

MONITORING THE ORTHOGONALITY OF THE dIDD

BALÁZS HEILIG, András Csontos

Eötvös Loránd Geophysical Institute, Budapest, Hungary

Unlike fluxgate magnetometers, the dIdD is void from both offset and scale factor errors. Hence, during the calibration process of a dIdD, in addition to the orientation angles of the instrument, one has to determine only a single orthogonality error. The other two orthogonality conditions are satisfied automatically, since the 3rd dIdD axis is defined mathematically by the method itself to be perpendicular to both physical axes of the instrument. Here we present a method to calculate the orthogonality error directly from dIdD readings in a simple trigonometric way. After correcting for the nonorthogonality, the orientation of the dIdD frame can be determined relative to a well-oriented reference (e.g. absolute) instrument. We also demonstrate how the proposed method works on real measurements.

Geomagnetic observatories, geomagnetic instruments

Balázs Heilig, Eötvös Loránd Geophysical Institute, Budapest, Hungary,
heilig@elgi.hu