Geophysical Research Abstracts
Vol. 12, EGU2010-3778, 2010
EGU General Assembly 2010

The Influence of Permafrost Processes onto the Records of the Geomagnetic Field in Sediments

Pavel Minyuk
(minyuk@neisri.ru)

At present permafrost is widely spread in the Arctic region of the Earth. At some climatic epochs region of their distribution was replaced to the south. During the accumulation and the following geological history, sediments of such regions were undergone by cryogenic processes of different types. Many of them influence in different extend onto the direction of magnetization of sediments. It was established that during the process of multiple froze and melting of hardly moisture sediments, directed reorientation of magnetic particles according to magnetic field of melting takes place. The study of magnetization of syngenetic frozen and never in past melted losses of the Upper Pleistocene with different cryogenic structure has been done. It was shown that during the melting such sediments, reorientation of magnetic particles takes place. At this moment the most essential reorientation takes place for sediments with micro-medium schlieren and net cryogenic textures. Slope processes of different types in the regions of perennial frozen strata change essentially the magnetization direction , particularly in sediments of the solufluction flows, where the magnetization direction is close to chaotic one. The magnetization direction of sediments near the ice wedges and pseudomorphoses, and also within the pseudomorphoses is deformed during the formation of these structures. The action of the cryogenic processes can result in gliding of records of the geomagnetic field variations. In non-bedded monotonous strata, the traces of many processes are visually invisible. The sampling could lead to distinguishing of « false» excursuses in the Brunhes chrone