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The geomagnetic quake as imminent reliable earthquake's precursor via Skopje and Sofia data

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The imminent "when" earthquake's predictions are based on the correlation between geomagnetic quakes and the incoming 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 predicted earthquake energy density. The probability time window for the incoming earthquake is for the tidal minimum approximately $\pm$ 1 day and for the maximum- $\pm$ 2 days. The statistic evidence for reliability is based on of distributions of the time difference between occurred and predicted earthquakes for the period 2002- 2005 for Sofia region (one component of geomagnetic vector) and 2004- 2005 for Skopje (geomagnetic vector monitoring in variometer mode). The predictions are valid for the earthquakes with magnitude greater then 3 at distance up to some 700 km. The distance dependence of the prediction accuracy on the magnitude is presented.

Some results of collaboration EqTiPlaMagInt are presented. For example, a prediction made for the 2005 number of world earthquakes with magnitude greater then 4 N_{WoEqM4}= 16510+1000-500 is confirmed successfully (http://usgs.neic.gov).

A project for complex Balkan- Black Sea region NETWORK for prediction the earthquake's time, place (epicenter, depth), magnitude and intensity using reliable precursors is proposed and shortly analyzed. The precursors list includes usual geophysical and seismological monitoring of the region, including hydrochemical monitoring of water sources and their Radon and Helium concentrations, crust temperature, and hydrogeodeformation field, monitoring of the electromagnetic field under, on, and above Earth surface, meteorological monitoring of the atmosphere, including earthquake

clouds and electrical charge distributions, near space monitoring aimed to estimate the Sun or Earth origin of variations, and biological precursors. The Project is based on contemporary data acquisition system for preliminary archiving, testing, visualizing, and analyzing the data. The theoretical part of the Project includes 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) data shall be used to prepare daily risk estimations.