

## Abstract Details

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### Abstract title:

Rock-magnetic parameters as paleoclimate proxies in the Chinese Red Clay sequences

V. Kravchinsky<sup>1</sup>, R. Zhang<sup>2</sup>, L. Koukhar<sup>1</sup>, R. Borowiecki<sup>1</sup>, J. Qin<sup>2</sup>, L. Yang<sup>2</sup>.

<sup>1</sup>University of Alberta, Physics, Edmonton, Canada.

<sup>2</sup>Northwest University, Geology, Xian, China.

The Chinese Red Clay (CRC) sequences underlay famous Chinese Loess and are among the longest and most continuously deposited terrestrial sedimentary archives in the world. The sequences recorded global paleoclimate variations with detailization comparable to the oceanic deep drilling records. Therefore assessing the fidelity of paleomagnetic and rock-magnetic signal in the CRC records became an important measure for more accurate magnetostratigraphic and cyclostratigraphic dating and for paleoclimate reconstructions. The results of rock-magnetic studies from different locations indicate that the CRC contains ultrafine ferrimagnetic grains produced during pedogenesis which are responsible for an increase of the FD-factor. The hysteresis properties are similar to loess and paleosols from the Chinese Loess Plateau demonstrating the presence of pseudo-single domain grains. The intervals characterized by the higher MS values are mostly from the upper part of the CRC sections and have narrower hysteresis loops. The higher Ms and Mrs and lower Bc and Bcr values from such intervals indicate that the magnetic properties are dominated by magnetite and maghemite. The samples from the lower part of the sections have lower MS values, and have wasp-waisted loops which are unclosed at ~ 400 mT. The lower Ms and Mrs and higher Bc and Bcr values indicate higher proportion of hematite and possibly goethite. The S-ratio trend gradually increases from the bottom to the top of the CRC reflecting the long-term shift in East Asian climate.