

COMPARING GEOMAGNETIC MEASUREMENTS IN BOTH HEMISPHERES FOR SIMILAR IMF CONDITIONS

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It has long been known that, for given conditions in the solar wind and interplanetary magnetic field (IMF), the electric fields and currents in the polar ionosphere have repeatable patterns. There have been long-standing questions about the possibility of differences between the response of the Northern and Southern ionospheres to the IMF variations. Creation of a new empirical model specifically for geomagnetic predictions is under way. This new model is based on global measurements of the ground level geomagnetic perturbations in the Northern hemisphere, along with the simultaneous measurements of the IMF. Predictions from this model are compared with geomagnetic measurements in both hemispheres in order to determine the differences in the response. Empirical/statistical methods are required for this type of comparison in order to obtain measurements in similar seasons (solar zenith angle) and opposing signs of the Y component of the IMF.

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