## SEVERE MAGNETIC STORM EFFECTS ON EQUATORIAL AND LOW LATITUDE IONOSPHERE

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## Abstract:

injection The energy and particle that takes place during magnetospheric disturbances produces multiple changes to the earth's high/low latitude ionosphere. Low latitude ionospheric electric fields and currents are often strongly disturbed during periods of enhanced geomagnetic activity. The effects of space weather on equatorial and low latitude Ionosphere from Indian sector are investigated in detail using Ionosonde data. For understanding of F region changes during magnetic storms the recent two most severe magnetic storms which commenced on 28 October 03 (with 9 K index and the max Dst value is -320nT ) and on 19 November 03 (with 9 K index and max Dst -410nT) respectively are very important and are discussed in details. For this purpose Ionospheric parameters foF2 and h`F from low and equatorial stations from India. It is observed that there is both enhancement and depletion in electron densities at any of the locations with respect to monthly median values during main phase of magnetic storm. Whereas a rapid increase in virtual height (h`F) is observed mainly during post midnight hours which corresponds to the main phase of storm at all the locations. The near simultaneity of the h`f disturbance at these stations suggests that storm time changes in both meridional winds and ExB plasma drift due to an east west electric field are responsible for disturbance. To quantify and characterize the h`F storm time variability in electric fields, dh`F/dt variations from the three stations are examined in details. This study is useful in understanding of the magnetosphere - Ionosphere interaction processes involved during the magnetic storms.