

Is the Central Sikhote-Alinsky Fault active?

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The Central Sikhote-Alinsky Fault (CSAF) is situated in the south-eastern part of Siberia. It is extending from the south-west to the north-east on more than 1000 kilometers. This is the left-lateral strike-slip fault. In the past this region was characterized by high geodynamic activity and large earth crust movements and deformations. But there is no accurate and reliable information about recent geodynamic and seismic activity of the CSAF. It is difficult to access this area which has a low population density. In our report we present first geodetic estimates of a recent geodynamic activity of the southern part of the CSAF that were found on the data from 5 GPS stations. Four GPS stations have been periodically observing since November 2001 and station Vladivostok (VLAD) has been permanently observing since February 1995. The last station is included into the Western Pacific Integrated GPS Network (WING). Three GPS stations and station VLAD are located to the west from the fault trace. Only one GPS station is installed to the east from the fault trace. We estimate site velocities from time series of horizontal position of each station relative to VLAD. Preliminary computation results allow us to speak about the almost absence of any significant movements for the stations located on the west side of the fault and existing a relative movements around 10 ± 1 mm/yr in the north-east direction for the GPS station located on the east side of the fault. The estimated velocity of the last GPS station is not so small. We consider it as related with a recent geodynamic activity of the CSAF. Obtained results are in a good agreement with geological structure of investigated region and tell about necessity of detailed investigation of geodynamic activity and related with it seismic activity in this region.