General comments

The paper is well written, and describes a state-of-the-art methodology for coastal flood modelling. It addresses issues of incorporation of wave overtopping time series, as well as how to model the flow across urban areas. However, this is very similar to the modelling approach taken by Stansby et al (2013). Although Stansby et al (2013) did not use the same specific models (they used POLCOMS, TELEMAC, TOMAWAC, SWAB and Eurotop, whereas this paper uses MARS, SWAN, SURF-WB), the general approach is very similar. However, this paper presents worthwhile results, being based upon a different event than Stansby et al (2013), and makes a more detailed comparison between the use of DTM and DEM for calculating flow through urban areas.

Specific comments

1. As mentioned above, the work of Stansby et al (2013) must be referenced, as it uses a very similar modelling approach.

2. P4959 L20-30. Did you use any specific criteria for deciding where to force the SURF-WB model (e.g. water depth/wavelength, or wave height/wavelength)? Can you be sure all the waves are within the surf zone?

3. P4961 L11-13. The wall at the crest of the dike will have a big effect on overtopping rates - can you be sure it collapsed near the start of the storm? Perhaps you could test the sensitivity of the timing of the wall failure on the resulting flood levels.

4. P4966 L4-6. It may be worth showing some results (of flood depths) calculated using mean overtopping discharges, to highlight the importance of using a full time-series.

5. P4967 L9-11. You state that using DTM with roughness to represent urban areas is insufficient, and that DEM is much better. However, would a DTM, with greatly increased roughness only in the location of buildings (i.e. not the whole urban area), have a similar effect?

Technical corrections

1. P4951 L26-27. It would probably be better to reference Eurotop (2007), rather than TAW (2002). The TAW equations (with updated research and testing) are included within Eurotop (2007).

2. P4956. Could you state the crest level of the dike, so that the reader can work out the relative crest freeboard.

3. P4958 L12. I think Fig. 3 should be Fig. 5 instead.

4. P4960 L18. I think you should write "offshore boundary" rather than "left boundary".

5. P4962 L3, and many other locations, including figures. Can you please not refer to "water height" - I think it is ambiguous. Could you use either "water depth" or "water level" instead - the definitions of these are clearer.

6. P4962 L10. Change "that" to ",which".

7. P4962 L14. Does "Fig. 8" refer to Fig. 8 of Cariolet (2010)?

8. P4975 Fig 2. This figure is quite small and hard to read - maybe it would be better dispayed as 2 figures (in a higher resolution).

9. P4978 Fig 5, right hand figure. Should the y axis label read "m above mean sea level", not "m / mean sea level"?

10 P4981 Fig 8. Y axis label - I think "Mean incoming discharge" would be better than "Mean incoming throughput".

11 P4982 Fig 9. This figure is difficult to read, especially the high water levels in the top map.

References

Stansby, P., Chini, N., et al (2013). An integrated model system for coastal flood prediction with a case history for Walcott, UK, on 9 November 2007. Journal of Flood Risk Management, 6(3), 229-252.

Pullen T., Allsop N.W.H., Bruce T., Kortenhaus A., Schüttrumpf H. & van der Meer J.W. (2007) EurOtop. Wave overtopping of sea defences and related structures: Assessment manual. http://www.overtopping-manual.com.