

Scintillations probabilities of occurrence

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The augmented Global Navigation Satellite Systems (GNSS), such as EGNOS, deliver together with a geographical position, guarantees on this position. These guarantees rely in particular on the ionosphere electron density values prediction and on its fluctuations. The ionosphere scintillation due to occurrences of turbulences on the satellite to ground links is one of the factors which might impact these guarantees. This paper will present some results on the probabilities of ionosphere scintillation occurrences both at low and high latitudes. They have been derived using the data recorded during the ESA MONITOR measurement campaigns. At low latitudes, the corresponding results have been obtained mainly using data from the West African sector.

At high latitudes, the scintillations occurrences have been analyzed and the correlation with the magnetic activity demonstrated. The analysis has been performed for a few magnetic storm periods. It has been extended to mid latitudes in the European sector.

