



SEISMIC HAZARD ASSESSMENT (SHA) IN ROMANIA AND NEW APPROACHES TO SHA USING FAULT DYNAMICS MODELING

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The earthquake risk on Romania is one of the highest in Europe, and seismic hazard for almost half of the territory of Romania is determined by the Vrancea seismic region, which is situated beneath the southern Carpathian Arc. The region is characterized by a high rate of occurrence of large earthquakes in a narrow focal volume at depth from 70 to 160 km. Besides the Vrancea area, several zones of shallow seismicity located within and outside the Romanian territory are considered as seismically dangerous. The results of probabilistic seismic hazard analysis, which considered both the intermediate-depth and the shallow seismicity (Sokolov et al., 2009), showed that for large return periods the influence of crustal events may be significant (intensity more than VII MSK and PGA more than 0.25 g) for some areas (e.g., zones of Intramoesian Fault, Fagaras-Campulung, Banat, etc.). The use of fault dynamics modeling and earthquake simulator, which has been recently applied for Tibet region (Sokolov and Ismail-Zadeh, 2014), could advance the probabilistic SHA for Romania revealing the zones of potential large crustal ruptures. Another open question is the interaction between the intermediate-depth and crustal earthquakes: are they fully independent or deeper events can trigger shallow events? This could also be investigated using the modeling.

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