



## Archaeomagnetic dating in Austria

**E. Schnepf** (1), P. Lanos (2), H. Mauritsch (1) and E. Aidona (3)

(1) Paleomagnetic Laboratory Gams, Leoben, Austria, (2) Laboratoire d'Archéomagnétisme, Rennes, France, Geophysical Laboratory, Thessaloniki, Greece (eschnepf@foni.net)

The IAGA archaeomagnetic data base comprises for Europe results obtained mainly from sites in Bulgaria, France, Great Britain and Hungary and for these countries archaeomagnetic secular variation reference curves exist. A curve for Germany will be available soon (Schnepf & Lanos, *Geophys. J. Int.*, *subm.*), but there is no data set with archaeomagnetic directions from Austria available up to now. Nevertheless, in order to obtain a reference curve for Austria all published SV data were compiled from a 500 km circular area around Radstadt (47.38°N, 13.45°E), which lies approximately in the geographic centre of Austria. The result is a surprisingly large data set with 160 directions from sites in Bosnia, France, Germany, Hungary, and Switzerland but only 1 structure from Austria could be found. Temporally, most of the data are concentrated in the Roman epoch as well as in medieval and modern times (especially 1000 to 1700 AD), while in the time interval between 400 and 900 AD data are still lacking. Also the time interval before 100 BC is poorly covered and it seems that the declination shows a higher dispersion compared to more recent times. With this data set a SV curve was calculated with a smoothing approach in which hierarchical Bayesian modelling based on roughness penalty has been implemented. This preliminary SV reference curve can now be used for dating within the past 2500 years and is applied for dating of archaeological structures from Lower Austria. Because most data come from the surrounding countries, more sampling in Austria was performed in the frames of the EU-funded AARCH network and of a Liese-Meitner project (M787-N11) funded by the FWF in order to verify and improve this preliminary secular variation reference curve. The new results will be presented.