Geosciences Division
Physical Research Laboratory

Seminar

Holocene floods in the middle Satluj valley and their climatic implications

Abstract

Projections based on the climate change scenario predict increased frequency and/or increased magnitude of floods in the Himalayan region due to more intense and frequent coupling between the Indian Summer Monsoon (ISM) and the mid-latitude westerlies. In view of this, studies pertaining to the geological evidence of extreme hydrological events (paleo-floods) become important as these extend beyond the instrumental records and ensure better understanding of the river response to the climate variability.

The Satluj River in the north-western Himalaya is frequented by devastating floods in the recent past thus suggesting its sensitivity towards extreme hydrological events. We studied the sedimentary records of palaeofloods in the middle Satluj which has preserved around 27 flood events of increasing magnitude. The geochemical fingerprinting (based on CIA) indicates that the floods were generated in the Higher Himalayan Crystalline with contribution from the trans-Himalaya. Optical chronology allowed us to constrain the floods into four major clusters (viz. 13-11 ka, 8-5 ka, ~4 ka and <2 ka). Climatically, these clusters represent the transitional climatic conditions during the Holocene and are contrary to the earlier studies where intensified Indian Summer Monsoon (ISM) was implicated for the floods in the Himalaya.

In this presentation, I would be giving a broad overview of the existing studies on paleo floods in the Indian Himalaya, with an emphasis on the causes of Holocene floods in the middle Satluj valley and their implications towards understanding the synoptic scale coupling (Arctic and North Atlantic Oscillation).

Speaker: Ms. Shubhra Sharma
Faculty of Physical Sciences,
Himachal Pradesh University, Shimla

Date	Time	Venue
27-Dec-2016	16:00 hrs	Ground Floor Lecture Hall

All are invited to attend and participate in discussion

Tea at 15:30 hrs

Neeraj Rastogi, Seminar Secretary, Geosciences Division