Geosciences Division
Physical Research Laboratory

Tuesday Seminar

Hydro-meteorological processes in southern India: Insights from stable isotopes in precipitation at Hyderabad

Abstract

Understanding hydro-meteorological processes in southern India is important because it governs the availability and distribution of water in this region. Most of the southern Indian states depends predominantly on precipitation for its water requirement. Hyderabad, located almost at the centre of the Indian peninsula, equidistant from both Arabian Sea and Bay of Bengal, makes it an interesting location to study hydro-meteorological processes such as northward extent of North East monsoon (which is known to bring significant rainfall in the state of Tamil Nadu), effect of locally derived moisture in the rain and seasonal variation in the contribution of various moisture sources. Also, Hyderabad experiences frequent extreme weather conditions such as heat waves, droughts, heavy rainfalls and floods superposed over climatological normal. Understanding of these processes is also important because it has significant political and socio-economic implications especially in the wake of recent water crises in southern India.

Stable isotopes of oxygen and hydrogen can be used to trace various hydro-meteorological processes such as vapour source variations, rainout history, vapour recycling, post-precipitation modifications, cloud microphysical processes, etc. Considering this, 182 daily rainfall samples were collected from Hyderabad during 2008-11 as a part of IWIN national programme.

The isotopic analysis of these samples in conjunction with ground-based and remotely sensed meteorological parameters will be discussed in this presentation. Also, the importance of isotopes in understanding extreme weather events will be discussed.

Speaker: Mr. Harsh Oza

SRF, GSDN

Date	Time	Venue
9-July-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