

Interactive comment on “The Floodwater Depth Estimation Tool (FwDET v2.0) for Improved Remote Sensing Analysis of Coastal Flooding” by Sagy Cohen et al.

Anonymous Referee #1

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This article presents a clever approach to estimate flood depths using high resolution flood extent images from remote sensing, and digital elevation maps. Given the widespread availability of remote sensing products, the main challenge of such type of products is finding good quality DEM in all world regions, as also mentioned by the authors. The operational use of the FwDET tool in near real time during flood emergencies gives it additional importance, and stresses the need for a computationally efficient tool as demonstrated in this article, in comparison to the previous version. The article is relatively short, though self-contained, and is rather convincing about the added value of version 2.0 of the tool. I'd appreciate a clearer description of methods, at times a bit unclear. Also, evaluation based on actual measurements would give

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much more strength to the model (see further comments below). Last point, I think that the choice of the modeled inundation map to compare with the FwDET estimate can change substantially the results. It would be useful to see a sensitivity analysis of choosing different time steps around the peak of simulated inundation maps, to understand the limitations of choosing the maximum flood depths, as currently done (more comments below).

Specific comments P2 l27: It was also recently used [. . .] P4 l24: is 3 a footnote or part of the model name (UnTRIM)? P4 l35: please add some more quantitative details to the statement “compared favorably” P4 l37-38: are the authors assuming that the remote sensing floodwater extent is representative of the maximum extent for this event? This assumption should be better clarified and its soundness proved. Why not simply using the simulated map which is the closest in time to the moment when the flood image was taken? The same considerations apply to case #3 (p5 l5-6) P6 l7-8: these sharp transitions are not really visible with the current zoom level. Sect 3: the authors could comment on the availability or not of point measurements. Including these in the comparison would strengthen the results. This can also be inferred from photos taken during the flooding near known features, such as buildings, bridges etc. Figure 4, right panel: The current legend location on top of the Chesapeake Bay Bridge is unusual and gives the impression to the reader that there is something to hide. Please move the legend on a sea area. Figure 6: Units are missing in the legend

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