Physical Research Laboratory
Ahmedabad

Area Seminar

(Space & Atmospheric Sciences Division)

Title: **"Altitudinal Variability of Quiet-time Plasma Drifts in the Equatorial Ionosphere"**

Speaker: **Debrup Hui**

Date: **12 October 2015**

Venue: **Ground Floor Lecture Hall**

Time: **1600 hrs**

Highlight of the talk:

Ionospheric plasma drift data from Jicamarca radar measurements during day time have been used to study, for the first time, the climatology of altitudinal variations of vertical and zonal plasma drifts in low latitudes during day time. We observed, for the vertical plasma drifts, a small but positive slope in the morning and a negative slope in the afternoon hours. The drifts change mostly linearly from E to F region altitudes except in the morning hours of May-June when the gradient are very small. The zonal drifts show highly nonlinear slopes at the lower altitudes and small negative slopes at the higher altitudes. We also studied the altitudinal profiles of vertical drifts during late afternoon and evening hours, when the electrodynamic properties in ionosphere change rapidly. The drifts increase and decrease below and above F region peak respectively before becoming height independent. These structures arise to satisfy curl free condition of electric fields in low latitudes. Including these gradients along with proper magnetic field models will improve the model results and accuracy of our navigation, communication and positioning systems.

All interested are welcome.