

***Interactive comment on* “Estimating flood damage in Italy: empirical vs expert-based modelling approach” by Mattia Amadio et al.**

Anonymous Referee #1

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I have now read the article titled “Estimating flood damage in Italy: empirical vs expert-based modelling approach”. The article focuses on the comparison of different models (empirical vs expert based and Multi-, Bi and Univariate models aiming at the estimation of flood losses in Italy. Given the plethora of models and approaches in the field the paper is important and interesting. Furthermore, the paper is well structured and written. I recommend it for publication following minor revision. Please consider the following comments before publication:

1. The title should be revised and become more attractive. How about: “Putting flood loss models to the test: the case of Italy” or something like that. ... (just a suggestion)
2. Chapter materials and methods: 3.1 data description – consider a few introductory sentences before listing the datasets used for the study.

3. Subchapter 3.2: This is a chapter full of dense information. I would prefer two chapters instead: one, giving an overview of the existing models and explaining their characteristics and, two, a chapter describing the method used by the authors focusing on the reasons why they chose to test the particular models.
4. In the proposed “method” chapter a schematic description of the model used or work flow would be good and very practical for the reader (a figure showing the models used, the category they belong to expert-based/empirical and UVM, BVM or MVM or a table with a short description of the models and their characteristics).
5. Page 8, line 4: “exposure indicators” why are these “exposure” and not “vulnerability” indicators?
6. Page 8, Table 1. What is “finishing level”?
7. Page 9, line 16: Age and heat system are not in table 1. If you do not use them do not mention them at all.
8. Is “number of floors” named “FN” as in table 1 or “NF” as in Figures 4 and 7?
9. The language is overall good. There are, however, some small typos that have to be edited. E.g. page 9, line 23: “such as high prediction accuracy” and not “such prediction accuracy”.
10. Page 14, line 17: “micro-scale”. What is considered a micro-, meso- and macro-scale? The issue of scale should be further discussed in the discussion chapter and conclusions.
11. Page 14, lines 18-19: the authors refer to one of the case study areas and suggest that the differences in the model results may be subject to the different type of flood that these areas experienced. This issue should be further discussed. Where all the events similar? What is the difference of the impact of a flash flood? What about the presence of debris? Are these models reliable for all these types of processes?

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Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2018-324/nhess-2018-324-RC1-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2018-324>, 2018.

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