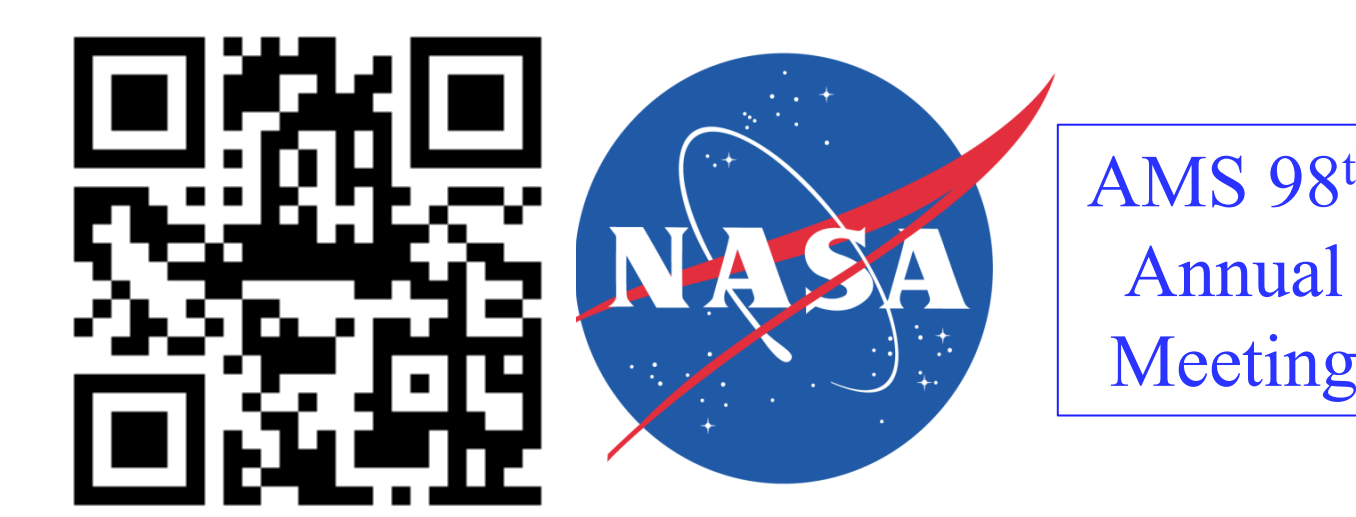


Improving Global Precipitation Product Access at the GES DISC



NASA/Goddard EARTH SCIENCES DATA and INFORMATION SERVICES CENTER (GES DISC)

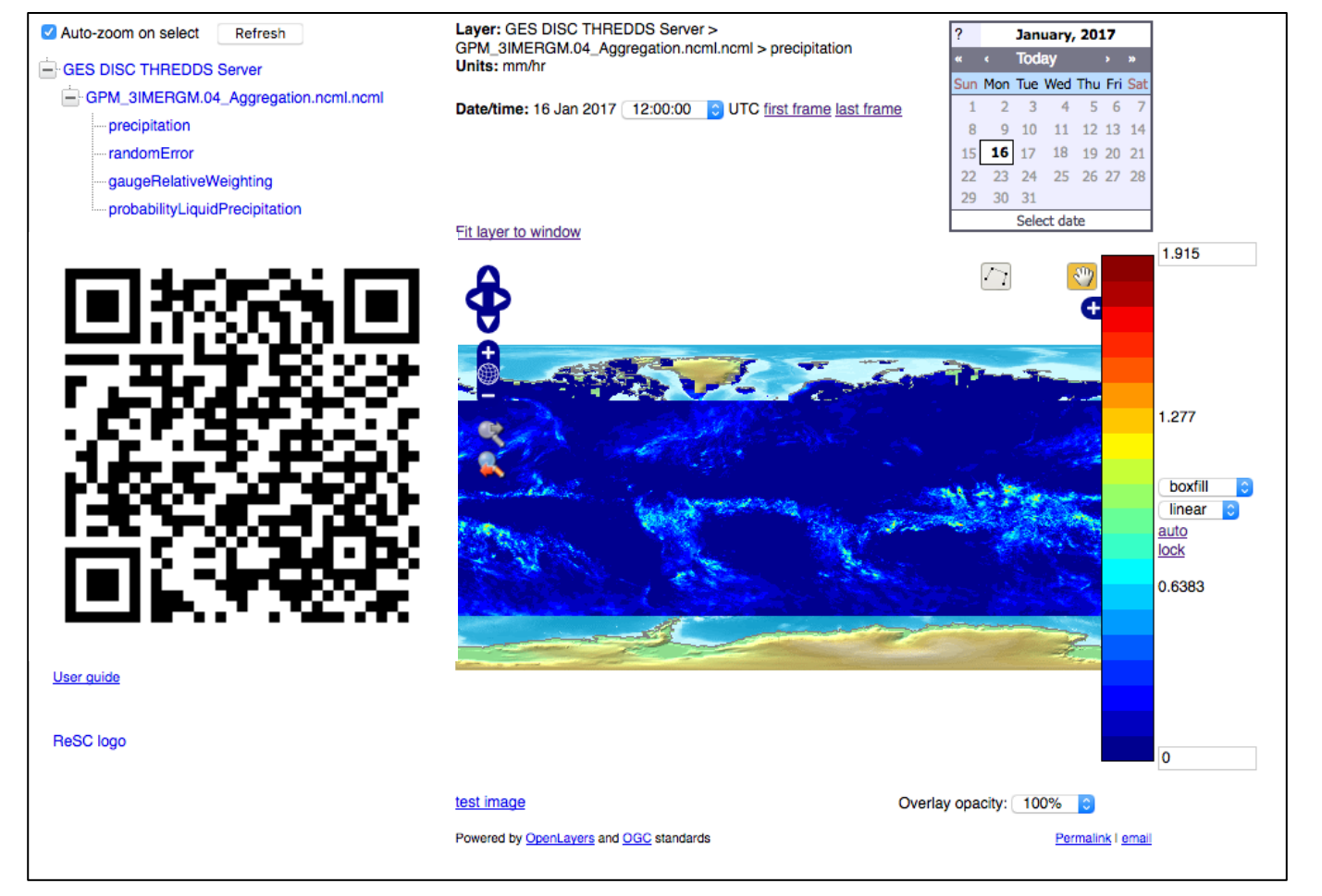
Z. Liu^{1,2} (Zhong.Liu@nasa.gov), B. Vollmer¹, A. Savtchenko^{1,3}, D. Ostrenga^{1,3}, B. DeShong^{1,3}, F. Fang^{1,3}, R. Albayrak^{1,3}, E. Sherman^{1,3}, M. Greene^{1,4}, A. Li¹, C.-L. Shie^{1,5}, W. Teng^{1,3}, and D. Meyer¹
¹GES DISC; ²CSISS, George Mason University; ³ADNET Systems, Inc.; ⁴Telophase Corp; ⁵Univ. of Maryland at Baltimore County

The NASA Goddard Earth Sciences Data and Information Services Center (GES DISC) has been actively and continually engaged in improving the access to and use of Global Precipitation Measurement (GPM), Tropical Precipitation Measuring Mission (TRMM), and other precipitation data, including the following new services and ongoing development activities:

- Updates on GPM products and data services
- New features in Giovanni
- Ongoing development activities
- Precipitation product and service outreach activities

The screenshot shows the GES DISC web portal interface. A search bar at the top contains 'IMERG'. Below it, a search result for 'GPM_3IMERGM: GPM L3 IMERG Final 1 month 0.1 degree x 0.1 degree precipitation V03' is displayed. A 'Data Access' sidebar on the right lists options: 'Online Active', 'Search+', 'Simple Subset Wizard', 'Giovanni', and 'OPeNDAP (DODS)'. A yellow arrow points from the text 'A variety of data access methods are available for users at different levels and needs' to the 'OPeNDAP (DODS)' option.

The data set landing page provides a one-stop shop for data services and information. Data set-related services are accessible at the top right. The three tabs provide information on product summary, data citation, and documentation.



A screenshot of Godiva2, showing a map of the IMERG monthly product. THREDDs Data Server supports interoperability through OPeNDAP, WCS, WMS, NetcdfSubset, NCML, UDDC, ISO, as well as viewers (Godiva2, NetCDF-Java ToolsUI, and IDV).

The screenshot shows the old version of the GES DISC web portal. A large red 'RETIRED' watermark is overlaid across the center of the page. The interface includes a search bar and various navigation tabs.

The screenshot shows the new GES DISC web portal. It features a 'Projects & Missions' section with a list of projects, a 'Featured Gallery Images' section with a grid of images, and a 'News' section with recent updates.

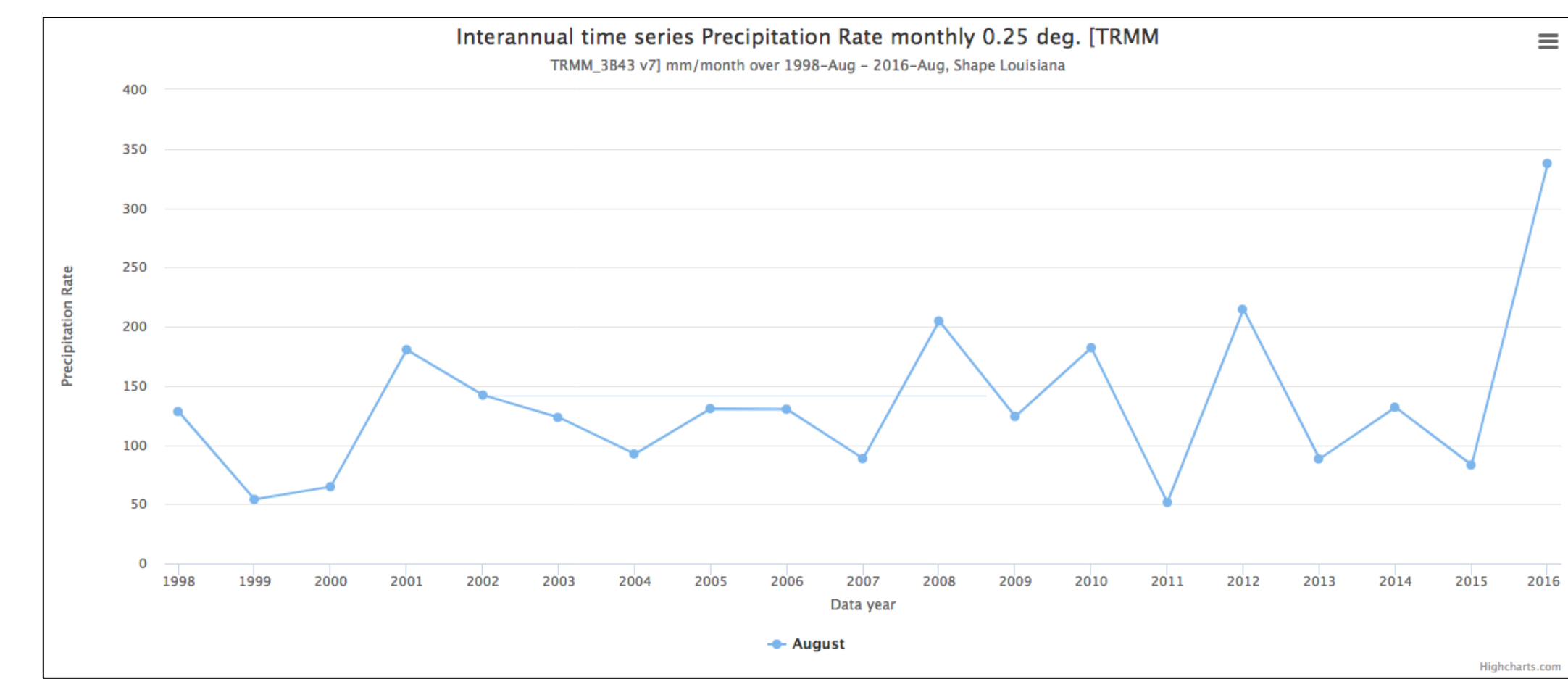
New Features and Highlights

Data Set and Service Updates:

- New GES DISC Web portal (see below)
- Web content migration (making things searchable and easier to find)
- GrADS Data Server (GDS) available for both IMERG and TMPA products
- THREDDs Data Server (Access: OPeNDAP, WCS, WMS, NetcdfSubset, NCML, UDDC, ISO; Viewers: Godiva2, NetCDF-Java ToolsUI, IDV)
- GPM V05 (available now); NOAA NCEP merged IR product (online now); GPCP-3 monthly product (coming soon); TRMM V8 (coming soon)
- Level-2 product subsetting (coming soon; OPeNDAP is available now)
- Datalist capability (coming soon)
- TMPA and IMERG in YouTube (coming soon)

Giovanni:

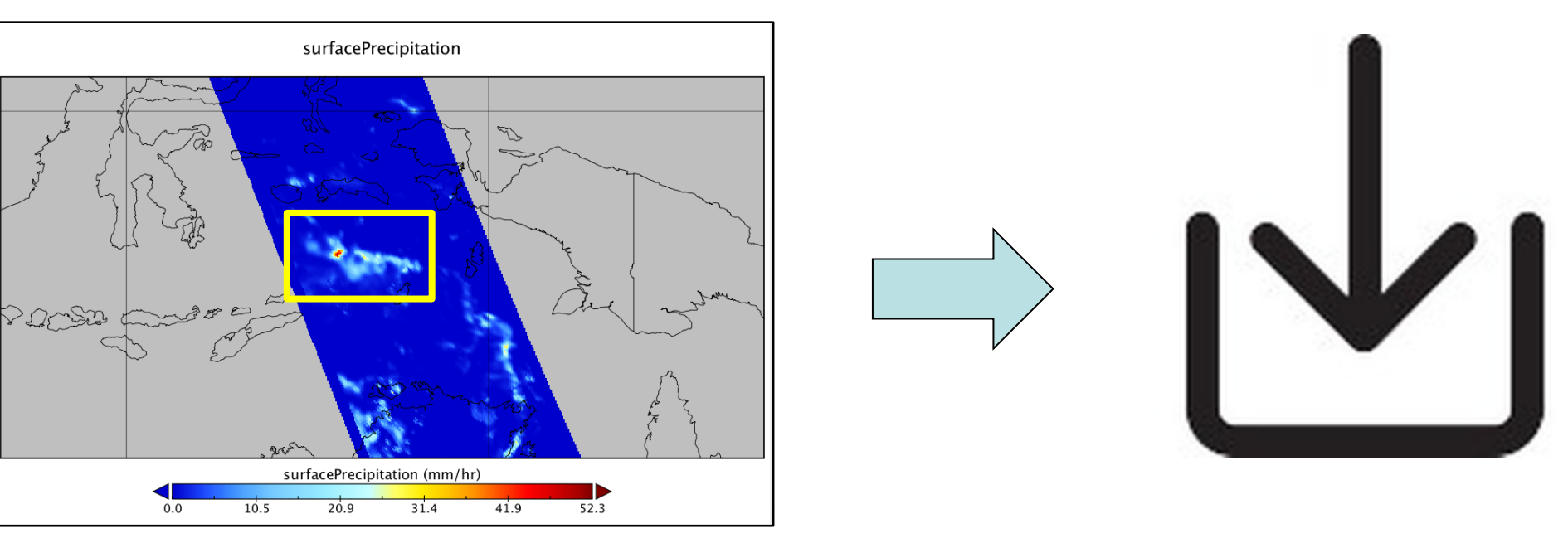
- Seasonal (Interannual) Time Series with shapefile support. With this release, users can specify a shape as their selected region of interest. In addition, a combination of bounding box and shape is supported, provided that the intersection of the shape and bounding box is valid for the data type.
- Seasonal (Interannual) Time Series with Comma-Separated-Variable (CSV) download. This release supports CSV text download for the values shown in any interannual time-series plot.



Above: The GES DISC Web portal has been completely redesigned to facilitate data and information discovery and access. Left: Project and mission information; featured gallery images; news; science focus areas; tools; and resources.

Above: Sample of interannual time series of 3B43 for August with shapefile support in Giovanni, showing a record-breaking rainfall in the state of Louisiana in August 2016. Shapefiles currently available in Giovanni: countries, U.S. states, land/sea masks, and major watersheds around the world.

Ongoing Development Activities



Level-2 GPM and TRMM product subsetting (spatial: areal and point). Subsetting through OPeNDAP is available now.

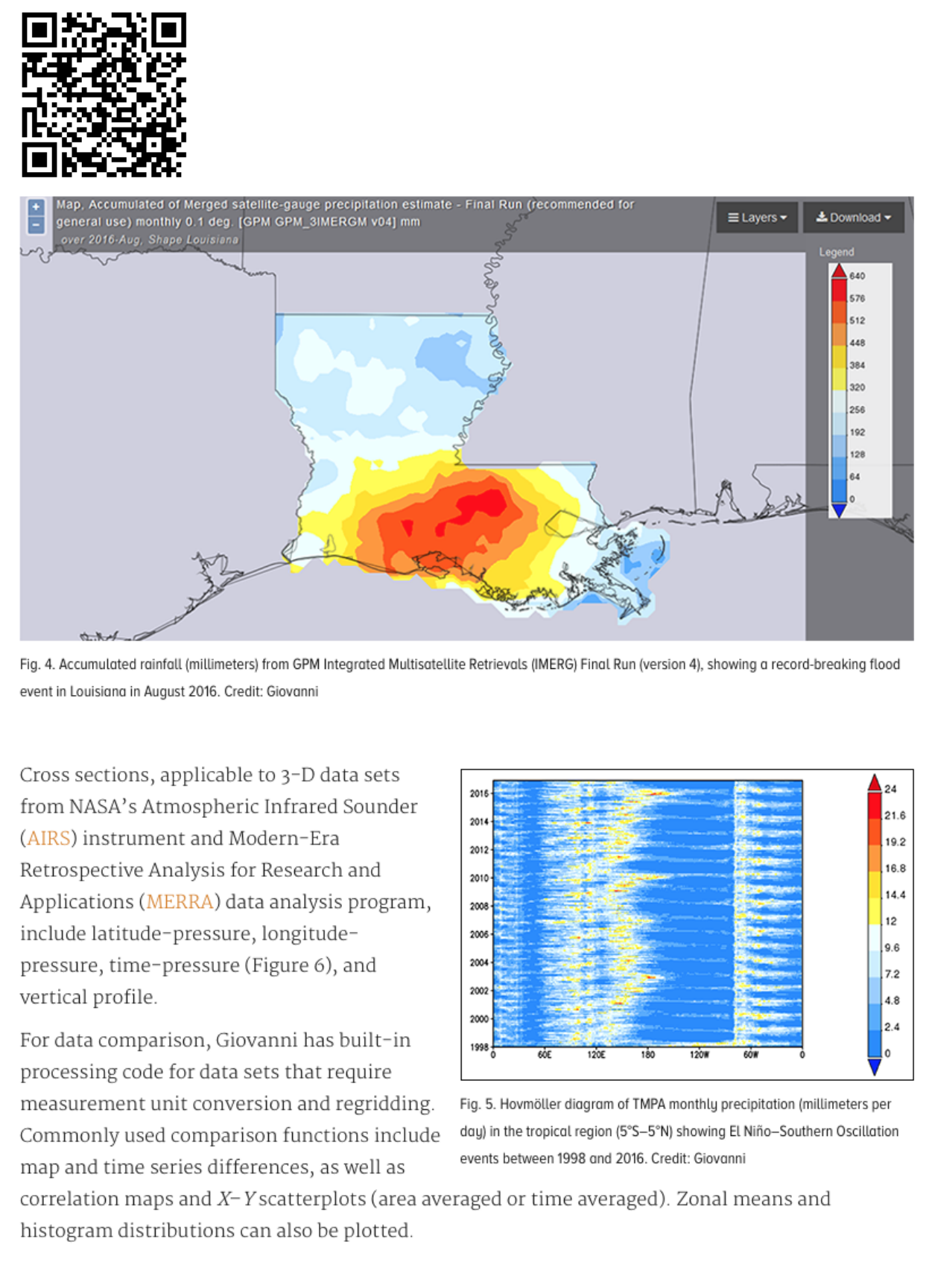
The image features the YouTube logo in a large, bold font. To the left, a map of the United States is shown with a color scale. An arrow points from the map towards the YouTube logo, suggesting that data sets are being made available on YouTube videos.

Making a whole data set collection (e.g., IMERG, TMPA 3B42) available on YouTube videos. Users can access animations of product collections without downloading data and software. Links will be included for accessing original data.

GPM and TRMM Data Service Outreach Activities

- GES DISC news, Twitter, user forum, GPM product and service training webinars, Giovanni workshops
- EOS article on Giovanni with IMERG and TMPA as examples. GPM products and services at the GES DISC in the BAMS (March 2017 issue)
- Posters and talks at AGU Fall Meetings, AMS Annual Meetings, and other conferences

The snippet shows the beginning of an EOS article titled 'Giovanni: The Bridge Between Data and Science'. It discusses how satellite remote sensing data sets can be a daunting task and how Giovanni, a Web-based tool, facilitates access, visualization, and exploration for many of NASA's Earth science data sets.



The snippet shows the beginning of a NOWCAST article titled 'GLOBAL PRECIPITATION MEASUREMENT MISSION PRODUCTS AND SERVICES AT THE NASA GES DISC'. It lists the authors: Z. Liu, D. Ostrenga, B. Vollmer, B. DeShong, K. Macchioli, M. Greene, and S. Kieffer.

This block contains social media links for Earthdata User Forum, Twitter (@NASA_GESDISC), and YouTube (user:NASAGESDISC). It also features a thumbnail for a Giovanni video titled 'Here's a Giovanni view of #HurricaneIrma using GPM IMERG data in Giovanni.'