

Interactive comment on “Hazard maps with differentiated exceedance probability for flood impact assessment” by P. K. Bhola et al.

Anonymous Referee #2

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General Comments ————— Dear authors, thanks for the well designed and inspirational paper. I was asked in October 2018 to review the papger, when another colleague already did a detailed review and gave very valuable comments to the paper. I agree with his comments and underline his implicit proposals for revision. Consequently I will concentrate on additional comments, which might have partial minor importance.

Detailed Comments —————

Title The title is short (which I prefer) and defines the general topic of the paper. As the core of the paper deals with the flood impact to buildings classified by the building use, I propose to add this to the title e.g. by a more specific definition of "flood impact assessment" in the title.

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Page 3 line 12 It is written "The framework to generate building hazard maps in REAL TIME ..." In the paper I did not find any information about this real time feature of the framework. I assume real time did not mean on-time. Can you specify the meaning of real time or simply skip the term ? e.g.: Is real time related to the calculation time of the frame work tools (24 h real time -> 24 calculation time (or less) ?

Application Domain The paper is using as case study a smaller German city with a specific topographic situation and type of river size. Such situations might exist in other parts in Germany, Europe as well as the whole world, but there might be also buildings in other environments (e.g. urban area with "plain" topography, "big" cities/metropolises, large rivers with different flow characteristic). The paper is focusing on the method and not on the case study it might be useful for the reader to have a paragraph about the type of case studies suitable for the application of the proposed method (maybe including the limits of the methods for other types of case studies). It might be also helpful to specify the required data to apply the method for other case studies. In the paper the used data is partial described in different chapters, but esp. the type/quality/level of details of the requested building data for this model should be describes. Ar the four classes in this case study specific for the case study or a general approach ?

Chapter 2.2 shortly describes the basics of the 2D hydrodynamic modeling. I'm missing the description about the handling of the buildings in this model. Are they included explicitly by their shape in the grid and excluded from the flow calculation (no flow through the building) ? Is the urban area including buildings "only" considered by a different (but global) roughness value (Table 2 suppl.)? These two approaches might lead to different water levels at the buildings.

Figure 4 I propose to change the color for Class I, as it is very difficult to distinguish between the light gray of Class I and the lighter gray of the background image. Maybe Class I and II should be not gray but yellow and lighter yellow ocher coming from Red and orange for class IV and III.

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(Page 10 line 14) not so important: the comment about the underground metro access is in general correct, but is there a metro in this "small" city ?

Figure 5 The idea of the figure is well chosen, but it took me some time to understand this. Assuming my interpretation is correct, I think this is not a summing up of components (+ operator) which is equal (= operator) to the part on the right side of this equation. It should be not a sum, maybe a selection I propose to replace the = by a ->

The discussion and conclusion is touching in some parts the application aspects for the target users (e.g. page 15). It would be useful to have an explicit discussion about the "progress" of the proposed methods to produce hazard maps for the target users (advantage and disadvantages). With other words: to evaluate the method from the target users point of view and not "only" from the hazard map producer point of view. As the focus of the paper is on the method the application oriented view might be considered at least by some sentences/a paragraph in the conclusions (outlook part).

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