

Interactive comment on “Simulation of storm surge inundation under different typhoon intensity scenarios: Case study of Pingyang County, China” by Xianwu Shi et al.

Anonymous Referee #2

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This work focuses on Simulating storm surge-induced inundation under different typhoon intensity scenarios. Although the results are within the scope of NHES, scientific discourses on the coastal storm surge are insufficient. My suggestion is a major revision.

Comments: 1. It seems the “wave setup” is excluded in your modeling results. In my opinion, the “wave setup” is sometimes dominating the storm surge. The effect of “wave setup” is more significant than “air pressure” and even “wind stress”, depended on the bathymetry. The “wave setup” effects are important to storm surge simulation and should be included in the manuscript. 2. The authors concluded that the scenario

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with the most intense typhoon (915 hPa) had the most adverse track, however, many previous studies indicated that the “size” of the hurricane (typhoon) is the main factor for storm surge height and coastal inundation extent. 3. Additionally, the typhoon size is inversely proportional to the typhoon intensity if the Jelesnianski typhoon model was used. This phenomenon should be discussed in the manuscript. 4. Many previous studies revealed that using a combination of parametric typhoon model and reanalysis wind produce is more suitable for storm surge and storm wave modeling. I supposed this method is also adequate for assessing the coastal inundation.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-425/nhess-2019-425-RC2-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-425>, 2020.

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