



Trends and variations of contemporary vertical crustal movements of Baikal region

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We analyzed different data of the contemporary vertical crustal movements of the Baikal region. The long-term component of the movements is represented by the results of the leveling carried out in the region in the 20th century during about 50 years. Positive vertical movements of the crust are located in a mobile areas (Cis Baikal, Khamar-Daban, Eastern Sayan) and in Angara-Lena uplift in the Siberian platform. The subsidence areas cover the northern part of the Pre-Baikal fordeep, the Pre-Sayan fordeep and adjacent parts of the platform, as well as the central part of the Baikal basin.

The new data on vertical movements obtained using the results of measurements at the Baikal geodynamic testing ground by GPS geodesy for 1994-2017 are presented. Comparison of GPS data and leveling shows different trends. Areas of inherited development and areas of inversion of movements are distinguished. The region of the continuing subsidence in the central part of the Baikal basin is most well distinguished. On the contrary, in the southern Transbaikalia the uplift was changed by a subsidence.

On the example of GPS measurements in the epicentral zone of the Kultuk earthquake on August 27, 2008 ($M = 6.3$) in the south of Lake Baikal, the variations of vertical movements associated with the process of a strong seismic event preparation are shown. The preparation of the earthquake occurred under conditions of compression of the crust and the uplifting of its surface. At the moment of the earthquake and in the postseismic stage, subsidence occurred.

Characteristic long records of the vertical movements are analyzed according to the permanent GPS measurements illustrating seasonal variations that differ in amplitude for different sites.

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