



## **New approach to evaluation of seismic regime parameters as the basis of dynamic maps of future earthquake sources**

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The account of fractal geometry of seismicity allows to extrapolate correctly representative statistical estimations of seismic parameters, received in various volumes of medium, into area of "physically actual" (connected with a length of seismic source) spatial sizes of collapsing parts of medium. It enables to connect directly seismic statistics and modern representations about fractality of seismic process with physics of destruction in spirit of the kinetic concept of strength. The technique basing on the generalized earthquake recurrence law is advanced in the work. It allows according to catalogues of seismic events to estimate one of fundamental parameters of a seismic regime – duration of destruction cycle  $\tau$ . The results received on a number of seismoactive regions of the world show that smaller values of destruction cycle duration concern to areas with more active tectonic regime. The developed technique is used for mapping of duration cycle of lithosphere destruction in Greece according to the earthquake catalogue compiled by Institute of Geodynamics, National Observatory of Athens for 1964-2003. It is established, that area of the least values of destruction cycle duration ( $\tau \cong 300-3000$  years) is dated for a zone of Western edge of North-Anatolian fault and reaches further the West down to Cephalonia Transform Fault (CTF), separating a zone of a continental collision in the North from a subduction zone in the South.

The same catalogue is used for calculation of Maps of Expected Earthquakes (MEE) of

Greece and distribution of RTL prognostic parameter. The designed distributions are compared to the similar data received earlier in 1997 on the basis of the earthquake catalogue compiled by Laboratory of Geophysics, Aristotel University (Thessaloniki). It is known that in allocated abnormal zones for the period of 1996-2002 there were 80% of earthquakes with  $M_L \geq 5.5$ . The data on destruction cycle duration in comparison to the tectonic structure of region became a physical basis and have confirmed the received results of the forecast.

Comparison of last MEE and RTL distributions, received on the data till 2004, their comparison with distribution of destruction cycle duration and the tectonic structure of the region has allowed to draw a conclusion about most seismically dangerous zones of Greece for the nearest 5-7 years.

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