NHESSD

Interactive comment on "A review and upgrade of the Lithospheric dynamics in context of the Seismo-electromagnetic Theory" *by* Patricio Venegas-Aravena et al.

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This paper presents the theory underlying four different empirical observations showing a possible link between magnetic fields and earthquakes. In my opinion, the most significant contribution is the attempt to connect the theory of preseismic and coseismic magnetic effects under the same umbrella.

The paper is fairly written and organized. However, there is some confusion in presenting some equations and some parameters are not clearly defined.

The requested revision is a minor/intermediate-level revision. I suggest some changes

and corrections after which the work can be published.

Major points

1. It seems to me that there is some confusion in some equations and the corresponding definitions of some parameters. Below some details:

Pag.4, line 4. V is not explicitly defined. I suggest to write: "... to the sphere and V the volume ..."

Pag.4, eq. (3) and line 14. SR is about 1, but it is not mentioned its meaning. Is it just a simple proportional factor? Does it depend on the microcracks geometry or spatial distribution? Or whatelse?

Pag.4, line 15. S is introduced here as contributing to the expression of A, and not directly in one equation. On the contrary, later on the text (Pag.5 line 35) it is said: "area S of Equation 4". By the way, which is the meaning of A? The difference between S and A should be stated clearly.

2. Pag. 6, Equations 12a, 12b, 12c. The estimated magnitudes are given with too high resolution. I suspect that estimating the associated errors of each parameter involved in the equations, the magnitude values could be given with a lower accuracy. Some short discussion on the involved errors should be given, and, in turn, the magnitude values should be given with less numerical figures.

3. Pag. 7, line 1. Here it is said that the ionosphere is at an altitude of 48km. Probably, this value in the mentioned web link was given as the altitude where the ionosphere starts (although other sources pose the value at around 60 km. see e.g. Wikipedia), till around 1000 km. Actually the highest ionospheric electron density is at around 300 km of altitude. By the way, the given link is now missing at NASA website.

4. Pag. 7, section 5. I was surprised about the large range of the magnetic field oscillation frequency from mHz to MHz. I think that some words would be necessary about this point.

Minor points

1. Pag.2, line 5. Please remove "the" before "any change".

2. Pag.3, line 7. Please write "explains".

3. Pag.3, line 25. Please correct as "MCD".

4. Pag.3, line 28. Please correct as "compressional".

5. Pag.4, line 20. Please write "corresponds".

6. Pag.4, line 25. Please change "y" with " and". (by the way, this mistake happens other times, e.g. pag.6, line 38, so I can presume that this text was originally translated from a Spanish text; for your safety, please check across the text if this mistake appears other times).

7. Pag.5, line 12. Please correct "untis" as "units".

8. Pag. 10, line14. Please remove a comma before "https. . ."

9. Pag.11, line 17. I think the Bibcode is not necessary (also because it is not fully written).

10. Pag. 11, line 34. Please correct "Fraser-Smitha" with "Fraser-Smith".

11. Pag.14, line 37. Please correct as "Vallianatos".

12. Pag.15, line 5. Please insert a blank between "Maule" and "Megathrust".

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