

THE CRUST OF THE BAIKAL RIFT ZONE AND ADJACENT AREAS FROM DSS DATA

GOLDIN, S.V., SUVOROV, V.D., MISHENKINA, Z.R., SHELUDKO, I.F., and PETRICK, G.V. Institute of Geophysics SB RAS, Novosibirsk, Russia

The data on P-wave velocity in the upper crust are revealed from seismic tomography on diving waves. In the lower crust that is under the depth level of 20 km, the interval velocity is defined by recalculating the mean velocity of the reflected wave from the Moho. These data show rather clear a reverse correlation between the interval velocities in the upper and lower crust of the Baikal rift zone, Trans-Baikal fold system and southern part of Siberian craton. We can believe that a gravitational differentiation is finished for the areas where the lower crustal velocity (and then density) is relatively increased whereas the upper crustal velocity is relatively decreased. Otherwise the crust may be not isostatically balanced. In the upper crust, we observe direct correlation between velocities within different subintervals. A transition from direct correlation to opposite one is located between the velocity isolines of 6,2 and 6,4 km/s varying in position from 10 km up to 20 km depth. The areas are clearly observed, where velocity of 6.4 km/s appears at an unusually shallow depth and velocity of 6.2 km/s is at the unusually high depth. Some of these anomalies are consistent to basins, orogens and other structures. Other anomalies that are mainly located within the Baikal rift zone have not clear relation with near surface geological structures.