

## 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:

We thank referee n°3 for this detailed review of our manuscript. The suggestions formulated largely meet the remarks from the two other referees. We detail hereafter our answers to each of these specific points:

## 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.

This lack of reference was also pointed by referee n°2. Actually the roughness coefficient was fixed according to Lumbroso et al. (2012) who showed the necessity to limit the roughness values to keep reasonable values of flow velocities. This reference will be added.

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).

Ok, this will be checked and corrected as necessary.

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".

Ok, we will be check this and adopt the same English.

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

Ok, we agree all units should be typed in the same way, this will be done.

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.

We propose to move this explanation to the introduction section, since the term river reach is used in this section for the first time.

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

Ok, this will be corrected.

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?

Public buildings are only partly covered, and commercial buildings are generally covered. However we decided to exclude this information, since the addresses of insurance policies often do not correspond to the location of the insured buildings in these cases. Therefore the real location of the damaged buildings cannot be determined accurately.

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)

Ok the meanings will be added at the first apparition.

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

The URLs of the different institutions will be moved in the acknowledgements sections.

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.

OK the order of tables and figures will be modified to better follow the citations in the text.

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.

We propose to add some peak discharge values estimated for both events at several points of the considered river networks. However, since almost all the stations were damaged during the floods, the information on mean discharges is not available.

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)?

OK the acronym will be replaced. The lower bounds have been used for the computation of the ISR values (this will be mentioned). The ISR values are presented on one case study to preserve the readability of the other figures showing the comparison between observed and simulated flood maps (lower and upper bound). We propose to keep this, since the ISR ratios computed on the other case study do not show significantly different features.

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".

All the referees pointed out the necessary reformulation of this sentence. It will be replaced by: "We tested herein if it could provide a number of private houses affected by the floods to be compared to ..."

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

OK. This will be corrected.

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

OK. This will be modified.

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

OK. This will be done.

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

OK. This will be done.