Hydrology and
Earth System
Sciences
Discussions

Interactive comment on "The challenge of forecasting impacts of flash floods: test of a simplified hydraulic approach and validation based on insurance claim data" *by* Guillaume Le Bihan et al.

Anonymous Referee #3

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MAJOR COMMENTS

The present article shows a novel methodology for the estimation of the flash flood impacts using a hydraulic model and a rainfall-runoff model. The article is well written and structured which makes it very understandable. The figures are pretty illustrative and are well explained in the text. Some methodology aspects must be better explained in the text since it is a relevant section for this article and some processes are not mentioned in depth (rating curves, river reaches, better explanation of the models operation, etc). The validation of the impact model with insurance data gives an extra

and innovative point in the article, showing the importance of this data and all the information it can provide. From my point of view, this article is ready for publication, with some minor changes:

SPECIFIC REMARKS

1. Page 3, Line 28: consider using the same punctuation throughout the text. For instance, dots for decimal numbers (n=0.05). I suggest to add some reference explaining why it is used this specific roughness coefficient.

2. Page 4, Line 33: take care with the citation of the figures, it is different throughout the text (i.e. figure 1.d instead of figure 1d).

3. Consider using always the same English spelling (UK or US). For example, in the Figure 2, the word "catalog" is used, however in the text is used "catalogue". The same with the words "modelled" and "modeled".

4. Why "km2" are the only units that are in italics? I suggest putting all them in the same way.

5. Page 7, Line 12: in this section (3.1) the meaning of "river reach" is explained for the first time. Consider explaining it before.

6. Page 8, Line 2: "altimetric" instead of "altmetric".

7. Page 9, Line 19: it is said in the text that is only used private houses, mostly individual houses (>7m height). What about public or commercial buildings? Does the CCR cover them?

8. Write the meaning of all the acronyms appearing in the text for the first time. For example IGN RE (page 8, line 1) or QPEs (page 8, line 17)

9. Consider citing internet sites, instead of including the wrl in the text.

10. Please change the order of the Table 2, since it is mentioned before Figures 4 and

5. The same case with Figure 7, it can't be mentioned in the text before Figures 4, 5, and 6.

11. Consider including more information about the rivers of the case studies, like the average discharge and the maximum peak discharge of both flood events in one of the stream gauges shown in the figure 3.

12. Figure 6: "ISR" instead of "TSI". Which modelled value is used for the ISR estimation? The upper or the lower bound? Why the ISR values are estimated just in one of the case studies (Draguignan 2010)?

13. Page 10, line 32: I don't understand the sentence "It was worse testing if it could provide a number of private houses affected by the floods for each river reach to be compared to the outputs of the proposed forecasting chain".

14. Page 13, line 5 and 7: "ISR" instead of "IRS".

15. Page 15, last paragraph: Figure 9 is wrong mentioned in the text.

16. References: change the order of "Gourley et al." references, since the newest one must be placed after the oldest one.

17. Figures:

- Use always the same units, "km" instead of "kms" (International System)

- Take care with the punctuation of the decimal numbers of the figures.

- The position of the "a); b); c); d)" within the figures must be always the same. Change it in the Figure 1.

- All the captions must have the same format.