

Interactive comment on “Speeding up and boosting tsunami warning in Chile” by Mauricio Fuentes et al.

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Dear Reviewer,

Santiago of Chile, April 11, 2019

We have read carefully your review of our article entitled, “Speeding up and boosting tsunami warning in Chile”, written by Fuentes M.(1), Arriola, S. (2), Riquelme S. (2), and Delouis B. (3), from (1) Department of Geophysics, University of Chile, Faculty of Physical and Mathematical Sciences, Santiago, Chile, (2) National Seismological Center, University of Chile, Santiago, Chile and (3) Géoazur, Université de Nice Sophia Antipolis, Observatoire de la Côte d’Azur, Nice, France.

We are grateful for the time you spent to review our paper, for all your comments and

C1

useful suggestions to improve the manuscript. In the following paragraphs we present in detail the answer to all questions, comments and suggestions you made.

Best regards, Mauricio Fuentes.

General comments

Reviewer: This paper presents a method for quick tsunami estimation in Chile early warning system using W-shape inversion for rough source estimation and linear tsunami numerical modeling. They mention this new approach as a fill-in gap method for the warning system. They have also tested their method with historical tsunami events and proved that they have good correlation between the real case and their results. This work is worth to be published. However, it needs major revision in terms of presenting and discussing their results, grammar in the entire text and conclusion. Besides, it is necessary to have further discussion and explanation on figures.

Response: We provided an annotated version of the manuscript with track of changes (red slanted stands for deleted text and blue for new text.) including all your suggestions.

Specific comments:

(1)

Reviewer: Below are the sentences that are not clear to me. They need to be rephrased: 1. Page 1 Line 14 whole sentence 2. Page 2 Line 4 “operating monitoring systems” 3. Page 2 Line 11 “until decreases to 0.5 to 1 m” 4. Page 5 Line 11 : : : whole paragraph 5. Page 5 last paragraph 6. Page 6 Line 4 to 6 7. Page 9 last paragraph.

C2

Below are some of grammar corrections: 1. Page 1 Line 3 “100 km which creates” 2. Page 2 Line 6 “This problem is separated in three parts: the determination of: : :” 3. Page 3 Line 24 “: : :with a fully linear shallow water equation propagation.” 4. Page 4 Line 24 “: : :.have tested as many earthquakes listed below and: : :” 5. Page 6 Line 2 “: : :very first minutes: : :” 6. Page 6 Line 11 “: : :which deploy a specific: : :” 7. Page 7 Line 1 “These kind of maps: : :” 8. Page 7 Line 5 “with a unique and simple: : :” 9. Page 7 Line 9 “: : :and number of people exposed to this hazard: : :” 10. Page 7 Line 13 “: : :details rather than modeling: : :” 11. Page 10 Line 1 “Using the methodology of Sandabata et al. (2018): : :”

Answer: We have rephrased the observed parts and fixed the English grammar.

(2)

Reviewer: About Figures and Tables: 1. Please refer to Figure 1 in the text. 2. please insert Table 1 after its reference in the text. 3. Figure 2: Does this red color on land represent runup values larger than 3m? Does this mean all of this are experienced more than 3m runup?? 4. Figure 5: please compare and discuss the difference between two maps: in terms of the effect of dispersion etc.. 5. Figure 6: please refer Figure 6 in the text and explain.

Answer:

1.) Figure 1 is now referred in section 3.

2.-) Locating the figures through the manuscript seems to be a post editorial task, since we can not correctly control the insertion of the figures with the provided LaTeX template. However, every reference to a figure or table is mentioned before they are inserted (in the .tex file).

3.-) In figure 2 (and 3), the coastline is divided by geopolitical zones (Chilean regions),

C3

the zone adopts the color of the maximum value of the runup distribution in that zone. If only one point overpass 3 m, the whole region becomes red. That is why we pointed-out that this way to divide the country is just referential, because we can easily use another, not being relevant for the algorithm development and more related to the criteria of the final user.

4.) The caption of figure 5 was rewritten in order to make this clear.

5.) Figure 6 is now referred in section 6.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-9/nhess-2019-9-AC3-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-9>, 2019.