



Ionospheric scintillation activity measured in the African region by means of GNSS signals

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Transionospheric radio signals may experience fluctuations in their amplitude and phase due to irregularity in the spatial electron density distribution, referred to as scintillation. Ionospheric scintillation is responsible for transionospheric signal degradation that can affect the performance of satellite based navigation systems.

A sample of ionospheric scintillation activity measured in the African region (Douala, magnetic latitude 5.36N) by means of GNSS signals is analysed. The measurements consist of classical ionospheric scintillation indices evaluated at L1 by means of a dedicated dual frequency GPS receiver (GSV4004) capable of estimating the temporal fluctuations superposed to the radio signals by drifting plasma density inhomogeneities. The experimental campaign refer to the period from March 2004 to February 2005. The experimental campaign was managed by the European Space Agency which kindly provided with the data for further analyses.

A morphological assessment of the scintillation activity is presented together with a description of the potential threats to GNSS based applications.