

# ***Interactive comment on “Assessing and zoning of typhoon storm surge risk with GIS technique: A case study of the coastal area of Huizhou” by Si Wang et al.***

## **Anonymous Referee #2**

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The study by Wang et al. provides a case study to assess typhoon storm surge risk with GIS technique for Huizhou, China. This study is conducted referring to the latest China national rules: Standard Technical Guideline for risk assessment and zoning of marine disaster (Part 1: 80 storm surge) (Ministry of Natural Resources of the People's Republic of China, 2019), by utilizing the Jelesnianski method, coupled ADCIRC-SWAN model and ArcGIS software. Wang et al. have made assessing and zoning of typhoon storm surge risk on Huizhou, with respect to hazard, vulnerability and risk, quantitatively.

In the manuscript, the study background of typhoon storm surge risk has been well introduced, as well as proper description of the results. In comparison, the methodology

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part needs to be improved by adding useful details with the corresponding references in necessary. Moreover, since this work aims to help decision-makers in Huizhou, it would be useful to see constructive suggestions by the authors, to have this work also as a case for knowledge-to-policy transition. This is also a scope of NHSS. In addition, linguistic improvement is suggested.

Major comments: (1) Line 84: The 'Standard Technical Guideline' is made on Year 2019, how does it use for Year 2016? If such rules have been tested or used before the publication of Guideline, please reconstruct this sentence for proper statement.

(2) In Figure 1, to add a mark for 'Daya Bay'.

(3) Line 130-145 presents the status of Huizhou City, please provide reference or source link.

(4) In 2.2 Dataset requirement, please provide reference for each dataset.

(5) Would it be possible to merge Figure 2 and 3 to one figure?

(6) Line 195, please provide references for these existing studies.

(7) Line 204-205, could you provide further details about the 11 astronomical tidal components? And only tidal components?

(8) Figure 4, the red rectangular in Panel a is different from the region of Panel b and c.

(9) In Lines 238-240: 'The Absolute Error (AE) is computed when the highest measured water level is above 100 cm. The Relative Error (RE) is calculated as the measured observed water level is below 100 cm.' Is it consistent with that in Table 2?

(10) Please provide references to Equations in 3.2.2

(11) What meaning are the colors of the curves in Figure 9?

(12) What the meaning of the green and red dots in Figure 10?

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(13) The 'Value' in Table 6 is a try of set up via this work, or refers to some references?

Minor comments: (1) Line 6: to use 'concentrations'.

(2) Line 39: should it be the word 'severe'?

(3) Line 44: Please use 'RMB' instead of 'Yuan' throughout the manuscript.

(4) Line 48: Please use a proper reference for IPCC report.

(5) Line 63: impact 'on', not 'to'.

(6) Line 79: Is there a reference for the 'Standard Technical Guideline'? or webpage?

(7) Line 101: Use 'depicts' instead of 'details'.

(8) Line 237: Use 'are' instead of 'were'.

(9) In Table 5 column 1st, the bracket is not paired in format.

(10) Line 527: replace 'increasing' by 'lowering'.

(11) Line 577: Use increased instead of heightened.

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