Geophysical Research Abstracts,
Vol. 10, EGU2008-A-03080, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-03080
EGU General Assembly 2008

Environmental changes paleomagnetically recorded in Late Quaternary sediments (Karadja Range, Azerbaijan)

O. Pilipenko (1), N. Abrahamsen (2), Z. Sharonova (1)

(1) Institute of Physics of the Earth RAS, Moscow, Russia (pilipenko@ifz.ru), (2) - Dept. of Earth Sciences, University of Aarhus, Denmark (mette-abraham@roendesnet.dk)

With the purpose of studying environmental changes and climate variations in Quaternary time we obtained a high-resolution and well-constrained paleomagnetic record covering the time interval about 42-18 ka from a unique geological object, the Karadja Range section, which is located in Azerbaijan not far from the town Mingechaur (Mingechaur Reservoir, 47°E, 40°N). The investigated part of the Karadja section consists of marine deposits through the approximately 12 m of the profile. The abundance of the fauna (mollusks, mammals) permitted bio-stratigraphic dating and correlation of the Karadja deposits with the deposits from other regions at the same time interval (Pekla, Tuzla and Roxolany sections, magnetic data of which the authors of this work also have obtained). Due to the presence of ash layers, fission-track data obtained allowed a reliable dating of the geological events. The variability of the scalar magnetic parameters (NRM, K, SIRM, ARM, Bcr, S-ratio) against depth in the Karadja section determine diagnostic horizons, which are related to environmental (depositional condition changes) and climatic variations. By using standard paleomagnetic methods, the magnetic mineralogy, concentration and grain size of the main NRM carriers have been studied. Rock magnetic properties show that there is not uniformity in terms of magnetic mineralogy, concentration or grain size of the main carrier of the NRM, wherefore the sediments of this section is not suitable for relative paleointensity studies. The angle elements of the remanent magnetisation (declination and inclination), however, give information about intervals of chemical oxidation processes in the deposits. The paleomagnetic study thus showed that there are intervals of abnormal NRM

behavior during about 25-20, 29-28 and 39-38 ka. These diagnostic intervals probably reflect environmental and climatic changes during the deposition process.