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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Model sensitivity for the prediction of extreme sea level events at a wide and fast-flowing estuary: the case of the Río de la Plata" *by* Matías G. Dinapoli et al.

Anonymous Referee #2

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This is a manuscript which fits the theme of NHESS but which needs major revisions before publication.

The writing can be improved. Some sections can be shortened or summarized. Sometimes (too) many references are attributed to a simple sentence. An example, from the Introduction: "The RdP has a huge runoff with a mean value of around 22,000 m3 s-1, ranking 5th worldwide in water discharge (Nagy et al., 1997; Jaime et al., 2002, Framiñan et al., 1999)." I wouldn't use the terms "huge", nor "runoff". Also don't see the relevance of worldwide ranking. Also don't see why such a minor sentence deserved 4 citations.

The authors reach a somewhat trivial set of conclusions, in that *storm* surge results are most sensitive to the wind forcing and to the bottom roughness – what else should be expected in such a shallow, wide estuary?

A few other remarks:

- Would improve if one or more figures showed the model grids used;

- Why use an ocean model to simulate an estuary of 10m average depth? More flexibility would yield finer resolutions;

- The discussion & conclusions is missing a more comprehensive comparison against similarly-minded papers, e.g. Zijl et al. (2015) where RMSE's are much smaller;

- The discussion & conclusions would benefit from a clear separation of tidal from other mechanisms contributing to the total water levels.

Reference

Firmijn Zijl, Julius Sumihar, Martin Verlaan "Application of data assimilation for improved operational water level forecasting on the northwest European shelf and North Sea" Ocean Dynamics 65(12); November 2015; DOI: 10.1007/s10236-015-0898-7

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