Geophysical Research Abstracts, Vol. 7, 03525, 2005
SRef-ID: 1607-7962/gra/EGU05-A-03525

Greigite detected as dominating remanence carrier in Late Pleistocene sediments from Lake Kinneret (Sea of Galilee), Israel

N.R. Nowaczyk (1), H. Ron (2), A. Agnon (2), U. Frank (1), M. Schwab (1)

(1) GeoForschungsZentrum Potsdam, Germany, (2) Hebrew University, Jerusalem, Israel, (nowa@gfz-potsdam.de)

Three up to 8.8m long sediment cores from the shore of Lake Kinneret were subjected to detailed paleo- and rock magnetic analyses. Although the distances between the cores are only a few meters, their paleomagnetic results and rock magnetic properties cannot be correlated over most of the core lengths. The reason is the locally very variable occurance of greigite within the recovered sediment layers. Thermomagnetic measurements clearly show an irreversible decay in magnetization

between 300 and 400Â°C.

Together with rock magnetic parameters and parameter ratios, such as IRM/susceptibility it can be shown that greigite is the main if not even the only magnetic carrier mineral in numerous horizons. These greigite bearing layers often exhibit a strong acquisition of a gyro-remnant magnetization during NRM demagnetization and ARM acquisition experiments. ARM directions of greigite bearing samples differ by up to 30Â° from the applied field direction. Their degree of anisotropy of magnetic susceptibility approaches 0%, possibly indicating a post-depositional cristal growth, i.e. a chemical remnant magnetization, that is independent from the layering. S-ratios close to 1 are due to an earlier saturation during IRM acquisition, when compared to magnetite. Hystersis data of greigite samples always plot in the single domain area of the Day diagram.