



ABSTRACTS

15. Dan VELE, Vasile NACU, Ioan STOIAN: *GEODETIC METHODS FOR CRUSTAL MOVEMENTS AND EARTHQUAKES PREDICTION*

In order to predict earthquakes, it is necessary to determine three mandatory elements: the location of the event, the moment and the magnitude. For this, a set of sources of information must be integrated, including: geological testimonials, statistical information, seismic measurements, physical measurements and other information. The knowledge of geology and geological processes in a given area, combined with the records of previous earthquakes, assumes the creation of seismic hazard maps. Information required for develop seismic hazard maps includes: the location of active and inactive faults, type of faults, the evidence of recent faults movements, history of earthquakes in the area, the location of epicenters of previous earthquakes, determination of the intensity of previous earthquakes and also the correlation of earthquakes with local faults.

Statistical information refers to the mathematical relationships between the magnitude of an earthquake and the length of the broken fault.

Seismic measurements are mainly following the frequency of earthquakes and seismic evidence (previous and subsequent shocks of to the seismic event).

Physical measurements have as a basic idea the determination of changes in distances, elevation of the terrain or physical properties of the monitored area. Geodesy was and is still involved in the determination of the movements along faults, by determining the accumulation of the elastic strain (tensions or extensions). Through repeated geodetic measurements, between the two successive earthquakes of near magnitude, is determined the amount of energy accumulated in the terrestrial crust. This article speaks about the methodology used to realize the geodetic component of the databases related to the seismic hazard maps.

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