

GPS study of Total Electron Content (TEC) Depletion during Low Solar Activity Period at Crest of Anomaly, Bhopal

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To study the depletion in TEC and ionospheric Scintillation at Equatorial region (BHOPAL) in the low solar activity period, a GSV4004A GPS ionospheric Scintillation and TEC monitor installed at the Department of Physics, Barkatullah University Bhopal (23.2N, 77.6 E). The dual frequency radio signals (1575.42 and 1227.60MHZ) of GPS allow the measurements of the total electron content (TEC) along a ray path from GPS satellite to receiver. This paper presents the results of occurrence of TEC depletion in the year 2004. Result shows that this activity is observed more in the nighttime as compared to the daytime. This activity shows the seasonal depends but does not show any direct correlation with magnetic activity. We also study the Scintillation activity for year 2004. We observed that the TEC depletion is always correlated with amplitude scintillation but there is no correlation between TEC depletion and intensity of the scintillation. The changes in the TEC are due to the Small-scale irregularity in the ionosphere during low solar activity period.