

MAGNETIC PARAMETERS AND PALEOCLIMATIC RECONSTRUCTION IN A PLEISTOCENE-HOLOCENE LOESS/PALEOSOL SEQUENCE IN THE SURROUNDINGS OF LA PLATA, BUENOS AIRES REPÚBLICA ARGENTINA.

1 BIDEGAIN, J.C.; 2 van VELZEN, A. 1 LEMIT-CIC, La Plata, Argentina, 2 Faculty of Earth Sciences, Utrecht, The Netherlands.

A Pleistocene-Holocene loess/paleosols sequence belonging to the Ensenada and Buenos Aires Formations is studied in the north-west of La Plata City. Intensive field and laboratory work in recent years has made it possible to use variation of magnetic parameters for reconstruction of paleoenvironments and paleoclimates. For the meaningful interpretation of magnetic parameters it is essential to study the stratigraphy, mineralogy, and chemistry of the sequence as well. The peak of LF susceptibility ($2.8 \times 10^{-6} \text{ m}^3/\text{kg}$) in loess-like silts just on the Brunhes/Matuyama boundary coincides with the level where the concentration of magnetite is highest according to XRD and where FeO concentration increases (Bidegain, 1999). The susceptibility in Bt paleosols varies, but tends to be lower than in the surrounding loess layers. Susceptibility is usually enhanced at the very top. The acquisition of isothermal remanent magnetization (IRM) also shows higher intensity in loess than in Bt paleosols. The formation of new superparamagnetic magnetite at the top levels seems to be unlikely when taking into account the low frequency dependence of susceptibility (5 % as highest). The lowest susceptibility values are recorded in clayey paleolag layers (lower than $1 \times 10^{-6} \text{ m}^3/\text{kg}$), which indicates dissolution of magnetic minerals by intensive weathering under humid climatic conditions. The Holocene loess deposits, in which recent soils were formed, show quite low values around $1 \times 10^{-6} \text{ m}^3/\text{kg}$. It is remarkable that values in the soil are not much higher.