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Quiet-day curves analysis using detectability of radar signals applied to Embrace Magnetometer data

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ABSTRACT

In this work, we present a statistical analysis of the QDCs derived from data acquired by the Embrace Magnetometer installed at the Southern Space Observatory (SSO/CRS/COCRE/INPE-MCTIC, 29° S, 53° W), São Martinho da Serra – Brazil. This region is characterized by the minimum intensity of the geomagnetic field due to the presence of the South Atlantic Anomaly (SAA). The analysis is based on algorithms traditionally used to process radar signals, which take in account statistical methods.

To accurately determine the influence of the Solar quiet (Sq) Earth's magnetic field and its seasonal variation in magnetic measurements, high-quality and reliable QDCs are essential since they are the baseline from which the magnetic indices obtained from Magnetometer data are derived.

Therefore, we present the preliminary results of monthly QDCs for the period of June 2015 to July 2016 regarding the study of its seasonal characteristics.

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