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Solid Earth Discussions

Interactive comment on "Seismicity characterization of oceanic earthquakes in the Mexican territory" *by* Quetzalcoatl Rodríguez-Pérez et al.

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Response to comments by the reviewer1

We appreciate the comments by the reviewer, which have allowed us to improve the manuscript. Overall, we have followed all the suggestions. We now give a response to the individual points raised:

Reviewer 1

MAJOR COMMENTS

1. Page 6, lines 18 – 21. "We estimate . . ." – What for? It would be contributive of you

will present the scope for this calculation at this point in the manuscript. Same as all models that you apply. It helps the reader when each one is concluded with the scope and the interrelation with the other models.

We clarified the methods used in the manuscript.

2. Page 10, 2nd paragraph: Reorganization of this paragraph seems necessary. Description, comparison, interpretation of the obtained results are expected here. The calculated parameters must be shown in a Table.

We reorganize this paragraph following the observations of the reviewer.

3. Page 11, lines 4 – 13: This paragraph is hardly followed by the reader, and in particular because a full seismotectonic description and the scope of showing these parameters are missing. It is suggested for the manuscript to be modified accordingly.

We reorganize this paragraph following the observations of the reviewer.

4. Page 11, lines 19 – 20: Putting together so many and different faulting directions is hardly conceivable and does not add value in the seismotectonic analysis. Would you like to discuss the differentiation, possible rotation and interplay of the dominant stress axes, and in general a description of this faulting pattern?

We improved these lines and discussed the point suggested for the reviewer.

5. Page 11, lines 15 – 24: A more analytic presentation of the results for each region is necessary. Explanation of the obtained values, comparison with the known stress regime (discussion in connection with published results) and interpretation is expected. Emphasis should be given to the new – bringing elements of the analysis.

We explain the calculated values. We also compared and discussed our results with other studies.

6. Discussion: "Loose" connection between the paragraphs, which does not enunciate the integration of the different approaches to the premier scope: to fully describe the

oceanic seismogenesis.

We modified this section of the manuscript.

SPECIFIC COMMENTS

1. Page 1, line 22: ". . . long ruptures . . . to produce large oceanic earthquakes . . ." – in fact cannot be characterized "long" producing "large" earthquakes, since this expression is rather appropriate for subduction earthquakes. The aspect ratio, length to width, is large because they are strike-slip earthquakes, which in turn are not so "large" if we will strictly keep this expression for the "stronger"subduction earthquakes. I will leave to the authors the final decision about this task.

We consider this comment, and we mention the aspect ration in this sentence to clarified the ideas.

2. Page 2, line 3: ". . . slow slip ruptures . . .": since it concerns mainly subduction earthquakes, could you please be more specific for the reader's ease?

We clarified this point in the text.

3. Page 2, line 9: ". . . oceanic earthquakes also occur as intraplate . . .": a very interesting issue and for this reason, some more additional descriptions along with relevant references would be welcome.

We added information and references in this regard.

4. Page 3, lines 22–24: In my opinion, there is no necessity to mention peculiarities in other authors' results. Moreover, the "basics" of coupling (e.g. 0<x<1 and x=1 means full coupling) might also be avoided, unless they will be embodied in phrases commenting on the degree of coupling.

We agree with the comment of the reviewer.

5. Page 3, lines 1–4: very short sentences that might be combined.

We combined these sentences.

6. Page 4, lines 8 – 24: It is not necessary to write continuously at the end of each sentence the "(Fig. 1)"

We followed this advice.

7. Page 5, lines 1 – 6: All this info to be inserted in a Table, which then must be commented at this point.

The information of these events is shown in Table 1.

8. Page 5, line 13: ". . . superficial . . ." – better say "surface magnitude".

We changed this word.

9. Page 5, lines 18 – 19: ". . . a catalog is made of . . . in the following interval . . .", better ". . . the catalog includes . . . between 2.7 – 6.9"

We consider this comment and changed the sentence.

10. Page 6, line 3: ". . . occurrence . . . magnitude", better "earthquake magnitude distribution"

We changed this sentence.

11. Page 6, lines 7 – 8: Make one sentence because they start with exactly the same words "the b – value" – connect both with an "and"

We followed the recommendation of the reviewer.

12. Page 13, lines 10 – 11: Incomplete sentence.

We changed this sentence.

13. Page 16, lines 1 – 15: Each sentence finishes with the same references. It appears 6 times in 15 lines. Reorganization of the text will help to avoid this repetition at the same time to express.

We reorganized the text to avoid repetition and clarify the ideas.

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