

## **Signatures of geomagnetic storms on nighttime irregularities in the equatorial ionosphere**

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### **Abstract**

Nighttime equatorial ionosphere has been known to be characterised by irregularities which manifest as spread F in ionograms and as L-band scintillations in navigation signals. Spread F which is categorised into three types has also been suggested to be influenced by geomagnetic storms. In this study, we have used ionograms obtained at Ilorin (Geomagnetic Lat.  $1.87^{\circ}\text{S}$ , Long.  $76.73^{\circ}\text{E}$ , dip angle,  $-7.9^{\circ}$ ) during April and May 2010 to investigate the impact of weak and moderate geomagnetic storms on the development of spread F. The result shows that geomagnetic storm enhances the occurrence percentage of spread F. The result further reveals that Range spread F (RESF) is highly favoured by geomagnetic storms than the other two types of spread F.

Keywords: geomagnetic storm, nighttime equatorial ionosphere, equatorial spread F,