Physical Research Laboratory
Ahmedabad

Space & Atmospheric Sciences Division

Division Seminar

Title : **"Investigation of gravity waves spectral characteristics using ground-based and satellite observations"**

Speaker**: Priyanka Ghosh**

Date**: 04 March 2019**

Venue**: Ground Floor Lecture Hall**

Time**: 16:00 hrs**

Highlight of the talk:

Gravity waves (GWs) generated in the lower atmosphere are ubiquitous in nature. They significantly influence the local and global atmospheric dynamical and thermal structures through various dissipation processes. The perturbations in wind and temperature associated with upward-propagating GWs increase exponentially throughout their propagation from lower to higher atmosphere (due to decreasing atmospheric density). The amplified perturbations induce convective or shear instabilities at some altitude levels in the atmosphere where the GWs breaks or dissipates. Consequently, these GWs impart energy and momentum to the surroundings, while their power of wavenumber spectra and spectral slope gets saturated to preserve overall stability. Earlier studies reported that the GW power spectra of horizontal mesoscale velocity fluctuations exhibit universality in frequency, horizontal and vertical wavenumber (in the troposphere and lower stratosphere) regardless of any other parameters (e.g., topographical location, meteorological phenomenon, season, altitude, etc.). In this seminar, the GWs spectral characteristics obtained using ground-based and satellite observations will be discussed.

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All interested are welcome.