Natural Hazards
and Earth System
Sciences

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Discussions

Interactive comment on "Probabilistic Flood Extent Estimates from Social Media Flood Observations" *by* Tom Brouwer et al.

Anonymous Referee #1

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This article presents an update methodology to generate probabilistic flood maps from social media content, addressing the uncertainty in a detailed way. The topic is of sure interest to NHESS, and the article is quite well structured, but it needs some reworking, for which I suggest a moderate revision.

I suggest an authors' revision of the introduction and the presentation of the case study section since some parts are few explained and some sentences are difficult to read.

Introduction:

page 2; line 10-23. The authors said that social media content gained much attention in flood mapping. For this reason it could be useful to add a sentence on the use of Facebook and Flickr (with references) in this context since only Twitter based studies are addressed.

page 2; line 10-11: please rephrase.

page 2; line11: "focus" at the past participle can take either double or single s, with the single option being highly preferred. Please consider changing it throughout the text.

page 2; line14: The authors could be more precise when citing that "these data can be used to assess the extent of the disasters"? Can you provide some citation? In addition it would be useful to differentiate extent of the area, extent of damage and extent of human losses.

page 2, line 15: I would delete the world "merely" since it seems give a negative connotation to the sentence.

page 2; line 25: relay or rely? Please revise it carefully

Case study:

page 3; line 17: can you be more precise on the amount of rainfall?

page 3; line 17: over the month "of" December. Please consider adding the preposition "of".

page 3; line 18-19: "The 2015 floods" mentioned by Scott (2016) were registered all over UK or within the study area? Please consider rearranging this part by adding more information of the flood event considered (27th of December), adding some information about the damages and the area involved.

page 3; line 25: "North of these ridges..", please rephrase this sentence

According to the methodology some issues need to be fixed, but first of all a general rearranging of the information in the sub-chapters needs to be done. Some details of the data are not concentrated together but are distributed on several chapters that make the reading a difficult process. In addition, it is not clear how many tweets have been considered and/or point of interest have been derived. Secondly, it misses to mention the vertical accuracy of the DTM and I think that the resampling method from

2 m to 20 m resolution should be stated before (please explain why). Moreover, when the observations have been grouped based on the LDDs have been based on the DEM or have been calculated by flow directions or by POI (point of interest) connected with flow directions? In addition the authors need to justify the use of the IDW technique to determine the flood extent at this stage. In addition try to explain the HAND map with few sentences for non-expert users. Some minor changes are listed as follows.

page 3; line 29: Which "useful information" have been extracted to create a deterministic flood extent estimate?

page 4; line 4: It is correct "to perform a step"? Please consider revising this sentence

page 5; line 20-21: Please rephrase the sentence

The chapter 3.4 "Evaluation of results" needs to be better contextualized and explained. The information inside this part seems to include limitation, problems, methodologies and expected results. I suggest rearranging this chapter.

In addition try to better explain the F(2) statistic expressed at page 7; line 20.

The discussion, should provide some interpretation of the results emerged without wasting entire sentences restating the results (ex, page 12; line 11-12 among others). Please, try to verify it and do not repeat same concepts. In addition, you might relate your work to the findings of other studies by finding crucial information in someone else's study that helps you interpret your own data, or perhaps you will be able to reinterpret others' findings in light of yours. In either case you should discuss reasons for similarities and differences between yours and others' findings.

In addition, please rephrase page 12; lines 2-4.

Please, cite in the text the authors of the script just mentioned with a doi at page 13; line 15.

Some figures need minor revision and a detail description is given as follows:

Figure 1 needs more details of where the study area is located. A smaller map of UK where the study area is highlighted is highly suggested to help readers in locating the area. Terrain elevation needs "m (a. s. l.)".

Figure 5. Please add the unit of frequency.

Figure 6. What's the confusion matrix? Please add in the caption what represent the numbers in square brackets.

Figure 7. Please add in the caption what represent the numbers in square brackets.

Figure 8. I suggest enlarging this figure to be able to appreciate the details.

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