Geophysical Research Abstracts
Vol. 13, EGU2011-14062, 2011
EGU General Assembly 2011

The analysis of magnetic anomalies from WDMAM 2007 and the anomalous magnetic field in the south of eastern Siberia

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With the purpose of finding-out of opportunities of geological interpretation WDMAM 2007 in the south of Eastern Siberia comparison of structure of magnetic anomalies WDMAM 2007 with an magnetic anomaly field (ΔT)a Russia is carried out. Method SPAN is applied for interpretation, allowing to convert spectral-spatial representation of a geomagnetic field in a deep geomagnetic section that has enabled to compare results of interpretation of magnetic anomalies to geological-geophysical sections.

On magnetic anomalies WDMAM 2007 and (ΔT)a models of the geomagnetic sections crossing the zone Baikal rift are constructed. Comparison has shown, that in anomalies WDMAM 2007 the basic features (ΔT)a are kept. Essential difference in sections contains in the top part of an earth's crust up to depth of 3-4 km. Since depth of 5 km in section WDMAM 2007 are confidently shown magnetic heterogeneity and well expressed low-magnetic zones.

One of sections runs along deep MT section, on which have been fixed vertical dissociation and lateral stratification of the earth's crust. Zones of the low conductivity, low density and seismic velocity on geomagnetic sections are identified as low-magnetic penetrable zones and layers. Passage on a geo-electric section has provided a binding of marking horizons. For example, close to fault zones of Lake Baikal the narrow vertical zones of the higher conductivity leaving a cloak are revealed. Owing to heating of rocks on a way of migration of thermal streams they were well showed in sections WDMAM 2007 on which are traced as low-magnetic tracks, since depth of 32 km.

On sections WDMAM 2007 it is visible, that two more branches continue from this center establishing fluid conductive channels. One of them leaves between Angara and Lena. On depth of 20-25 km it is characterized by inversions of density and seismic speed that speaks about presence here rheological the weakened layer of the higher porosity which are taking place in conditions heating. The second branch passes through a Yurubchen-Tohom zone on depth of 20 km. To the west it appears to the surface in area of gold ore deposits of the Prisajano-Yenisei folded system.

On the western coast of Baikal the thermal source with temperature of an output of water 81° (Cape Kotelnikovsky) is located. On sections WDMAM 2007 vertical track from the fluid stream ascending from area heating, is traced from depth of 17-18 km.

Check on zones of the higher conductivity of the south of Eastern Siberia has shown, that geomagnetic sections WDMAM 2007 reflect rheological the weakened layers with low magnetization, channels of an ascending thermal stream and tracks of thermal sources. Map WDMAM can be applied to forecasting a thermal mode and a condition of substance in the earth's crust, below depth of 5 km.