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Natural Hazards and Earth System Sciences
Discussions
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Interactive comment on "Assessment of the 1783 Scilla landslide-tsunami effects on Calabria and Sicily coasts through numerical modeling" *by* Filippo Zaniboni et al.

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Zaniboni et al. investigate the Scilla tsunami, which is one of the deadliest tsunamis ever occurred in Italy. They simulated the tsunami generated by the subaerial landslide that followed one of the largest aftershocks that occurred during the 1783 earthquakes storm in Calabria, Italy, and compared the results against the historical evidences. Since there were still some disturbing gaps between the computed results and the historical evidences, they improved the grid resolution and restored the topography of the Pantano Piccolo area in northeastern Sicily at the time of the tsunami. This way they were able to match very nicely the computed results with the actual evidences.

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Discussion paper

This is an elegant investigation, relevant to nowadays tsunami hazard research and evaluation. The study is well constructed, conducted very carefully with much attention to the fine details. The understandings extrapolate the past experience onto the future, emphasizing the hazard posed by tsunamis induced by subaerial landslides, the need to stay away from the coast after strong shaking, and the vulnerability of coastal channels to tsunami penetration inland.

The manuscript is certainly suitable for NHESS, but I would recommend some corrections and improvements before publication as follows:

General Comments

Abstract:

I suggest the authors to state and stress the importance of morphological reconstruction they have implemented in the grid around the area of Pantano Piccolo in order to achieve a better agreement between the high resolution scenario computation and the past evidences.

Conclusions:

Rather than a focused, short and concise, this section is a mixture of results, discussion, summary and some conclusions; it is of the longest sections in the manuscript and hard to follow. For example, the first paragraph is a summary of Zaniboni et al. (2016), the second paragraph is a summary of the present study, the bullets section is “main results and findings” (P. 18 line 18), the middle bullet in page 19 is mainly discussion, etc; and the actual conclusions are spread along this section and hard to follow.

I suggest reorganizing the Conclusions section, it can be divided into discussion and conclusions, or any other useful way; it should be shorter with less repetitions of what have already been said before. It would also be useful to refer back to the relevant figures, and this will help the reader to follow the mentioned issues. At the moment

there is only one as such reference (P. 18, line 11).

I am not an English speaking person, but had the feeling that some language editing is needed.

Technical comments:

P. 1, Line 12: Please consult the editor whether to use a reference in the abstract;

P. 1, line 14: "... three tsunami simulations." while P. 2, lines 11-12 mention two tsunamis...;

P. 1, line 17: Would be more accurate to say 'regional' rather than 'global';

P. 6, line 27: Do you mean 'seismogenic' rather than 'tsunamigenic'?

P. 9, line 2-3: 'cleared out' means to empty, remove, leave, etc... I believe you mean 'will be explained'? If so, please rephrase.

P. 14, Lines 8-9: Please indicate which of the simulations is not in line with the historical accounts.

P. 15 and 17, Captions of Figures 9 and 11: While referring to the upper and lower panel, use colon ":" rather than right side bracket ")".

Figure 1:

The study area is quiet familiar to the Mediterranean and the European communities. However, I would suggest the introducing of an inset that gives a wider geographic orientation for those around the world who are not familiar with this region.

Figures 2 and 5:

Please add the location of Pantano Piccolo and San Saba that are mentioned later on in the text.

Table 1:

There were several tsunamis in Calabria and Sicily during the 1783 earthquakes crisis. Please mention in the caption the exact date of the Scilla tsunami;

Please verify whether the historical sources were careful enough to differentiate the effects induced by the Scilla tsunami from the effects of the other tsunamis (e.g. the February 5, 7, March 1, 28);

In order to get a comprehensive perspective of the impact of the Scilla tsunami, I would suggest to complete the given list. For example, please mention what had happened in Pantano Piccolo, San Saba, and elsewhere if known. In my opinion, it worth mentioning also what had happened in Scilla even though this was already investigated in the previous, 2016 paper;

Punta del Pezzo: Please verify whether the sea affected one and a half mile stretch of the beach. One may think that the sea inundated one and a half mile into the land?

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