

## **GEOMAGNETIC STORM INDUCED ACOUSTIC GRAVITY WAVES AT EQUATORIAL LATITUDE**

M. Lal  
Equatorial Geophysical Research Laboratory  
Indian Institute of Geomagnetism  
Krishnapuram, Maharajanagar, Tirunelveli - 627011, India  
*E-mail : [mlal@iig.res.in](mailto:mlal@iig.res.in)*

The magnetosphere is the source of generation of geomagnetic storm on the earth's atmosphere. The influence of geomagnetic storm on the earth's atmosphere has been studied by several workers at mid and high latitude, but the study at low latitude is meager. We have made an attempt to study the influence of geomagnetic storm at low latitude northern hemisphere. The array of microbarograph has been used to measure the pressure variation at Tirunelveli (8.7°N, 77.8°E), India. The spectral plot obtained for the pressure variation shows the presence of acoustic gravity waves between 10 and 200 minutes. The amplitude and phase variation has been studied for 2003 and 2004. There is enhancement in the amplitude of the acoustic gravity waves obtained immediately after the severe geomagnetic storm. Some of the recent storm studies in the present work are Oct-Nov 2003, July 2004, and Nov 2004. It has been observed that more than one consecutive storm causes changes in the shape of the AGW days-amplitude-period contour graph, i.e., distortion in the actual shape of the contour has been observed during Oct-Nov 2003, which was the period of severe geomagnetic storm. On the other hand, the spectral plot obtained during July and Nov' 2004 shows the consistent increase in the amplitude and phase of acoustic gravity waves, immediately after the geomagnetic storm. The most likely pathway through which geomagnetic activity influences climate and weather phenomena is the disturbances propagating from upper atmosphere to the lower atmosphere and affects the tropospheric circulation. The detailed results will be presented during the symposium.