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# Geomagnetic Activity Indices

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## Résumé

Interactions between the solar wind, including plasma and the interplanetary magnetic field, and the Earth's magnetosphere result in energy and particle transfers. The characteristics of the solar wind are highly variable and have a direct influence on the shape and size of the magnetosphere, the amount of energy transferred and how this energy is dissipated. It is obvious that the great diversity of magnetic variations sources generates great complexity in magnetic signatures on the ground of our planet.

Geomagnetic activity indices aim to synthetically describe the geomagnetic activity felt on the ground, the so-called geoeffectivity. Each geomagnetic activity index uniquely describes different phenomena occurring from the Earth's surface up to upper part of magnetosphere. The biggest solar events that impact Earth, have consequences on human infrastructures such as spacecrafts, radio communications, GPS signals, on-ground fluid transport networks, or even aircraft crews.

We will present briefly the principle of a magnetic observatory and the main derived geomagnetic indices. Then data repositories/databases, that may be freely used to download or use geomagnetic activity indices in a interoperable way with other physical parameters of Sun-Earth relationships, will be introduced. To end up with examples of consequences of major events on our technologies.

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