



Reliability quantification of the intensities predicted by the Seismic Automatic Determination (DAS) system of the Catalan seismic network

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Catalonia, located in the NE of the Iberian Peninsula, has a moderate seismicity; however different destructive earthquakes occurred during the 1373-1448 period. In 2003, a seismic emergency plan for the region was carried out (SISMICAT) with two main points, the evaluation of seismic risk in the municipalities of Catalonia and the implementation of a response plan after a fast notification in case of earthquake of interest. The Institut Cartogràfic i Geològic de Catalunya (ICGC) provides this service through Seismic Automatic Determination (DAS) system, installed at ICGC in 2005, based on Earthworm tools developed by the USGS and adapted to the local needs and conditions of the Catalan seismic network. Thus, when a seismic event occurs, the first information reaching civil protection, received after few minutes via SMS and email, is generated automatically; the notification includes hypocentral parameters and magnitude. Along with it, since 2007, the automatic notification was complemented with summary tables and maps of the peak ground motion data (PGM), PGA and PGV, from the seismic stations and estimated intensities thanks to software integrated within the framework of the ISARD project.

Since DAS has been already operating for a decade sending notifications, a collection of peak ground motion data from the seismic stations is available. In this study, PGM have been reviewed and compared with the reported macroseismic intensities to analyze the fitting of the GMICES (ground motion intensity conversion equation), with the aim to quantify the reliability of the predicted intensities in order to improve the interpretation of the data by the civil protection survey.