WELCOME TO
NASA APPLIED REMOTE SENSING TRAINING (ARSET) WEBINAR SERIES

Water Resources Management Using NASA Earth Science Data

COURSE DATES: EVERY Tuesday, October 13, 20, 27; November 3, 10
TIME: 10 TO 11 AM AND 2 TO 3 PM Eastern US Time
(UTC-4 Hours for October and UTC-5 Hours for November)
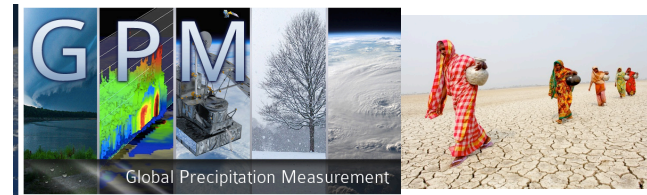
Applied Remote Sensing Training

Webinar Outline

Week 1

NASA Remote Sensing Data and Applications for Water Resources Management
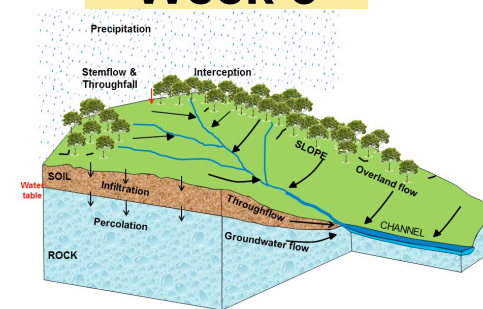
Week 2

Precipitation and Soil Moisture Data

Week 3

Run off, Streamfow and Reservoir Level Data

Week 4

Evapotranspiration and Ground Water Data

Week 5

Land Data Assimilation for Water Budget Estimation and Case Studies with GIS Applications

Training Team

Instructors:

- Amita Mehta (ARSET): amita.v.mehta@nasa.gov
- Cynthia Schmidt (ARSET): cynthia.l.schmidt@nasa.gov
- Brock Blevins (ARSET): brockbl1@umbc.edu (Week 5)
- Kyle Matty (UMBC/ARSET): kmatty1@umbc.edu (GIS helper)

Guest Speakers:

- Eni Njoku(NASA-JPL): eni.g.njoku@jpl.nasa.gov (Week-2)
- Brian Thomas (NASA-JPL): Brian.F.Thomas@jpl.nasa.gov (Week-4)
- Sujay Kumar (NASA-GSFC): sujay.v.kumar@nasa.gov (Week-5)

Spanish Translation:

- David Barbato (ARSET): barbato1@umbc.edu

General Inquiries about ARSET:

- Brock Blevins (ARSET) bblevins37@gmail.com
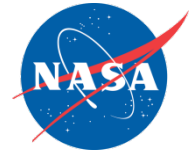- Ana Prados (ARSET) aprados@umbc.edu

Week-5 Agenda

- Overview of Land Data Assimilation Models

- GIS Demonstration: Import, Display, and Analyze Water Budget Components over California

- Training Summary and Important Announcements

Training Summary

Water Resources Data Applications

Freshwater components crucial for the following Activities

Water Allocation

Agricultural and Irrigation Management

Flood/Drought Management

Reservoir/Dam Management

Water Budget including all the freshwater components

Precipitation
Soil Moisture
Evapotranspiration

Precipitation
Runoff/ Streamflow
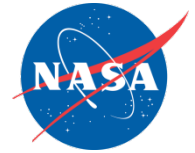Soil Moisture
Evapotranspiration
Ground Water

Reservoir Height
Precipitation
Runoff/ Streamflow

This Training Covered the Following Satellites and Models for Monitoring Freshwater Components
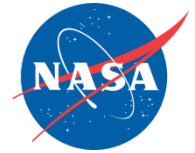
- Rain Amount   (TRMM, GPM)
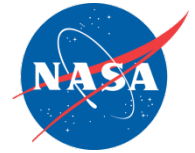- Snow Cover   (Terra and Aqua MODIS)
- Soil Moisture   (SMAP, NLDAS/GLDAS)
- Evapotranspiration   (Terra and Aqua MODIS, Landsat, NLDAS/GLDAS)
- Runoff/Streamflow   (TRMM,GPM, NLDAS/GLDAS)
- Lake Level Height   (Jason-2)

Multiple Web-based Tools for Water Resources Data Search, Analysis, and Download

Data Portal/Tool	URL	Parameters
Mirador	http://mirador.gsfc.nasa.gov	Precipitation (TRMM & GPM), Soil Moisture, ET, Run Off (NLDAS & GLDAS)
Giovanni-4 Geospatial Interactive Online Visualization And aNalysis	http://giovanni.gsfc.nasa.gov/giovanni	Precipitation (TRMM and GPM), Soil Moisture, ET, Run Off (NLSDAS and GLDAS)
GFMS Global Flood Monitoring System	http://flood.umd.edu/	Streamflow, Run Off (TRMM & Hydrology Model)
USDA Crop Explorer Reservoir Height	http://www.pecad.fas.usda.gov/cropexplorer/global_reservoir	Lake Level Height (Jason-2)
PPS/STORM	https://storm.pps.eosdis.nasa.gov/storm	Precipitation (TRMM & GPM)
National Snow and Ice Data Center	http://nsidc.org/	Snow Cover (MODIS), Soil Moisture (SMAP)
Reverb/ECHO	http://reverb.echo.nasa.gov/reverb	Precipitation (TRMM & GPM), Snow Cover (MODIS), Soil Moisture, ET, Run Off (NLDAS & GLDAS)

Multiple Web-based Tools for Water Resources Data Search, Analysis, and Download

Data Portal/Tool	URL	Parameters
Lance MODIS Products	http://lance-modis.eosdis.nasa.gov/	MODIS Snow Cover
MODSCAG (MODIS Snow Covered-Area and Grain size)	http://snow.jpl.nasa.gov/portal/browse/dataset/urn:snow:MODSCAG	MODIS Snow Cover
SMAP ASF API	https://portal.asf.alaska.edu/get-data/api	Soil Moisture (SMAP) (L1 and L2)
SMAP Vertex	https://vertex.daac.asf.alaska.edu	Soil Moisture (SMAP) (L1 to L4)
Worldview	https://worldview.earthdata.nasa.gov/	MODIS Images, Selected Soil Moisture and Precipitation data from SMAP & GPM
MODIS Global Evapotranspiration Project (MOD16)	http://www.ntsg.umt.edu/project/mod16	Evapotranspiration
Grace Groundwater data	http://grace.jpl.nasa.gov/data/get-data/	Ground Water

Concluding Remarks

- There are multiple water resources data products available from NASA with different spatial and temporal resolutions and coverage, data selection depends on the applications they are used for

- Regional validation is highly recommended to assess accuracy of the water resources data products

- ARSET provides advanced on-line and in-person trainings for Air Quality, Land, Water Resources and Disasters Management. If you are interested, you can request a training for your organization or region at http://arset.gsfc.nasa.gov/training

Important Information

Important Information

Certificate of Completion **(upon request):**

You must have attended all 5 live sessions
You must submit the homework assignments

Certificate Request Form **(Due December 15, 2015)**
https://docs.google.com/forms/d/
1CmeWM3PfFnoI9t41LAXGgNtqezxYnSkWm2pepCcAu7Q/
viewform?usp=send_form

Homework Assignments

Week 1 Assignment (Due November 15, 2015)
https://docs.google.com/forms/d/1xDzBArgzUMsh3-JolBacWBw1l_QWZG6IrtKpkV-KDp0/viewform?usp=send_form

Week 5 Assignment (Due December 15, 2015)
https://docs.google.com/forms/d/1wpvQ9LyCjkxC7TMY_KPmo_BJ-0cJfwX62WYPhaOHixA/viewform?usp=send_form

Important Information

If requested, the Certificate of Completion will be emailed after January 15th 2016

For further information contact : Marines Martins
Email: marines.martins@ssaihq.com

Course Survey

To help us evaluate our trainings and determine future remote sensing training topics, please take a couple minutes now to fill out this survey by clicking the link in the
 Q & A box

We will pause to allow you to begin the survey.

Thank You!

Amita Mehta
email: amita.v.mehta@nasa.gov