

## The ISC-GEM Global Earthquake Instrumental Catalogue: an update

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The first release of the ISC-GEM Global Instrumental Earthquake Catalogue (1900-2009) ([www.isc.ac.uk/iscgem/index.php](http://www.isc.ac.uk/iscgem/index.php)) was released in January 2013 after a 27-month project co-funded by the GEM Foundation ([www.globalquakemodel.org](http://www.globalquakemodel.org)). One of the objectives of the new catalogue was to reassess homogeneously (to the largest extent possible over time) focus parameters (especially location and magnitude) and list them along with formal uncertainties in as special product to serve those studying seismic hazard and Earth's seismicity.

Due to time and resource limitations, the first release of the ISC-GEM catalogue (1900-2009) included earthquakes selected according to the following time-variable cut-off magnitudes:  $M_s=7.5$  for earthquakes occurring before 1918;  $M_s=6.25$  between 1918 and 1963; and  $M_s=5.5$  from 1964 onwards. Because of the importance of having a reliable seismic input for seismic hazard studies, funding from GEM, USGS, NSF and commercial companies in the US, UK and Japan allowed us to start working on the extension of the ISC-GEM catalogue both for earthquakes that occurred beyond 2009 and historical earthquakes listed in the International Seismological Summary (ISS) which fell below the cut-off magnitude of 6.25 before 1964. This extension is part of a four-year program that aims at including in the ISC-GEM catalogue as many potentially damaging earthquakes as possible that occurred between 1904 and 1959. In this contribution we present the updated ISC GEM catalogue at the end of the second year extension program, which includes over 1000 more earthquakes that have occurred in 2010-2012 and thousands more between 1935 and 1959 with respect to the first release. Further catalogue extension between 1904 and 1934 is currently underway. The extension of the ISC GEM catalogue will also be helpful for regional cross border seismic hazard studies as the ISC GEM catalogue can be used as basis for cross-checking the consistency in location and magnitude of those earthquakes listed both in the ISC GEM global catalogue and regional catalogues.