



Experience of use of digital gravimagnetic data for specification of a geological structure of the North Ural region

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Study of magnetic heterogeneities of the lithosphere is very important for the prediction of minerals. Results of developing a geophysical basis for specifying the geological map in sheet Q-42 (Polar Urals) are considered. Geophysical basis is a set of digital geophysical data prepared at the stage that preceded compilation of the geological map. The main geophysical materials in the set are magnetic anomalies map, gravimetric, and radiometric maps at 1:1 000 000 scale. Geophysical maps are compiled based on medium and large-scale field measurements and structured in the database in three information levels. Final digital materials are represented in the database by 500x500m grids.

Investigations of digital cartographic materials result in a scheme of integrated interpretation of geophysical data and geological-geophysical section.

The following conclusions were obtained for the study region using digital gravimetric data:

- anomalous areas corresponding to large synclinoria or anticlinoria of the Ural fold system were revealed within the North Urals region overlapped by platform cover;
- significant peculiarity of material complexes of the Kharbey Anticlinorium characterized by intense positive anomaly of the gravity field is shown;
- the presence of bodies of mafic composition within the overlapped by platform cover Gortsky, Yarsalinsky synclinoria and Uvat-Khanty-Mansiysk median massif is confirmed and new development areas of intrusive rocks of mafic composition are revealed;
- assumed Triassic rift structures filled with volcanic formations of mafic composition and intruded by small gabbroid bodies, usually prospective for hydrocarbons, are revealed.