Comment on nhess-2021-170

Anonymous Referee #2

Referee comment on "Submarine landslide source modeling using the 3D slope stability analysis method for the 2018 Palu, Sulawesi, tsunami" by Chatuphorn Somphong et al., Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2021-170-RC2, 2021

The manuscript deals with a very relevant question – how to explain the pattern of inundation by the 2018 Palu-Sulawesi tsunami and namely the role of submarine landsides in influencing this pattern, since previous works are only partially satisfactory in explaining this pattern. In this work the authors using a different approach, employing a submarine landslide sourse based on numerical slope stability analysis to test solutions that are more compatible with the pattern of inundation of the tsunami along Palu bay.

Generally I find the paper very well written, very clear in its language, statements, methods, observations and discussion. I also find the approach interesting and inovative in this context, and the modeling parameters reasonable – although I am not knowlageable in the details of the numerical modeling of tsunami generation, propagation and inundation to comment on those in high detail. I particularly think that the approach is interesting in exploring solutions that would identify submarine areas more susceptible to failure in a earthquake-triggered scenario, as one would expect in such circumstances. This potential predictive capability of the model is something that is very useful, that could potentialy be applied to other areas, and therefore I am glad to see that in a study that combines such approach with tsunami modeling.

I also find the figures illustrative and relevant, my only suggestion – which could improve the readability of the figures – is to use a shaded relief overlay for the onshore topography on figures 1,4-8. I confess I also have difficulties in the representation of Fig 9c - for someone that does not know the geography of the area is difficult to undestant what is represented (what is the onshore and the offshore) and so I suggest the use of a light color to represent the land, or even a shaded relief of the area, if the authors have access to this.

I am thus very happy to recommend the paper for publication following these minor changes (which are more suggestions rather than corrections). I think the paper is will

appeal to broad readership of NHESS and will further stir the debate around the subject, which is very relevant. Finally I would like to commend the authors for their work and apologise for the late submission of this review.