NASA Goddard Earth Sciences Data and Information Services Center (GES DISC)

NASA GES DISC's customized services for climatology and meteorology

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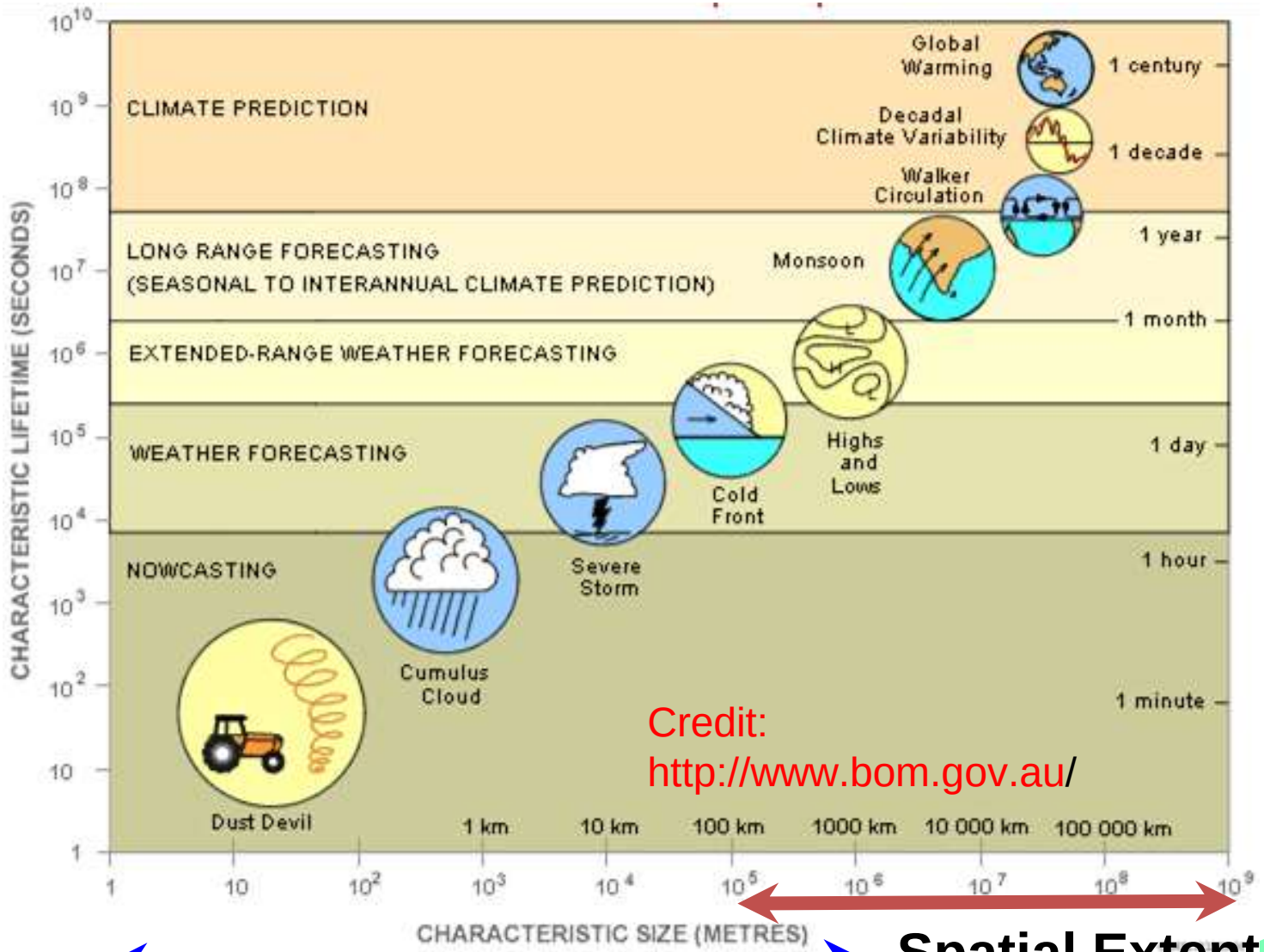
35th Conference on Environmental Information Processing Technologies

Outline

- Definition of Weather & Climate
- Fitness for business services for weather & climate
- NASA GES DISC Data & Services for Weather & Climate
- GES DISC user-friendly (but customizable) services

Weather vs. Climate

Climate is what you expect and **weather** is what you get!

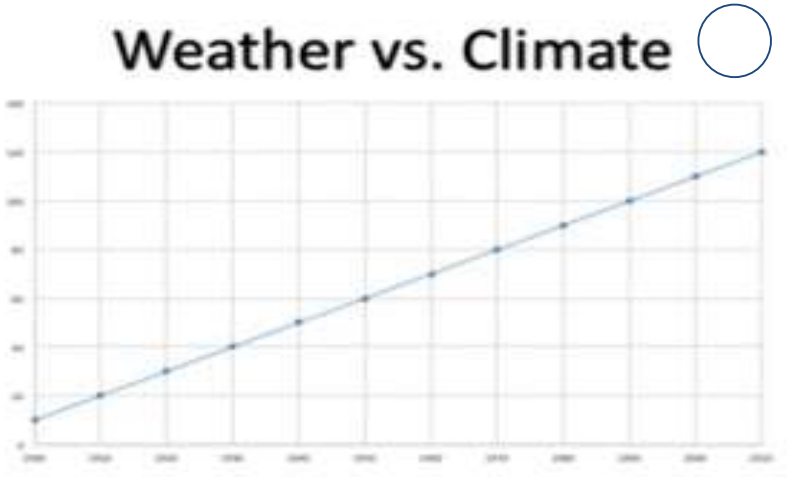


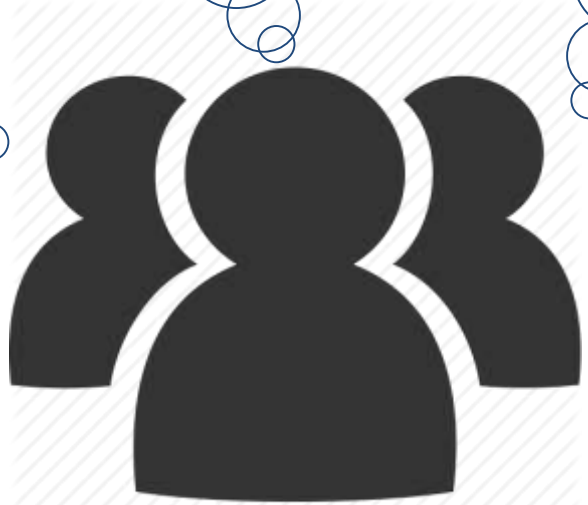
Fitness for Business in Weather/Climate services - GES DISC Mission

Will we need to evacuate the city due to …?

How much solar/wind energy can we expect to get in this area?

Where…?
What… ?
How… ?





GES DISC Weather & Climate Data & Services

Data Producers

Data Users

Sciences

Atmospheric Composition

Global Water & Energy Cycles

Climate Variability

Weather

Carbon Cycles

Data

Satellite
In Situ
Model
Aircraft

Ingest

Archive

Preservation

Distribution

Services

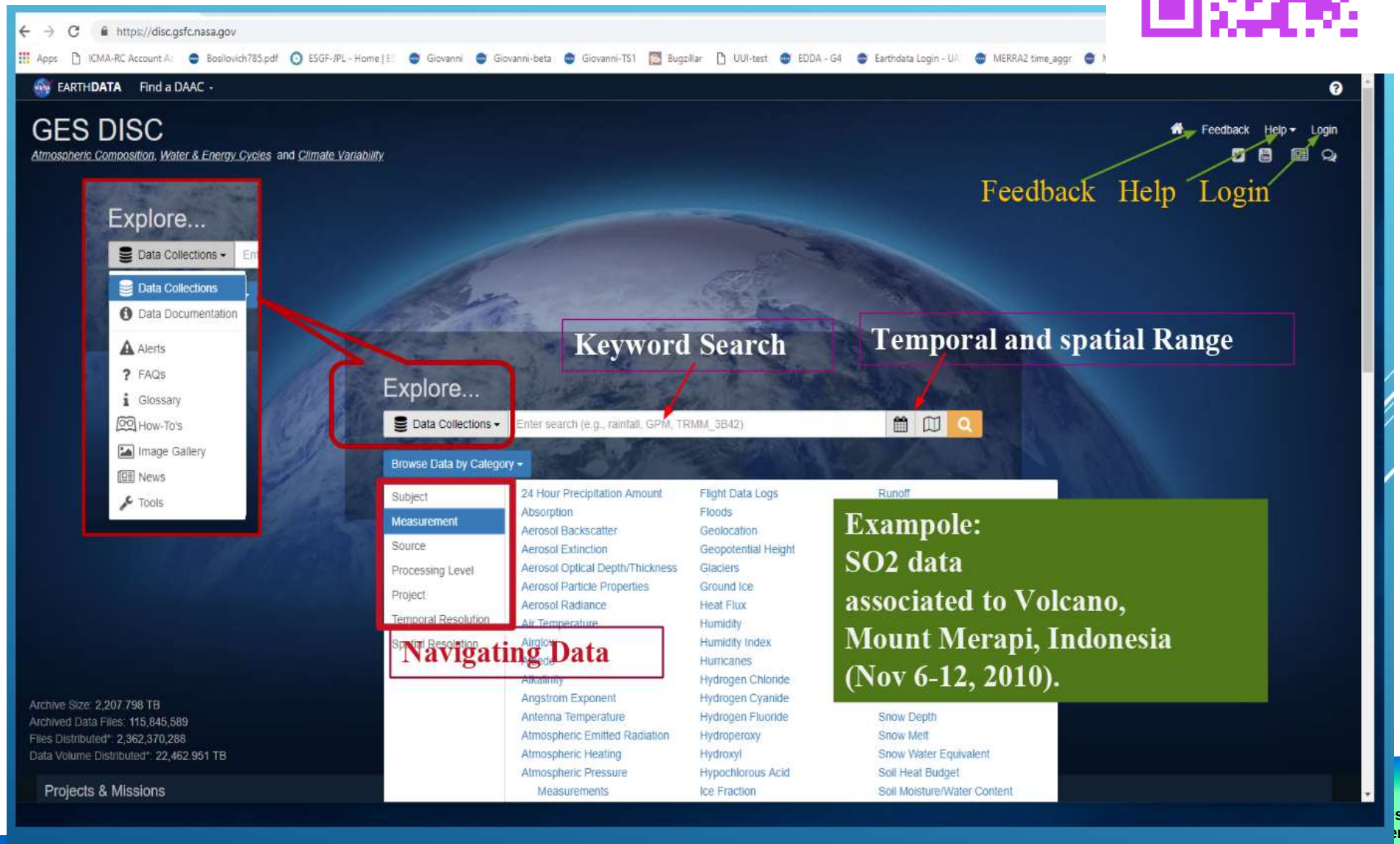
Accessibility
Interoperability
Usability

Downloading
Subsetting
Reprojection
Visualization

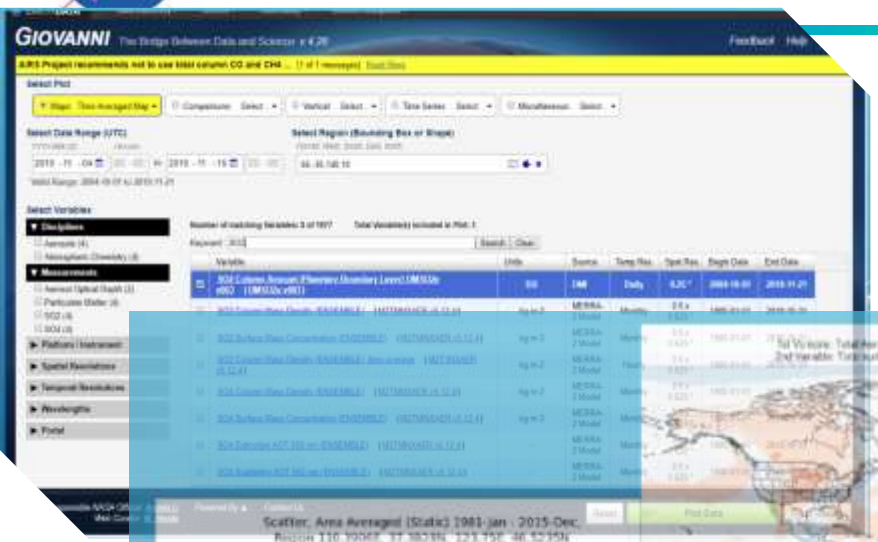
User Services

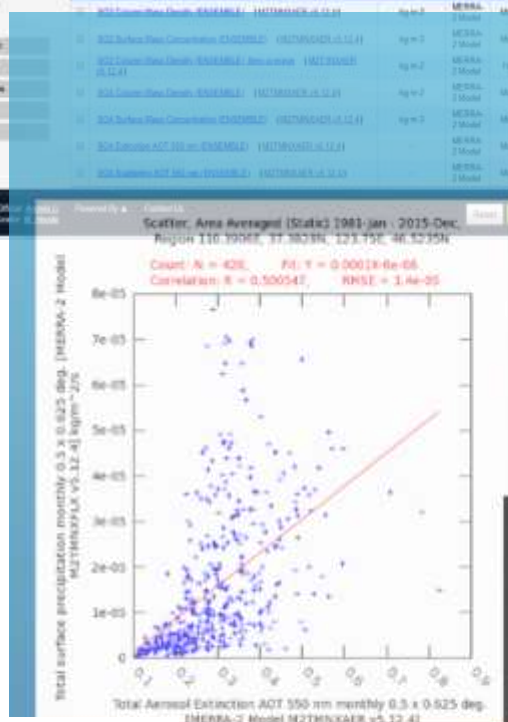
GES DISC Data Search Service: Explore Weather/Climate data

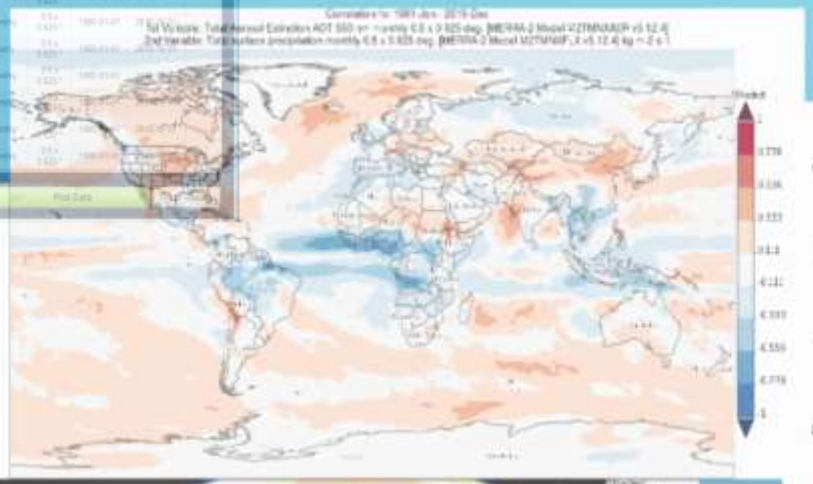
https://disc.gsfc.nasa.gov

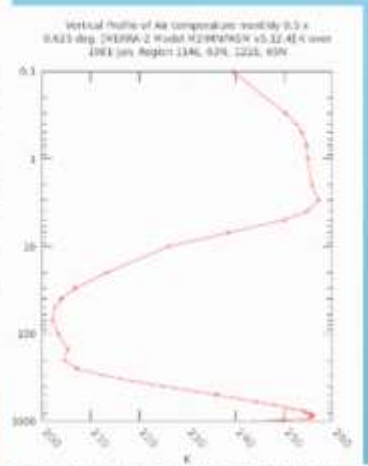


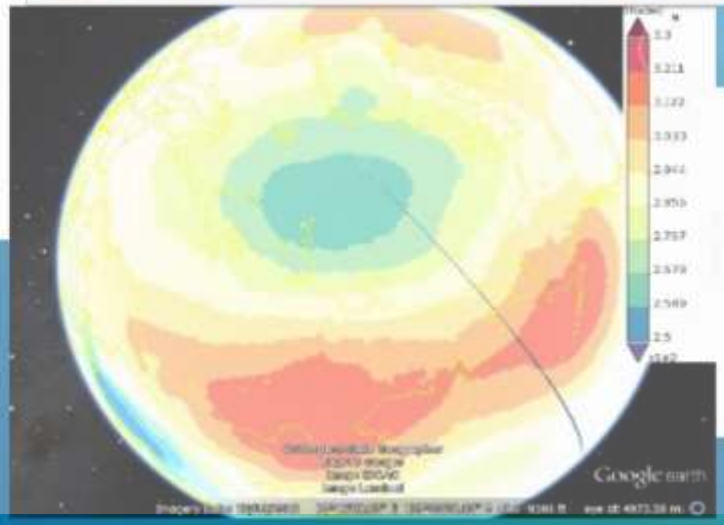
Giovanni - Analyze/Visualize on-the-fly service











https://giovanni.gsfc.nasa.gov/

Analyze California Fire with GES DISC data & tools

Carbon Monoxide and Aerosol from Satellites and MERRA-2
California Fire, July 28 2018

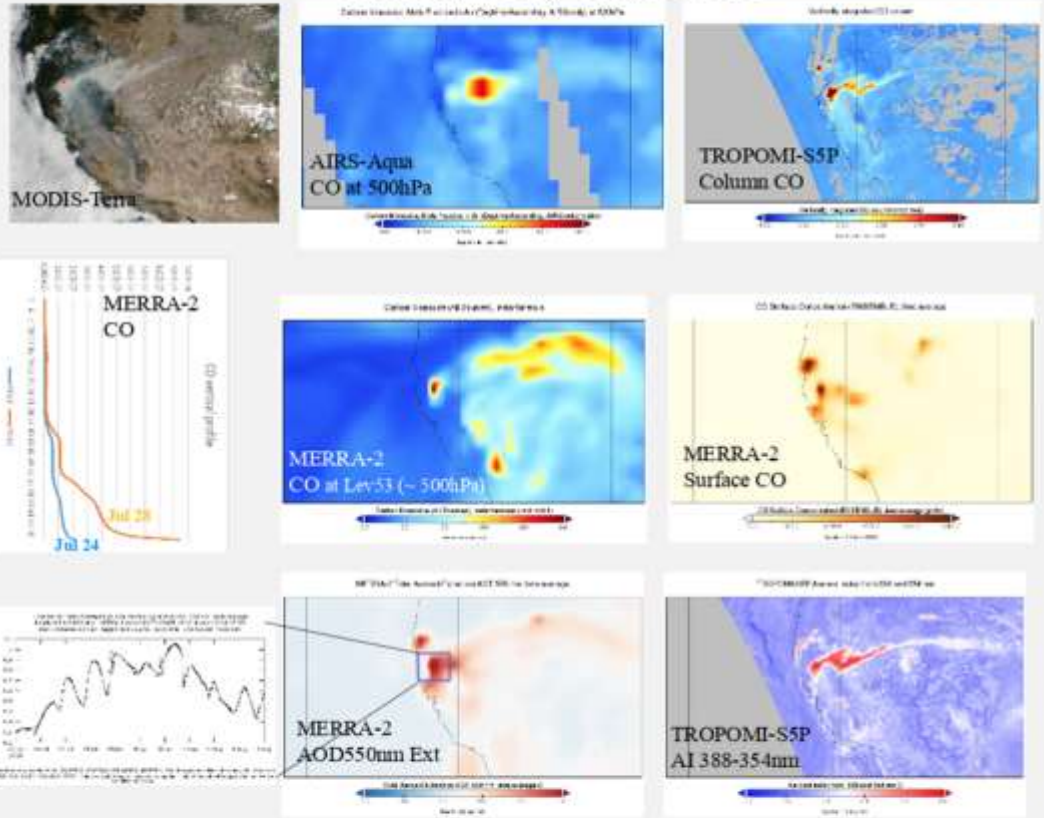


Fig.1 Images demonstrated the large scale elevated Carbon Monoxide (CO) and aerosols observed from satellite (AIRS/Aqua and TROPOMI/Sentinel-5P) and model assimilated data from MERRA-2 during a California Fire event on July 28 2018. The true color image is from MODIS-Terra.

Meteorology and Land Surface Conditions
Before the Fire event

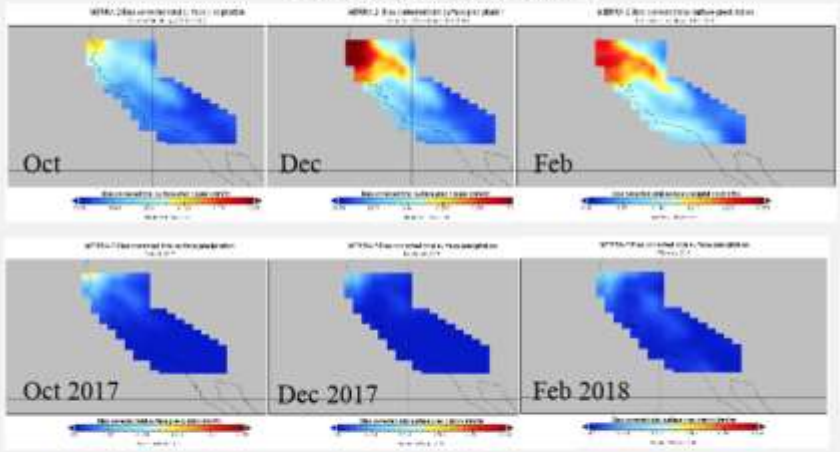


Fig.2 Images are monthly precipitation from MERRA-2, showing that the precipitation during 2017-2018 raining season is much below the climatology.

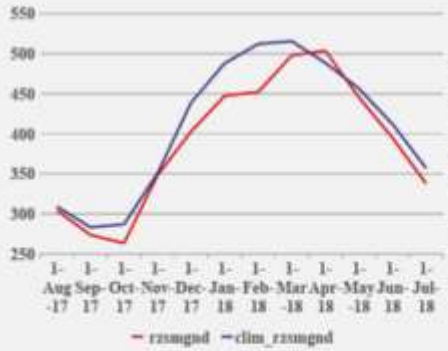


Fig.3 Time series of monthly soil moisture at root zone from NLDAS_NOAH over northern California (-124.0,38.9,-120.3,41.5) from Aug 2017 to Jul 2018 (Red line) and corresponding monthly Climatology

How-To's | Download | Case Study | Visualization

GES DISC Customizable datasets for features

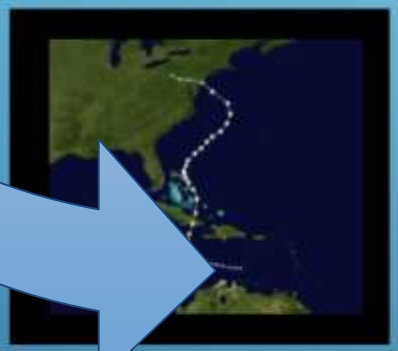
COMING SOON

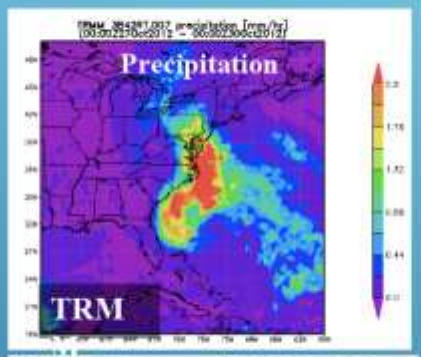
List of "Bundle Data Parameters"

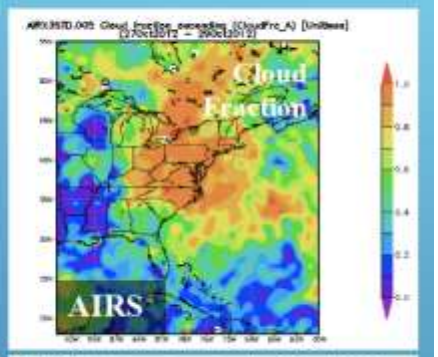
Hurricane	Volcano	Flood
Precipitation; Wind Speed; SST; Humidity; Air Temp.; Sfc Pressure; Aerosol	Air Temp.; SO2; Aerosol/Dust; Wind Speed; Humidity; Clouds	Precipitation; Soil Moisture; Sfc Runoff; Humidity; Air Temp.

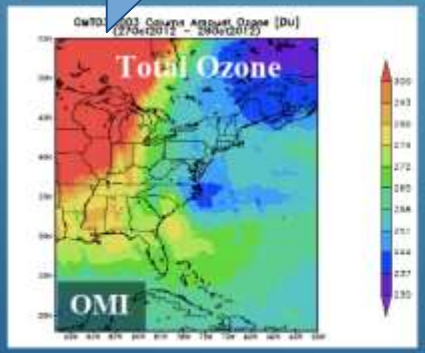
SIGNATURES OF HURRICANE SANDY FROM GIOVANNI

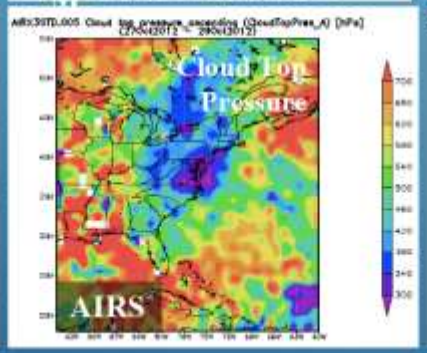
October 27-29 2012

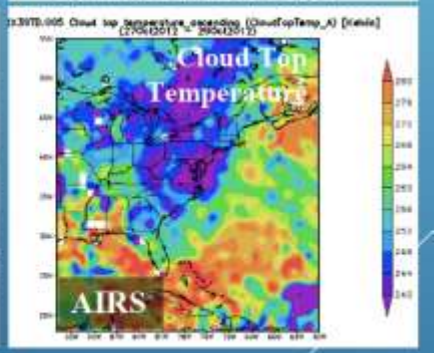












Customized with GES DISC data & tools

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- How-To’s

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