

Interactive comment on “Analysis of geomagnetic measurements prior the Maule (2010), Iquique (2014) and Illapel (2015) earthquakes, in the Pacific Ocean sector of the Southern Hemisphere” by Enrique G. Cordaro et al.

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Dear Natascha Töpfer and reviewers,

We have considered your suggestions and thoughts.

The changes made to the manuscript are highlighted in yellow. Below this letter you will find the answers to the referees.

Best Regards, E.G. Cordaro on behalf of the authors.

C1

Comments for the Referee #2:

C1-“ The text and figures contain many typos/errors, which makes them difficult to read.”

R: To response this comment, the paper was corrected once more by native speakers.

C2-“ The relation between the magnetic field variations shown and the earthquakes”

Page 4 , Lines 11-13

R: Different methods to search for the single cumulative magnetic anomalies and then the temporal behavior y now are used, in general in Ionosphere, for example: De Santis et al 2017. , Marchetti and Akhoondzadeh 2018 an other We used the method for cumulative magnetic anomaly in the surface of the earth.

C3-“Kp index is only one of many indicator of the geomagnetic activity.”

R: we partially agree on this point, It's a global and daily index, considering this, we have indicated his maximum variation (figure 1) and the others source of anomalies are at the lithosphere, this objection in particular is to our understanding covered in the fourth section, "Daily cumulative numbers of anomalous behavior in the component z of magnetic field over the surface of Earth for Maule 2010 Mw8.8, Iquique 2014 Mw8.2 and Illapel 2015 Mw8.3".

C4- “For the different frequency ranges for Fourier”

Page 7, Lines 8-15

It is important to insist that the frequencies obtained by the Fourier method are inherent to the lithosphere, that is, obtained on the surface of the earth. The variation of the low frequencies prior to the Earthquake in the magnetic field are due to the ionosphere-atmosphere-lithosphere coupling. Other authors classify them in the ionosphere by relating them with waves transmitted from the magnetosphere and the solar wind. We indicate in Introduction (Cordaro et al (2018) that the frequencies in UHz are related

C2

to Earthquake del Maule 2010 Mw 8.8 and Villanatos and Tzanis 2003 shows that the magnetic field frequencies are possibly related to Earthquake included in a range of at least three order of magnitude and finally detecting a month before the Earthquake in the range of frequencies between 5 -100 mHz based on the Ionosphere-Lithosphere –atmosphere coupling.

C5-“ Lines 18-22 on page 4: these do not read correct”

R: It was checked again.

C6-“Think the authors wanted to say the absolute value of $Dst < 10$ nT. In addition, what does it mean with “the DST for 2015 is less precise”?”

R: That's correct, they are absolute values. And we want to say that the data is not as accurate.

C7-“What is the major contribution of this work?”

Page1 , Lines 39-40

R: The study of the afore mentioned variables could allow us to obtain precursor or pre-earthquake signs, and this may give us the possibility to predict an earthquake using measurable, objective readings. Allowing us to alert the population, so, the ultimate goal of this work is preserving life.

C8- “The figure numbering does not match the main text and captions. “

R: We checked, and accordingly highlighted the name of the figures in the main text and captions.

Interactive comment on Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2019-9>, 2019.

C3