



Large scale external fields in near Earth geomagnetic field models

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Most recent magnetic field models produced from the Oersted and Champ data sets include a parameterization of the field generated by the magnetospheric ring current, usually based on the Dst index. However it is now recognized that fields generated by other magnetospheric sources can be discerned in both satellite and observatory data. The modern use of long time series of satellite data has also revealed other weaknesses of Dst: baseline instabilities and a contribution from internal induced fields. To overcome these difficulties we have built a new "Vector Magnetic Disturbance" (VMD) time series, at a 20 minute resolution, computed from low and mid-latitude INTERMAGNET observatory data. We find that near Earth magnetic field models using this new time series requires a parameterization of the large scale external field that is less complex and better fits the satellite data than Dst. The VMD processing technique and comparisons with the Dst index will be presented.