



Spatio-temporal analysis of seismic activity in the 20th century on the planetary scale

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Joint hypocentral data from the beginning of the 20th century to nowadays found in JASPEI “20th century” and U.S. Geological Survey Seismic Data Base (over the last 111 years) was statistically analyzed. The results of the analysis were presented as 3D visualizations of spatio-temporal distribution of quantity of strong earthquakes (with magnitude $M > 7.0$).

Upon supposition that such strong earthquakes represent a result of a sudden release of slowly accumulated strain energy and thus provide direct evidence of active tectonic processes on the planetary scale, it is possible to assume that our 3D visualization of the spatio-temporal distribution illustrates both the overall picture of tectonic events over the last 111 years and the chronology of such events.

This approach makes possible to observe consecutive changes of time and place of powerful seismotectonic events and to study migration of such seismic activity, as well as to determine the origin of such tectonic processes