

Ocean Sci. Discuss., referee comment RC1
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Comment on os-2022-9

Anonymous Referee #1

Referee comment on "Compound flooding in convergent estuaries: insights from an analytical model" by Ramin Famikhallili et al., Ocean Sci. Discuss.,
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The article by Famikhalli et al. examines the interactions among river discharge, storm surge, and tide in an idealized converging channel. Overall, in my opinion, the study provides insights and good explanations to results that are long found in numerical studies, e.g. the increased storm surge with a deepened river channel. Overall, I don't find any major issues. Here are some of my suggestions.

- A discussion about the impact of wave reflection will be very helpful and broaden the readership of the paper, since in many estuaries and coastal bays, reflection of tidal wave (even the storm surge, which is also a wave) is very normal.
- In the idealized model, there no flooding over the shallow area (i.e., a hard shoreline), which make the sea-level rise have the same impact as with channel deepening. But in reality, the inundation and related wave dissipation over the shallow banks could lead to a very different story. Please clarify such limitations of the current analytical model.
- I suggest to use same color scale for subplots in Fig. 9 and 10. It is a bit of misleading when using different color scale within one plots. Using just contours instead of colored contours is also an option.