Physical Research Laboratory
Ahmedabad

Space & Atmospheric Sciences Division

Division Seminar

Title: **"Trace gases over the Bay of Bengal during monsoon season"**

Speaker**: Dr. Girach Imran**
Space Physics Laboratory,
Vikram Sarabhai Space Centre, Thiruvananthapuram

Date: **18 September 2017**

Venue: **Ground Floor Lecture Hall**

Time: **16:00 hrs**

Highlight of the talk:

Our study of trace gases (ozone, carbon monoxide and methane) over the Bay of Bengal (BoB) fills a gap of observations during the summer monsoon season, providing information on the extent of seasonal variability over the BoB. Measurements were carried out as a part of the Continental Tropical Convergence Zone (CTCZ) campaign during the summer monsoon season of 2009. The correlated variations of these trace gases and percentage residence time of air parcels over the Indian regions suggest that the enrichment of ozone and precursor gases over the BoB is associated with both emissions and photochemistry over the Indian region. An analysis of modeled ozone along air mass trajectories show mean en-route ozone production rate of about 4.6 ppbv day-1 in the outflow towards the BoB. In situ observations also confirm similar magnitude of en-route ozone production. The low-ozone events coincided with intense rainfall over the BoB. After analysing the observed variability in air temperature, model simulations of vertical winds, and an ozone-profile case study from southern India, we suggest that first low-ozone events were due to strong downdrafts of ozone-poor air masses. While horizontal advection transports the ozone-rich air masses over the BoB. I will emphasize some of the important results during the presentation.

All interested are welcome.