Natural Hazards and Earth System Sciences Discussions

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
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# Comment on nhess-2021-320

Anonymous Referee #1

Referee comment on "Evaluating and ranking Southeast Asia's exposure to explosive volcanic hazards" by Susanna F. Jenkins et al., Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2021-320-RC1, 2022

I found the paper very interesting and well written.

Comments:

1) I see that the threshold used for marking the onset of damages of the buildings, related to ash fall, was set to 100 kg/m2. As noticed by the authors this is true for weak buildings (line 222). Is there an estimate of the mean typology of the buildings in the considered areas or are you using a ``conservative'' approach?

2) The nomenclature used for the concepts of ``short-term'' and ``long-term'' hazard seems different from what is found in the literature. The authors (lines 93-96 and 523-525) associate ``short-term'' with the hazard conditional to a given scenario and ``long-term'' with the probability of occurrence of the eruption scenario.

However, other authors (eg. Marzocchi and Bebbington, 2012) associate the terms ``short'' and ``long'' strictly with the time scale and use ``short-term'' to indicate a forecast in a time horizon of hours/weeks or months, typically of interest in managing evolving episodes of volcanic unrest; and ``long-term'' for time windows of years to decades that are required for land use and evacuation planning.

This point should be clarified and, in case of conflict with the commonly used nomenclature, I suggest to modify the terms or explicitly state that you are using ``short-term'' a ``long-term'' in a more specific way.

3) Concerning ``the need for new flow models that predict not only a binary inundation but also some measure of impact intensity metrics (e.g. flow depth, dynamic pressure'' (line 717), in generally I agree with the authors. However, some models are already freely available (see eg: https://github.com/TITAN2D/titan2d or https://github.com/demichie/IMEX_SfloW2D)

Please, note that in this comment, the references are reported just as examples and do not imply any request of including them in your paper.

References

Marzocchi, W. and Bebbington, M.S. (2012). Probabilistic eruption forecasting at short and long time scales, Bull. Volcanol., 74, 1777-1805, doi:10.1007/s00445-012-0633-x.