

Study of ionospheric scintillations and total electron content at a terrestrial point within equatorial anomaly region

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Increasing application of Global Navigational Satellite Systems GNSS has further strengthened interest in understanding of ionospheric scintillations as a result of its impact on GNSS signals. GNSS offer a remarkable new way to study ionospheric structure and associated perturbations. The monitoring of Ionospheric Scintillation and variability of Total Electron Content TEC over a terrestrial point within equatorial anomaly region has been achieved by using the NovAtel GSV 4000B GPS-SCINDA system at Akure (7.3, 5.2), Nigeria. This system is capable of tracking up to 14 GPS satellites simultaneously. Diurnal and seasonal variations of Total Electron Content as well as the ionospheric scintillation activity within the equatorial anomaly region were examined. TEC maximises in daytime at about local noon and exhibits seasonal redistribution. A proposal for establishment of GPS network across the EIA region over inland Africa is presented.