STRUCTURE OF THE SOUTHERN AND SOUTH-WESTERN SUTURE ZONES OF THE EAST EUROPEAN CRATON FROM 3D MAGNETIC MODELING BASED ON NEAR-SURFACE AND SATELLITE DATA

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S-W and S margins of the East European Craton (EEC) were formed during different tectonic cycles and under different geodynamic conditions. Positions of the EEC boundaries are determined ambiguously. SW and S suture zones have different characteristics of the near-surface and satellite anomaly magnetic fields. Their feature common is the presence of the elongated positive near-surface anomalies, accompanying the Craton borderlines, and transverse to the anomalies over Precambrian structures within Craton. Positive anomalies band over SW margin are accompanied with conjugated minimum, when on the South margin echeloned anomalies are shifted one other to the NE along large-scale fault zones. These anomalies have no common minimum. It is known positive Kursk Magsat anomaly with its conjugated minimum over SW Craton part along TTZ. From 3D magnetic modeling Kursk anomaly is the total effect of the magnetic sources located within the whole crust. Southern Craton margin in the satellite field is manifested less clearly. 3D magnetic model of the crust was based on the digital anomaly magnetic map, Precambrian basement depths, crust structure and distribution of seismic velocities within it from the DSS data, temperature within the crust and petromagnetic rock characteristics. Long-wavelength component of the magnetic field, caused by deep-seated sources, was obtained. Its sources are related to the lower crust and have magnetization intensity of 1.0-3.5 A/m. Only in the Lvov Paleozoic Depression sources were fixed both in the lower and in the upper crust. Their lower limitations were agreed with position of M-discontinuity or with depth to the magnetite Curie temperature. Deep-seated magnetic sources may be presented by basic intrusions, which were formed under the tension conditions, or rocks enriched in secondary magnetite as a result of the multiple activation of the EEC suture zones.

3D magnetic modeling, Craton

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