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Climatology of GPS scintillations over Antarctica under solar minimum conditions

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We analyse GNSS ionospheric scintillation data recorded in Antarctica to investigate the conditions of the near-Earth environment leading to scintillation scenarios, producing a "scintillation climatology" over a large geomagnetic quiet period. Within this scope we realize maps of scintillation occurrence as a function of the magnetic local time (MLT) and of the altitude adjusted corrected geomagnetic coordinates (AACGM). The maps are realized merging observations of two GISTMs (GPS Ionospheric Scintillation and TEC Monitor) located at Mario Zucchelli Station (74.7°S, 164.1°E) and Concordia Station (75.1°S, 123.2°E) in Antarctica during 2008. The results highlight the possibility to investigate the impact of ionospheric irregularities on the phase and amplitude of GNSS signals, evidencing the cusp/cap and auroral contributions. This works aims to contribute to the development of nowcasting and forecasting tools for GNSS ionospheric scintillation.