	Influence of dissolved organic materials on turbid water
[E82-10092] p0068 N82-21644 Project communications/documentation standards	[NASA-TM-76796] p0134 N82-20606	optical properties and remote-sensing reflectance p0093 A82-20445
manual	Observation of the Earth by radar [NASA-TM-76830] p0124 N82-21687	Sigma/deg/ signature of the Amazon rain forest obtained from the Seasat scatterometer p0125 A82-21027
[E82-10093] p0068 N82-21645 As-built design specification for segment map (Sgmap)	NATIONAL AERONAUTICS AND SPACE	SASS measurements of the Ku-band radar signature of
program [E82-10094] p0123 N82-21646	ADMINISTRATION. AMES RESEARCH CENTER, MOFFETT FIELD, CALIF.	the ocean p0093 A82-21917 The NASA participation in the 1980 EPA PEPE/NEROS
San Juan National Forest Land Management Planning	Using known map category marginal frequencies to improve estimates of thematic map accuracy	field measurements program p0075 A82-26621
Support System (LMPSS) requirements definition [E82-10108] p0069 N82-21649	p0113 A82-25456	The microwave radiometer spacecraft. A design study: Executive summary p0131 N82-16154
An evaluation of ISOCLS and CLASSY clustering algorithms for forest classification in northern Idaho	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. EARTH RESOURCES LABS., BAY	Mission definition for a large-aperture microwave radiometer spacecraft p0131 N82-16155
[E82-10109] p0069 N82-21650	ST. LOUIS, MISS.	Laboratory upwelled radiance and reflectance spectra of
Transition year labeling error characterization study [E82-10111] p0069 N82-21651	ELAS - A geobased information system that is transferable to several computers p0115 A82-27666	Kerr reservoir sediment waters [NASA-TP-1993] p0110 N82-21774
Wheat stress indicator model, Early Warning (EW) data	NATIONAL AERONAUTICS AND SPACE	NATIONAL AERONAUTICS AND SPACE
base interface driver, user's manual [E82-10115] p0069 N82-21652	ADMINISTRATION. GODDARD INST. FOR SPACE STUDIES, NEW YORK.	ADMINISTRATION. LEWIS RESEARCH CENTER, CLEVELAND, OHIO.
Development of rotation sample designs for the estimation of crop acreages	Fanning - A classification algorithm for mixture landscapes applied to Landsat data of Maine forests	Ground-truth observations of ice-covered North Slope Lakes imaged by radar
[E82-10117] p0070 N82-21654	p0062 A82-27668	[NASA-TM-84127] p0107 N82-18664

Recorring ocean waveleight from HF radar sea schools (RE2-1013) 50008 NR2-17805 (RE2-1013) 50008 NR2-1		TOWNS THATION. WALLOFS	CONTONATE SOUNCE INDEX	
NOSS altimeter algorithm specifications [MAS.P.H.P.102] (PDSS N2-1083) (PDSS N2-1	ADMINISTRATION. WALLOPS FLIGHT CENTER,	P	FARNBOROUGH (ENGLAND).	
BURRAU OF STANDARDS, BOULDER, COLOR Concepting content was preferred to an experience of the content of the content of the color of the	NOSS altimeter algorithm specifications		LANDSAT imagery	
Annoya Ceaning systems welfaction and transfer project. Applications systems welfacted and attractive property of the propert		[E82-10129] p0087 N82-21659	An introduction to image processing at Royal Aircraft	
Separation of internal and external fields: A new propose No. 2-1805 NATIONAL CENTER FOR ATMOSPHERIC RESEARCH. Low-lithiding cloudiness and climate feedbase. Comparative estimates from satelline data for the comparative estimates for the comparative estim	COLO.	altitude		
NATIONAL CHINATOR CONCENTRATION AT TACTORIES Comparative estimates from stelline data Comparative estimates from the stelline financial control of standille some cover (Pasa-Chi-Pica) (1982-1004)		Separation of internal and external fields: A new	into an equispaced grid of points	
Low-statistic discussion of selection selection selection of selection		[E82-10139] p0123 N82-21666		
ATIONAL ENVIRONMENTAL SAFELITE SERVICE. WASHINGTON, D. C. WASHINGT	Low-latitude cloudiness and climate feedback -	Delineation of soil temperature regimes from HCMM		
Application of systems verification and transfer project. Volume 6: Operating Systems verification and transfer project. Volume 6: Operating Systems verification and transfer project. Volume 6: Operating Systems verification of seeling systems of policy Naz. 2002 pp. 1019 Naz. 2	p0075 A82-26980	[E82-10042] p0119 N82-19617		
whoping discontinus delication discontinus projects of the control	WASHINGTON, D. C.	numerical models using satellite temperature		
Application of satellite frost forecast technology to other mid-page special conditions in the North Alamic (AD-AI) 109 N82-2092 (CSI-RR-3384)	Volume 6: Operational applications of satellite snow-cover		The design and implementation of an operational,	
ADMINISTRATION. ROCKVILLE, MD. Demonstration of slong-area embospheric tracer system using perfluorocarbons. ANATIONAL OCEANIC AND ATMOSPHERIC and AMINISTRATION. WASHINGTON, D. 20138 N82-17792. [P822-102219] [P822-1022219] [P822-1022219] [P822-1022219] [P822-10222-10222] [P822-10222-10222] [P822-10222-10222] [P822-10222-10222] [P822-10222-10222] [P822-10222-10222] [P822-1022				
Error analysis of puble focation estimates for simulated bathymeric idual returns 20096 NB2-17803 ANTIONAL CAND ATMOSPHUS PRING MD. ARTIONAL OCEANIC AND ATMOSPHERIC PROSESSES OF TRANSPORTATION AND STATES PRING MD. ARTIONAL OCEANIC AND ATMOSPHERIC PROSESSES OF TRANSPORTATION AND STATES PRING MD. ARTIONAL OCEANIC AND ATMOSPHERIC PROSESSES OF TRANSPORTATION AND STATES PRING MD. ARTIONAL OCEANIC AND ATMOSPHERIC PROSESSES OF TRANSPORTATION AND STATES PROVIDED TO THE PROSESSES OF TRANSPORTATION AND STATES PROVIDED TO THE PROVIDED THE			9	
Delineation of soil temperature regimes from HCMM ANTIONAL OCEANIC AND ATMOSPHERIC (E82-10049) p.0038 N82-10932 PERS2-1093219] p.0038 N82-20932 NATIONAL RESEARCH NST. FOR OCEANOLOGY. STELLEMBOSCH (SOUTH AFRICA). Interaction between the Aguihas current and the subtripopial convergence (CSI-RF-384) NATIONAL WEATHER SERVICE. FORT WORTH, TEX. PARTIONAL WEATHER SERVICE. FORT WORTH, TEX. PARTING PROPER SERVICE. FORT	bathymetric lidar returns	The Office for Remote Sensing of Earth Resources	_	
ADMINISTRATION, SILVER SPRING, MD. Demonstration of a long-range atmospheric tracer system using perfluorocarbons (p. 2081 N82-16813) ANTIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, WASHINGTON, D. C. DOSS N82-103219 [P82-103219] p.0138 N82-19729 Evaluation of HCMM satellitie data for exatuatine stidal circulation patterns and thermal inertia soil moisture measurements [E82-1004] p.0108 N82-20529 [E82-1004] p.0108 N82-20529 [E82-10064] p.0108 N82-20529 [E82-10064] p.0008 N82-20528 [E82-10064] p.0008 N82-20528 [E82-10064] p.0008 N82-20529 [E82-10064] p.0008 N82-20539 [E82-10067] p.0008 N82-	, ,	Delineation of soil temperature regimes from HCMM		
using perfluenceatrons [PB82-1062446] p 0081 N82-16613 NATIONAL OCEANICA ND ATMOSPHERIC ADMINISTRATION, WASHINGTON, D. C. Publications and reports on contracts and grants, 1980 p 0138 N82-17782 Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inertia soil moisture measurements [E82-10051] p 0138 N82-17892 [E82-10051] p 0108 N82-20587 NATIONAL RESEARCH INST. FOR OCEANOLOGY. STELLENGOCK (SOUTH AFRICA). Interaction between the Aguibas current and the interaction introduction to weather stabilities interpretation: Introduction to weather stabilities interpretation: Introduction to weather stabilities interpretation: Introduction to weather approach to corp are astination of the Carrent and the interaction o	ADMINISTRATION, SILVER SPRING, MD.	[E82-10141] p0070 N82-21668		
DATIONAL OCEANIC AND ATMOSPHERIC Publications and reports on contracts and grants. 1980 [P882-103219] pol 138 N82-17982 Evaluation of HCMM satellite data for estuarine tidat circulation patterns and thermal inerties osil moisture measurements [E82-10067] pol 1882-20587 NATIONAL RESEARCH INST. FOR OCEANOLOGY. STELLEMPOSCH ISOUTH AFRICA). Interaction between the Aguihas current and the subtropical convergence [CSIR-RF-384] pol 98 N82-20547 NATIONAL RESEARCH INST. FOR OCEANOLOGY. Washingt satellite introduction to weather with the subtropical convergence [CSIR-RF-384] pol 98 N82-20547 NATIONAL WEATHER SERVICE, FORT WORTH, TEX. Washingt satellite interpretation: Introduction to weather system NATIONAL WASHINGTON, D. C. Remote sensing procurement package: A management propose of the washington of the washington geometry. PROBLEM OF SERVICE, FORT WORTH, TEX. Washingt satellite interpretation: Introduction to weather system PROPER OF SET OF	using perfluorocarbons	heating patterns	Applications systems verification and transfer project.	
Publications and reports on contracts and grants, 1980 [PB82-103219] p0138 N82-17952 Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inertia soil moisture measurements [E82-10064] p0108 N82-20587 NATIONAL RESEARCH INST. FOR OCEANOLOGY. STELLEN90SOR (SOUTH AFRICA). Interaction between the Aguthas current and the subtropical convergence [CSIR-RR-384] p0098 N82-20824 NATIONAL WEATHER SENVICE. FORT WORTH, TEX. Weather satellite interpretation: Introduction to weather satellite interpretation: Introduction to weather satellite intergretation: Introduction to overather sate intergretation of a segment-based LANDSAT full-fram approach to corp area estimated to operate assimilation poor and an advanced in the political process. Poli	NATIONAL OCEANIC AND ATMOSPHERIC	PENNSYLVANIA UNIV., PHILADELPHIA.	observations. Colorado Field Test Center	
Evaluation of HCMM satellite data for estuarine tidal circulation patterns and thermal inerties soil moisture measurements patterns and the patterns and	Publications and reports on contracts and grants, 1980	p0059 A82-27586		
Letary Control RESEARCH INST. FOR OCEANOLOGY. NATIONAL RESEARCH INST. FOR OCEANOLOGY. NATIONAL WEATHER SERVICE, FORT WORTH, TEX. Weather satellite interpretation: Introduction to weather satellite imagery. [P892-107657] NAVAL OCEAN RESEARCH AND DEVELOPMENT ACTIVITY, BAY ST. LOUIS, MISS. Structure and variability of the Alboran Sea frontal system p0933 A82-20647 NAVAL OCEAN STEEMS CENTER, SAN DIEGO. CALIF. Satellite-borne non-DOD sensors for terrestrial observations (IAD-A109486) [AD-A109486] NAVAL OCEAN STEEMS CENTER, SAN DIEGO. CALIF. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] NAVAL SURFACE WEAPONS CENTER, DAHLGRIN, VA. Mere wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] NAVAL SURFACE WEAPONS CENTER, DAHLGRIN, VA. Mere wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] NAVAL SURFACE WEAPONS CENTER, DAHLGRIN, VA. MERBASKA UNIV LINCOLIN. A gradient model of vegetation and climate utilizing NOAA stellatine imagery. Phase 1: Texas transect [E82-10145] DAM Stellite imagery. Phase 1: Texas transect [E82-10146] Remote sensing procurement packaps. A management p	Evaluation of HCMM satellite data for estuarine tidal	Improved definition of crustal anomalies for Magsat	Spectral reflectance of hydrophytes p0102 A82-24960	
NATIONAL RESEARCH INST. FOR OCEANOLOGY. STELLENGOSCH (SOUTH AFRICA). Interaction between the Aguibas current and the subtropical convergence [CSIR-R-384] poops N82-20824 NATIONAL WEATHER SERVICE, FORT WORTH, TEX. Weather satellite imagery [PB82-107657] NAVAL OCEAN RESEARCH AND DEVELOPMENT ACTIVITY, BAY ST. LOUIS, MISS. Structure and variability of the Alboran Sea frontial system p.0039 A82-20827 NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO. CAUF. Satellite-borne non-DOD sensors for terrestrial observations in the North Atlantic [AD-A109486] p.0134 N82-20630 NAVAL RESEARCH AB, WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p.0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, V.S. MAVAL SURFACE WEAPONS CENT	measurements	[E82-10051] p0085 N82-19626	p0059 A82-249	
Interaction between the Aguihas current and the subtropical convergence [CSIR-RF.384] p.0098 M82-20824 NATIONAL WEATHER SERVICE, FORT WORTH, TEX. Weather statellite interpretation: Introduction to weather satellite imagery politic imagery politic interpretation: Introduction to weather satellite imagery politic interpretation: Introduction to weather approach to corp are estimation politic interpretation: Introduction to weather approach to corp are estimation politic interpretation: Introduction to weather approach to corp are estimation politic interpretation: Introduction to weather approach to corp are estimation politic interpretation: Introduction of the politic interpretation of the politic interpretation of the politic interpretation politic interpretation politic interpretation: Introduction of very and illumiter to the European Politic	•	Remote sensing procurement package: A management	South Dakota	
Subtropical convergence [CSIR-RR-384] p0098 N82-20824 NATIONAL WEATHER SERVICE, FORT WORTH, TEX. Weather satellite interpretation: Introduction to the provide remote emeasurement in illumination of the provide remote measurement poof N82-20590 Effects of nitrogen nutrition on the growth, yield and analysis of ocean were sate in support of Seast A propose N82-20590 Effects of nitrogen nutrition on the growth, yield and satellite interpretations. Poof N82-20590 Effects of nitrogen nutrition on the growth, yield and satellite interpretations. Poof N82-20590 Effects of nitrogen nutrition on the growth, yield and satellite interpretations. Poof N82-20590 Effects of nitrogen nutrition on the growth, yield and satellite interpretations. Poof N82-20590 Effects of nitrogen nutrition on t	Interaction between the Agulhas current and the		SPAR AEROSPACE PRODUCTS LTD., TORONTO	
NATIONAL WEATHER SERVICE, FORT WORTH, TEX. Weather satellite interpretation: Introduction to weather spond on the growth, yield and reflectance cancer population of a segment-based LANDSAT full-fram approach to corp area estimation [E82-1008] p0067 N82-2059 [E82-1008] p0067 N82-2059 [E82-1008] p0067 N82-2059 [E82-1008] p0067 N82-2059 [E82-1005] p0068 N82-2069 pool of N82-2069 p		Soybean canopy reflectance as a function of view and	Study of a radar altimeter for the European remote sensing	
satellite imageny [PB2-107657] p0118 N82-16677 NAVAL OCEAN RESEARCH AND DEVELOPMENT ACTIVITY, BAY ST. LOUIS, MISS. Structure and variability of the Alboran Sea frontal p0093 A82-20447 NAVAL OCEAN SYSTEMS CENTER. SAN DIEGO. CAUF. Satellite-borne non-DOD sensors for terrestrial observations [AD-A109486] p0134 N82-20630 [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A10982] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pagific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., UNCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10146] p0098 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Dolts PO114 A82-26839 PO12 A82-26839 PO102 A82-26839 PO103 NB2-1667 Satellite-borne non-DOD sensors for terrestrial p0093 NB2-16697 PO068 NB2-2067 PO068 NB2-20639 PO068 NB2-20639 PO068 NB2-20591 PO068 NB2-20591 PO068 NB2-20639 PO069 NB2-20591 PO068 NB2-20639 PO069 NB2-20591 PO068 NB2-20639 PO069 NB2			[SPAR-R.1090-ISSUE-A] p0133 N82-19652	
Fifects of nitrogen nutrition on the growth, yield and reflectance characteristics of corn canopies Structure and variability of the Alboran Sea frontal system p0093 A82-20447 NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO. CALIF. Satellite-borne non-DOD sensors for terrestrial observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109882] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV. UNCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect p0098 N82-21648 NORTH CAROUNA STATE UNIV., RALEIGH. Remote sensing of salitime trip in the San Francisco Bay Dolets Fifects of nitrogen nutrition on the growth, yield and reflectance as influenced by cultural p0067 N82-20591 Sophean canopy reflectance as influenced by cultural poof N82-20591 Sophean canopy reflectance as influenced by cultural practices [E82-10016] p0068 N82-21647 A multiband radiometer and data acquisition system for remote sensing field research [E82-10148] p0114 N82-21669 Spectral-agronomic relationships of corn, soybean early poof N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p0071 N82-21670 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 Determination of the optimal level for combining area and yield estimates [satellite imagery	approach to corp area estimation	An experimental program to provide remote measurement	
Structure and variability of the Alboran Sea frontal system p.0093 A82-20447 p.0093 A82-20448 p.0093 A82-20448 p.0093 A82-20449 p.0093 A82-204	NAVAL OCEAN RESEARCH AND DEVELOPMENT		pressure in support of Seasat-A	
NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO. CAUF. Satellite-borne non-DOD sensors for terrestrial observations [AD-A109486] p.0134 N82-20630 [SE2-10142] p.0134 N82-21669 [SE2-10142] p.0134 N82-21669 [SE2-10142] p.0071 N82-21670 [SE2-10143] p.0098 N82-20827 [SE2-10145] p.0071 N82-21670 [SE2-10145] p.0071 N82-2	Structure and variability of the Alboran Sea frontal	[E82-10068] p0067 N82-20591	STANFORD UNIV., CALIF.	
Satellite-borne non-DOD sensors for terrestrial observations [AD-A109486] p. D134 N82-20630 [E82-10142] p. D134 N82-21669 [E82-10142] p. D134 N82-21669 [E82-10143] p. D070 N82-21670 [E82-10144] p. D070 N82-21670 [E82	NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO,	practices	for remote air pollution measurement p0077 A82-28152	
[82-10143] Spectral-agronomic relationships of corn, soybean and wheat canopies (E82-10143) poops N82-21662 conditions in the North Atlantic [AD-A109832] poops N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] poops N82-21691 NEBRASKA UNIV. LINCOLM. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10145] poops N82-21648 NORTH CAROLINA STATE UNIV. RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Pool 10 A82-26839 READING UNIV. (ENGLAND). Spectral-agronomic relationships of corn, soybean and wheat canopies (E82-10145) poop N82-21670 poop N82-21670 poop N82-21670 poop N82-21670 for combining area and ithology, northern Califonia and itinblogy, northern Califonia [E82-10135] poop N82-21662 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination of iteration of wavelength and view/illumination direction poop N82-21671 poops N82-21691 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] poop N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] poop N82-21673 Poop N82-21673 SystemATICS GENERAL CORP, STERLING, VA. SystemATICS GENERAL CORP policy of the optimal level for combining area and yield estimates [E82-10146] policy of the optimal level for combining area and yield estimates [E82-10146] policy of the optimal level for combining area and yield estimates [E82-10145] policy of the optimal level for combining area and yield estimates [E82-10145] policy of the optimal level for combining area and yield estimates [E82-10145] policy of the optimal level for combining area and yield estimates [E82-10145] policy of the optimal level for combining area and yield estimates [E82-10145] policy of t				
Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21672 [E82-10145] p0071 N82-21673 [E82-10145] STATE UNIV. OF NEW YORK, STONY BROOK. NEBRASKA UNIV LUNCOLN. A gradient model of vegetation and climate utilizing NOA satellite imagery. Phase 1: Texas transect [E82-10146] p0099 N82-21648 [E82-10146] p0099 N82-21648 [E82-10146] p0071 N82-21673 [E82-10145] P0071 N82-2		remote sensing field research		
[AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 READING UNIV. (ENGLAND). as a function of wavelength and view/illumination of wavelength and view/illumination of wavelength and view/illumination of comparative estimates p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration. p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between calibrate feedback. Comparative estimates from satellite data p0075 A82-20422	observations	[E82-10142] p0134 N82-21669	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure	
VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] pO099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 PO102 A82-26839 READING UNIV. (ENGLAND). Simple radiative transfer model for realizing po075 A82-20422 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration. p0116 A82-27689 SYSTEMATICS GENERAL CORP., STEFILING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between carry poons and reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration. p0116 A82-27689 SYSTEMATICS GENERAL CORP., STEFILING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between calibration of the optimal level for combining area and vield estimates [E82-10146] FRAME OF THE OF T	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state	[E82-10142] p0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p0070 N82-21670	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662	
Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 P0102 A82-26839 READING UNIV. (ENGLAND). Variability of reflectance measurements with sensor altitude and canopy type [E82-10146] p0071 N82-21672 [E82-10146] p0071 N82-21673 p0071 N82-21673 [E82-10146] p0071 N82-21673 [E82-1014	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology. northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback	
[82-10149] p0099 N82-21691 NEBRASKA UNIV LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [882-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 P0071 N82-21673 P0071 N82-21673 P0071 N82-21673 P0071 N82-21673 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN,	[882-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [882-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [882-10144] p.0071 N82-21671	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback Comparative estimates from satellite data	
A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect p0069 N82-21648 [E82-10107] p0069 N82-21648 E82-10107] p0069 N82-21648 P0071 N82-21673 P0071 N82-21673	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor allitude and canopy type	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An	
[E82-10107] p.0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p.0102 A82-26839 P.0102 A82-26839 READING UNIV. (ENGLAND). REMOTE SENSING OF SALINITY OF SALINI	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral	
Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 READING UNIV. (ENGLAND). Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing	[882-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and vield estimates	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors	
canopy piomass and reflectance 00057 A82-20422	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA stellife imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648	[882-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647	
	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between	
[E82-10136] p0123 N82-21663 RESEARCH AND DATA SYSTEMS, INC., LANHAM,	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between	
Development of a surface isolation estimation technique	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM.	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422	
Suitable for application of polar orbiting Satellite data FEE-ANY UNIV. (1984-EL).	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422	
[LOZ-10122] DO123 NOZ-2 1030 CONTROL TO GRADULON BY THE STRINGSPRETE BAG TERRETAR OF	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data	[882-10142] p0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [882-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [882-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [882-10145] p0071 N82-21672 Determination of the optimal level for combining area and yield estimates [882-10146] p0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [882-10122] p0123 N82-21656	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. OPEN IN THE PROPERTY OF THE PASADENA CALIF. OPEN IN THE PASADENA CALIF.	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN).	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA.	
OFFICE OF NAVAL RESEARCH, PASADENA. CALIF. Arabian sea project of 1980: Composites of infrared images OFFICE OF NAVAL RESEARCH, PASADENA. CALIF. Arabian sea project of 1980: Composites of infrared images Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 IEPIA-C30240-E1/E31 OD32 N92-18672	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p.0096 N82-17567 [FOAC.30240-E1/E3] p.0133 N82-18672 [RESEARCH INST. OF NATIONAL DEFENCE, Tennessee Valley Region, volume 1, no. 1 [PB2-107910] p.0096 N82-17567 [RESEARCH INST. OF NATIONAL DEFENCE, TENNESSEE VALLEY AUTHORITY, ORRIS.	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE,	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration with emphasis on the importance of spectral calibration p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422 T T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P82-130899] p0134 N82-21703 [TENNESSEE VALLEY AUTHORITY, NORRIS.	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 [FOA-C-30240-E1/E3] p0134 N82-21703 [FOA-C-30240-E1/E3] p0135 N82-18672	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C.	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19847 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p.0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [FOA-REPT-VOL-15-NO-2] p0096 N82-17566	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A10419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0099 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 CO OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10146] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [F0A-REPT-VOL-15-NO-2] p.0096 N82-17566	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [PB82-115122] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation.	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infered images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infered images [AD-A107910] p0096 N82-17567 ICOA-C-30240-E1/E3] p0133 N82-18672 [FOA-C-30240-E1/E3] p0134 N82-21703 [FOA-C-30240-E1/E3] p0134 N82-21703 [FOA-C-30240-E1/E3] p0134 N82-18703	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0099 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [DTA-0-142] p0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA.	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatert, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-REPT-VOL-15-NO-2] p.0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C.	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0112 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [P882-115130]	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infered images [AD-A107910] p.0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p.0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses. and airborne remote sensing [CTA-0-142] roughling and college of the properties of t	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 CO OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic snallyses, and ailthorne remote sensing	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-REPT-VOL-15-NO-2] p.0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban climate using HCMM data	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0057 A82-20422 TENNESSEE VALLEY AUTHORITY, CHATTANOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p.0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [P882-115130] p.0066 N82-19716 TEXAS A&M UNIV., COLLEGE STATION. HCMM detection of high soil moisture areas	
RESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p0097 N82-1844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses [NASA-CR-168444] p0096 N82-17798 [NASA-CR-168444] p0096 N82-17798 TESEARCH INST. OF NATIONAL DEFENCE, JUNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FIOA-C-30240-E1/E3] p0133 N82-18672 [FIOA-C-1040-E1/E3] p0133 N82-18	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0098 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOM/INION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses [NASA-CR-168444] p0096 N82-17798	[E82-10142] p0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [F0A-REPT-VOL-15-NO-2] p0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban climate using HCMM data	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19847 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1. no. 1 [P882-130899] p.0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [P882-115130] p.0066 N82-19716 TEXAS A&M UNIV. COLLEGE STATION. Dryland pasture and crop conditions as seen by HCMM	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infered images [AD-A107910] p.0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [TOA-C-142] p.0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses (NASA-CR-168444) p.0096 N82-17798 [NASA-CR-168444] p.0096 N82-17798 Usage and limitations of characteristic vector analysis of remote sensing multispectral data for the identification of remote sensing multispectral data for the identification of the remote sensing multispectral data for the identification of the remote sensing multispectral data for the identification of the remote sensing multispectral data for the identification of the remote sensing of suffur dioxide effects on vegetation. Oncomposition of the identification of the identification of the identification of the remote sensing of the remote sensing of suffur dioxide effects on vegetation. Oncomposition in and under sea ice [F0A-REPT-VOL-15-NO-2] p.0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE pARK, N. C. A study of model parameters associated with the urban of the identification of the remove that the identification of the remove of the remaining and sea unique of the remove of the remaining and sea unique of the remove of the remaining and sea unique of the remove of the remaining and sea unique of the remove of the remove of the remaining and sea unique of the remove of the remain in malamistatic of the remove of the remaining and sea unique of the remove of the remaining and sea unique of the remove of the remain in malamistatic of the remaining and sea unique of the remove of the remaining and sea unique of the remaining and sea unique of the remaining and season of the	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay pol102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-O-142] OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses [NASA-CR-168444] p0096 N82-17798 Usage and limitations of characteristic vector analysis of remote sensing multispectral data for the identification	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-REPT-VOL-15-NO-2] p.0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban climate using HCMM data [E82-10140] p.0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] A study of model parameters associated with the urban climate using HCMM data [E82-10159] A study of model parameters associated with the urban climate using HCMM data	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [PB82-115120] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [PB82-115130] p.0066 N82-19716 TEXAS A&M UNIV., COLLEGE STATION. HCMM detection of high soil moisture areas p.0059 A82-24963 Dryland pasture and crop conditions as seen by HCMM [E82-10074] TEXAS UNIV. AT ARLINGTON.	
aeromagnetic data spatial resolution p0076 A82-27665 [E82-10136] p0123 N82-21663 RESEARCH AND DATA SYSTEMS, INC., LANHAM,	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA statellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839	[882-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [882-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [882-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor allitude and canopy type [882-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [882-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND).	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between	
[E82-10136] P0123 N82-21663 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD.	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between	
Development of a surface isolation estimation technique	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM.	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422	
suitable for application of polar orbiting satellite data TEL-AVIV UNIV. (ISRAEL).	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM.	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422	
suitable for application of polar orbiting satellite data TEL-AVIV UNIV. (ISRAEL).	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM.	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422	
Suitable for application of polar orbiting satellite data TEL-AVIV UNIV. (ISRAEL).	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422	
	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration 25YSTEMATICS GENERAL CORP STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422	
[LOZ-10122] DO123 NOZ-2 1030 CONTROL TO GRADULON BY THE STRINGSPRETE BAG TERRETAR OF	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[882-10142] p0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [882-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [882-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [882-10145] p0071 N82-21672 Determination of the optimal level for combining area and yield estimates [882-10146] p0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [882-10122] p0123 N82-21656	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of	
RESEARCH INST. OF NATIONAL DEFENCE, nonuniform surface reflectance p0112 A82-20423	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE,	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.012 A82-20423	
RESEARCH INST. OF NATIONAL DEFENCE, OFFICE OF NAVAL RESEARCH PASADENA CALIF. UNKOEPING (SWEDEN). TENNESSEE VALLEY AUTHORITY, CHATTANOOGA.	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN).	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA.	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. OPEN IN THE PROPERTY OF THE PASADENA CALIF. OPEN IN THE PASADENA CALIF.	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN).	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA.	
RESEARCH INST. OF NATIONAL DEFENCE, OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared Arabian sea project of 1980: Composites of infrared Observations with an imaging 35 GHz radiometer of National High-Altitude Photography (NHAP) of the	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[E82-10142] p0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN).	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images images Arabian sea project of 1980: Composites of infrared images images Arabian sea project of 1980: Composites of infrared images Arabian sea project of 1980: Composites of infrared Arabian	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 P0096 N82-17567 RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Sharping 35 .GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p0133 N82-18672	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images	[E82-10142] p0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmislatett, July 1980 [F0A-C-30240-E1/E3] p0133 N82-18672	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130839] p.0134 N82-21703	
OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p.0096 N82-17567 [FOAC.30240-E1/E3] p.0133 N82-18672 [RESEARCH INST. OF NATIONAL DEFENCE, Tennessee Valley Region, volume 1, no. 1 [PB2-107910] p.0096 N82-17567 [RESEARCH INST. OF NATIONAL DEFENCE, TENNESSEE VALLEY AUTHORITY, ORRIS.	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE,	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration with emphasis on the importance of spectral calibration p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422 T T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P82-130899] p0134 N82-21703 [TENNESSEE VALLEY AUTHORITY, NORRIS.	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 [FOA-C-30240-E1/E3] p0134 N82-21703 [FOA-C-30240-E1/E3] p0135 N82-18672	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C.	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19847 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p.0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technologies for oceanography: An assessment of Federal technologies for oceanography in cesearch and monitoring [FOA-REPT-VOL-15-NO-2] Technologies for oceanography research and monitoring in the control of the contro	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A10419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0099 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 CO OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10146] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [F0A-REPT-VOL-15-NO-2] p.0096 N82-17566	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p0066 N82-19715	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p.0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-O-142] p.0097 N82-18844 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). NO Service of 1980: Composites of infrared images (FoA-C-30240-E1/E3) p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-RET-VOL-15-NO-2] p.0096 N82-17566 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). Remote sensing techniques for infrared training in incommission of conuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCKHOLM (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, TSTOCK	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 CO OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanography: An assessment of Federal technology and oceanography: An assessment of Federal technology and oceanography: An assessment of the	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmsalatett, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-REPT-VOL-15-NO-2] p.0096 N82-17566	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback - Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration of p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P82-13089] p.0134 N82-21703 [TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations. RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p0133 N82-18672 [FOA-C-30240-E1/E3] p0133	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A10419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0099 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technologies for oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOM/INION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations,	[E82-10142] p0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10123] Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10123] Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [F0A-REPT-VOL-15-NO-2] p0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19647 SYSTEMS AND APPLIED SCIENCES CORP., SYSTEMS AND APPLIED SCIENCES CORP. RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.012 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of monuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Authority, ChatTathonoga. National High-Altitude Photography (NHAP) of the Tennessee Sealley Region, volume 1. no. 1 [P882-130899] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [PB82-115100] TEXAS A&M UNIV., COLLEGE STATION.	
RESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p.0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring p.004-0142] p.0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses. As tudy of model parameters associated with the urban climate using HCMM data ganalyses RESEARCH INST. OF NATIONAL DEFENCE, D.113 N82-18672 [FOA-C-12] p.0037 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. A study of model parameters associated with the urban climate using HCMM data ganalyses RESEARCH INST. OF NATIONAL DEFENCE, D.113 N82-18672 [FOA-C-30240-E1/E3] p.013 N82-18672 [FOA-C-14-E1/E3] p.013 N82-18672	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0098 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses.	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27655 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, UNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-REPT-VOL-15-NO-2] p.0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban climate using HCMM data [E82-10140] p.0079 N82-21667	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-R-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0057 A82-20422 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [P882-130899] p.0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [P882-115130] p.0066 N82-19716	
RESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p0097 N82-1844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses [NASA-CR-168444] p0096 N82-17798 [NASA-CR-168444] p0096 N82-17798 TESEARCH INST. OF NATIONAL DEFENCE, JUNKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FIOA-C-30240-E1/E3] p0133 N82-18672 [FIOA-C-1040-E1/E3] p0133 N82-18	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0098 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay Delta p0102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOM/INION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses [NASA-CR-168444] p0096 N82-17798	[E82-10142] p0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-30240-E1/E3] p0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [F0A-REPT-VOL-15-NO-2] p0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban climate using HCMM data	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] p.0133 N82-19847 SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 T TEL-AVIV UNIV. (ISRAEL). Contrast reduction by the atmosphere and retrieval of nonuniform surface reflectance p.0112 A82-20423 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1. no. 1 [P882-130899] p.0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [P882-115130] p.0066 N82-19716 TEXAS A&M UNIV. COLLEGE STATION. Dryland pasture and crop conditions as seen by HCMM	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infered images [AD-A107910] p.0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT. WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p.0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic mong pass fundations and sandyses analyses [NASA-CR-168444] p.0096 N82-17798 [NASA-CR-168444] p.0096 N82-17798 Usage and limitations of characteristic vector analysis [E82-10159] p.0080 N82-21683 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). Observations with an imaging 35 .GHz radiometer of terrain in Malmstatett. July 1980 p.0133 N82-18672 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0132 N82-18672 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary (PB82-115122) p.0066 N82-19715 RESEARCH INST. OF NATIONAL DEFENCE, J. VIII p.0133 N82-18672 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Date [PB82-115122] p.0066 N82-19715 RESEARCH INST. OF NATIONAL DEFENCE. TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary (PB82-115122) p.0066 N82-19716 RESEARCH INST. OF NATIONAL DEFENCE. TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Date (PB82-1	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., UNCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGM. Remote sensing of salinity in the San Francisco Bay Delta Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 CO OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations. oceanographic analyses [NASA-CR-168444] p0096 N82-17798 Usage and limitations of characteristic vector analysis	[E82-10142] p0134 N82-21669 Spectral-agronomic relationships of corn, soybean and wheat canopies [E82-10143] p0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p0071 N82-21673 Determination of the optimal level for combining area and yield estimates [E82-10146] p0071 N82-21673 R READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM, MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [F0A-C-3024-E1/E3] p0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [F0A-REPT-VOL-15-NO-2] p0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban climate using HCMM data [E82-10140] p0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10149] p0080 N82-21683	[E82-10028] p0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p0112 A82-20422 TENRESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [PR82-130899] p0134 N82-21703 TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [P882-115122] p0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [P882-115130] p0066 N82-19716 TEXAS A&M UNIV., COLLEGE STATION. HCMM detection of high soil moisture areas p0059 A82-24963 Dryland pasture and crop conditions as seen by HCMM [E82-10074]	
PRESEARCH INST. OF NATIONAL DEFENCE, Arabian sea project of 1980: Composites of infered images [AD-A107910] p.0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT. WASHINGTON, D. C. Technology and oceanographic research and monitoring [OTA-0-142] p.0097 N82-18844 OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic mong pass fundations and sandyses analyses [NASA-CR-168444] p.0096 N82-17798 [NASA-CR-168444] p.0096 N82-17798 Usage and limitations of characteristic vector analysis [E82-10159] p.0080 N82-21683 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). Observations with an imaging 35 .GHz radiometer of terrain in Malmstatett. July 1980 p.0133 N82-18672 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, J. UNKOEPING (SWEDEN). National High-Altitude Photography (NHAP) of the terrain in Malmstatett. July 1980 p.0132 N82-18672 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary (PB82-115122) p.0066 N82-19715 RESEARCH INST. OF NATIONAL DEFENCE, J. VIII p.0133 N82-18672 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Date [PB82-115122] p.0066 N82-19715 RESEARCH INST. OF NATIONAL DEFENCE. TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary (PB82-115122) p.0066 N82-19716 RESEARCH INST. OF NATIONAL DEFENCE. TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Date (PB82-1	observations [AD-A109486] p0134 N82-20630 NAVAL RESEARCH LAB., WASHINGTON, D. C. Surface wave statistics and spectra during high sea state conditions in the North Atlantic [AD-A109832] p0098 N82-20827 NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA. Some altimetric signatures from Seasat over the mid-Pacific Seamount Range [AD-A110419] p0099 N82-21691 NEBRASKA UNIV., LINCOLN. A gradient model of vegetation and climate utilizing NOAA satellite imagery. Phase 1: Texas transect [E82-10107] p0069 N82-21648 NORTH CAROLINA STATE UNIV., RALEIGH. Remote sensing of salinity in the San Francisco Bay pol102 A82-26839 Compatibility study of the MAGSAT data and aeromagnetic data [E82-10136] p0123 N82-21663 O OFFICE OF NAVAL RESEARCH, PASADENA, CALIF. Arabian sea project of 1980: Composites of infrared images [AD-A107910] p0096 N82-17567 OFFICE OF TECHNOLOGY ASSESSMENT, WASHINGTON, D. C. Technology and oceanography: An assessment of Federal technologies for oceanographic research and monitoring [OTA-O-142] OLD DOMINION UNIV., NORFOLK, VA. The relationship among sea surface roughness variations, oceanographic analyses [NASA-CR-168444] p0096 N82-17798 Usage and limitations of characteristic vector analysis of remote sensing multispectral data for the identification	[E82-10142] p.0134 N82-21669 Spectral-agronomic relationships of corn. soybean and wheat canopies [E82-10143] p.0070 N82-21670 Simulated response of a multispectral scanner over wheat as a function of wavelength and view/illumination direction [E82-10144] p.0071 N82-21671 Variability of reflectance measurements with sensor altitude and canopy type [E82-10145] p.0071 N82-21672 Determination of the optimal level for combining area and yield estimates [E82-10146] p.0071 N82-21673 READING UNIV. (ENGLAND). Land cover classification accuracy as a function of sensor spatial resolution p.0076 A82-27665 RESEARCH AND DATA SYSTEMS, INC., LANHAM. MD. Development of a surface isolation estimation technique suitable for application of polar orbiting satellite data [E82-10122] p.0123 N82-21656 RESEARCH INST. OF NATIONAL DEFENCE, LINKOEPING (SWEDEN). Observations with an imaging 35 GHz radiometer of terrain in Malmslatett, July 1980 [FOA-C-30240-E1/E3] p.0133 N82-18672 RESEARCH INST. OF NATIONAL DEFENCE, STOCKHOLM (SWEDEN). Remote sensing techniques suitable for exploration and navigation in and under sea ice [FOA-REPT-VOL-15-NO-2] p.0096 N82-17566 RESEARCH TRIANGLE INST., RESEARCH TRIANGLE PARK, N. C. A study of model parameters associated with the urban climate using HCMM data [E82-10140] p.0079 N82-21667 A study of model parameters associated with the urban climate using HCMM data [E82-10159] A study of model parameters associated with the urban climate using HCMM data [E82-10159] A study of model parameters associated with the urban climate using HCMM data	[E82-10028] p.0091 N82-16446 HCMM: Soil moisture in relation to geologic structure and lithology, northern California [E82-10135] p.0092 N82-21662 STATE UNIV. OF NEW YORK, STONY BROOK. Low-latitude cloudiness and climate feedback. Comparative estimates from satellite data p.0075 A82-26980 STATE UNIV. OF NEW YORK, SYRACUSE. Ground level reflectance measurement techniques - An evaluation with emphasis on the importance of spectral calibration p.0116 A82-27689 SYSTEMATICS GENERAL CORP., STERLING, VA. Guidelines for spaceborne microwave remote sensors [NASA-RP-1086] SYSTEMS AND APPLIED SCIENCES CORP., RIVERDALE, MD. Simple radiative transfer model for relationships between canopy biomass and reflectance p.0057 A82-20422 TENNESSEE VALLEY AUTHORITY, CHATTANOOGA. National High-Altitude Photography (NHAP) of the Tennessee Valley Region, volume 1, no. 1 [PB82-130899] TENNESSEE VALLEY AUTHORITY, NORRIS. Remote sensing of sulfur dioxide effects on vegetation. Volume 1: Summary [PB82-115120] p.0066 N82-19715 Remote sensing of sulfur dioxide effects on vegetation. Volume 2: Data [PB82-115130] p.0066 N82-19716 TEXAS A&M UNIV., COLLEGE STATION. HCMM detection of high soil moisture areas p.0059 A82-24963 Dryland pasture and crop conditions as seen by HCMM [E82-10074] TEXAS UNIV. AT ARLINGTON.	

THOMSON-CSF, MEUDON-LA-FORET (FRANCE).
Study of synthetic aperture radar in 2D - 2FS operation over the ocean
[ESA-CRIP)-1475] p0132 N82-18481

VIRGINIA POLYTECHNIC INST. AND STATE UNIV.. BLACKSBURG. Spatial reasoning in remotely sensed data p0105 A82-27592

W

WASHINGTON UNIV., SEATTLE.

WASHINGTON UNIV., SEATTLE.

Sea ice movements from synthetic aperture radar [AD-A109002]

WASHINGTON UNIV., ST. LOUIS, MO.

Program on stimulating operational private sector use of Earth observation satellite information [E82-10131]

P0138 N82-21660

WISCONSIN UNIV. - MADISON.

Wetland mapping from digitized aerial photography p0118 N82-16437

The development and testing of methods to infer midiatitude precipitation intensity from geosynchronous satellite infrared data [AD-A108881]

P0120 N82-19788

WISCONSIN UNIV., MADISON.

Multidisciplinary research on the application of remote sensing to water resources problems [E82-10021]

Investigation of Antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10062]

Investigation of antarctic crust and upper mantle using MAGSAT and other geophysical data [E82-10147]

WOODS HOLE OCEANOGRAPHIC INSTITUTION.

MASS.

Gravity and geoid anomalies of the Philippine Sea: Evidence on the depth of compensation for the negative

MASS.
Gravity and geoid anomalies of the Philippine Sea:
Evidence on the depth of compensation for the negative
residual water depth anomaly
[NASA-CR-168639] p0085 N82-19732
WORLD METEOROLOGICAL ORGANIZATION,
GENEVA (SWITZERLAND).
Measurement of river sediments
[WMO-561] p0107 N82-18670
Flash flood forecasting
[WMO-577] p0107 N82-18671
WYOMING UNIV.. LARAMIE.

WYOMING UNIV., LARAMIE.

Ozone measurements to 48km with chemiluminescent ozone detectors

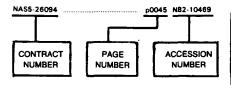
[AD-A110342] p0134 N82-21808

CONTRACT NUMBER INDEX

EARTH RESOURCES / A Continuing Bibliography (Issue 34)

JULY 1982

Typical Contract Number Index Listing



Listings in this index are arranged alphanumerically by contract number. Under each contract number, the accession numbers denoting documents that have been produced as a result of research done under that contract are arranged in ascending order with the AIAA accession numbers appearing first. The accession number denotes the number by which the citation is identified in the abstract section. Preceding the accession number is the page number on which the citation may be found.

AF PROJ. 627A	p0109	N82-20822
AF PROJ. 4290	p0095	N82-16331
AF PROJ. 6670	p0120	N82-19788
AF PROJECT 2310	p0074	A82-21432
	•	
AF TASK 2310G1	p0074	A82-21432
AF-AFOSR-77-3271	p0113	A82-25139
DA PROJ. 4A7-62730-AT-42	p0064	N82-16455
DAAG53-76-C-0138	p0074	A82-25140
DACW39-77-C-0073	p0064	N82-16455
DACW72-81-M-0342	p0110	N82-21704
DARPA ORDER 3206	p0074	A82-25140
DE-AI01-80EV-10081	p0081	N82-16613
DITC PROJECT 534-3203	p0114	A82-27590
DSS-OSQ-80-00097	p0129	A82-27642
DSS-08SU-01525-7-0198	p0057	A82-20408
DTCG39-80-C-80052	p0132	N82-18466 A82-20999
EPA-R-806606-02 EPA-68-02-2439	p0073	A82-26329
ESA-3749/78/NL-HP	p0124	N82-21699
ESA-4080/79/F-FC(SC)	p0124	N82-18669
ESA-4241/80/F-FC(SC)	p0136	N82-21698
ESA-4243/80/F-CG(SC)	p0124	N82-18564
ESA-4367/80/F-DD(SC)	p0132	N82-19650
204 4007/00/11/00/00/	p0133	N82-19651
ESA-4415/80/NL-PP(SC)	p0120	N82-19649
ESA-4423/80/F-FC(SC)	p0098	N82-19805
ESA-4427/80/F-DD(SC)	p0133	N82-19652
ESA-4586/81/F-DD(SC)	p0132	N82-18481
ESTEC-3749/78	p0120	N82-19654
ESTEC-4484/80/NL-PP(SC)	p0134	N82-19653
F4920-77-C-0092	p0077	A82-28152
F19628-78-C-0131	p0109	N82-20822
F19628-78-C-0137	p0120	N82-19788
F19628-81-C-0001	p0095	N82-16331
JPL-955047	p0091	N82-16446
NAG1-189	p0096	N82-17798
NAG5-14	p0109	N82-20807
NAG5-18	p0085	N82-19732 N82-19638
NAG5-163 NASA ORDER C-00741	p0107 p0123	N82-19636
NASA ORDER S-40229B	p0123	N82-20587
NASA ORDER S-40256-B	p0113	A82-22146
NASA ORDER S-53772	p0109	N82-20622
NASA ORDER S-53877	p0109	N82-20621
NASA ORDER S-75406-B	p0119	N82-19621
NASA ORDER S-75406B	p0123	N82-21678
NASW-3331	p0138	N82-21660
NASW-3398	p0133	N82-19647
NASW-3541	p0134	N82-20606
NASW-3542	p0124	N82-21687
NAS1-15657	p0082	A82-27631
NAS1-16444	p0075	A82-26980
NAS5-20831	p0108	N82-20619 N82-16440
NAS5-21808 NAS5-23729	p0132 p0109	N82-16440 N82-20623
NAS5-23729 NAS5-24206	p0059	A82-24963
NASS-24264	p0039	N82-21685
NAS5-24410	p0109	N82-21663
NAS5-24479	p0103	N82-21662
NAS5-25668	p0120	N82-19644
NAS5-25882	p0085	N82-19626

	NAS5-25957		p0087	N82-21686
1	NAS5-25977		p0086	N82-20585
	14700-20077		p0087	N82-21674
	NAS5-26047		p0084	N82-19616
1	NAS5-26111			A82-27686
1	NAS5-26138		p0084	N82-19618
1			p0085	N82-19619
1			p0087	N82-21679
1	NAS5-26157		p0123	N82-21663
1	NAS5-26276		p0105	A82-27592
/	NAS5-26328		p0085	N82-19620
1	NAS5-26424		p0086	N82-20589
:	NAS5-26425			N82-19624
t			p0092	N82-21677
,	NAS5-26442		p0079	N82-21667
. 1			p0080	N82-21683
,	NACE 26446		p0080	N82-21684
1	NAS5-26446		p0109	N82-21680
/	NA35-20433		p0064 p0071	N82-19615 N82-21681
	NAS5-26541		p0122	N82-21457
t			p0093	A82-24061
,			p0093	A82-24063
			p0074	A82-25452
			p0113	A82-25455
ı	1		p0127	A82-27578
			p0128	A82-27580
1	1		p0128	A82-27594
			p0083	N82-17708
١	NAS8-33822		p0126	A82-23045
	NAS9-14565		р0070	N82-21658
- 1	NAS9-15421 NAS9-15466			A82-21033
	NA39-13400		p0061 p0066	A82-27645 N82-20590
			p0067	N82-20591
١			p0068	N82-21647
			p0134	N82-21669
			p0070	N82-21670
			p0071	N82-21671
			p0071	N82-21672
			p0071	N82-21673
	NAS9-15476		p0063	N82-16448
1			p0066	N82-19635
			p0070	N82-21658
	NAS9-15800		p0061	A82-27662
			p0118	N82-16438
			p0064 p0064	N82-19607 N82-19608
			p0064	N82-19610
			p0065	N82-19630
			p0065	N82-19631
1			p0065	N82-19632
			p0065	N82-19634
			p0066	N82-19636
			p0068	N82-21635
			p0068	N82-21636
			p0122	N82-21637
			p0122	N82-21638
1			p0068 p0068	N82-21639 N82-21640
ı			p0122	N82-21641
١			p0122	N82-21642
			p0123	N82-21643
J			p0068	N82-21644
			p0068	N82-21645
			p0123	N82-21646
1			p0069	N82-21649
1			p0069	N82-21650
1			p0069	N82-21651
1			p0069	N82-21652
1			p0070	N82-21654
١			p0070 p0070	N82-21655 N82-21657
			p0070	N82-21661
1			p0070	N82-21676
			p0072	N82-21682
	NAS9-16208		p0118	N82-16452
-	NAS10-9876		p0121	N82-20607
ı			p0138	N82-19627
1		738	p0095	N82-16697
1	NERC-GR/3/1		p0059	A82-22144
١		076	p0058	A82-21093
1	NGL-05-007-0			
1	NGL-17-004-0		p0082	A82-26266
1			p0063	N82-16447
ı)54	p0078	N82-19609
1	NGL-33-010-1		p0116	A82-27689
•	NGL-42-003-0	007	p0102	A82-24960

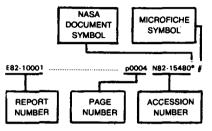
NGL-50-002-127	p0132 p0106	N82-16445 N82-16439
NGR-22-009-839	p0088	N82-21796
NOAA-MO-A01-78-00-4330 NOAA-NA-80AAD0019	p0094 p0101	A82-27596 A82-22145
NOAA-04-M01-134	p0063	A82-27700
NR PROJ. 307-428	p0097 p0113	N82-19435 A82-22891
NSC-70-0404-E002-09 NSERC-A-5586	p0114	A82-27623
NSERC-A-6043 NSF ATM-79-00233	p0117 p0075	A82-27698 A82-26721
NSF ATM-80-12214	p0075	A82-26721
NSF ATM-80-24641 NSF ATM-81-03697	p0101 p0075	A82-21922 A82-26700
NSF CME-79-09065	p0075	A82-26980
NSF ECS-80-06884 NSF OCE-77-27735	p0113 p0097	A82-22891 N82-19796
NSG-1641	p0098	N82-20823
NSG-2289 NSG-5256	p0077 p0102	A82-28152 A82-26839
NSG-5325	p0059	A82-27586
NSG-5335 NO0014-75-C-0396	p0107 p0082	N82-19646 A82-26266
N00014-76-C-0170	p0134	N82-21808
N00014-76-C-1048	p0130 p0097	A82-27675 N82-19435
PROJ. AGRISTARS	p0063	N82-16448
	p0064	N82-19607
	p0064 p0064	N82-19608 N82-19610
	p0064	N82-19614
	p0065 p0065	N82-19628 N82-19629
	p0065	N82-19630
	p0065 p0065	N82-19631 N82-19632
	p0065	N82-19633
	p0065 p0066	N82-19634 N82-19635
	p0066	N82-19636
	p0066 p0067	N82-20590 N82-20591
	p0068	N82-21635
	p0068 p0122	N82-21636 N82-21637
	p0122	N82-21638
	p0068	N82-21639 N82-21640
	p0122	N82-21641
	p0123 p0123	N82-21642 N82-21643
	p0068	N82-21644
	p0068	N82-21645
	p0123 p0068	N82-21646 N82-21647
	p0069	N82-21648
	p0069 p0069	N82-21649 N82-21650
	p0069	N82-21651
	p0069 p0069	N82-21652 N82-21653
	p0070	N82-21654
	p0070 p0123	N82-21655 N82-21656
	p0070	N82-21657
	p0070 p0134	N82-21658 N82-21669
	p0070	N82-21670
	p0071 p0071	N82-21671 N82-21672
	-0071	N82-21673
	p0071 p0109	N82-21676 N82-21680
	p0072	N82-21682
PROJ. CWIS-31350	p0106 p0098	N82-18469 N82-20827
SNSF-3,209,77 SRI PROJ. 8808	p0074	A82-24958
SRI PROJ. 8808UN PROJECT MEX-120-8-004-05-X	p0095	N82-16697 A82-27693
WF59553000	p0117 p0098	N82-20827
146-40-01-01	p0098	N82-19801 N82-20617
658-20-02 691-09-02-01	p0108 p0110	N82-21774
692-40-01	p0083	N82-17708

REPORT/ACCESSION NUMBER INDEX

EARTH RESOURCES / A Continuing Bibliography (Issue 34)

JULY 1982

Typical Report/Accession Number **Index Listing**



Listings in this index are arranged alphanumerically by report number. The page number indicates the page on which the citation is located. The accession number denotes the number by which the citation is identified. An asterisk (*) indicates that the item is a NASA report. A pound sign (#) indicates that the item is available on microfiche.

AD-A106133		p0095	N82-16331 #
AD-A106422	***************************************	p0064	N82-16455 #
AD-A107910		p0096	N82-17567 #
AD-A108098	***************************************	p0118	N82-17570 #
AD-A108192	*	p0106	N82-18469 #
AD-A108342			N82-18664* #
AD-A108404		p0132	"
AD-A108405		p0132	
AD-A108406		p0084	N82-18931 # N82-18930 #
AD-A108784		p0138	N82-20626 #
AD-A108881		p0130	N82-19788 #
AD-A109002	······································	p0097	N82-19435 #
AD-A109050		p0098	N82-19802 #
AD-A109366		p0121	N82-20628 #
AD-A109484		p0134	N82-20491 #
AD-A109486		p0134	N82-20630 #
AD-A109832		p0098	N82-20827 #
AD-A109929		p0109	N82-20822 #
AD-A110280		p0087	N82-21690 #
AD-A110287		p0087	N82-21689 #
AD-A110342		p0134	N82-21808 #
AD-A110419		p0099	N82-21691 #
AFGL-TR-81-0	252	p0120	N82-19788 #
AFGL-TR-81-0		p0120	N82-20822 #
	32-0202	•	A82-27091* #
		•	N82-21808 #
			"
ARL-TR-81-51		•	N82-16452* #
		p0120	N82-19649 #
BLL-TRANS-1	509-(9022.552)	p0097	N82-19756
BR71459		p0122	N82-21499 #
BR76808		p0122	N82-21565 #
BR77598		p0087	N82-21697 #
BR80598		p0118	N82-18657
DTC 50 9C 11	7	-0120	NO2 10644# #
BTS-FR-80-11 BTS-FR-81-16		p0120	N82-19644* # N82-21457* #
R12-FK-01-10	9	p0122	N82-21457* #
CRREL-SR-81-	23	p0106	N82-18469 #
CRREL-81-19		p0107	N82-18664* #
CSIR-RR-384		p0098	N82-20824 #
CTAMN/81/R	/10	p0098	N82-19805 #
DFVLR-FB-80-	32	p0096	N82-17802 #
DOC-80SDS42	29	p0132	N82-16440* #
EPA-600/7-81		p0066	N82-19715 #
EPA-600/7-81	-114	p0066	N82-19716 #
ERIM-152400-	5-T	p0063	N82-16448* #

ERIM-152400-12-T	p0070	NB2-21658* #	E82-10071
ERL-0192-TR	20008	N82-19802 #	E82-10072
ERL-0210-TM		N82-20491 #	E82-10073 E82-10074
ECA CD(D) 1420	-0124		E82-10074
ESA-CR(P)-1438 ESA-CR(P)-1450	p0124 p0124		E82-10076
ESA-CR(P)-1468	p0132	N82-18564 #	E82-10077
ESA-CR(P)-1475	p0132	N82-18481 # N82-18669 #	E82-10078
ESA-CR(P)-1478		N82-18669 # N82-19649 #	E82-10079
ESA-CR(P)-1479	p0098	N82-19805 #	E82-10080 E82-10081
ESA-CR(P)-1492-VOL-1 ESA-CR(P)-1492-VOL-2	p0133 p0133	N82-19650 # N82-19651 #	E82-10081
ESA-CR(P)-1502	p0133	N82-19652 #	E82-10083
ESA-CR(P)-1506	p0134	N82-19653 #	E82-10084 E82-10085
ESA-CR(P)-1507	p0120	N82-19654 #	E82-10086
ESA-SP-172	p0122	N82-21458 #	E82-10087
ESA-SP-1030	p0124	N82-21700 #	E82-10088 E82-10089
ESA-TT-710	p0096	N82-17802 #	E82-10090
			E82-10091 E82-10092
ESS/SS-1006	p0132	N82-18564 #	E82-10092
ETL-R028	p0121	N82-20628 #	E82-10094
ETL-R031		N82-21689 #	E82-10105 E82-10107
EW-LO-00707	p0065	N82-19630* #	E82-10107
		**	E82-10109
EW-L1-00711		N82-19607* #	E82-10111 E82-10115
EW-L1-04101	p0068	N82-21652* # N82-21635* #	E82-10116
EW-L1-04134	p0070	N82-21657* #	E82-10117 E82-10118
E82-10019	nO118	N82-16437* #	E82-10118
E82-10020	p0118	N82-16438* #	E82-10123
E82-10021	p0106	N82-16439* #	E82-10127 E82-10129
E82-10022	p0132 p0118	N82-16440* # N82-16441* #	E82-10131
E82-10024	p0091	N82-16442* #	E82-10133
E82-10025	p0081	N82-16443* # N82-16444* #	E82-10135 E82-10136
E82-10026	p0132	N82-16445* #	E82-10137
E82-10028	p0091	N82-16446* #	E82-10138 E82-10139
E82-10029	p0063 p0063	N82-16447* # N82-16448* #	E82-10139
E82-10031	p0064	N82-19607* #	E82-10141
E82-10032	p0064	N82-19608* #	E82-10142 E82-10143
E82-10033	p0078 p0064	N82-19609* # N82-19610* #	E82-10144
E82-10035	p0119	N82-19611* #	E82-10145 E82-10146
E82-10036	p0119 p0078	N82-19612* # N82-19601*	E82-10147
E82-10037 E82-10038 E82-10039	p0119	N82-19613* #	E82-10148
E82-10039	p0064	N82-19614* #	E82-10150 E82-10152
E82-10040	p0064 p0084	N82-19615* # N82-19616* #	E82-10154
E82-10042	p0119	N82-19617* #	E82-10155
E82-10043	p0084	N82-19618* # N82-19619* '#	E82-10156 E82-10157
E82-10045	p0085 p0085	N82-19620* #	E82-10158
E82-10046	p0119	N82-19621* #	E82-10159 E82-10160
E82-10047	p0119 p0120	N82-19622* # N82-19623* #	E82-10161
E82-10049	p0091	N82-19624* #	E82-10162
E82-10050	p0085 p0085	N82-19625* # N82-19626* #	FC-J0-00502
E82-10052	p0085	N82-19626* # N82-19627* #	FC-J1-04108
E82-10053	p0065	N82-19628* #	FC-J1-04176
E82-10054	p0065 p0065	N82-19629* # N82-19630* #	FC-LI-04153
E82-10056	p0065	N82-19631* #	56 10 00480
E82-10057	p0065	N82-19632* #	FC-LO-00480 FC-LO-00493
E82-10059	p0065	N82-19633* # N82-19634* #	
E82-10060	p0066	N82-19635* #	FC-L1-00714 FC-L1-00718-V
E82-10061		N82-19636* #	FC-L1-04073
E82-10062		N82-20585* #	FC-L1-04120-J
E82-10063		N82-20586* # N82-20587* #	FC-P1-04121
E82-10065		N82-20588* #	FC-P1-04197
E82-10066	p0086	N82-20589* #	FOA-B-60002-
E82-10067		N82-20590* #	FUA-B-00002-
E82-10068		N82-20591* #	FOA-C-30240-I
E82-10069		N82-20592* #	EOA. PEPT.VOI

NASA MICROFICHE						
DOCUMENT SYMBOL T	ERIM-152400-12-T	p0070	N82-21658* #	E82-10071		
SYMBOL STANDOL	ERL-0192-TR	20098	N82-19802 #	E82-10072		
	ERL-0210-TM	p0134	N82-20491 #	E82-10073		
<u></u>		•	<i>"</i>	E82-10074		
E82-10001p0004 N82-15480* #	ESA-CR(P)-1438			E82-10075		
	ESA-CR(P)-1450 ESA-CR(P)-1468			E82-10076		
 	ESA-CR(P)-1475			E82-10077		
	ESA-CR(P)-1476			E82-10079		
REPORT PAGE ACCESSION	ESA-CR(P)-1478	p0120	N82-19649 #	E82-10080		
NUMBER NUMBER NUMBER	ESA-CR(P)-1479			E82-10081		
	ESA-CR(P)-1492-VOL-1 ESA-CR(P)-1492-VOL-2			E82-10082	p0108	N82-20605* #
stings in this index are arranged alphanumerically	ESA-CR(P)-1502			E82-10083	p0068	N82-21635* #
· · · · · · · · · · · · · · · · · · ·	ESA-CR(P)-1506	p0134	N82-19653 #	E82-10084		
report number. The page number indicates the	ESA-CR(P)-1507	p0120	N82-19654 #	E82-10085		
age on which the citation is located. The	FCA CD 172		NOO 04 450 #	E82-10087		
cession number denotes the number by which	ESA-SP-172	p0122	N82-21456 #	E82-10088		
e citation is identified. An asterisk (*) indicates			"	E82-10089		
at the item is a NASA report. A pound sign (#)	ESA-TT-710	p0096	N82-17802 #	E82-10090		
, , , , , , , , , , , , , , , , , , , ,	500/00 4000		"	E82-10091		
dicates that the item is available on microfiche.	ESS/SS-1006	р0132	N82-18564 #	E82-10093		
Į.	ETL-R028	p0121	N82-20628 #	E82-10094	p0123	N82-21646* #
AD 4406133	ETL-R031			E82-10105		
AD-A106133p0095 N82-16331 #				E82-10107		
AD-A106422p0064 N82-16455 # AD-A107910p0096 N82-17567 #	EW-LO-00707	p0065	N82-19630* #	E82-10108		
AD-A108098 p0096 N82-17567 #	EW-L1-00711	50064	N92 19607* #	E82-10111		
AD-A108098 p0118 N62-17570 #	EW-L1-00732	p0069	N82-21652* #	E82-10115	p0069	N82-21652* #
AD-A108342	EW-L1-04101	p0068	N82-21635* #	E82-10116		
AD-A108404	EW-L1-04134	p0070	N82-21657* #	E82-10117		
AD-A108405	502 10010		"	E82-10112		
AD-A108406p0084 N82-18930 #	E82-10019	p0118	N82-1643/* #	E82-10123		
AD-A108784p0138 N82-20626 #	E82-10021			E82-10127		
AD-A108881 p0120 N82-19788 #	E82-10022	p0132	N82-16440* #	E82-10129		
AD-A109002p0097 N82-19435 # AD-A109050p0098 N82-19802 #	E82-10023	p0118	N82-16441* #	E82-10131		
AD-A109366	E82-10024			E82-10135		
AD-A109484p0134 N82-20491 #	E82-10025			E82-10136		
AD-A109486p0134 N82-20630 #	E82-10027	p0132	N82-16445* #	E82-10137		
AD-A109832	E82-10028	p0091	N82-16446* #	E82-10138		
AD-A110280p0109 N82-20822 #	E82-10029			E82-10139		
AD-A110287p0087 N82-21689 #	E82-10030			E82-10141		
AD-A110342p0134 N82-21808 #	E82-10032			E82-10142	p0134	N82-21669* #
AD-A110419p0099 N82-21691 #	E82-10033			E82-10143	p0070	N82-21670* #
AFGL-TR-81-0252 p0120 N82-19788 #	E82-10034	p0064	N82-19610* #	E82-10144	p0071	N82-21671*#
AFGL-TR-81-0261	E82-10035	p0119	N82-19611* #	E82-10146	n0071	N82-21673* #
"	E82-10036	p0119	N82-19612* # N82-19601*	E82-10147	p0087	N82-21674* #
AIAA PAPER 82-0202 p0094 A82-27091* #	E82-10038	p0119	N82-19613* #	E82-10148	p0087	N82-21675* #
AP-70p0134 N82-21808 #	E82-10039	p0064	N82-19614* #	E82-10150	p0071	N82-21676* #
AF-70 p0134 N62-21606 #	E82-10040	p0064	N82-19615* #	E82-10152	p0092	N82-21677*#
ARL-TR-81-51p0118 N82-16452* #	E82-10041	p0084	N82-19616* #	E82-10155		
" \	E82-10042			E82-10156	p0109	N82-21680* #
BAE-TP-7905p0120 N82-19649 #	E82-10044	p0085	N82-19619* #	E82-10157		
BLL-TRANS-1509-(9022.552) p0097 N82-19756	E82-10045	p0085	N82-19620* #	E82-10158		
OLE THE TOO GOLLIOSE, AND POOR THEE TOYER	E82-10046	p0119	N82-19621" #	E82-10160		
BR71459 p0122 N82-21499 #	E82-10047	p0119	N82-19623* #	E82-10161	p0080	N82-21685* #
BR76808p0122 N82-21565 #	E82-10049	p0091	N82-19624* #	E82-10162	p0087	N82-21686* #
BR77598	E82-10050	p0085	N82-19625* #	EC 10 00E03	-00e4	NO2 10014# "
·	E82-10051	p0085	N82-19626* #	FC-J0-00502 FC-J1-04108	p0069	N82-21653* #
BTS-FR-80-117p0120 N82-19644* #	E82-10052 E82-10053	p0138	N82-1962/* #	FC-J1-04176		
BTS-FR-81-165p0122 N82-21457* #	E82-10054					-
CRREL-SR-81-23 p0106 N82-18469 #	E82-10055	p0065	N82-19630* #	FC-LI-04153	p0070	N82-21654* #
CHREL-5R-61-23 pU106 N82-18409 #	E82-10056	p0065	N82-19631* #	FC-LO-00480	20065	N82-19631* #
CRREL-81-19 p0107 N82-18664* #	E82-10057	p0065	N82-19632" #	FC-LO-00493		N82-19636* #
· · · · · · · · · · · · · · · · · · ·	E82-10058					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
CSIR-RR-384 p0098 N82-20824 #	E82-10060	p0066	N82-19635* #	FC-L1-00714		
CTAMN/81/R/10 p0098 N82-19805 #	E82-10061			FC-L1-00718-VOL-1		N82-21639* #
CIMMIN/01/N/10 p0098 No2-19805 #	E82-10062			FC-L1-04073FC-L1-04120-JSC-17401		N82-21640* # N82-21655* #
DFVLR-FB-80-32p0096 N82-17802 #	E82-10063			15-61-04120-050-17401	p0070	
. "	E82-10064	p0108	N82-20587* #	FC-P1-04121		
DOC-80SDS4229p0132 N82-16440* #	E82-10065	p0078	N82-20588* #	FC-P1-04197 '		
EPA-600/7-81-113p0066 N82-19715 #	E82-10066	p0086	N82-20589* #	FOA B 60003 M3	-0000	NO2 17500 "
EPA-600/7-81-113 p0066 N82-19715 # EPA-600/7-81-114 p0066 N82-19716 #	£82-10067	p0066	N82-20590* #	FOA-B-60002-M7	p0096	N82-1/566 #
2 2.2-/,	E82-10068			FOA-C-30240-E1/E3	p0133	N82-18672 #
ERIM-152400-5-Tp0063 N82-16448* #	E82-10069			•	• •	
ERIM-152400-7-Tp0066 N82-19635* #	E82-10070	p0079	N82-20593* #	FOA-REPT-VOL-15-NO-2	p0096	N82-17566 #

REPORT/ACCESSION NUMBER INDEX

	0.0. NOO 405F0 #	. 1514000 45000	-0400 ND0 046464 #	NAS 1.26:168543	-0090 N82 21694* #
FOK-RV-R-81-064	p0134 N82-19653 #	LEMSCO-15937		NAS 1.26:168543 NAS 1.26:168544	nnsn N82-21685* #
FSU-MET-STU-81/2	00097 NR2-19796 #	LEMSCO-16034		NAS 1.26:168545	
F30-ME1-310-61/2	poos/ 1102-13/30 #	LEMSCO-16035		NAS 1.26:168681	
INPE-1923-RPE/249	p0091 N82-16442* #	LEMSCO-16204		NAS 1.26:168743	. p0088 N82-21796* #
INPE-1972-RPE/278		LEMSCO-16207		NAS 1.60:1818	. p0109 N82-20623* #
INPE-2019-NTE/166		LEMSCO-16300		NAS 1.60:1822	. p0108 N82-20617* #
INPE-2021-RPE/288		LEMSCO-16315		NAS 1.60:1823	p0108 N82-20618* #
INPE-2063-RPE/305	p0118 N82-16441* #	LEMSCO-16340		NAS 1.60:1824	
INPE-2064-RPE/306	DUU/8 N82-20588* #	LEMSCO-16376		NAS 1.60:1825 NAS 1.60:1826	
INPE-2081-RPE/315		LEMSCO-16649		NAS 1.60: 1820	
INPE-2104-RPE/331INPE-2119-RPE/343		LEMSCO-16650		NAS 1.60:1829	
INPE-2154-RPE/373		LEMSCO-16663 LEMSCO-16676		NAS 1.60:1993	
INPE-2163-RPE/381		LEMSCO-16677			
INPE-2169-RPE/385		LEMSCO-16844		NASA-CR-160887	. p0069 N82-21651* #
INPE-2170-RPE/386		LEMSCO-16850	p0068 N82-21645* #	NASA-CR-161021	
INPE-2190-RPE/002		LEMSCO-16851-VOL-1	p0068 N82-21639*#	NASA-CR-161022	. p0066 N82-19636* #
INPE-2191-RPE/003		LEMSCO-17154	p0069 N82-21650* #	NASA-CR-161023 NASA-CR-161024	-0065 N82-19631* #
INPE-2196-RPE/005INPE-2197-PRE/006		LEMSCO-17163	p0069 N82-21649* #	NASA-CR-161025	
INPE-2199-RPE/007	n0067 N82-20600* #	LEMSCO-17179	p0069 N82-21652* #	NASA-CR-161028	
INPE-2209-MD/007	p0091 N82-19642 #	MITT-28	n0078 N82-19740 #	NASA-CR-161029	
INPE-2211-MD/008	p0078 N82-19641 #		poors man to me	NASA-CR-161032	
INPE-2212-MD/009	p0133 N82-19520 #	MTR-8299	p0095 N82-16331 #	NASA-CR-161033	
INPE-2215-MD/010				NASA-CR-161034	
INPE-2229-PRE/021		MU-JO-0100	p0065 N82-19629* #	NASA-CR-161038 NASA-CR-161046	
INPE-2231-RPE/399INPE-2240-PRE/026	00078 N82-19756 #	MU-JO-0101	p0065 N82-19628* #	NASA-CR-161051	
INPE-2246-PRE/030	p0107 N82-19304 #	04055	-0064 NG2 10609# #	NASA-CR-161055	. p0068 N82-21645* #
INPE-2303-TDL/072	DO121 N82-19927 #	MU-L1-04055	POOD+ 1407-13009. #	NASA-CR-161056	. p0123 N82-21646* #
INPE-2307-TDL/074	p0097 N82-19778 #	NAS 1.15:76796	p0134 N82-20606* #	NASA-CR-161057	. p0068 N82-21640* #
		NAS 1.15:76830	p0124 N82-21687* #	NASA-CR-161058	
ISBN-3-7696-9663-8	p0084 N82-19603	NAS 1.15:83887	pO135 N82-21826* #	NASA-CR-161059	
ISBN-91-7056-057-9	PUUSB N82-17566 #	NAS 1.26:160887	p0069 N82-21651* #	NASA-CR-161060 NASA-CR-161061	
ISBN-92-63-10561-8 ISBN-92-63-10577-4	nO107 NR2-18671 #	NAS 1.26:161051	p0070 N82-21661* #	NASA-CR-161063	
.55/192-55-100//4	, po.o, 1102-10071 #	NAS 1.26:161055 NAS 1.26:161056	00123 N82-21645" #	NASA-CR-161064	
ISSN-0065-5341	p0084 N82-19603	NAS 1.26:161056	00068 N82-21640* #	NASA-CR-161065	. p0123 N82-21642* #
ISSN-0069-5882	p0078 N82-19740 #	NAS 1.26:161058	pQ068 N82-21636* #	NASA-CR-161066	. p0123 N82-21643* #
ISSN-0071-9196	p0085 N82-19648 #	NAS 1.26:161059	p0068 N82-21635* #	NASA-CR-161067 NASA-CR-161081	. p0068 N82-21644* #
ISSN-0379-6566	p0122 N82-21458 #	NAS 1.26:161060	p0122 N82-21637* #	NASA-CR-161081	
ISSN-0379-6566	DU124 N62-21700 #	NAS 1.26:161061	pO122 N82-21638* #	NASA-CR-164433	
JPL-PUB-81-96	n0083 N82-17708* #	NAS 1.26:161063 NAS 1.26:161064	p0068 N82-21639* #	NASA-CR-164746	. p0078 N82-19609* #
		NAS 1.26:161065	p0122 N82-21642* #	NASA-CR-164756	
JSC-16366		NAS 1.26:161066	p0123 N82-21643* #	NASA-CR-164771	
JSC-16380 JSC-16820	DOORS NR2-19631* #	NAS 1.26:161067	p0068 N82-21644* #	NASA-CR-164772 NASA-CR-164810	
JSC-16823	p0064 N82-19614* #	NAS 1.26:164927 NAS 1.26:165084	00071 N82-21681" #	NASA-CR-164811	
JSC-16824		NAS 1.26:165085	n0107 N82-20586* #	NASA-CR-164812	
JSC-16830		NAS 1.26:165086	p0108 N82-20587* #	NASA-CR-164813	
JSC-16833		NAS 1.26:165087	p0078 N82-20588* #	NASA-CR-164814 NASA-CR-164815	
JSC-16841 JSC-16842	nOOS N82-19629* #	NAS 1.26:165088		NASA-CR-164816	
JSC-16860	p0069 N82-21653* #	NAS 1.26:165090 NAS 1.26:165091	00079 N92-20591* #	NASA-CR-164917	
JSC-16956	. p0070 N82-21661* #	NAS 1.26:165092	p0079 N82-20593* #	NASA-CR-164918	
JSC-17037	p0123 N82-21646* #	NAS 1.26:165093	p0067 N82-20594* #	NASA-CR-164919	
JSC-17101 JSC-17113	. p0118 N82-16438* #	NAS 1.26:165094	p0079 N82-20595* #	NASA-CR-164920 NASA-CR-164921	
JSC-17114		NAS 1.26:165095	p0091 N82-20596* #	NASA-CR-164922	
JSC-17119		NAS 1.26:165096 NAS 1.26:165097	n0086 N82-20598* #	NASA-CR-164923	
JSC-17129		NAS 1.26:166729	p0109 N82-21680* #	NASA-CR-164924	
JSC-17137	p0064 N82-19610* #	NAS 1.26:166789	p0122 N82-21457* #	NASA-CR-164925	
JSC-17141 JSC-17155-VOL-1		NAS 1.26:167400		NASA-CR-164926 NASA-CR-164927	
JSC-17231		NAS 1.26:167409	P0071 N82-216/6* #	NASA-CR-164928	
JSC-17251	p0068 N82-21635* #	NAS 1.26:167417 NAS 1.26:167434	n0069 N82-21653* #	NASA-CR-165084	
JSC-17296	. p0068 N82-21636* #	NAS 1.26:167438	p0070 N82-21654* #	NASA-CR-165085	
JSC-17369	p0068 N82-21644* #	NAS 1.26:167439	p0070 N82-21655* #	NASA-CR-165086	
JSC-17371		NAS 1.26:167447	p0069 N82-21650* #	NASA-CR-165087 NASA-CR-165088	
JSC-17389 JSC-17390	00122 N82-21637* #	NAS 1.26:167448	p0069 N82-21649* #	NASA-CR-165090	
JSC-17400	p0122 N82-21638* #	NAS 1.26:167451 NAS 1.26:167454	POU/U N82-21658* #	NASA-CR-165091	
JSC-17402	p0072 N82-21682* #	NAS 1.26:167454 NAS 1.26:167456		NASA-CR-165092	. p0079 N82-20593* #
JSC-17413	p0070 N82-21657* #	NAS 1.26:167473	p0123 N82-21656* #	NASA-CR-165093	
JSC-17418		NAS 1.26:167474	p0070 N82-21657* #	NASA-CR-165094 NASA-CR-165095	
JSC-17422		NAS 1.26:167480		NASA-CR-165095	
JSC-17427 JSC-17435		NAS 1.26:167505		NASA-CR-165097	
JSC-17784		NAS 1.26:167506 NAS 1.26:167509		NASA-CR-166727	. p0107 N82-19646* #
JSC-17793	p0069 N82-21652* #	NAS 1.26:167510		NASA-CR-166729	. p0109 N82-21680* #
		NAS 1.26:168397		NASA-CR-166764	
L-14992	p0110 N82-21774* #	NAS 1.26:168399	p0067 N82-20600* #	NASA-CR-166768 NASA-CR-166789	
LARS-021781	DOOR NR2-21647* #	NAS 1.26: 168399		NASA-CR-166827	. nO121 N82-20607* #
LARS-030381		NAS 1.26:168400		NASA-CR-167400	
LARS-062381	p0066 N82-20590* #	NAS 1,26:168401 NAS 1,26:168402		NASA-CR-167409	. p0071 N82-21676* #
LARS-071480		NAS 1.26:168403		NASA-CR-167417	. p0072 N82-21682* #
LARS-071580		NAS 1.26:168512	p0109 N82-20807* #	NASA-CR-167420 NASA-CR-167434	. puudo Na2-19035*#
LARS-091281LARS-101281		NAS 1.26:168513		NASA-CR-167434	. p0070 N82-21654* #
LARS-111481		NAS 1.26:168515 NAS 1.26:168518		NASA-CR-167439	. p0070 N82-21655* #
	-	NAS 1.26: 168521	p0123 N82-21663* #	NASA-CR-167447	. p0069 N82-21650* #
LEMSCO-14056	p0069 N82-21651* #	NAS 1.26:168522		NASA-CR-167448	
LEMSCO-14307		NAS 1.26:168523	p0123 N82-21665* #	NASA-CR-167451 NASA-CR-167454	
LEMSCO-14640 LEMSCO-14674		NAS 1.26:168524		NASA-CR-167456	
LEMSCO-14811		NAS 1.26:168525 NAS 1.26:168526	00070 N82-21668* #	NASA-CR-167430	
LEMSCO-15116		NAS 1.26:168531		NASA-CR-167474	
LEMSCO-15409		NAS 1.26: 168532	p0087 N82-21674* #	NASA-CR-167480	
LEMSCO-15604		NAS 1.26:168533	p0087 N82-21675° #	NASA-CR-167494	
LEMSCO-15692		NAS 1.26:168537		NASA-CR-167505	
LEMSCO-15708		NAS 1.26:168539 NAS 1.26:168540		NASA-CR-167506	
LEMSCO-15905		NAS 1.26:168542		NASA-CR-167509	
				•	

REPORT/ACCESSION NUMBER INDEX

		REPORT/ACCESSION N	OWREK INDEX
NASA-CR-167510	p0070 N82-21670* #	PB82-103219	p0138 N82-17792 # m
NASA-CR-168397		PB82-106246	p0081 N82-16613 # [
NASA-CR-168398		PB82-107657 PB82-109448	p0118 N82-16677 #
NASA-CR-168399		P882-113283	p0096 N82-17805 #
NASA-CR-168400		PB82-114703	n0097 N82-19796 # 1
NASA-CR-168401 NASA-CR-168402		PB82-115122 PB82-115130	p0066 N82-19715 # p0066 N82-19716 #
NASA-CR-168403		PB82-130899	p0134 N82-21703 #
NASA-CR-168427		PB82-130899 PB82-137142	p0110 N82-21704 #
NASA-CR-168444	p0096 N82-17798* #	PR-4	-0123 NB2-21678* #
NASA-CR-168512	p0109 N82-20807* #	PR-1325-2	p0086 N82-20589* #
NASA-CR-168513 NASA-CR-168515	n0138 N82-21660* #	1	i
NASA-CR-168515NASA-CR-168518	p0092 N82-21662* #	QPR-3	p0119 N82-19621* #
NASA-CR-168521	p0123 N82-21663* #	QPR-5	DO084 N82-19618* #
NASA-CR-168522 NASA-CR-168523	n0123 N82-21665* #	QPR-6	p0086 N82-20585* #
NASA-CR-168524	p0123 N82-21666* #	QPR-6	p0087 N82-21679* #
NASA-CR-168525	p0079 N82-21667* #	QR-1	n0064 N82-19615* #
NASA-CR-168526 NASA-CR-168531 NASA-CR-168532	00071 NB2-21668* #	QR-2	p0120 N82-19623* #
NASA-CR-168532	p0087 N82-21674* #	QR-2	p0107 N82-20586* #
NASA-CR-168533 NASA-CR-168537 NASA-CR-168539	p0087 N82-21675* #	QR-2	n0071 N82-21681* #
NASA-CR-168537	n0123 N82-21677* #	QR-3	p0091 N82-19624* #
NASA-CH-168540	p008/ N82-216/9*#	QR-4	p0085 N82-19620* #
NASA-CR-168542	p0080 N82-21683* #	QR-6	p0085 N82-19616* #
NASA-CR-168543	p0080 N82-21684* # p0080 N82-21685* #		· 1
NASA-CR-168545	p0087 N82-21686* #	QSTPR-7	p0087 N82-21686* #
NASA-CR-168545 NASA-CR-168557 NASA-CR-168633	p0097 N82-18660* #	QTPR-7	n0087 N82-21674* #
NASA-CR-168633	p0138 N82-19627* #	dira-,	p0007 N02-21074 #
NASA-CR-168639 NASA-CR-168681 NASA-CR-168743	p0098 N82-20823* #	RAE-SPACE-585	p0122 N82-21565 #
NASA-CR-168743	p0088 N82-21796* #	RAE-SPACE-586	p0087 N82-21697 #
		NAE-SFACE-SSS	po 110 Hoz-1809/
NASA-RP-1083	p0133 N82-19647* #	RAE-TR-80107	p0122 N82-21565 #
		RAE-TR-80110	
NASA-TM-76796 NASA-TM-76830	p0134 N82-20606* #	RAE-TR-810/1	po 116 1462-16657
NASA-TM-82098	n0119 N82-19613* #	RC-LO-00479	p0069 N82-21651* #
NASA-TM-82163 NASA-TM-83812	p0084 N82-17715* #	DEDT 44 2000	-0124 NO2 21600 #
NASA-TM-83812	p0096 N82-17563* #	REPT-44.2866	00120 N82-19654 #
NASA-TM-83818 NASA-TM-83825	nOO85 N82-19645* #	REPT-81F0060-VOL-1 REPT-81F0061-VOL-2	p0108 N82-20617* #
		REPT-81F0061-VOL-2	p0108 N82-20618* #
NASA-TM-83858	p0106 N82-18663* #	REPT-81F0062-VOL-3	n0108 N82-20619* #
NASA-IM-83865	p0095 N82-17561* #	REPT-81F0064-VOL-5	p0109 N82-20621* #
NASA-TM-83868	p0083 N82-17714* #	REPT-81F0065-VOL-6	p0109 N82-20622* #
NASA-TM-83887	p0135 N82-21826* #	REPT-81F0063-V01-4 REPT-81F0063-V01-5 REPT-81F0065-V01-6 REPT-81F0066-V01-7 REPT-81F0067-V01-8	p0109 N82-20623* #
NASA-TM-83858 NASA-TM-83858 NASA-TM-83865 NASA-TM-83867 NASA-TM-83868 NASA-TM-83867 NASA-TM-83867 NASA-TM-84040	p0078 N82-18808* #	REPT-622-233	DO097 N82-18660* #
NASA-TM-84050 NASA-TM-84127 NASA-TM-84129	p0004 N82-19614* #	REPT-3318	p0124 N82-21698 #
NASA-TM-84129	p0085 N82-19625* #	RR-L1-04146	-0060 NG3 31640# #
NASA-TM-84130 NASA-TM-84467	p0119 N82-19611* #	RR-L1-04146	p0009 N62-21649* #
NASA-1M-84467	pousa Naz-19801* #	RRI-L1-04143	p0069 N82-21650* #
NASA-TP-1822	p0108 N82-20617* #	RSC-4	-0107 NB2 10700 #
NASA-TP-1823	p0108 N82-20618* #	HSC-4	PU107 N82-19790 #
NASA-TP-1824 NASA-TP-1825	n0108 N82-20620* #	RSL-TR-410-3	p0107 N82-19646* #
NASA-TP-1826 NASA-TP-1827 NASA-TP-1828	p0109 N82-20621* #	RSL-TR-527-1	p0107 N82-19638* #
NASA-TP-1827	p0109 N82-20622* #	RSRE-MEMO-3151	n0122 N82-21499 #
NASA-TP-1829	p0109 N82-20623* #	l	
NASA-TP-1993	p0110 N82-21774* #	SAAB-REPR-AE-10	p0120 N82-19656 #
		SAPR-15	p0078 N82-19609* #
NOAA-TM-ERL-ARL-101	p0081 N82-16613 #		
NOAA-TM-ERL-WPL-73	p0096 N82-17805 #	SCIENTIFIC-3	p0120 N82-19788 #
		SDSU-RSI-81-03	p0132_N82-18445* #
NOAA-TM-NESS-115	pU138 N82-17792 #		
NOAA-TM-NWS-SR-103	p0118 N82-16677 #	SER-B-253-MITT-159-PT-2	p0085 N82-19648 #
	,	SER-E-18	n0084 N82-19603
NOAA-TR-OTES-1	p0096 N82-17803 #		
NOAA-81071410		SM-LO-00463	p0065 N82-19632* #
NOAA-81072202	p0138 N82-17792 #	SM-L1-04091	00068 NR2-21636* #
NOAA-81080301 NOAA-81081101		ì	· " 1
NOAA-81081101	p0118 N82-16677 #	SPAR-R.1090-ISSUE-A	
NOAA-81081901	p0096 N82-17805 #	SR-EL-04131	50063 NR2 16448* #
NOSC/TD-458	n0134 N82-20620 #	1	
*	-	SR-E1-04138	p0066 N82-19635* #
NRL-MR-4722	p0098 N82-20827 #	SR-E1-04174	pu070 NB2-21658* #
NSF/IDOE-81-44	n0097 N82-19796 #	SR-LI-00306	p0123 N82-21646* #
-,		SR-LI-04049	
NSF/IDOE/CUEA/TR-39	p0097 N82-19796 #	SR-LO-04002	n0065 NB2 10624* #
NEWC/TR 91 440	-0000 N93 34504 "	3n-LU-04002	podos Na2-19034" #
NSWC/TR-81-440	POUSS N82-21691 #	SR-L1-0409	p0064 N82-19610* #
OHR-16		SR-L1-00301	p0122 N82-21637* #
OHR-18		SR-L1-00302	
ORNWEST-81-5	n0096 N82-17567 #	SR-L1-00304	
		SR-L1-00305	
OTA-0-142	p0097 N82-18844 #	SR-L1-00307	
PRRO.215120	n0073 A82-10177		
PB80-215130		1	
PB80-215130	p0073 A82-19177	SR-L1-00717SR-L1-04122	p0122 N82-21638

SR-PI-04187	p0070	N82-21670* #
SR-P1-04038 SR-P1-04044 SR-P1-04191 SR-P1-04201 SR-P1-04202	p0068 p0067 p0071 p0134 p0071	N82-21647* # N82-20591* # N82-21672* # N82-21669* # N82-21671* #
SR-U0-00497	р0065	N82-19633* #
TR-81-2	p0096	N82-17798* #
TVA/ONR/ARP-81/5-VOL-1 TVA/ONR/ARP-81/6-VOL-2		N82-19715 # N82-19716 #
TVA/ONR/NRO-82/3	p0134	N82-21703 #
USCG-D-64-81	p0132	N82-18466 #
WES/TR/EL-81-6	p0064	N82-16455 #
WHOI-4931	p0085	N82-19732* #
WMO-561	p0107 p0107	N82-18670 # N82-18671 #
YM-N1-04198	p0123	N82-21656* #

1. Report No. NASA SP-7041 (34)	2. Government Accession	on No.	3. Recipient's Catalog	No.		
4. Title and Subtitle		5. Report Date July 1982				
EARTH RESOURCES A Continuing Bibliography (I	-	6. Performing Organization Code				
7. Author(s)			8. Performing Organiza	tion Report No.		
		1	O. Work Unit No.			
9. Performing Organization Name and Address						
National Aeronautics and Spa Washington, DC 20546	ce Administrati	on	11. Contract or Grant No.			
			Period Covered			
12. Sponsoring Agency Name and Address						
		1	4. Sponsoring Agency	Code		
15. Supplementary Notes						
16. Abstract						
This bibliography list 567 reports, articles, and other documents introduced into the NASA Scientific and Technical Information System between April 1, and June 30, 1982. Emphasis is placed on the use of remote sensing and geophysical instrumentation in spacecraft and aircraft to survey and inventory natural resources and urban areas. Subject matter is grouped according to agriculture and forestry, environmental changes and cultural resources, geodesy and cartography, geology and mineral resources, hydrology and water management, data processing and distribution systems, instrumentation and sensors, and economic analysis.						
17. Key Words (Suggested by Author(s))		18. Distribution Statement				
Bibliographies Earth Resources Remote Sensors	Unclassified	- Unlimited				
19. Security Classif. (of this report)	20. Security Classif. (c	of this page)	21. No. of Pages	22. Price*		
Unclassified Unclassified			152	\$10.50 HC		

PUBLIC COLLECTIONS OF NASA DOCUMENTS

DOMESTIC

NASA distributes its technical documents and bibliographic tools to eleven special libraries located in the organizations listed below. Each library is prepared to furnish the public such services as reference assistance, interlibrary loans, photocopy service, and assistance in obtaining copies of NASA documents for retention.

CALIFORNIA

University of California, Berkeley

COLORADO

University of Colorado, Boulder

DISTRICT OF COLUMBIA

Library of Congress

GEORGIA

Georgia Institute of Technology, Atlanta

ILLINOIS

The John Crerar Library, Chicago

MASSACHUSETTS

Massachusetts Institute of Technology, Cambridge

MISSOURI

Linda Hall Library, Kansas City

NEW YORK

Columbia University, New York

OKLAHOMA

University of Oklahoma, Bizzell Library

PENNSYLVANIA

Carnegie Library of Pittsburgh

WASHINGTON

University of Washington, Seattle

NASA publications (those indicated by an "*" following the accession number) are also received by the following public and free libraries:

CALIFORNIA

Los Angeles Public Library San Diego Public Library

COLORADO

Denver Public Library

CONNECTICUT

Hartford Public Library

MARYLAND

Enoch Pratt Free Library, Baltimore

MASSACHUSETTS

Boston Public Library

MICHIGAN

Detroit Public Library

MINNESOTA

Minneapolis Public Library and Information

Center

NEW JERSEY

Trenton Public Library

NEW YORK

Brooklyn Public Library

Buffalo and Erie County Public Library

Rochester Public Library

New York Public Library

OHIO

Akron Public Library

Cincinnati and Hamilton County Public Library

Cleveland Public Library

Dayton Public Library

Toledo and Lucas County Public Library

TEXAS

Dallas Public Library

Fort Worth Public Library

WASHINGTON

Seattle Public Library

WISCONSIN

Milwaukee Public Library

An extensive collection of NASA and NASA-sponsored documents and aerospace publications available to the public for reference purposes is maintained by the American Institute of Aeronautics and Astronautics, Technical Information Service, 555 West 57th Street, 12th Floor, New York, New York 10019.

EUROPEAN

An extensive collection of NASA and NASA-sponsored publications is maintained by the British Library Lending Division. Boston Spa, Wetherby, Yorkshire, England. By virtue of arrangements other than with NASA, the British Library Lending Division also has available many of the non-NASA publications cited in *STAR*. European requesters may purchase facsimile copy of microfiche of NASA and NASA-sponsored documents, those identified by both the symbols "#" and "*", from: ESA Information Retrieval Service, European Space Agency, 8-10 rue Mario-Nikis, 75738 Paris CEDEX 15, France.

National Aeronautics and Space Administration

THIRD-CLASS BULK RATE

Postage and Fees Paid National Aeronautics and Space Administration NASA-451



Washington, D.C. 20546

Official Business
Penalty for Private Use, \$300

2 1 SP-7041, 820901 S90569AU 850609 NASA SCIEN & TECH INFO FACILITY ATTN: ACCESSIONING DEPT P O BOX 8757 BWI ARPRT BALTIMORE MD 21240



POSTMASTER:

If Undeliverable (Section 158 Postal Manual) Do Not Return