



SEISMIC HAZARD ASSESSMENT IN NORTHWESTERN ALGERIA

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Northern Algeria belongs to the Africa- Eurasian plate boundary area characterized by the presence of major active geological structures that are responsible for the occurrence of strong to moderate-sized earthquakes in the past, and constitute likely, the source of seismic hazard for the region in the future. In this work we undertook a seismic hazard assessment study, by using PSHA approach, in order to provide engineers and planners a useful tool to take into consideration the seismic threat in their respective works.

The following steps have been followed: (i) a detailed seismotectonic mapping, that includes geomorphic, geological field investigations as well as geophysical investigations, mainly ERT, that aims to identify and to define the geometry of the seismogenic sources, (ii) determination of source parameters such as b-value, activity rate, maximum Magnitude and earthquake recurrence, (iii) selection of ground motion attenuation relationships that fit the Algerian recorded strong motion data and, finally (iv) computation of seismic hazard.

Results are presented as hazard curves of different percentiles corresponding to relations between values of PGA and the annual frequency of exceedance, values of PGA and return periods as well as curves of uniform hazard spectrum (UHS). A sensitivity analysis for different parameters has been also performed in order to show the uncertainties in the study.

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