

DEEP GEO-MAPPING OF THE URALS LITOSPHERE ACCORDING TO GEOLOGO-GEOPHYSICS DATA

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High degree of study of the Urals lithosphere by geophysical methods, primary by seismic, and presence of the three boreholes of deep scientific drilling in the region: the Ural SD-4, the Tatar (New-Elhov), the Tumen SD-6 and results seismic-gravity modeling of system long profiles, also completed analysis of the whole of geologic-geophysical data allowed to develop the procedure of deep geo-mapping of consolidated crust, having realized it by taking the Urals region as an example. A priori model of continental crust was taken as a basis, reflecting modern ideas about its main components. For the purposes of geo-mapping it is required to use such notions as seismic-geological levels (SGL) of consolidated crust and seismic-geological surface dividing them (not boundaries), regional structural-material complexes, blocks of different ranks and border structures. The maps of relief of the main seismic-geological line Moho, surface of the second SGL, corresponding to the position of ancient granite-gneiss basement of Archaic age, also maps of thickness of crystalline crust and transient complex K-M in the lower crust for all Ural region were compiled according to the developed Principe. The total crust thickness of main magmatic Urals zones is heightened up to 55 -65 km (together with complex K-M in the lower crust thickness 20-25 km). Mantle part of lithosphere here is 8.4 km/s and more, and it has anomalously high density (3,4 -3.45 g/sm³), as result of eclogitization, but becomes normal (8,2 –8 km/s and 3,30 g/sm³) at flanges of Ural rifting belt. This zonality (and zonality of crust structures) corresponds to the model of preservation of non-subducted partly transformed ancient lithosphere with wedges of newly formed ophiolite zones under the Urals, which formed during non-standardly of geodynamic cycle.