Geophysical Research Abstracts
Vol. 19, EGU2017-18773, 2017
EGU General Assembly 2017

Active fault databases and seismic hazard calculations: a compromise between science and practice. Review of case studies from Spain.

Julian Garcia-Mayordomo (1), Raquel Martin-Banda (2), Juan Miguel Insua-Arevalo (2), Jose Antonio Alvarez-Gomez (2), and Jose Jesus Martinez-Diaz (2)

(1) Geological Survey of Spain (IGME), Tres Cantos (Madrid), Spain (julian.garcia@igme.es), (2) Facultad de Ciencias Geologicas, Universidad Complutense, Madrid, Spain (raquem08@ucm.es, insuarev@geo.ucm.es, jaalvare@geo.ucm.es, jmdiaz@geo.ucm.es)

Since the Quaternary Active Faults Database of Iberia (QAFI) was released in February 2012 a number of studies aimed at producing seismic hazard assessments have made use of it. We will present a summary of the shortcomings and advantages that were faced when QAFI was considered in different seismic hazard studies. These include the production of the new official seismic hazard map of Spain, performed in the view of the foreseen adoption of Eurocode-8 throughout 2017. The QAFI database was considered as a complementary source of information for designing the seismogenic source-zone models used in the calculations, and particularly for the estimation of maximum magnitude distribution in each zone, as well as for assigning the predominant rupture mechanism based on style of faulting. We will also review the different results obtained by other studies that considered QAFI faults as independent seismogenic-sources in opposition to source-zones, revealing, on one hand, the crucial importance of data-reliability and, on the other, the very much influence that ground motion attenuation models have on the actual impact of fault-sources on hazard results. Finally, we will present briefly the updated version of the database (QAFI v.3, 2015), which includes an original scheme for evaluating the reliability of fault seismic parameters specifically devised to facilitate decision-making to seismic hazard practitioners.