Nat. Hazards Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/nhess-2019-318-RC2, 2020

Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Assessment of the physical vulnerability of buildings affected by slow-moving landslides" *by* Qin Chen et al.

Anonymous Referee #2

Received and published: 2 March 2020

General comments The paper presents a method for assessing the physical vulnerability of buildings located in slow-moving landslide-affected areas. The Authors develop multi-scenario analyses to generate physical vulnerability curves and they validate their results on a building impacted by a slow-moving landslide in a study area in China. The work is completed by a sensitivity analysis on the parameters playing a major role on the vulnerability of the analyzed structure. The addressed topic is timely and of interest to the landslide community for its potential applicability. However, the current version of the paper needs to be thoroughly revised to better clarify some of the assumptions made and the definition of parameters according to the literature. Since the Authors state that the procedure could be easily exported to other landslides even over large areas, an effort must be made to allow the reader catch the (minimum number) of input

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Discussion paper

parameters that are necessary to perform similar studies. Some English sentences are unclear; accordingly, a review from a native speaker would be helpful.

Specific Comments As for specific and technical comments, the Authors can refer to the annotated pdf file in attachment. Overall, some key issue are synthesized in the following: - the Abstract should be rearranged and totally rewritten. It cannot be a list of steps followed during the analysis. Authors should mention the problem and the approach followed to get the results. - Fig.3, pag.6. Authors should better clarify, for instance with an additional Figure, how the lateral forces impacting the foundation can be associated with ym (that is the inflection under vertical loads). At the moment the concept of im is not clear. - The sentence (pag.7) referring to Finno et al. (2005) should be better clarified. - The Authors identify the damage classification with vulnerability. This aspect deserves further clarifications based on widely shared literature. - Provide more details on laboratory tests used to gather the values of the shear strength parameters shown in Table 3. - In Figure 12, it is not clear the range of variation of 1/Fs. Some further comments would be helpful. - The comparison shown in Figure 13 are unclear. What is there on x-axis? - Conclusions: please clarify better or add references concerning the calculation of FS just in correspondence of buildings and over large areas. - Exportability should be better supported with clarifications.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-318/nhess-2019-318-RC2-supplement.pdf

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