Observations of medium scale traveling ionospheric disturbances (MSTIDs) using the ground-based GNSS networks around Taiwan

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Using a network of ground-based GNSS receivers, medium-scale travelling ionospheric disturbances (MSTIDs) at the low-latitude equatorial ionization anomaly region is studied during 2013-2015. An algorithm using two-dimensional fast Fourier transform is developed to automatically identify the appearance of MSTIDs. Results show that the northward propagation of MSTID is predominated in daytime hours during April-July and in nighttime during March-August. On the other hand, southward MSTIDs are dominated in January-February and November-December in both daytime and nighttime. The statistical analysis of northward and southward propagations of MSTIDs at low-latitude reported here will be useful to understand its underlying physics.

Keywords: ionosphere, GNSS observations, Medium scale travel ionospheric disturbances

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