

PECULIARITIES OF CONTINENTAL CRUST TRANSFORMATION IN THE ASIATIC-PACIFIC BORDERLAND

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The analysis of geological history and new geophysical data for the east of Russia and China allowed boundaries of the zone of continental crust transformation to be improved. This transregional zone 7000 km long and 1500 km wide is limited by gravitational steps. On the Pacific side, along deep trenches the differential in gravity anomalies is 200-300 mGal. The conformal Indochina-Chukot gravity step with the differential of 50-100 mGal has been distinguished within the continent. The zone between these steps includes a system of inhomogeneous tectonic structures: deep trenches, island arcs, marginal seas, volcanic belts and continental rift troughs. It is of prime importance that in spite of the mosaic structure, the zone also possesses common features: structural plan is predominantly of north-eastern strike, a single trend of the crust accretion from 20-45 km, the contrast character of the heat field, high tectonic activity in K2-KZ-Q, anomalously high inhomogeneity of the crust and lithosphere thickness. So within the continental surrounding of the transital, the inhomogeneity of the crust thickness is 1 to 4 times as high as that west of the Indochina-Chukot step. Data of magnetotelluric sounding demonstrated that a polyasthenosphere is characteristic of the zone. Seismic tomography points to the presence under the lithosphere of a belt of direct correlation between seismic wave velocities and geoid heights at a depth of about 500-700 km. The authors are of opinion that this belt in the intermediate mantle points to the planetary character of zone distinguished.