



Secular variation record and magnetic properties of Holocene deposits from Emine-Bair-Khosar Cave (Crimea, Ukraine)

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Environmental magnetic properties and palaeomagnetic features along the vertical section of loose deposits were studied in Emine-Bair-Khosar Cave (Crimea, Ukraine), near 990 m a.s.l. Deposits are formed by soil/loess material, transported into the cave from outdoor through the entrance pit, and limestone debris. Cave fill contains a lot of palaeontological remains (Vertebral and Malacofauna) and has visible horizontal stratification providing the possibility of obtaining secular variation record and applying magnetostratigraphic dating. The studied section is 2.65 m deep. A saiga bone found 2 m deep was dated by ^{14}C as 10500 years BP. Curves of temporal variation of inclination and declination along the profile were composed on the base of results of AF-demagnetisation of natural remanence. The upper part of the section was dated according to correspondence to archaeomagnetic master curves for Ukraine for the period of 5500 yrs. Variation of χ , ARM, NRM intensity reflects climatic changes in Crimea during Holocene: lower values indicate relatively cold periods, higher - correspond to warm periods with stronger pedogenesis. The enhancement of frequency dependence of magnetic susceptibility proves significant contribution of superparamagnetic soil material in “warm” layers. Hysteresis loops of soil-containing samples have larger paramagnetic slope, higher M_r and M_s values than respective loess-containing deposits. Keonigsberger ratio, ARM/χ , MDF serves as the evidence for relative magnetic hardness, high in loess and low in soil-containing deposits, indicating rather changes in magnetic mineralogy along the section. From the complex interpretation

of environmagnetic and palaeomagnetic data we conclude that the warmest time during Holocene (except present) took place between 2800-5000 yrs (Atlantic climatic optimum, AT-3); the coldest period is recognised on the beginning of Holocene - end of Pleistocene (Late Drias, DR-3).