Physical Research Laboratory
Geosciences Division

Tuesday Seminar

Geological and archaeological implications of drainage morpho–dynamics in NW Indo–Gangetic plains

Abstract

Indo–Gangetic plains is one of the largest alluvial plains adjacent to orogenic mountains. It comprises of alluvial sediment transported and deposited mainly by the Himalayan sourced antecedent rivers. This resulted in diverse geomorphic settings across the east–west strike of the Indo–Gangetic plains. The inter–basinal area between the Yamuna in east and the Sutlej in west is presently devoid of any major drainage except for the small ephemeral Ghaggar river. However earlier field based studies by geographers and later based on remote sensing approach have suggested presence of Ghaggar–Hakra paleochannel, in the Ghaggar plains, as a manifestation of a large river in the region. Pal et al. identified, few major paleochannels of Sutlej and Yamuna river and proposed that both these rivers were flowing into Ghaggar–Hakra paleochannel to form the large river. Also the largest concentration of Harappa civilization is located near the Ghaggar–Hakra paleochannel. This led to a hypothesis that perennial Himalayan river flow sustained Harappan settlements in this region. However, such hypotheses have never been tested due to absence of data on subsurface stratigraphy, and provenance of buried sediment beneath the paleochannel. This seminar will deal with new results on shallow stratigraphy, sediment provenance, and chronology that respectively show fluvial architecture, Himalayan sources, and timing of fluvial activity of Ghaggar–Hakra paleochannel. Results will be presented from a new project focused to test the proposed connectivity of Yamuna catchment with the Ghaggar–Hakra paleochannel. This project is designed to understand the hydrology of Ghaggar-Hakra river system that possibly sustained the Harappan civilization.

Speaker: Dr. Ajit Singh
Earth Sciences, IIT Gandhinagar

Date	Time	Venue
12-February-2019	16:00 hrs	Ground Floor Lecture Hall

All are invited to attend and participate in discussion

Tea at 15:30 Hrs
(Near Ground Floor Lecture Hall Foyer)

A .K. Sudheer, Geosciences Division