Identifying real and reliable features of the geomagnetic field - a Nordic study.

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When palaeomagnetic data is gathered, an accurate chronology is necessary as the temporal spine onto which the collected data is to be fitted. Having established the baseline chronology, however, we must then determine whether or not the accurately-dated data is itself reliable. In terms of palaeomagnetic measurements, for example, we are concerned with the following: that sample collection is properly done, and does not distort the underlying data; that data is not further altered by the measurement techniques used; and that normalising factors are taken into account, to compensate for any depositional or post-depositional environmental effects. There is then, however, the need to determine whether variations in measured data are due to local conditions, or whether they represent global trends. The cross-correlation of data sets – in particular from alternative proxies – is a good way of matching presumed global features, and can be used to highlight anomalous local variations.

This poster takes as its baseline chronology the high-resolution Kalksjön Holocene palaeointensity data, gathered in Sweden, which has been extensively cross-correlated against other data sets to establish an accurate palaeomagnetic record of direction and intensity. Further analysis is then carried out, in which cosmogenic radionuclide-derived curves are matched against a filtered Kälksjön dataset, and matching features determined. A separate palaeomagnetic record is also used, taken from Icelandic Holocene lava samples, which further corroborates some of the identified features.