Physical Research Laboratory
Ahmedabad

Space & Atmospheric Sciences Division

Division Seminar

Title: **"Solar wind high-speed stream impacts on the Earth and comet"**

Speaker**: Dr. Rajkumar Hajra**
LPC2E - CNRS, France

Date: **27 March 2017**

Venue: **Ground Floor Lecture Hall**

Time: **16:00 hrs**

Highlight of the talk:

The solar coronal holes emanate high-speed (~750-800 km s-1) streams (HSSs). If the coronal holes last for more than a solar rotation period (~27 days), the corresponding HSSs appear to "corotate" with the sun, very much like water spewing from a lawn sprinkler. These HSSs, when they interact with slow-speed (~300-400 km s-1) streams near the ecliptic plane, give rise to compressed plasma and magnetic field regions, the so-called corotating interaction regions (CIRs). The HSSs/CIRs are characterized by nonlinear interplanetary Alfvén waves. In the present talk I will show recent results on the CIR/HSS impacts on the near-Earth and cometary plasmas. The Earth's magnetosphere and the cometary plasma without any intrinsic magnetic fields exhibit distinguishing interactions with the solar winds. Earth orbiting satellite and ground based observations will be presented to show the impacts on the Earth's magnetosphere-ionosphere system. The solar wind impacts on the induced magnetosphere of the comet will be shown based on the observations made by the ESA's Rosetta spacecraft that in situ monitored the target comet 67P/Churyumov-Gerasimenko for more than 2 years.

All interested are welcome.