Physical Research Laboratory
Ahmedabad

Space & Atmospheric Sciences Division

Division Seminar

Title: **"Summer Mesospheric Upwelling and Cooling at High-Latitudes"**

Speaker**: Dr. Fazlul Laskar**
Institute of Atmospheric Physics, Kuhlungsborn, Germany

Date: **08 January 2018**

Venue: **Ground Floor Lecture Hall**

Time: **16:00 hrs**

Highlight of the talk:

Although summers are associated with high temperature at the surface of the earth, this is not true for all latitudes and altitudes. Due to dynamical changes, the altitude around summer mesopause (at about 90 km) over high-latitudes is the coldest region in the earth's atmosphere. Physically, the cooling in the high-latitude mesosphere arises because of the upward motion and associated adiabatic cooling. The experimental quantification of the vertical motion is a challenging task as the expected vertical velocity is of the order of a few cms-1, which is smaller than the typical uncertainties involved in the Doppler velocities derived from atmospheric radars. We have used multistation meteor detections from two VHF-radars in Northern-Norway to measure the wind field and thus gradients, horizontal divergence, and relative vorticity in winds. With these sets of observations the vertical velocities in the summer mesosphere have been quantified. These results would be presented in light of their consequences on other mesospheric phenomena related to summer mesospheric cooling.

All interested are welcome.