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Comment on nhess-2021-70

Anonymous Referee #4

Referee comment on "Variable-resolution building exposure modelling for earthquake and tsunami scenario-based risk assessment: an application case in Lima, Peru" by Juan Camilo Gomez-Zapata et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-70-RC4>, 2021

General comments:

The manuscript Variable-resolution building exposure modelling for earthquake and tsunami scenario-based risk assessment. An application case in Lima, Peru by Juan Camilo Gomez-Zapata et al. propose the use of variable resolution boundaries based on Central Voronoi Tessellations (CVT) to spatially aggregate building exposure models for risk assessment to various natural hazards. The study is useful as the method have a high efficiency in estimating the earthquake and tsunami loss.

However, there are some details in the technical part should be explained clearly by the author, like the process of select earthquake scenario¼as described in the line 290, " A Mw 9.0 tsunami scenario was selected among a catalogue...", but I can not find the description of the cattalogue, (I'm sorry if I miss something), besides, what is the scaling law used in the determination of the parameters of tsunami source? and some detail about TsunAWI should also be introduced. The methodology part could be more clear if a flowchart is used I think. Considering above, I suggest the manuscript should be reconsidered after **major revisions**.