Title: Ionospheric Response to the Geomagnetic Storm, September 2017

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Abstract:

The magnetosphere and ionosphere have a crucial interaction during geomagnetic storm. The Global Navigation Satellite System (GNSS) receivers provide the ionospheric Total Electron Content (TEC) observations with good temporal and spatial resolution which is generally used to investigate the ionospheric variation and irregularities. Here, we have studied the intense geomagnetic storm during September 7-8, 2017 with minimum Dst value of -124 nT in the main phase. The variation of different solar wind parameters is analysed. Further, the variation of TEC from two high latitude Indian Antarctic stations, Bharati (69.40° S, 76.19° E), Maitri (70.76° S, 11.73° E), & two low latitude stations Hyderabad (17.50° N, 78.40° E,), Bangalore (12.97° N, 77.56° E) are observed. The TEC variation is compared with quiet days mean at different latitudes. An enhanced TEC during the disturbed time is observed, with the southern Equatorial Ionization Anomaly (EIA) crest region more pronounced than the northern EIA region from the Global Ionospheric Maps (GIM).