

NASA Remote Sensing for Flood Monitoring and Management

April 18-20, 2017

Fairfax, VA

Introduction

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

April 18, 2017

Session 1A: Precipitation from Remote Sensing Measurements

8:30 – 9:00 a.m.

Presentation: Introduction

Presenter: Mike Walsh

9:00 – 9:30 a.m.

Presentation: NASA Applied Sciences Program on Disaster Management

Presenter: Mike Walsh

9:30-9:45 a.m.

Presentation: About ARSET and Training Outline

Presenter: Amita Mehta

9:45 – 10:30 a.m.

Presentation: Remote Sensing of Precipitation

Presenter: Amita Mehta

10:30 – 10:45 a.m.

Break

10:45 – 12:30 p.m.

Exercise: QGIS and Precipitation Data Access and Analysis

12:30 – 1:30 p.m.

Lunch Break

Session 1B: Digital Elevation Data from Remote Sensing

1:30 – 2:30 p.m.

Presentation: Overview of Digital Elevation from SRTM and ASTER

Presenter: Amita Mehta

2:30 – 3:00 p.m.

Exercise: Install and Test Python

3:00-3:15 p.m.

Break

3:15-3:45 p.m.

Presentation

3:45 – 5:00 p.m.

Exercise: Terrain and Slope Data, Extracting Precipitation and DEM data

Day Two

April 19, 2017

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

8:30 – 9:15 a.m.

Presentation: Introduction to Synthetic Aperture Radar

Presenter: Erika Podest

9:15 – 10:00 a.m.

Presentation: Applications of SAR

Presenter: Erika Podest

10:00-10:15 a.m.

Break

10:15 – 12:30 p.m.

Exercise: Accessing SAR Data

12:30 – 1:30 p.m.

Lunch

Session 2B: Soil Moisture Active Passive (SMAP)

1:30 – 2:30 p.m.

Presentation: Overview of the SMAP Satellite Mission

2:30 – 3:00 p.m.

Presentation: Overview of SMAP Applications

Presenter: Erika Podest

3:00 – 3:15 p.m.

Break

3:15 – 4:30 p.m.

Exercise: Accessing and Applying SMAP Data

4:30 – 5:00 p.m.

Group Presentation

Day Three

April 20, 2017

Session 3A: Flood Management and Monitoring Tools

8:30 – 9:30 a.m.

Presentation: Overview of Flood Monitoring Tools

Presenter: Amita Mehta

9:30 – 10:00 a.m.

Presentation: Overview and Access of Socioeconomic GIS Data

Presenter: Amita Mehta

10:00 – 10:15 a.m.

Break

10:15 – 12:30 p.m.

Exercise: Assessment for a Flood Case Study

Pre-Flood, Flood Monitoring, and Identifying Impacts

12:30 – 1:30 p.m.

Lunch

Session 3B: Flood Monitoring and Management Case Study

1:30 – 2:30 p.m.

Presentation: Post-Flood Relief Planning

Presenter: Amita Mehta

2:30 – 3:00 p.m.

Form groups and select case study

3:00 – 3:15 p.m.

Conduct Independent Case Studies

4:15 – 4:45 p.m.

Group Presentations

4:45 – 5:00 p.m.

Training Summary