

Ionospheric F Region Effects Observed in the Brazilian and African Sectors During the Sudden Stratospheric Warming 2012

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The main objective of this study is to investigate the ionospheric F layer (in the Brazilian and African sectors) response to the sudden stratospheric warming event that occurred from 10 January to 03 February 2012. The GPS data available from 9 receiving stations in the equatorial and low latitude region in the Brazilian and African sectors have been used to obtain the measures of the vertical total electron content (VTEC) and ROT (rate of change of TEC). The continuous wavelet transform (CWT) was applied to the Δ VTEC values during the 2012 SSW event to check the main periodicities of these data. Magnetometer measurements during the 2012 SSW event are used to derive the equatorial electrojet (EEJ) values over the Brazilian sector. Also, the ion density measurements on-board the Communication/Navigation Outage Forecasting System (C/NOFS) are presented. Important features observed during this investigation will be presented and discussed.