

THE FEATURES OF GEOELECTRIC STRUCTURE OF THE TECTONOSPHERE OF AVERAGE URAL AND SURROUNDING PLATFORM AREAS

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Advances in magnetotelluric sounding (MTS) have provided the possibility to study deep parts of the planet and obtaining information on electroconductivity of the Earth tectonosphere which is very sensitive to lithology of rocks in the upper part of the crust, as well as to the phase state of substance, the temperature, concentration, and a mineralization of fluids.

Introduction of modern broadband digital measuring and computation equipment, as well as programs of computational modeling allowed us to realize more completely the possibilities of geoelectric methods.

The material on the study of fields of natural sources (AMTS-MTS-DMTS methods) and the induction electromagnetic sounding (IEMS) method with a controlled source along a traverse about 1000 km long from the Settlement of Askino (Bashkortostan) in the west to Tjukalinsk (Omsk oblast) in the east with an a posteriori test of the previously obtained results was generalized for the first time in this work. Major faults and zones of higher fracturing in the crust and mantle, as well as relationships between electroconductivity and the tectonic structure of regions were studied. New data is obtained on particularities of tectonosphere construction of all the main structural formational zones of the Urals part proper and the adjacent areas of the East-European platform, Preduralian foredeep and the West Siberian platform.

The originality of the studies performed lies in the fact that peculiarities of tectonosphere stratification were traced by electric parameters within a depth from 10 m to 600 km, and traces of events that proceeded there over a large time interval were revealed.

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