

Evolution of Ideas on the Nature and Structure of Ladoga Anomaly of Electrical Conductivity

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Abstract

Several stages of the Ladoga conductivity anomaly study are discussed. The Ladoga anomaly was discovered in the late 70s by means of magnetovariational observations by research team of the Institute of geophysics from Kyiv (Ukraine). At the next step, in 80s the anomaly was studied by magnetotelluric method. The third stage of the deep studies was realized in 2013–2015 by means of integrated magnetotelluric and magnetovariational profiling. Each of three stages were completed by construction of specific geoelectrical models of the anomalous area up to the depth of 30–40 km. In the fourth stage, in 2015 and 2017 the studies were performed by means of DC electrical profiling with the use of multielectrode installations in complex with AMT soundings. According to results of the fourth stage, an unambiguous conclusion was drawn on the connection of the upper part of the Ladoga anomaly (till the depth of 1–2 km) with electronically-conducting sulfide-carbonaceous rocks. The structure and nature of the deeper part of the Ladoga anomaly requires further investigations on the base of integration of geological and complex geophysical methods.

Keywords

Ladoga anomaly Electrical conductivity Magnetotellurics DC profiling

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Notes

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