Geophysical Research Abstracts, Vol. 7, 00704, 2005
SRef-ID: 1607-7962/gra/EGU05-A-00704

New techniques of integral electric and electromagnetic study of permafrost in burial mounds at Altai mountings.

E. Balkov, M. Epov, A. Manstein, **Y. Manstein**

Institute of Geophysics, Russian Academy of Sciences, Siberian Branch (manstein@emf.ru / Fax +73832 304955)

Altai mountings (South part of Western Siberia) is one of the most interesting places for archaeologists, where a lot of evidences of human activity since paleolith were found. The particular task is Pazyryk culture burial mounds study. Initially all of them were made in permafrost, but due to climate change, some of those are not frozen now. Only frozen mounds could be open, that's why it is very important for archaeologists to know which mound still contains the frozen object.

The burial mounds are covered with more or less round stones, diameter 20-50 cm. It makes impossible to use conventional DC resistivity tomography there. The method of 2-D DC resistivity survey method was modified especially for this task. The modified DC resistivity survey method was applied together with EM induction sounding.

Electromagnetic induction sounding device EMS was used for the work. The EMS application proves again that electromagnetic induction sounding is the fast and cost-effective method for near-surface investigations.

The integrated method gave good results. Three mounds were studied at 2004. Obtained results matches to the preliminary data.

The tested integrated method shows his effectiveness for near surface exploration, especially in those cases where it is not feasible to place electrodes onto the exploring area.

Investigations were carried out under financial support of Russian Fund of Basic Research, grant #03-06-80415