Environmental magnetism in pleistocene and holocene sedimentary sequences of chacopampean plain (Argentina)

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Environmental magnetism studies were carried out in sedimentary sequences of the chacopampean plain in Argentina, to determine the magnetic signal in relation with more benign climatic conditions. Accordingly, five sections were sampled, two from loess/paleosoils of late Pleistocene age assigned to the Buenos Aires Formation, and three from fluvial sediments of late late pleistocene/holocene age assigned to the Luján Formation .

The obtained data comprise measurements of magnetic susceptibility (X), magnetic coercivity (Hc), remanence coercivity (Hcr), saturation remanent magnetization (Mrs), saturation magnetization (Ms) and thermoremanent behaviour . The results were analyzed in relation with the stratigraphic/ sedimentologic record in the field.

Based on the behaviour of magnetic parameters, it was concluded that under more benign climatic conditions (warm and humid) the magnetic signal showed a decrease of the low coercivity detrital fraction, i.e.magnetite, associated with the formation of a high coercivity fraction, i.e. hematite, in both the eolic and fluvial sediments of different age. These results were compared in turn with others worldwide (e.g. China loess); the influence of the parental material in the environmental magnetic signal in late Cenozoic sedimentary sequences is analized.