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First of all we want to thank the reviewer for his/her valuable and thoughtful comments. Following, we will reply to each of the comments made. We further attach a change tracked version of the manuscript from which the changes proposed can be seen.

Review C1396-2015

Interactive comment on "Social media as an information source for rapid flood inundation mapping" by J. Fohringer et al.

Anonymous Referee #1

The article presents a very important problem of flood monitoring using a blend of authoritative *and non-authoritative methods.*
In particular it leverages data from tweeter and flicker during the Dresden flood of 2013. This is a very good test case because it is recent and it is possible to fuse multiple heterogeneous data available.

Referee Comment:

Weakness: The major weakness is in the presentation of the results. They include only a series of maps that show areas likely to be inundated, but there is no discussion of how good this estimation is. For example, have the authors tried to compare their results with other estimates of the inundated area? How are these results comparing? Is it possible to quantify the relative improvement introduced by the use of volunteered information?

Author's Response

The maps in Fig. 6 show the inundated areas and inundation depths obtained from different independent data sources which we investigated within the scenarios a: gauge level observations, b: social media information and c: remote sensing flood mask cf. p 4248 section 3.2.2 and p 4250 L4.
The purpose of this graph is to compare the inundation depth map derived from social media with the inundation depth maps derived independently from gauge level observations and with inundation extent which is available from remote sensing data.

Authors' Changes:

We will modify the structure of the manuscript adding a new section 3.2.3 Evaluation. In this context we will describe more clearly that we compare independent data sources and will emphasize stronger the findings derived from this comparison. For this purpose we will also add a map showing the differences between the inundation maps obtained from gauge level observations (scenario a) and from social media information (scenario b).

Referee Comment:

P4234: A tool is mentioned, but no details are given to it. Is it available and for public use?

Authors' Response:

The tool referred to on P4234 is actually the development described later on in sections 2.3 and 2.4. This tool is not available for public use.

Authors' Changes:

To make clear what is meant by the 'tool' we will introduce a name for the tool (PostDistiller) and provide a link to its detailed description which follows in the sections 2.3 and 2.4.

Referee Comment:

P4235: Citation to Crooks et al. seems out of place. I suggest removing it. If the authors wish to discuss tweeter use related to earthquakes, there are several official USGS govmnt reports that give a concise summary of the capabilities and its effective usage.

Authors' Response:

The discussion of using tweets in relation to earthquakes is not of upmost importance for our work.

Authors' Changes:

We will remove this reference and the according sentence.

Referee Comment:

P4243: How is it possible to estimate the inundation depth? This is mentioned through-out the manuscript and it seems to be crucial to the methodology.

Authors' Response:

The estimation of inundation depths is done by flood experts by visual inspection of the photo contents. Objects visible in the photos might be used to derive an estimate of inundation depth, e.g. flood water in relation to buildings' windows, a bicycle which is only partly visible due to flood water. This is a manual process and the PostExplorer provides the interface to do this in an efficient way.

Authors' Changes:

We will add a description of this process to the text on page 4243 (new section 2.3.1 Components). We will also provide a specific example on page 4249 (new section 3.2.2 Results) for some photos available for the Dresden use case.

Referee Comment:

Minor comments: Overall, URL links should be added in the references or perhaps in the footnotes. There are a few typos and spelling. There should also be a consistency between the US and British spelling throughout the manuscript.

Authors' Response:

The URL links have been added to the text during the typesetting of the HESS-Discussion paper. We will need to follow the Journal's guidelines to handle this type of reference.
We will proofread the manuscript and correct for typos and BE, AE spelling inconsistencies. There will also be a proof reading carried out by the Journal during the publication process.

Authors' Changes:

Please see above response.