Physical Research Laboratory
Ahmedabad

Space & Atmospheric Sciences Division

Division Seminar

Title: **"On the occurrence of afternoon reverse jet over Indian longitudes during June solstice in solar minimum"**

Speaker**: Kuldeep Pandey**

Date: **27 September 2017**

Venue: **Ground Floor Lecture Hall**

Time: **16:00 hrs**

Highlight of the talk:

In day time, a strong jet of current flows at ~105 km altitude within +/- 3deg latitudes with respect to the geomagnetic equator. In general, this current is eastward and known as equatorial electrojet. However, on many occasions, the flow of current is reversed (westward) and conventionally known as counter electrojet (CEJ). Whether CEJ is generated locally or it is part of global current system is an unsettled issue. The strength of this ionospheric current primarily depends on solar quiet (Sq) electric field and electrical conductivity. In general, it is found that, over the Indian sector, the occurrence of CEJ events in afternoon hours is frequent during June solstice in solar minimum years. Though several mechanisms were proposed earlier, those works did not consider the effects of temporal variations of Sq electric field due to paucity of systematic measurements over the Indian sector. Therefore, an investigation is carried out using the equatorial electrojet model developed in PRL, temporal variations of Sq electric field available in recent times and other inputs. The investigation brings out the explicit role of Sq electric field in generation of afternoon CEJ events, indicating these CEJ events to be a part of global current system. Further, the findings of this investigation are substantiated through various other observations from the Indian sector.

All interested are welcome.