



New archeomagnetic results of pottery from Neolithic settlement Sakhtysh-I (Teykovsky District, Ivanovo Region, Russia)

Olga Pilipenko (1), Inga Nachasova (1), Gennadiy Markov (1), and Yuriy Tsetlin (2)

(1) Schmidt Institute of Physics of the Earth RAS, Moscow, Russian Federation (pilipenko@ifz.ru), (2) Institute of Archeology RAS, Moscow, Russian Federation (yu.tsetlin@mail.ru)

This work is devoted to the archeomagnetic study of fired ceramic samples from the Neolithic settlement Sakhtysh -I with the goal to obtain new data of geomagnetic field intensity in the past. The settlement Sakhtysh-I was found in Teykovsky district of Ivanovo region of Russia. Archeological excavations of ancient ceramics were carried out by professor of the Institute of Archeology RAS Yu. Tsetlin in 1978. The studied collection of pottery fragments belongs to six Neolithic cultures: Volga-and-Oka, Upper Volga, Pit-and-Comb, Rare-Pit, Thin-Rare-Pit, and Volosovo. The composition of the ferromagnetic fraction presented in the studied archaeological samples from Sakhtysh-I settlement was studied by the complex methods of rock magnetism. The thermomagnetic analysis (TMA) in dependence of the saturation magnetization and magnetic susceptibility on temperature and determination of the Curie points, and the powder method X-ray diffraction were carry out. Thus based on TMA one can conclude that the main carrier of the magnetization of the samples is relatively resistant to heat maghemite. The size of grains lies in a pseudo single domain area. The determination of the ancient magnetic field induction was carried out by modified Thellier method. Based on the carbon-isotope dating the age of pottery fragments corresponds to the ~ 5000 - 3000 years BC, and we can construct a curve of paleointensity variations of the geomagnetic field from the age. Determinations of geomagnetic field intensity are in the range of 0.034 to 0.052 mT. The comparison of paleointensity variations of the studied ceramics from Sakhtysh - I settlement with archeomagnetic data from the Iberian Peninsula and Siberia was fulfilled. This work was supported by RFBR, project № 16-05-00378.