



Homogenized focal parameters for Portuguese earthquakes between 1900 and 1960

Ricardo Torres (1), Jorge Cruz (2), Josep Batlló (1,3), Susana Custódio (1), and Fernando Carrilho (2)

(1) Instituto Dom Luiz (IDL), Universidade de Lisboa, Portugal, (2) Instituto Português do Mar e da Atmosfera (IPMA), Lisboa, Portugal, (3) Institut Cartogràfic i Geològic de Catalunya (ICGC), Barcelona, Spain

The INSPIRE project, funded by Portuguese FCT, started in 2012 and aims to review the instrumental seismicity of Portugal in the period 1900-1960.

Prior to the deployment of the new Portuguese seismic network in the early eighties, many earthquakes with epicentre in the Atlantic and even in continental Portugal were undetected or not located instrumentally. But knowledge of the occurrence and location of earthquakes prior to this period is fundamental to understand the seismicity of the region and for studies of seismic hazard and risk.

Relocation of events instrumentally recorded until 1960 is particularly difficult due to several factors: Namely, the poor sensitivity of the seismographs and the few available stations, but also the incompleteness of the reports and the lack of accuracy of the station chronometers. Thus, different catalogues give different locations for the same event, with no information about how they were obtained, or there are conspicuous gaps in the instrumental records of Portuguese stations. For many earthquakes of the studied period records regard only felt effects. In general, there is no control on the accuracy or quality of epicentral coordinates of events consigned in the catalogues.

To correct these problems and improve the knowledge of the seismicity of the area it has been necessary to review all available materials, which include diverse sources. Moreover, the problems posed by data quality forced us to perform an analysis of the events one by one.

Here we present our final results, with around 350 earthquakes reviewed. Now location procedures are homogenized and repeatable. Also, at the end of the run, more than 160 additional events have been consigned in the resulting catalogue.

A further step will be calculation of homogenized magnitudes for all of them and calculation of focal mechanism whenever possible.