

Seismic Monitoring Technology of Weak Earthquakes and Explosions on the Basis of Solution of the Seismic Moment Tensor Inverse Problem

The new computational technology for weak seismic activity monitoring has been developed based on the data of local networks and seismic data processing. The coordinates of the epicenters and six independent components of the seismic moment tensor equivalent sources were determined. The components of the seismic moment tensor depend on the time. This allows us to do a complete analysis of dynamic, spatial and spectral properties of the seismic source, evaluate its main stresses as a functions of time or frequency. The proposed approach requires the solution of so-called unstable dynamic inverse problem of determining the seismic moment tensor. The proposed approach has been tested for some small earthquakes and chemical explosions with the equivalent energies.

Primary author: EROKHIN, Gennady (Immanuel Kant Baltic Federal University)

Presenter: EROKHIN, Gennady (Immanuel Kant Baltic Federal University)

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