NASA Remote Sensing for Flood Monitoring and Management

April 18-20, 2017
Fairfax, VA

Remote sensing data can help professionals manage and monitor extreme weather conditions. In this training, participants will learn how to access and analyze available NASA data relevant to flood management. This includes data on precipitation, soil moisture, inundation mapping, and elevation modeling. Participants will learn to apply data for assessing flood risk, monitoring conditions, and planning relief. Each session will include a presentation followed by an opportunity to use the data and tools covered in the presentation.

Day One: Global Precipitation Measurement Mission and the Shuttle Topography Radar Mission

April 18, 2017

- Remote Sensing of Precipitation, GPM Sensors, Data Products, and Data Access.
- Overview of SRTM and SRTM Data Access.
- Access GPM Precipitation and SRTM Data and Analyze in QGIS.
- Python Script to Read HDF Files.

Day Two: Soil Moisture Active Passive Mission and Synthetic Aperture Radar

April 19, 2017

- Remote Sensing of Soil Moisture from SMAP, Data Products, and Data Access.
- Introduction to SAR, SAR Data, and Applications to Open Water and Inundation mapping.
- Access and Analysis of SMAP Data.
- Access and Analysis of SAR Data, including Sentinel-1 and Palsar.

Day Three: Flood Monitoring Tools, Flood Mapping, and GDACS

April 20, 2017

- Overview of Flood Monitoring Tools: Global Flood Mapping System (GFMS), MODIS Near Real-Time (NRT) Flood Mapping, and the Global Disaster Alert and Coordinate System (GDACS).
- Selected Flood Case Studies.
    - Pre-flood monitoring phase (GPM, SMAP)
    - Flood monitoring and risk assessment – streamflow and inundation (GFMS, SAR, SRTM)
    - Post-flood relief planning (MODIS-NRT, SAR, GDACS)