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# Experience of investigation the Earth's crust and upper mantle based on wavelet transform of gravity and geomagnetic data

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The wavelet transform have been successfully applied to solve many geophysical problems, including a processing of the gravity and geomagnetic field anomalies. We consider that nowadays opportunities of this remarkable mathematical tool are not used completely.
In this study we offer to discuss the implementation of new techniques for processing and interpretation of geophysical potential field for the study of the deep structure of the Earth, including the Earth crust and upper mantle. The idea of searching causative sources of potential fields in the wavelet-domain is the basis of the proposed technology, built using wavelet basis, which we called "native."
We suggest for consideration the results of the wavelet processing and interpretation of gravity and magnetic data within the Volga-Ural oil and gas province, located in the eastern part of the East European Platform on an area of 800 km. Volga-Ural oil and gas province includes a number of major geological elements such as Kama anteclise Preduralsky foredeep, parts of the folded Urals, the Caspian syncline and Pritimanskogo deflection.