

Development of an ionosphere scintillation observation system by using positioning signals from geostationary satellites

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To investigate ionospheric irregularities, we have developed a system to observe scintillation using the positioning signal transmitted from geostationary satellites. As transmission points at F region is fixed, comparison between scintillation and HFD observations to investigate ionospheric irregularities in three-dimension. The scintillation observation system is composed of a rubidium oscillator, a parabolic antenna of 3.6 m in diameter and the receiver specialized for scintillation observation. The S/N of this observation system is enough to detect weak scintillation as low as $S4 - 0.01$, so that the system is estimated to be able to observe weak scintillations even in quiet conditions.