



## **Geomagnetic secular variation on centennial to millennial time-scales**

**M. Korte**

GeoForschungsZentrum Potsdam, Germany (monika@gfz-potsdam.de)

Centennial to millennial variations of the geomagnetic field are hard to assess in detail: Direct observations of the full vector field span less than 200 years, archaeomagnetic data have the disadvantage not to provide time series from individual locations and sediments need high sedimentation rates to contain information of sufficient temporal resolution. This presentation discusses centennial to millennial secular variation characteristics as observed in data and a global model and their relations to shorter and longer term variations.

The global field model shows that although secular variation includes significant regional differences there is also strong temporal change in the global dipole moment. The study of temporal power spectral densities reveals that periodicities of about 1000 years exist in axial quadrupole and octupole. In particular the axial quadrupole does not average to zero over the 7 kyr covered by the model.

A special feature of secular variation are the proposed "archaeomagnetic jerks", described by sharp cusps in geomagnetic field direction and intensity maxima and observed in European data at about 800 BC, 200 AD, 800 AD and 1400 AD. They have not been confirmed so far by lake sediment data or the current global model and their spatial extension and significance are still open questions.