On Some Results of the Middle East and Kamchatka EQs Catalogues Analysis

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The industry of IT opens a wide spectrum of new opportunities and states the set of new requirements for an efficiency at the both forecasting and risk-management problems for the fatal nature events. We discuss the problem and present some methods to estimate a set of seismic risks. By crossdisciplinary paradigm in solving a complex scientific problem, we take a chance in using of some statistical forecasting methods to detect the ongoing fatal events with EQs catalogues processing.

First, we suppose that all geoactivity signals at the stations reflect the processes of the fatal-oriented open dynamical, chaotic at both time and space, system. Then, we state that for every natural catastrophe has to have a set of precursors – by means of relationships at both space and time scales while the self-organization. The problem is, by means of that, to create the logical chain to burning and realizing of such precursors and mainshocks theirselves as well as to develop the tool to filter the false events.

It was shown that opportunities to collect the geoinfo and to analyze the datum flows let us rely on solving the problems such as crucial events forecasting, as well as the problem of short-term seismic control in a real-time mode. The problem to control the geoinformation datum streams, the reasons for so-called "system-time" to be introduced, as well as the seismic shocks forecasting opportunities by means of so-called "reversal time" tools are the subjects of our approach.

It was realized that restricted series like Kamchatka's EQs Catalogue of about 50000 records since 01.01.1962 and, for example, Iranian EQs Catalogue of about 17000 records since 01.01.1900 provide us with some statistical results on probabilities and periods for the EQs given magnitude to be realized.

The most effective way to increase the reliability of the EQs forecasting systems is a strong collaboration between long-, medium- and short-term techniques of forecasting and, as well, an interdisciplinarity of research methods. It is extremely difficult to guess the location and magnitude of coming EQ with precursors recorded at only one seismic station, so we take a chance in using standard EQs catalogues for the whole region given to solve a problem.

We consider both general practical and theoretical results obtained with analytical processing of catalogues. For example, we found out that Entropy method could be applied to reduce a complexity of medium term EQs forecasting problem. We discuss over our recent

HYPOTHESIS

EQs forecasting uncertainty with Entropy methods is E   37 ,8167 %.

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