Abstract Details

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Title: (IWG3B) ON THE CORRELATION BETWEEN REGIONS OF SEISMIC ACTIVITY AND CRUSTAL STRAIN RATES, INFERRED FROM GPS MEASUREMENTS

Abstract:

An ability to detect the areas of the crust deformations is one of the most important problems in geodynamics. The GPS technique allows to obtain 3D velocity field on the crust surface with the accuracy of a few millimeters per year. The paper contains the first presentation of the 3D velocity field of the enormous terrestrial area (Central Tien-Shan), measured with use of GPS technique by the joint team of specialists from Russia, USA and Kyrgyzstan. It is shown, that the divergence of the velocity field is equal to the strain rate field and that the knowledge of the 3D velocity field enables to evaluate the strain rate field, which turns to be equal to the divergences of the velocities. A suggestion that the majority of earthquakes are located in relatively small areas with maximum divergences of velocities, coinciding with the regions of great compressions and tensions, is discussed.

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