Seismic hazard parameters of main seismogenic source zone model in the Algeria-Morocco region


Abstract:

In this study, a seismogenic source zone model for the Algeria-Morocco region is proposed for seismic forecasting and seismic hazard studies. The delineation includes five zones based on available seismic and geological data. The zone model shown in figure 1, includes the Moroccan Meseta, the Rif, the Tell zone, the High Plateaux and the Atlas zone. Earthquake occurrence process in this region is modeled and analyzed using recent earthquake catalogs for northern Morocco and northern Algeria compiled in former studies (Peláez et al., 2007; Hamdache et al., 2010). For these catalogs, dependent events were identified and removed by adapting Gardner and Knopoff declustering procedure to the study region. Magnitudes of completeness were estimated using different methods, then the Poissonian character of the obtained sub-catalogs was analyzed. The b-value of the Gutenberg-Richter recurrence relationship, considered as an area-specific seismic hazard parameter, was initially computed using the Weichert (1980) approach.

Keywords:

Seismic hazard, seismic sources, Earthquakes, Algeria, Morocco

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