



## **Local geomagnetic indices and their role in space weather**

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The analysis of local geomagnetic disturbances (specific longitude and latitude) have recently proved to play an important role in space weather research. Localized strong (high intensity) and impulsive (fast developed and fast recovered) geomagnetic disturbances are typically recorded at high latitudes and commonly related to field-aligned currents. These type of disturbances are also recorded, less frequently, at mid and low latitudes, representing an important hazard for technology. In order to obtain geomagnetic disturbances (geomagnetic index) from the records at a certain observatory, a baseline has to be removed. The baseline is usually determined taking into account geomagnetic secular variation and solar quiet time. At mid-latitudes the shape of the daily solar quiet component presents a strong day-to-day variability difficult to predict. In this work we present a new technique capable to determine the baseline at mid-latitudes which allows us to obtain a high resolution local geomagnetic index with the highest accuracy ever obtained at mid-latitudes.