High resolution paleosecular variations recorded in Lake Pleshcheevo sediments (Yaroslavl region, Russia)

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In this paper we present the results of paleomagnetic investigations of the Lake Pleshcheevo sediments (Yaroslavl region, Russia). Sediments of modern lakes are a unique record's archive changes of environment, climate, geomagnetic field over the past millennia. From lake were selected 4 cores up to 6.3 meters. From the core using a special sampler was selected undeformed samples for petromagnetic and paleomagnetic investigations. Magnetic susceptibility, NRM (modulus and direction), demagnetization by an alternating magnetic field were made for all samples. The absolute age of the sediments was determined using the radiocarbon dating. To establish the absolute age of magnetization in sediments, it is necessary to use information from observational, archaeomagnetic, and other data. After correlation of data from Lake Pleshcheevo sediments with archaeomagnetic and other corrected limnomagnetic records, we were able to construct an adequate time scale for recording geomagnetic variations. The obtained changes of direction of the characteristic NRM component of sediments were compared with archaeomagnetic data and records of geomagnetic field variations reconstructed from studies of lake sediments in Western and Eastern Europe. There is observed a very good agreement of all these data. It testifies the high quality of the magnetic record in the sediments of the Pleshcheevo Lake and the need for special studies and obtaining a high-quality master curve of the geomagnetic field variations over the last 12 thousands years for the European part of Russia.

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