

Replies to specific comments – RC4

RC4.1: First of all, it is not clear what the authors mean by “conceptual data model”. The way it is presented, it seems that the different tables or shapes are actually linked, through spatial joins but, as the reader advances in the explanation, it turns apparent that they are not.

Authors: We intended the definition of “conceptual data model” as a simple representation of the database architecture. Indeed, we associate records in one table with records in another table through a common field, known as a key. So the different tables are not related with spatial joins but with common attributes as explained in Page 6, line1.

Changes: None

RC4.2: It is not clear why the authors have chose a polygon feature class for the EVENT shapefield, as they do not explain the criteria to define its size or extent.

Authors: Indeed, this point hasn't been clearly exposed as already highlighted by RC1. The EVENT polygon features correspond to French administrative entities known as departments where flood events have caused damage.

Changes: This precision will be included within the manuscript.

RC4.3: I wonder why the authors have not included any sort of additional information relative to the magnitude of the event, at least an indicator (e.g. flooding levels, precipitation...), I believe that if the final reason of this database is to support modelling, that sort of information associated with the event table, would help to better understand the actual relation between damage, and events.

Authors: Indeed, information about the magnitude of flood events could have been included within the database. But we chose to keep that information apart for two reason:

1) the lack of hydrometeorological data must not compromise the filling of the database

2) precise damage location and date is provided, enabling the users to cross DamaGIS with their own data to make their own analysis, and to run their own models (as we did in in Saint Martin, Fouchier, Javelle, Douvinet, and Vinet (2016).

This point was also underlined by reviewer 3 who suggested removing the Basin table as well.

Changes: This will be better explained within the manuscript (and Basin table removed)

RC4.4: I have checked the geodatabase but I was not able to find any DETAIL field, do the authors actually mean field, or shapefield, and if any, why is not included in the sample geodatabase?

Authors: You are absolutely right; it is a mistake from the authors. The “DETAIL FIELD” used to give more information about damaged elements but we had to take it off as it could jeopardize the protection of individuals’ personal information.

Changes: The “DETAIL” field will be removed.

RC4.5: Even if I find this work of interest, and the idea of the database very valuable, I would appreciate if the authors further explain how they plan to maintain it over time? Who is going to take care of uploading the data and doing the search of information after this manuscript is published? Indeed, it is not clear at all how the geodatabase can be updated. Is that possible through the zenodo open access site? who is going to run the quality control of the database if opened to all public?

Authors: Indeed, you are right and the authors have not been clear enough and both reviewers 3 and 4 also underlined this point. The quality control of the data from social media is insured by the request of a direct source of information within the database (Page 4, line 14). For now, no quality index has been included to the database as the number of contributors was very limited.

It is important to highlight that there is no online platform to enable a participatory work for now. Indeed, this platform has only been mentioned as a project to keep filling the database “*The objective for the database is to evolve into participatory functioning*” (Page 4, Line 29); “*An online platform could then be considered to encourage collaborative work as well as the creation of multi-stakeholder working groups.*” (Page 16, Lines 5-6).

The current paper only gives tools to develop such an approach: a method to assess the severity of flood-related damage and a structure for the database. We also consider that such a participatory work should be moderated by a dedicated institution such as local or national authorities. We understand that this particular point wasn’t clear enough within the manuscript so the authors will attempt to clarify it.

Changes: Clarifications will be included within the manuscript accordingly, in the “perspectives” section.

RC4.6: I find it very challenging as nowadays the number of information within social platforms and media is overwhelming, so how do the authors suggest to set a limit? I mean, when it is enough to avoid overrepresentation of certain events just because there was a lot of people present or observing.

Authors: The large amount of data broadcasted by social media is indeed very challenging. You are perfectly right, there is an actual risk for some events to be overrepresented. However, the same risk might be faced using other media sources. Furthermore, the filling of DamaGIS until now has taught us that the demand for a precise location of damage data allow to avoid duplicates. Moreover there is a bigger risk for missing some damage data in sparsely populated areas.

Changes: This precision will be included within the manuscript.

RC4.7: On the other hand, how do the authors run the quality control of the data from social/media sources? The authors suggest that the implementation of a quality index would improve the database. Why this was not already included? Why this index should only apply to assess the geographic accuracy? I understand that the data on damage is even more important to asses. From what I understood from the manuscript, the event with larger and better information was one that was complemented with information from fieldwork... this is from my point of view a bad signal as it indicates that at the end, the database should be implemented or filled with fieldwork

Authors: The quality control of the data from social media is insured by the request of a direct source of information within the database (Page 4, line 14). For now, no quality index has been included to the database as the number of contributors was very limited. As for fieldwork data, DamaGIS has been implemented to be a multisource database, this is why data from fieldwork has been included. Moreover, fieldwork is a way to directly check the quality of damage data and avoid duplicated.

Changes: This precision will be included within the manuscript.

RC4.8: Regarding the structure of the paper, I understand very well the organization of the sections, however, the nature and some more details of the database should be presented earlier in the text, otherwise many question raise during the reading.

Authors: This comment has been partly answered in the next one (RC4.9).

Changes: The abstract will be rewritten in order to address this comment.

RC4.9: I would recommend the authors to explain what they mean by assessment of the damage already in the abstract. From the abstract, it is not clear to whom this database is directed, research community? I would expect this to have a broader audience; stakeholders from different sectors.

Authors: Indeed, the lack of precision within the abstract has been underlined by Reviewer 2 as well. This database is not designated for the research community only as it is available in open access. However, it has been implemented in order to support flood damage modelling.

Changes: The abstract will be rewritten in order to address this comment.

RC4.11: It is important as well, to explain what the authors mean by local scale (already in the abstract).

Authors: A local scale is a spatial scale that is essentially under the scale of the municipality.

Changes: This precision will be included within the manuscript.

RC4.12: Page 1, lines 20-21: is the situation related to flood damage going to get worst only by the effect of climate change? Nothing to add related to occupation? I would recommend the authors to introduce a bit more details about the structure of the database and how they will assess the severity already also in the introduction, last paragraph.

Authors: Indeed, changes in land use is an important factor to consider in the increase of flood exposure. Details about the database structure and severity assessments will be included within the abstract in response with your previous comments.

Changes: This precision will be included within the manuscript.

RC4.13: Page 3, line 20: "DamaGIS provides an increased database for..." could the authors explain this? Increased relative to what?

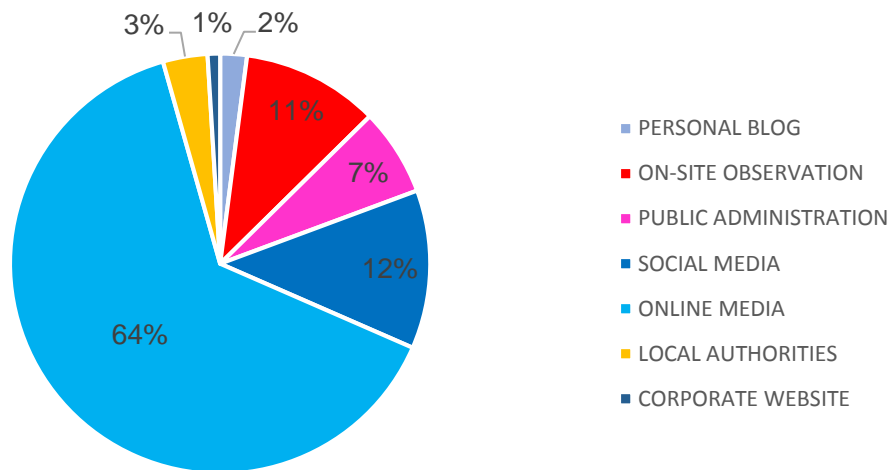
Authors: By the use of the adjective "increased", the authors aimed to describe the database as detailed and complete. To be clearer, the adjective will be replaced with "detailed"

Changes: "Increased" will be changed by "detailed"

RC4.14: Figure 1 shows a graph with the % distribution for 8 classes, but the legend includes only 7. Could you fix this or explain it?

Authors: You are absolutely right; it is a mistake from the authors.

Changes:



RC4.15: Page 5, line 5: I cannot actually understand how the authors expect to counterweigh the overrepresentation of large or more impacted cities, first, if more impacted, it is normal to be more represented, then if more people have seen the flood, you will have more sources of information, but not necessarily ensures that this will be proportionally distributed.

Authors: Your comment is indeed perfectly justified. It seems that we have misspoken our point of view. We intended to say that the use of social media in addition with classic media will contribute to give more information about territories which get less traditional media coverage but have as much damage as territories with a strong media coverage. For instance, after the flood of the 3rd October 2015 many municipalities have been affected by floods but classic media have focused their attention only on two of them because they had fatalities.

Changes: This precision will be included within the manuscript.

RC4.16: Page 6, lines 1-2: what do the authors mean by conceptual data model? I would expect that then they explain better how these are actually connected, from what I understand the only connection is the fact that they have a common field. How do you determine the region field within the event shapefile?

Authors: We have already answered this comment in RC4.1 and RC4.2.

Changes: Clarifications will be included within the manuscript accordingly.

RC4.17: Page 7, line 7: before presenting the fields within the DAMAGE shape I would recommend to state that the estimation of the severity field will be explained later.

Authors: Your comment has been duly noted and modifications have been made accordingly.

Changes: This precision will be included within the manuscript.

RC4.18: Page 7, line 11; DATE: date of the occurrence of the damage; delete entry. TYPE: type of damaged element (please add here the element to connect with what is explained later and to inform that here you will include the element and not the damage itself

Authors: Your comment has been duly noted and modifications have been made accordingly.

Changes: This precision will be included within the manuscript.

RC4.19: Page 7, line 27: does your database have a common field with the Vict-In database?

Authors: Yes, the ID of the EVENT table is used within the Vict-In database.

Changes: Will be added within the manuscript.

RC4.20: Section 3 is a bit confusing, you spend too much time introducing again the database without explain so the reader gets a bit confused. I would recommend to move the paragraph at line 25 to line 17 after the point behind damaged element. There is a general need to explain what you have decided and how you make it rather than talking about others works, this can be done and discussed later, once the reader understand your choice.

Authors: We have chosen to begin this section with a state-of-the-art on existing methods to assess flood damage severity in order to explain the need for a new system. However, we understand that this choice might be confusing for the reader.

Changes: None

RC4.21: At the conclusions, the authors state the accuracy of their method, but there is not a section or explanation in the text about how this is done. How the media data are contracted with reliable data.

Authors: This comment has already been addressed in RC4.6.

Changes: Clarifications will be included within the manuscript accordingly.

RC4.22: They also state the simplicity of the database, but they never explained how this is going to be maintained. Through volunteers?

Authors: This comment has already been addressed in RC4.5

Changes: Clarifications will be included within the manuscript accordingly.

Saint Martin, C., Fouchier, C., Javelle, P., Douvinet, J., & Vinet, F. (2016). *Assessing the exposure to floods to estimate the risk of flood-related damage in French Mediterranean basins*. Paper presented at the 3rd European Conference on Flood Risk Management (FLOODrisk 2016).