Paleomagnetic investigation of the Tarhanian deposits of Cop-Takyl section (Kerch peninsula, Crimea)

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With the goal to provide the new magnetostratigraphic investigations of the Miocene marine deposits of the Black Sea Basin the forty-four oriented hand blocks of the Cop-Takyl section (45°N, 36°E, Kerch peninsula, Crimea) were collected during summer 2019 field work. The section is composed mainly of clays, has a total thickness of ~ 53 m and covered the Tarhanian stratigraphic interval. Standard paleomagnetic measurements have been performed to establish a new magnetostratigraphic record for the Cop-Takyl section. The composition of the ferromagnetic fraction was examined using dependences of magnetic susceptibility on temperature and saturation magnetic moment on temperature. These thermo magnetic analyzes showed that the low concentration of magnetite is the main carrier of the natural remanent magnetization NRM. Coercivity of remanence Bcr values, determined from backfield demagnetization measurements, range between ~34 and 91 mT. The structure of the magnetite grains is mainly pseudo-single domain. In order to determine true NRM directions, we studied the anisotropy of magnetic susceptibility. The rock sample possesses a planar anisotropy, which is a characteristic of the normal sedimentary rocks. The alternating field demagnetization of the samples (three duplicates from each level) was used for obtaining NRM vector angle elements. Demagnetization results were analyzed using orthogonal plots and stereographic projections. Polarity components were isolated in most samples between 15-60 mT. The values of the declination D and inclination I of the NRM satisfactory agree for all three duplicates from each level. This allows to average angle elements and construct curves of I and D variations over the thickness of the section. New paleomagnetic data of the Cop-Takyl section will used for assessing the effect of astronomical cyclicity on sedimentation processes. This work was supported by Russian Science Foundation, project № 19-77-10075.