



## Characterization of archaeomagnetic Jerks in Europe

**E. Schnepf** (1)

Paleomagnetic Laboratory Gams, University of Leoben, Austria  
(elisabeth.schnepf@unileoben.ac.at)

Abrupt changes in the movement of the geomagnetic directional secular variation (SV) are called archaeomagnetic jerks (AMJ). They can be characterised by minima of velocity and maxima of curvature of archaeomagnetic secular variation curves. Analysis of the well defined archaeomagnetic SV curves from Europe suggests that during the past 3000 years five AMJ have occurred within time intervals of about 120 years at approximately 880 BC, 150 BC, 210 AD, 760 AD, and 1320 AD. Gallet et al. (EPSL, 2005) suggested that the AMJ correlate with high archaeointensities obtained from French and Syrian pottery. The European archaeointensity data set has been investigated in order to define the temporal variation, but the data are too scattered for a better confirmation of the proposed correlation between AMJs and archaeointensity. Although the AMJs at 760 AD and 880 BC are not very well defined, the strongest SV occurs perhaps around 880 BC. Here a swing to western declinations up to  $60^\circ$  has been found in two approximately contemporaneous sites from Northern Germany and declinations above  $40^\circ$  are recorded in seven distinct structures. Interestingly, five of the corresponding virtual geomagnetic pole (VGP) positions lie on latitudes below  $60^\circ$  N close the VGP positions found in the West Eifel volcanic field (Germany). These lavas have recorded several geomagnetic excursions in the lower Brunhes chron and palaeointensities less than half of the present field strength have been obtained (Schnepf & Hradetzky, JGR, 1994). The excursions date between 510 and 760 ka (Singer et al., PEPI, *subm.*). Accordingly AMJs and geomagnetic excursions can show similar field characteristics for the direction. Archaeointensity determinations from the structures which recorded the AMJ will be presented and discussed.