



# ***Interactive comment on “A sanity check for earthquake recurrence models used in PSHA of slow deforming regions: the case of SW Iberia” by Margarida Ramalho et al.***

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Title: A sanity check for earthquake recurrence models used in PSHA of slow deforming regions: the case of SW Iberia Author(s): Margarida Ramalho, Luis Matias, Marta Neres, Michele M. C. Carafa, Alexandra Carvalho, and Paula Teves-Costa

General comments:

The authors show very promising results in the evaluation of earthquake generation models using two different methods. The methodologies have been applied and compared in SW Iberia which is one of the most seismic risk zones.

The manuscript is readable and well structured. I just have two main concerns. The first one is that the methodology section can be corrected to boost the focus of the authors specific contributions (see details below). My second remark is about the conclusions section. Please rewrite this section, it is needed to summarize the most important results of your paper. From my point of view is still difficult to rapidly retrieve the main contributions of your work in the actual conclusion section.

### Specific Comments

1. In the abstract, please remove the last sentence. It is better not to include in this section a conclusion, just leave some remarkable results.
2. Line 203 “mentioned above do not consider any uncertainty”. Please rewrite this sentence being more precise in “any uncertainty”. It could be better to explain what uncertainties you are referring to. To me this sentence is too general and/or strong.
3. Simple consistency test:

It is needed to reduce this section, some content are trivial and can be moved to the supplementary material.

- a. Please, remove the content from line 382 (The area. ...) to line 396 and move it to the supplementary material. b. Line 400, Eq 7 »> Eq 8

### 4. Uncertainties: Logic Tree and Monte-Carlo simulation

- a. It is necessary to include a reference or some brief explanation about how you have implemented the Monte-Carlo simulation (i.e. parametrisation). b. Line 425 (This exercise → This simulation)

### 5. Complex sanity test\_ Seismicity Rates with “Long Term Seismicity”

- a. Line 448 (are revised below → see Supplementary Material) b. Please move from line 449 to 481 to the supplementary material. This will be help that the reader focus on your actual work and the section be more organised separating “your work” and “the

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fundamental basis". c. Line 482, replace code by algorithm

6. Seismicity rates compared with "Long Term Seismicity"

a. No necessary to include the sentence from line 652 to 653. It doesn't add significant information.

Technical corrections

Figure 1.

a) I suggest that the maps have colorbars. b) Might be you can change the color pallet to highlight the faults. Now, the faults are in white and is difficult to distinguish it. c) I don't think you need an Europe map. You can integrate the rest of the figures in just one figures.

Figure 7.

I suggest that you place a legend with the name of the models and each model be a coloured dot , instead of set the name in the figure.

Tables.

In general, please explain what each column stands for, even though you have already written in the main text.

I hope this helps to improve the authors paper,

Roberto Cabieces

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2020-300, 2020>.

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