



On the characteristics of a residual external signal seen in coefficients of main geomagnetic field models

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Several recently developed main geomagnetic field models, based on both observatory and satellite data (e.g. IGRF, CHAOS, GRIMM, COV-OBS), as well as the historical model *gufm1*, have been designed to describe only the internal part of the field, except for the COV-OBS that also accounts for the external dipole. In this paper we analyze data and coefficients from two main field models, namely *gufm1* (Jackson et al., 2000) and COV-OBS (Gillet et al., 2013), by means of low pass filters with a cutoff period of 11-year, to evidence a residual signal with seemingly external sources, superimposed on the internal part of the field. The characteristics of the residual signal in the dipole and non-dipole coefficients are discussed.