

Interactive comment on “The prediction of floods in Venice: methods, models and uncertainty” by Georg Umgiesser et al.

Anonymous Referee #2

Received and published: 21 December 2020

First, I would like to congratulate the authors on their work to providing a comprehensive review of storm surge forecasting methods in the northern Adriatic Sea. The background information on the physics of the flooding behind Venice also provides good foundation for the readers to understand the problem and appreciate the methods that are available. The review is thorough and covers multiple facets of storm surge forecasting both in a regional and local level.

However, I believe that a few more inputs would improve the manuscript to help provide more information to readers. With that said, I would recommend this paper for publication after minor revisions.

1. It is stated in the manuscript that a reliable meteorological forecast is an important factor. It would be interesting to see your approach on quantifying uncertainty coming

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from the forecasts themselves and how big that uncertainty is in relation to others (for instance model uncertainty)

2. In relation to the first question, have you done comparisons between the different forecasts? Or are there any previous studies providing the levels of uncertainties of different forecasts for the north Adriatic region?

3. Another interesting input to the paper would be the comparison in performance of the forecast based on numerical models versus forecast based on data-driven models, from former studies.

4. Is a long-term storm surge forecast of interest to this paper? If yes, how useful are the global climate models for that? In terms of the spatial and temporal resolution, and level of uncertainty?

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2020-361>, 2020.