Early report of ionospheric scintillation observations near the geomagnetic equator over a 100 deg. E longitude sector

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In order to investigate ionospheric irregularities near the geomagnetic equator over a 100 deg. E longitude sector scintillation observations have been started receiving satellite radio waves from GMS (geostationary) and GPS (orbiting) at Bangkok (2.8 deg. N geomag.) and Chiang Mai (7.9 deg. N geomag.) since early 2000. Early observations show that scintillations simultaneously occur at both stations during the pre-midnight, when the background TEC frequently increases or fluctuates. Scintillation activity is higher at Chiang Mai than Bangkok and seems to have no clear relations to the geomagnetic activity.

In order to investigate ionospheric irregularities near the geomagnetic equator over a 100 deg. E longitude sector, scintillation observing systems have been installed at Bangkok (13.7 deg. N, 100.8 deg. E; 2.8 deg. N geomag.) and Chiang Mai (18.8 deg. N, 99.0 deg. E; 7.9 deg. N geomag.), Thailand early in 2000 under POST-PARTNERS project. Temporal variations and spatial distributions of ionospheric irregularities are observed by measuring amplitude scintillations of satellite radio waves from GMS (geostationary) and GPS (orbiting) at two stations.

Early observation results show that scintillations simultaneously occur at both stations during the pre-midnight, when the background TEC frequently increases or fluctuates probably owing to the secondary fountain effect and plasma bubbles. Scintillation activity seems to be higher at Chiang Mai than Bangkok and to have no clear relations to the geomagnetic activity. These features so far coincide well with usual equatorial irregularities observed over other longitude sectors.

References

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