

# **Storm Time Variations of Total Electron Content near the Crest of Equatorial Ionization Anomaly in the Indian Zone at Udaipur**

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Space weather studies using the dual frequency GSV 4004A GPS Ionospheric Scintillation and TEC Monitor of M/S GSV Silicon Valley, USA are underway at the crest of the equatorial ionization anomaly (EIA), at Udaipur (MLAT  $15.3^{\circ}$  N), India. These studies are probably, the first of its kind in the Indian zone, at the crest of the EIA. Although the current solar cycle is going through its minimum phase, yet on a number of occasions, the disturbed sun conditions characterized by solar flares of X and M class have occurred. These flares were some times associated with the geomagnetic storms. The effects of geomagnetic storms on the Total Electron Content (TEC) have been studied. The effect of the disturbed sun is not as pronounced as it is at the high and polar latitudes, yet the variations in TEC reveal storm related variations, which are very distinct and notable. Results for two storms events are being presented in this paper. The first geomagnetic storm occurred during November 2004 and the second one during May 2005. These storms were quite severe as inferred from the IMF Bz and Dst index. Drastic variations in the TEC have been observed during these storms. The variations in the TEC have been interpreted in terms of the penetration electric field arising due to storm-induced currents. During the May storm, the prompt penetration of electric field has been suggested, whereas, during the November storm disturbance dynamo fields have been invoked to explain the variations in the TEC. Surprisingly, the storm time variation in TEC were devoid of associated ionospheric scintillations.