

THE STUDY OF STRAINED STATE OF ELASTIC-BRITTLE LITHOSPHERE FOR ESTIMATION OF EARTHQUAKE RISK

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The field data of passive seismic measurements carried out by Center GEON were collected in the Northern Caucasus, in Moscow, in the area near Astrakhan city (just north from Caspian Sea), and around Alma-Ata city (Kazakhstan). During these studies, from 5 to 12 digitized three-component seismic recorders elaborated in Center GEON and named Delta-Geon were spaced every 15-20 km in the area of about 80 km × 80 km. In the Northern Caucasus, the continuous operation of registration of seismic events from local and far earthquakes was carried out during 4 years. For data processing, an original information system was developed in Center GEON. The final result of the studies is the numerical image of strained state in the elastic-brittle lithosphere mainly between 0 and 30 km of depth, which is changed in time and in as vertical so over a widespread area. The cycles of increase and decrease of strained state in the media of lithosphere are interpreted as symptom of preparation and discharge of seismic dangerous event. The important feature of the technology mentioned above is the every day (or for another required period) inspection for the variable strained state in the lithosphere at a distance 300-350 km around the area of seismic recorders location. We send the data of these observations to Ministry on extraordinary situation of Russia every week.