Natural Hazards and Earth System Sciences
Discussions

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2
https://doi.org/10.5194/nhess-2021-359-RC2, 2022
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Comment on nhess-2021-359

Anonymous Referee #2

Referee comment on "Real-time coastal flood hazard assessment using DEM-based hydrogeomorphic classifiers" by Keighobad Jafarzadegan et al., Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2021-359-RC2, 2022

The authors present an interesting work on flood hazard assessment and mapping. The paper is well-written and easy to follow. However, some issues need to be addressed before the paper can be accepted for publication as follows:

• The abstract should briefly state the purpose of the research, the principal results, and major conclusions. The abstract should be more descriptive rather than informative. More than half of this abstract is allocated to the research gaps which in my opinion is not appropriate (L24-36). Please revise the abstract section with more focus on your methods, and significant results/conclusions.

• L167. Add one or two sentences to explain about Savanah model in Delft3D-FM.

• Using a univariate flood frequency analysis in an estuary region should be justified with a detailed analysis that shows there is no correlation between high river flow and sea water level. Otherwise, a bivariate flood frequency analysis should be considered.

• How did you test different combinations of W1 and W2 (Weight parameters)? Please clarify.

• It is not clear how the parameter of TH is derived. Please clarify.

• The manuscript would be significantly improved by providing more discussion about the broader contribution of the study. (e.g., How coastal planners and managers could benefit from the proposed methodology? How the proposed methodology can be utilized in other coastal regions?)

• The limitations of the study and the possible enhancements of the proposed methodology should be discussed clearly.