

## Variability of L-Band GPS Scintillation over Auroral Region, Maitri, Antarctica

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**Abstract :** We have investigated the occurrence characteristics of ionospheric scintillations, using dual frequency GPS, installed and operated at Indian scientific base station Maitri (71.45S and 11.45E), Antarctica, during December 2009 to December 2010. The scintillation morphology is described in terms of S4 Index. The scintillations are classified into four main categories as Weak ( $0.2 < S4 < 0.4$ ), Moderate ( $0.4 < S4 < 0.6$ ), Strong ( $0.6 < S4 < 1.0$ ) and Saturated ( $S4 > 1.0$ ). From the analysis we found that the percentage of weak, moderate, strong and saturated scintillations were 96%, 80%, 58% and 7%, respectively. The maximum percentage of all types of scintillation was observed in the summer season, followed by equinox and the least in winter season. As the year 2010 was a low solar activity period, consequently the maximum occurrences of scintillations were those of weak and moderate and only four cases of saturated scintillation were observed.

**Keywords :** L-band scintillation, GPS, auroral region, low solar activity

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