

## Development of seismic hazard maps for Northeast of Algeria

Hamidatou Mouloud (1), Dietrich Stromeier (2), and Fabrice Cotton (2)

(1) Department of Civil Engineering, University of August 20, 1955. Skikda, Algeria (m.hamidatou@univ-skikda.dz), (2) Department of Geophysics. Section 2.6 "Seismic Hazard and Stress filed" Potsdam. Germany (d.stromeier@gfzpotdam.de)

We first provide a brief overview of the evolution of seismic hazard assessment in Algeria, followed by a comparison of the current official seismic hazard map used to define the seismic zonation of North Algeria in the framework of Algerian code building (RPA 2003) with the corresponding map from the European project. The general pattern of the PGA spatial distribution is not similar in the two maps. This comparison suggests that seismic hazard in North of Algeria should be re-evaluated using current state-of-the art methods as developed in the frame of SHARE and Global Earthquake Model (GEM) projects. In the second part, we present twelve seismogenic zones are proposed. This new method differs from the conventional method because it incorporates earthquake magnitude uncertainty and mixed data sets containing large historical events and recent data. The method can be used to estimate the  $b$  parameter of the Gutenberg-Richter relationship, annual activity rate  $\lambda$  ( $M$ ) of an event and maximum possible magnitude  $M_{max}$  using incomplete and heterogeneous data files. In addition, an earthquake is considered a Poisson event with an annual activity rate  $\lambda$  and with a doubly truncated exponential earthquake magnitude distribution  $b$ . Seismic risks were assessed in urban areas and an earthquake catalogue, graphs and maps were created using geographic information systems (GIS), the Z-map code version 6 and Crisis software 2012.