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Magnetic record of Late Quaternary sediments from the Karadja Range section, Azerbaijan

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With the purpose of investigating a possible global correlation between the geomagnetic field variation and climate we obtained high-resolution and well-constrained paleomagnetic records during the time interval 40-20 ka from the unique geological object, the Karadja range section, which is located in Azerbaijan not far from the town of Mingechaur (Mingechaur Reservoir, Long=47°E, Lat=40°N). The abundance of the fauna (molluscs, 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, the experimental data of which the authors have). Fission-track data from existing ash layers allowed a reliable dating of the geological events. The variability of the scalar magnetic parameters (NRM, K, SIRM, ARM) vs. depth in the Karadja section enable us to determine diagnostic horizons, related with deposition condition modifications and with climatic variations. Using well-developed paleomagnetic methods, the magnetic mineralogy, concentration and grain size of the NRM main carriers were studied. Determination of the angle elements of the geomagnetic field (declination and inclination) gave information about directional variations of the geomagnetic field. The paleomagnetic study showed that there is an interval of abnormal behavior of the geomagnetic field during 25-20 ka. The fine structure and evolution of the geomagnetic field in time during the late Pleistocene were studied by the methods of wavelet analysis.