Natural Hazards
and Earth System
Sciences
Discussions

Interactive comment on "CCAF-DB: The Caribbean and Central American Active Fault Database" *by* Richard Styron et al.

Anonymous Referee #3

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General comments: This discussion paper describes a database of ∼250 active faults recently released on GitHub. After the introduction, the authors describe clearly and in exhaustive manner the purpose, mapping methods, assignment of attributes, and data format of the database. Then, the authors, after a short overview of regional faulting, describe the database, dividing it in several areas, such as Central America, Middle America Trench, Lesser Antilles and so on. Overall, the discussion paper is well written and organized, and the number of figures is appropriate. The purposes of the database compiled by the authors range from seismic hazard analysis, to earthquake and tectonic research, to educational and general interest, in order of decreasing importance, as written by authors (page 3 line 2-3). Even if I am not an expert of active faults and tectonics of Central America, the database seems to be up

do date. Anyway, due to the nature of the database, a public and open-source one, this is not a crucial issue; the database can be updated when important information about new active faults is published or if important information are missed. Instead, from a seismic hazard modeller point of view, the database seems to be lacked of some crucial parameters, such as the seismogenic thickness. In my opinion, a database like this one must be ready for any kind of seismic hazard calculation, it is the geologist that compiles a database and gives the "numbers" to the hazard modeller and not vice versa. So, the following improvements (specific comments) are required before to consider it for publication. Specific comments: 1) Give information about the seismogenic thickness, how we can compute the area of the source without this parameter? And, where are the upper and lower of the seismogenic thickness? Can these sources break the surface? Or they are blind faults? In my opinion, this is a key parameter that is not listed in this database and this information is mandatory for each fault-based PSHA and also in OpenQuake. 2) Slip rate maybe is the most important parameter in any fault-based PSHA. I know that probably it is also the most difficult parameter to estimate but I think that adding some additional information is mandatory. Can you add some additional information such as the number of faults in the database with at least one value of slip rate? Where are they come from? Geodesy, geology; are they long-term values? Moreover, can you give at least an estimate value for those faults without a value? For example a wide range 5 - 10 mm/yr? In order to allow the modeller to use a mean value of the slip rate (that's better than nothing!). 3) Typos, comments on the figures, and other minor required changes are highlighted in the attached pdf. Please consider it for publication after minor/moderate revision.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-46/nhess-2019-46-RC3-supplement.pdf

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