

## ***Interactive comment on “The ISC-GEM Earthquake Catalogue (1904–2014): status after the Extension Project” by Domenico Di Giacomo et al.***

**Anonymous Referee #2**

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The authors update and extend the ISC-GEM catalogue, which is a reference global catalog developed mostly for seismic hazard assessment purposes, but which is also widely used for other studies, including seismo-tectonics. The main difference with respect to the previous version of the ISC-GEM catalog (v1) is the inclusion of pre-1960 earthquakes with magnitudes below the original (time-dependent) magnitude thresholds and new  $M \geq 5.5$  events from 2010 to 2014, as well as a better assessment of magnitudes for some earthquakes.

Because the methodology is sound and has been presented in earlier articles, I will not comment much on it. Most of my comments, which are detailed below, concern presentation issues.

In particular, I find that the reference throughout the article to the 4-year project and

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its stages is somewhat cumbersome and uninteresting for the reader. While such references would be adequate in a technical project report, readers of the article will be interested in the catalog and not on how the project was timed and developed. I thus encourage the authors to eliminate from the article references to the yearly development of the extension project, and rather focus only on the catalogue analysis.

I also find a bit difficult to follow the description of the data and workflow. It would help if the authors could add a flowchart with the processing. The dataset could be identified at each step as extension-0, extension-1, extension-x, extension-final, and the processing steps could be identified as well. A table could accompany the flowchart, including the number of events after each processing step. If needed, adapt for the different time periods.

The article is written in easily understandable English, but still some sentences require re-reading. If possible, I would recommend that the article be carefully edited for English.

The article is pertinent, of general interest, and relevant for all users of the catalog, and well as for readers interested in the development of seismic catalogues. I therefore recommend the article for publication after minor revision.

Minor comments:

- . Page 1, Lines 1-5: Too long sentence. Becomes confusing. Rephrase/clarify.
- . P1, L 11-13: Include a brief explanation as to why the ISC-GEM catalog now starts only in 1904 rather than 1900 (as originally).
- . P2, L7: “large earthquakes pre-1964 and from 1964 onwards;”- confusing, rephrase.
- . P3, L24. I would suggest to remove the text and table (Table 1) about the timing of the project, unless there is a good reason to show it.
- . P5, L3: Remove the reference to the phase of the project, leave only the reference to

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catalogue time period (1920-1959).

. P 5, L12-14. Confusing. Rephrase/clarify.

. P6, L7-12. The criteria are somewhat vague. Is it possible to detail, for example in a table?

. P6, L18-19. Confusing. Rephrase/clarify.

. P7, L5. Replace “recurrent” by “frequent”.

. P9, L16, and later. I find it confusing to use the word “counts” to refer to the number of locations available in each source. Maybe “reported locations” or some different word/expression is more adequate. “Counts” seems too generic.

. P11, L28-29. Rephrase/clarify.

. P14, L22. Careful with referring to “historical” earthquakes, as this expression is typically used for earthquakes documented historically but not recorded instrumentally. Maybe better to use “pre-digital”, if this is the case?

. Figure 1. Identify in the figure the different time periods referred to in the text (P3, L14).

. Figure 6. It would be nice to plot, behind this histogram, a second histogram showing the initial number of extension events in the period studied.

. Figure 23. It would be interesting to add to this figure a similar one, but showing only the earthquakes with well-constrained locations.

. Acknowledgements: Josep Batlló, there is no “h” at the end of “Josep”, and there are two “l” and one “t” in “Batlló” (!).

Finally, I apologize the editor and authors for the late review.

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