

The revised paper is certainly much improved compared with the previous versions. Some other issues must be fixed and some parts improved before publication in NHESS.

Specific points

- 1) When describing the hydrodynamic model setting, the Author state that “For the investigated events in this study flood risk is mainly dominated by defence overflow and defence breaching”. While defence overflow can be easily computed as a function of the hydraulic head acting above the defence, defence breaching requires some model to simulate (or to account for) the breaching process and the ensuing much larger outflow (Dazzi et al., 2020; Viero et al., 2013). Any further detail on defence breaching is lacking in the paper.
- 2) When describing the hydrodynamic model setting, at lines 168-169 I read “we did not represent the flow of water in the main channel. Rather boundary conditions were given as time series of water surface elevation imposed along the defence crests”. These sentences are not clear at all. How was the upstream boundary condition (inflow discharge hydrographs from the hydrological model) used in hydrodynamic modelling? What is intended for “main channel”? Does the second sentence refer to downstream boundary condition only? (at lines 220-221 I read “simulated peak flow used as an upstream boundary condition in HEC-RAS” that states that the flow of water is somewhere represented).
- 3) The “Concluding remarks” has been enlarged, rather than improved. Now conclusions are long to read, contain repetitions and, finally, are unable to convey clear messages. Each single paragraph is a collection of very different arguments, and concluding remarks on the same topic are dissected in different paragraphs. Please revise the structure of this last section.

Minor Points

- L. 67: Abi-Samra, not Abi-Sarma.
- L. 108: Skamarock, not Shamarock.
- L. 128: Meehl et al., 2007, not 2017.
- L. 166: Please consider adding a reference to Viero et al. (2019), as a relevant example of flooding dominated by defence overflow and defence breaching.
- L. 167: Bates e al. (2013) is referenced in the text but, in the Bibliography, I can only find Bates et al. (2005). This item (line 480) is missing the title and is not properly formatted.
- L. 258: check the reference to Figure 7 (maybe Figure 9 is the correct one).
- L. 275: Xian et al. (2015), not (2005).
- L. 472: in the item Ahearn (2004) the report title is missing.
- l. 476: Barnard et al (2017) is not referenced in the text.
- l. 492: Bradbrook et al. (2004) is not referenced in the text. Moreover, the link provided is not the official one, please change it to <https://doi.org/10.1080/15715124.2004.9635233>.
- L. 510: the year at the end.
- L. 514: Surname of the Authors first.
- L. 517: Danielson and Gesch is dated 2011, not 2016.
- L. 546: reference to Gerald et al. (2007), not cited in the text, is a duplicate of Meehl et al. (2007), and should be removed.
- L. 553-558: the reference to Hamman et al. (2016) is duplicated.
- L. 605: O’Donnel (2020) is not referenced in the text.

- The two references to Schumann et al., 2007 should be denoted with 2007a and 2007b.
- I found several references to a U.S.S Geological Survey throughout the Bibliography. It should read USGS, isn't it? (example l. 646)
- L. 648-653: the reference to Vousdoukas et al. (2018) is duplicated.
- L. 657: Wahl et al. (2018) is not referenced in the text.
- L. 671-676: the reference to Ziervogel et al. (2014) is duplicated.
- Please note that in the Copernicus template there is a Bibliography style aimed at formatting the Bibliography with proper (and reader-friendly) indentation.
- Figure 3 and throughout the text: put the superscript 3 in "m³/s".
- Figure 3: "Stream flow at upstream" => "Upstream boundary condition"; "Total Water Level at Downstream" => "Downstream boundary condition"
- Caption of Figure 3: "firhg-hand panel" should read "right-hand panel".

Additional references

- Dazzi, S., Vacondio, R., & Mignosa, P. (2019). Integration of a Levee Breach Erosion Model in a GPU-Accelerated 2D Shallow Water Equations Code. *Water Resources Research*, 55(1), 682-702. <https://doi.org/10.1029/2018WR023826>.
- Viero, D. P., D'Alpaos, A., Carniello, L., & Defina, A. (2013). Mathematical modeling of flooding due to river bank failure. *Advances in Water Resources*, 59, 82-94. <https://doi.org/10.1016/j.advwatres.2013.05.011>.
- Viero, D. P., Roder, G., Matticchio, B., Defina, A., & Tarolli, P. (2019). Floods, landscape modifications and population dynamics in anthropogenic coastal lowlands: The Polesine (northern Italy) case study. *Science of The Total Environment*, 651, 1435-1450. <https://doi.org/10.1016/j.scitotenv.2018.09.121>.