

The Structure of the East-European Platform on Regional Gravity and Magnetic Data.

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Initial data for this study are computer maps of gravity and magnetic fields on the whole European part of Russia. The computer data processing calculation of various transforms of fields, some modifications of cluster analysis with a variable set of analyzable components, correlation analysis and their interpretation have allowed to formulate the following basic conclusions. 1. Analysis of processed data and comparison to known geological data have allowed - to select some regional lineaments cross the whole platform. 2. The preliminary tectonic zoning scheme shows complication of the East-European platform structure. Our research results rather confirm the point of view about original development of the shields and the Russian plate. In gravity and magnetic fields there are series of faults, bounding structure of the Baltic and Ukrainian shields, Voronezh array and Belorussian antecline. These linear elements do not allow to trace tectonic structures of the basement under the cover of the Russian plate east part directly. 3. The analysis of regional gravity and magnetic fields testifies about complicated structure of Moscow sineclise and existence in its origin several subparallel trough, divided by linear megaswells within it. The crystalline basement depth can reach 6÷7 kilometers in the most dropped parts of trough. Riphean part of geologic cross-section thickness can exceed 3 km. The essential increasing of Riphean and Lower Vendian deposits, capable to generate hydrocarbons, increases prospective of petroleum detection.