



Extension in Baikal rift basin after 13 years of GPS measurements: present-day kinematics of passive rifting

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The studies of present-day crustal deformations on the Baikal geodynamic GPS testing area where started at 1994. The horizontal velocity field has been computed from the measurement data over the period from 1994 to 2007. The rate of southeast (N 130° E) movement of Trans-Baikal block relative to Siberian platform is 3.4 ± 0.7 mm/yr. This corresponds to the parameters of long-term component of extension, determined according to geological data also with direction of extension according to seismological data. About 30% (1.0 – 1.5 mm/yr) of general velocity increase fall within the Baikal basin; the deformation rate is as high as $2.1 \cdot 10^{-8}$ year⁻¹ there, gradually decreasing either side across the rift. Velocity conditions across the strike of the basin with a gradual increase from one block to another are indicative of non-rigid behavior of continental lithospheric plates on the divergent boundary.

The first data to be obtained on kinematics of extension in the northern (Barguzin) rift section conform to those on kinematics of the Central and South Baikal basin. The horizontal velocity structure on the Baikal divergent boundary between the North Eurasia and Amur plate corresponds to the model of passive rifting.