ABSTRACT

The NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) is home of global precipitation product archives, in particular, the Tropical Rainfall Measuring Mission (TRMM) products. TRMM is a joint U.S.-Japan satellite mission to monitor tropical and subtropical (40° S - 40° N) precipitation and to estimate its associated latent heating. The TRMM satellite provides the first detailed and comprehensive dataset on the four dimensional distribution of rainfall and latent heating over vastly undersampled tropical and subtropical oceans and continents. The TRMM satellite was launched on November 27, 1997. TRMM data products are archived at and distributed by GES DISC.

The newly released TRMM Version 7 consists of several changes including new parameters, new products, meta data, data structures, etc. For example, hydrometeor profiles in 2A12 now have 28 hydrometeor layers. New parameters have been added to several popular Level-3 products, such as, 3B42, 3B42RT.

Version 2.2 of the Global Precipitation Climatology Project (GPCP) dataset has been added to the TRMM Online Visualization and Analysis System (TOVAS; URL: http://disc2.nasa.gov/Giovanni/tovas/), allowing online analysis and visualization without downloading data and software. The GPCP dataset extends back to 1979.

Version 3 of the Global Precipitation Climatology Centre (GPCP) monitoring product has been updated in TOVAS as well. The product provides global gauge-based monthly rainfall along with number of gauges per grid. The dataset begins in January 1986. To facilitate data and information access and support precipitation research and applications, we have developed a Precipitation Data and Information Services Center (PDISC; URL: http://disc.gsfc.nasa.gov/precipitation). In addition to TRMM, PDISC provides current and past 20 years of precipitation data over the Internet. At PDISC, users can access tools and software. Documentation, FAQ and assistance are also available.


NEW! TRMM Version 7 Products

- Precipitation datasets (left):
  - Standard TRMM products
  - Ancillary products (e.g., merged IR)
  - Ground based instruments
  - Other precipitation products in TOVAS (e.g., Wettstatt-Sucre, GPCP)

- Other data products:
  - Other remote sensing products from different missions (e.g., ARES, A-Train)
  - Modeling products (e.g., MERRA, GLDAS)

Outreach As Collaboration

Our purpose is not to just push data to users, but to make available potential solutions to users' problems.

Example Applications (Agriculture): United Nations World Food Programme

USDA Foreign Agricultural Service

Agriculture Information System (AIS)

Current Conditions Map

Ongoing: Integrate IPWG Validation Algorithms into TRMM Online Visualization and Analysis System (TOVAS):

- Intercomparison of V6 and V7 TRMM (beta versions)
- Integration of daily rainfall products (to be released in 2012)
- Intercomparison of climateology products (to be released in 2013)

NEW! GPCP Version 2.2 Precipitation Dataset in TOVAS Now

The Global Precipitation Climatology Project (GPCP) has released its latest version, 2.2.

Temporal Coverage:
- Long term monthly means, derived from the monthly data

Spatial Coverage:
- 2.5° degree latitude x 2.5° degree longitude global grid
- 88.75° N – 88.75° S, 1.25° E – 358.75° E

The 30 years of GPCP Version 2.2 data allow time-series analysis. Top left: A well-known phenomenon is decreasing precipitation in northeastern China. Top right: In contrast to northeastern China, the southern provinces of China are experiencing increased precipitation over the Pacific Ocean, showing seasonal and interannual variability of precipitation in 1979-2010. Precipitation in this region is strongly influenced by El Niño - Southern Oscillation (ENSO) events; the brighter “stripes” extending to the east indicate El Niño events.