



IONOSPHERIC DYNAMICS OVER SOUTH AMERICA OBSERVED BY TEC MAPPING

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ABSTRACT

Equatorial Plasma Bubbles (EPBs) and Medium Scale Travelling Ionospheric Disturbances (MSTIDs) have been monitored by Total Electron Content Map (TECMAP) observed by ground based GNSS (Global Navigation satellite System) receiver networks in South America. We observed that daytime MSTIDs are frequent during the period from March to September while EPBs are frequent during the period of September to March, just in an opposite phase in each other. Investigating the same day occurrence of MSTID and EPBs, however, we found that there is a close relation between the inter-bubble distance and horizontal wavelength of MSTID, suggesting contribution of MSTID in generating the EPBs. TECMAPs during intense geomagnetic storms revealed latitudinal propagation modes of Large Scale Travelling Ionospheric Disturbance (LSTID) and non-symmetric propagation feature between the Northern and southern hemispheres.