Dewberry

NASA Remote Sensing Applications for Flood Monitoring and Management Workshop

April 18 to 20
8:30 a.m. to 5:00 p.m.

Tuesday, April 18

Session 1A: Precipitation from Remote Sensing Measurements

8:30-9:00	**Introduction**	Presentation	Mike Walsh
9:00-9:30	**Applied Sciences Program on Disaster Management**	Presentation	John Murray
9:30-9:45	**About ARSET, Training Outline**	Presentation	Amita Mehta
9:45-10:30	**Remote Sensing of Precipitation** Overview of TRMM and GPM Data and Applications; Demonstration of Data Access and Analysis Tools	Presentation	Amita Mehta
10:30-10:45	**Break**	Break	—
10:45-12:30	**Install and Test QGIS** Precipitation Data Access & Analysis in QGIS	Exercise	Amita Mehta, Erika Podest & Participants
12:30-1:30	**Lunch Break**	Break	—

Session 1B: Digital Elevation Data from Remote Sensing

1:30-2:00	**Overview of DEM from the Shuttle Radar Topography Mission and ASTER**	Presentation	Amita Mehta
2:00-2:15	**Data Access Tools** GDEX CGIAR	Demonstration	Amita Mehta
2:15-3:00	**Install/Test Python** Extract Precipitation Data Using Python Script	Exercise	Amita Mehta, Erika Podest & Participants
3:00-3:15	**Break** (Potential cushion for running late)	Break	—
3:15-3:45	**Potential Topics:** i) Type of Work and Flood Management Activities, ii) Data Currently Used, and iii) Data Needs	End-User Presentation or Open Discussion	Catherine Bohn

3:45-5:00	**Terrain and Slope Data** Access and Analysis in QGIS; Extract Precipitation and DEM Data	Exercise	Amita Mehta, Erika Podest & Participants

Wednesday, April 19

Session 2A: Overview of Synthetic Aperture Radar (SAR) Data for Flood Detection

8:30-9:15	**Introduction to Synthetic Aperture Radar** Introduction to SAR	Presentation	Erika Podest
9:15-10:00	**Applications of SAR**	Presentation	Erika Podest
10:00-10:15	**Break**	Break	—
10:15-12:30	**Title** Where to Download SAR data; Downloading Open Access SAR Processing and Analysis Software; SAR Pre-Processing; Detecting Inundation with SAR	Exercise	Amita Mehta, Erika Podest & Participants
12:30-1:30	**Lunch Break**	Break	—

Session 2B: Soil Moisture Active Passive (SMAP)

1:30-2:30	**Overview of the Soil Moisture Active Passive (SMAP) Satellite Mission** Objectives, Algorithms, Products, cal/val	Presentation	Erika Podest
2:30-3:00	**Overview of SMAP Applications**	Presentation	Erika Podest
3:00-3:15	**Break** (Potential cushion for running late)	Break	—
3:15-4:30	**Accessing SMAP Data and a Case Study** Where to Access SMAP Data; Opening and Visualizing SMAP Data; SMAP Data Analysis	Exercise	Amita Mehta, Erika Podest & Participants
4:30-5:00	**Group Presentations**	Presentations	Participants

Thursday, April 20

Session 3A: Flood Management and Monitoring Tools

8:30-9:15	**Overview of Flood Monitoring Tools** GFMS, MODIS-NRT, DFO, GDACS, ERDS	Presentation	Amita Mehta
9:15-10:00	**Overview and Access of Socioeconomic GIS Data**	Presentation	Amita Mehta
10:00-10:15	**Break**	Break	—
10:15-12:30	**Assessment for a Flood Case Study** **Pre-Flood Phase:** Monitoring Precipitation and Streamflow using GFMS, Soil Moisture Using SMAP **Flood Monitoring:** Flood Depth (GFMS), Surface Inundation (SAR, MODIS-NRT, GDACS) **Identifying Flood Impacts:** QGIS-Based Analysis of DEM/Slope, Population, Infrastructure	Exercise	Amita Mehta, Erika Podest & Participants
12:30-1:30	**Lunch Break**	Break	—

Session 3B: Flood Monitoring and Management Case Study

1:30-2:30	**Post-Flood Relief Planning** MODIS NRT, SAR, GDACS, DFO	Presentation	Amita Mehta & Erika Podest
2:30-3:00	**Flood Case Study** Participants form groups and select a flood case study	Exercise	Participants
3:00-3:15	**Break** (Potential cushion for running late)	Break	—
3:15-4:15	**Conduct a Case Study Independently** Groups Conduct Precipitation Monitoring, Flood Monitoring, and Emergency and Relief Planning	Exercise	Amita Mehta, Erika Podest & Participants
4:15-4:45	**Group Presentations**	Presentations	Participants
4:45-5:00	**Training Summary** Summarize Training, Participants Take Survey	Presentation	Amita Mehta, Erika Podest & Participants