

Review “On the role of building value models for flood risk analysis”

The changes to the manuscript are minimal and I’m not fully satisfied with what has been done with the comments. The current manuscript however doesn’t contain important flaws. The research has been carried out well and is new but at the same time a bit obvious and all the conclusions are as expected. Therefore, I have a couple of points to make the manuscript both better and more interesting.

Important points:

- The link between the title and the content is still a bit poor. The reviewer added to the abstract and conclusions that there is a focus on exposure. However, the title suggests that the paper is some sort of sensitivity analysis to see how important building values are in flood risk analysis. Some of that is done in the paper but within the current framing of the paper this comes through very little. It would be good if you could let this aspect of the research come back a little bit more. Because given the current content I think a better title would be: “A comparison of building value models for flood risk analysis”.
- The point that the conclusions are only valid if there is a significant spread in building volumes is maybe good to repeat in the conclusion. This is a really major point because the assumption that attached buildings are one building increases this spread a lot and hence makes the difference between the models in the conclusions much larger. This is not a very common assumption also so it might make the conclusions not applicable elsewhere.

Suggestion:

- I like some discussion on the future of building value models for flood risk assessment. In flood vulnerability modelling there is a trend to use Machine Learning methods to assess the vulnerability (e.g. Merz et al., 2012). In Wagenaar et al. (2017) absolute damages are determined and hence the building values are already included in that model also in a multi-variable way. So many variables can contribute to the building value, such as building age for example. Do you envision in the future also more complex multi-variable models for building value alone? The M5 model is a first step in this direction, is it useful to get more detailed and are there important influencing variables that are not taken into account in these models (e.g. building age, building material, quality of maintenance) or maybe proxies such as income levels in of the inhabitants or area.

References

- Merz, B., Kreibich, H., and Lall, U.: Multi-variate flood damage assessment: a tree-based data-mining approach, *Nat. Hazards Earth Syst. Sci.*, 13, 53-64, <https://doi.org/10.5194/nhess-13-53-2013>, 2013.
- Wagenaar, D., de Jong, J., and Bouwer, L. M.: Multi-variable flood damage modelling with limited data using supervised learning approaches, *Nat. Hazards Earth Syst. Sci.*, 17, 1683-1696, <https://doi.org/10.5194/nhess-17-1683-2017>, 2017.