

Advanced Flood Management Training
Week-1 Homework Exercise
Pakistan Flood, July-August 2015
Global Flood Monitoring System (GFMS)

This exercise is designed to provide practice in using GFMS to monitor rainfall and flood intensity. Please go through the following case study of Indus River flooding over Pakistan and answer the following questions.

Part 1: Time Series of Flood Intensity

- Go to <http://flood.umd.edu/>
- Scroll down to **Flood Detection/Intensity (depth above threshold [mm])**
- In **'Pan the map'** panel (right to the map)
 - Zoom over Pakistan by using **'Zoom in'** arrow
 - In the **'Plot time series for an individual point (lat, lon):'** Enter the following lat-lon in the boxes: **29.37 and 70.71**
 - Select Time :
 - **T1: 00Z01Jul 2015**
 - **T2: 21Z31Aug2015**
- Click on **'See time series.'**
- You will get a time series of flood intensity.
- You may save the time series plot on your computer (you may use press control key and right mouse click to and save as an image)
- From the time series note down the date when the flood intensity (depth above threshold) was maximum, and note down the value of depth above threshold.
- How many flood events were there with the flood intensity above 600 mm?
- **Repeat the time series plot for the (lat, lon) 35.42 and 74.12**
- You may save the time series plot on your computer (you may use press control key and right mouse click to and save as an image)
- From the time series note down the date when the flood intensity (depth above threshold) was maximum, and note down the value of depth above threshold.
- Was the flood intensity larger at this location compared to at the previous location (**29.37 and 70.71**)?

Optional Exercise: Streamflow Maps

- Go to <http://flood.umd.edu/>
- Scroll down to **Streamflow 12km res [m³/s]**
- In **'Pan the map'** panel (right to the map)
 - Zoom over Pakistan by using **'Zoom in'** arrow
- Enter **Start Time: 00Z01Jul2015 and End Time: 21Z15Aug2015**
- Click on **'Animate'** and notice how streamflow values change in the rivers in central and northern Pakistan over this period

Week-1 Homework Questions

Answer the following questions based on the GFMS exercise of the Indus river flood over Pakistan:

- 1) What was the highest flood intensity at the location with lat-lon 29.37 and 70.71 ?
- 2) What was the date when the flood intensity was maximum at lat-lon 29.37 and 70.71 ?
- 3) What was the flood intensity on 26th July at 29.37 and 70.71 ?
- 4) What was the highest flood intensity at the location with lat-lon 35.42 and 74.12?
- 5) Based on the two flood intensity time series it appears that the maximum flooding occurred a few days earlier in northern Pakistan
 - a) true
 - b) false