

Global storm and substorm geomagnetic indices from geomagnetic stations close to the focus of the solar quiet system of ionospheric currents

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Using a new developed method to subtract geomagnetic regular variations from mid latitude stations that are close to the focus of the ionospheric solar quiet system of currents "Sq", we can generate global geomagnetic indices similar to Dst and AE for mid latitudes. Dst index is generated from low/mid latitude stations far from the equator and from the focus of the Sq ionospheric currents and provides information about the magnetospheric ring current. AE index is generated from high latitude stations and provide information about magnetospheric substorm-related currents. Geomagnetic mid latitude locations are affected by both of these magnetospheric systems of currents. The proposed new indices provide information about storm and substorm effects occurring at mid latitude locations, filling an important gap on current space weather services.