



High resolution paleointensity records from European last glacial loess sites

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High resolution relative paleointensity (RPI) records from European loess sites contain evidence for multiple RPI lows between approximately 22 and 45 ka BP, including the “Mono Lake” and “Laschamp” geomagnetic excursions. RPI records from archaeological sites near Piatra Neamt (Romania), from Krems (Austria) and from Willendorf (Austria) are both presented and compared. Age models are based on AMS 14C dates from cultural layers as well as luminescence, RPI correlation to the NAPIS stack (Laj et al., 2000), and susceptibility correlation to the ELSA stack (Schaber & Sirocko, 2005). The investigation of paleomagnetic signals results in reliable and comparable RPI records. The directional records appear smoothed, for the sites near Piatra Neamt and at Willendorf more than for the Krems site. RPI records show a high resolution and variability. The length of the RPI lows of the Romanian site give estimates of the durations of the “Mono Lake” and “Laschamp” geomagnetic excursions (sensu the RPI lows) of approximately 1.5 ky (Mono Lake) and about 2 ky (Laschamp). These high resolution paleomagnetic records clearly emphasize the yet largely undiscovered but high potential of archeology bearing quasi-continuously deposited loess sites for paleomagnetic studies. Independent numerical dating employing AMS 14C and luminescence measurements are combined with paleomagnetic records obtained at the archaeological sites: Our approach may improve the understanding of the temporal evolution of the paleomagnetic field and enlighten the timing and pattern of the “Mono Lake” and “Laschamp” geomagnetic excursions.