

Ionospheric Scintillation Observation Using GPS Data at Malaysia

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Ionospheric scintillation is rapid fluctuation of amplitude and phase in radio signals caused by small scale irregularities of electron density that develop in the ionospheric F region. Ionospheric scintillations are intense in equatorial region like Malaysia, therefore it is worthwhile to study the ionospheric scintillations in this region. This paper presents the percentage of the occurrence of amplitude scintillation at UKM station (geographic: 2.55N, 101.46E, geomagnetic: 7.39S, 173.63E), Malaysia. GPS Ionospheric Scintillation and TEC Monitor (GISTM) data during solar minimum from January to December 2010 have been collected in this study. The amplitude scintillation was categorized into three groups of seasons which are summer (May, June, July and August), winter (November, December, January and February) and equinox (September, October, March and April). In this paper, only the amplitude scintillation activities for S4 index value larger than 0.2 for more than 2 minutes are considered. The statistical results show that the highest percentage of amplitude scintillation with the value of 93.5% occurred during equinox and winter months in September and December, respectively. No amplitude scintillations were observed during the summer months. The details of these observations will be presented.