



On the complex regional earthquake precursors research and prediction NETWORK

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A regional NETWORK for prediction the earthquake's time, place (epicenter, depth), magnitude by using reliable precursors is proposed and shortly analyzed. The researched precursors are based on complex under, on and above Earth surface geophysical and usual seismological analysis of the region under consideration.

Some results of collaboration EqTiFiLaMag, which is trying to create the earthquake research and prediction NETWORK in Balkan-Black Sea region are presented:

- The correlation between *geomagnetic quakes* and the incoming extremum (minimum or maximum) of tidal gravitational potential (there is unique correspondence between the geomagnetic quake signal and the maximum of the monitoring point of **the energy density of the predicted earthquake** The statistic evidence for reliability is based on of distributions of the time difference between occurred and *predicted* earthquakes for the period 2002- 2006 for Sofia region and 2004- 2006 for Skopje. The *predictions* are valid for the earthquakes with magnitude greater then 3 at distance up to some 700- 800 km. The distance dependence of the prediction accuracy on the magnitude is presented),
- A reliability of predictions made for the 2006 spectral earthquake numbers,
- The possibility for systematic of earthquake parameters Richter Magnitude, Seismic Moment, Intensity and Depth, The world statistic of tide-earthquake correlation.

The proposed investigations for establishing of regional NETWORK would be a part

of the Project based on contemporary data acquisition system for preliminary archiving, testing, visualizing, and analyzing the relevant geophysical data. The theoretical part of the Project will include wide interdisciplinary research based on the unification of standard Earth sciences and using of nonlinear inverse problem methods for discovering the empirical and hidden dependences between variables. By means of special software the complex environmental and real time analyzed Satellite data shall be used to prepare regional daily risk estimations.