



## **A continuous time scale for Romanian loess based on magnetic data**

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Magnetic susceptibility of loess deposits is widely used as proxy for major paleoclimatic changes during Quaternary. Establishing a reliable chronology for magnetic susceptibility variations in loess is thus very important for the reconstruction of the past environment. We developed a new method to extract information about the sedimentation history of loess. The global ice volume model of Paillard (1998) is used as a signal model for magnetic susceptibility recorded in loess. The novelty of this work is twofold. On the one hand a new algorithm is proposed to date a paleoclimatic records avoiding completely anchor points. On the other hand a first continuous time scale for magnetic susceptibility recorded in loess is determined ensuring a continuous representation of sedimentation rate. The method is applied on two loess sequences from Romania. The results showed that the new time bases for loess deposits are in good concordance with the OSL and IRSL independent age measurements suggesting that magnetic susceptibility were influenced by the global ice volume forcing. Sedimentation rate derived from the new time base have shown fluctuating loess sedimentation in agreement with OSL derived sedimentation rate. Furthermore sedimentation rate derived from the new time base correlate well with the grain size distribution for the last two glacial periods indicating that loess was deposited in strong winds intensity climatic conditions.