



New aspects of studying of seismogravitational paleodislocations for paleoseismogeological researches

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Detail study of seismodislocations underlies the paleoseismogeological method which is widely used now. Seismodislocations are disturbances in the relief caused by earthquakes and can be classified as seismotectonic, seismogravitational and gravity-seismotectonical. By now the main attention has been paid to detail study of seismotectonic dislocations. As a result a number of various empirical relationships between different physical parameters of fractures and the earthquake's magnitudes are obtained. At the same time the study of seismogravitational dislocations, which has been used till now mainly for establishing epicentral zones and the timing of old earthquakes, can essentially amplify the analysis of seismotectonic dislocations and can be alternative in case of their bad preservation.

The landslide probability density function (Malamud et al.) and an empirical correlation between earthquake's magnitude and total volume of triggered landslides (Keefer), allow us to calculate the total volume of landslides triggered by an individual earthquake using only the volume of maximal landslide and then estimate erosion rate.

This approach is independent method in context of traditional paleoseismogeological method. We have made its approbation in Gornyi Altai, Russia (RFBR grant z06-0564920), where many seismogravitational paleodislocations were revealed and Chuya earthquake ($M=7.3$) took place in 2003.