



Study of the behaviour of the equatorial ionization anomaly (EIA) during solar flares

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A solar flare occurring in the sun's chromosphere is observed in various wavebands (radio to x-rays). The response of the solar flare which causes sudden changes in the earth's ionosphere is not yet well understood though investigations suggested that its impact depends on the size and location of occurrence of solar flare on sun. Considering this, we have carried an investigation to study the response of two strong and gradual solar flares: 2 Apr 2001 (X20, limb) and 7 Feb 2010 (M6.4, disk) on the earth's equatorial-low latitude regions using multi-technique observations of satellite and ground-based instruments. We found a weakening of strength of equatorial ionization anomaly (EIA) in total electron content during both the flares as observed by TOPEX, JASON-1 and JASON-2 altimeter measurements. The H component of the geomagnetic field also shows a sudden change at equatorial and low latitude stations in the sunlit hemisphere during the flare. The observations of ionosonde at low-latitudes indicate a strong absorption of higher-frequency radio signals. The detail response of these flare on EIA of the earth's ionosphere will be presented and discussed.