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USING TOTAL ELECTRON CONTENT AS INDEX OF IONOSPHERIC RESPONSE TO MAGNETIC
ACTIVITY AT AKURE WITHIN EQUATORIAL ANOMALY

Abstract

GPS measurements recorded at Akure (7.30N, 5.20E), Nigeria, were analysed to obtain the total electron content (TEC) values. The station of study falls within the equatorial anomaly region. The TEC was used to as index to investigate the local ionospheric response to magnetic activity. Different magnetic activities such as low (Dst \leq -20nT); medium (-20nT \leq -50nT); high (-50nT \leq DA-100nT), and extreme (Dst \leq -100nT) were identified with specific ranges of TEC values. The variability of this TEC index with hours and seasons were investigated. TEC index has some levels of correlation with existing magnetic indices. Measured TEC could serve as proxy for monitoring ionospheric responses to magnetic activity.