

## ***Interactive comment on “Transposing an active fault database into a fault-based seismic hazard assessment for Nuclear facilities. Part B: Impact of fault parameter uncertainties on a site-specific PSHA exercise in the Upper Rhine Graben, Eastern France” by Thomas Chartier et al.***

PhD GARCIA-MAYORDOMO (Referee)

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Received and published: 23 May 2017

The manuscript is well written and structured, clear and interesting. My congratulations to the authors. I have only a few major concerns (listed below) and many little ones (highlighted in yellow in a commented pdf attached). Please, consider my comments and suggestions in a future revised version of your manuscript.

-Equation (1), Does V stand for average displacement? It should not be included in the

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equation of Seismic Moment rate as slip rate is already accounted for in it (as “s”).

-Equation (5), I assume that the equation comes from somewhere else in literature. If this is the case, please, cite the paper. If not, then explain how you get to it further in detail. Additionally, you should name here the variable “V”.

-In section 5 (Sensitivity), geometry at depth: I agree with your statements about the influence of dip in the hazard results (lower dip-> more hazard). However, Figure 6.c shows the opposite. I think it is just a problem with the legend: the continuous line should address Dip Max and the discontinuous Dip Min. Please, check it.

-Figure 2 left (shouldn't it say “a”) instead of left?) The black line representing the mean UHS is missing.

-Figure 2 right (shouldn't it say “b”) instead of right?) Could you explain further the point of this figure? I'm not sure if I'm interpreting it right... for example, can I say that CF08 is the only GMPE that threw results  $PGA > 0.7g$ ? Additionally, it is difficult to interpret the figure as the colors mix... it is a bit confusing. I think you could provide a clearer figure (regular histograms) and explain it a bit further in the manuscript.

GENERAL REVIEW QUESTIONS AND ANSWERS 1.Does the paper address relevant scientific and/or technical questions within the scope of NHESS? Yes

2.Does the paper present new data and/or novel concepts, ideas, tools, methods or results? Not cutting edge, but fairly original.

3.Are these up to international standards? Yes.

4.Are the scientific methods and assumptions valid and outlined clearly? Yes

5.Are the results sufficient to support the interpretations and the conclusions? Yes

6.Does the author reach substantial conclusions? Yes (slip rate can influence the results as much as the choice of GMPES)

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7. Is the description of the data used, the methods used, the experiments and calculations made, and the results obtained sufficiently complete and accurate to allow their reproduction by fellow scientists (traceability of results)? I think so, at least to a great extent.

8. Does the title clearly and unambiguously reflect the contents of the paper? Yes

9. Does the abstract provide a concise, complete and unambiguous summary of the work done and the results obtained? Yes

10. Are the title and the abstract pertinent, and easy to understand to a wide and diversified audience? Yes

11. Are mathematical formulae, symbols, abbreviations and units correctly defined and used? If the formulae, symbols or abbreviations are numerous, are there tables or appendixes listing them? Not always (equations 1 and 5). Minor corrections needed.

12. Is the size, quality and readability of each figure adequate to the type and quantity of data presented? Yes

13. Does the author give proper credit to previous and/or related work, and does he/she indicate clearly his/her own contribution? Yes

14. Are the number and quality of the references appropriate? Yes

15. Are the references accessible by fellow scientists? Yes

16. Is the overall presentation well structured, clear and easy to understand by a wide and general audience? Yes

17. Is the length of the paper adequate, too long or too short? It is good.

18. Is there any part of the paper (title, abstract, main text, formulae, symbols, figures and their captions, tables, list of references, appendixes) that needs to be clarified, reduced, added, combined, or eliminated? Yes, there are minor corrections to be done

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in a couple of figures. See attached pdf with my comments.

19. Is the technical language precise and understandable by fellow scientists? Yes

20. Is the English language of good quality, fluent, simple and easy to read and understand by a wide and diversified audience? Yes

21. Is the amount and quality of supplementary material (if any) appropriate? There is any.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2017-97/nhess-2017-97-RC2-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2017-97, 2017.

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