

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

### **Anonymous Referee #2**

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This paper introduces a rigorous method for producing deterministic and probabilistic flood maps by assimilating user-created contents harvested in social media (Twitter). This approach is very promising for real-time assessment of flood extent, compared to what remote sensing and hydrodynamic modelling can and cannot do.

This is not the first study of this kind of course, but the method proposed presents some original aspects (especially the consistent interpolation of observations over hydraulically connected areas), and the uncertainty analysis through Monte Carlo simulation of identified and quantified error sources is very interesting.

The method is fully illustrated by application to the December 2015 flood in York, UK. This application case is well presented and explained and it is typical of many other potential applications of the methodology. The potential and limitations of the method

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are discussed honestly.

I enjoyed reading the paper which is nicely written, very well structured with high quality figures. The code and data are made publicly available, which is commendable.

Therefore, I have only a few minor concerns, or points of discussion:

1/ What is the  $F(2)$  statistic is explained in the text (section 3.4), but not in the abstract. Please add a definition when mentioning  $F(2)$  in the abstract.

2/ Explain why the DWD has been estimated to range between 20 cm and 80 cm (section 3.3)

3/ I understand that the (potentially large) uncertainties of the validation data were ignored when building the reliability diagrams. I therefore feel that the uncertainties of the probabilistic maps may be even more overestimated than claimed in the paper. Please discuss this issue, the possible consequences of neglecting the validation data uncertainties, and how they could be included in the analysis.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2016-376, 2016.