Dear authors,

Congratulations to this very clear and concise piece of work. The overall goal, methods, and results of the model development and model application are described with sufficient detail, and the overall structure of the paper supports reading and understanding of the content. Also, the presentation of the results is in most cases clear and informative.

The fact that model code and study results are provided on Zenodo is very much appreciated, great! A short readme or similar would help, however, to guide the user through the folder structure of the repository.

Before publication is possible, there are nevertheless some minor aspects which should be addressed in an updated version of the manuscript.

1. Page 2 / lines 52-43: maybe good to mention the license under which the model is distributed? This gives directly an idea of what is permitted and not. Additionally, I strongly encourage you to add a DOI in the manuscript linking to the Zenodo-version used in this manuscript.

2. Page 11 / line 213: why are these recent optimizations lacking? Please provide a brief explanation.

3. Section 3.1 and 3.2: for both test cases, it is stated that they are widely used to assess model predictions. What I thus would like to see is an extended discussion of how model results here generally compare to other modeling studies. For instance, are the trend presented here and their magnitude comparable? A bit more depth is needed to move the manuscript more towards a scientific publication rather than an extended model documentation logbook.

4. Chapter 3.1.2: Here, the cases are benchmarked for two different resolutions. The initial 5 m resolution and a finer 1 m resolution. Question 1 is, how did you derive the new geographical data, how did you perform the resampling? And question 2, why did you not look into grid coarsening - wouldn't the chance of having abrupt water level changes between cells become larger when applying grids with, admittedly probably very much, coarser spatial resolution? This would be less relevant to assess speed of the solvers, but accuracy.

5. Chapter 3.3: While for the two Environment Agency test cases a motivation was stated, it does not become clear where why exactly this case study was selected. Please elaborate briefly why you decided to use this test case and not another one from the rich literature of LISFLOOD-FP studies, for example.

6. Page 27 / Line 423: this is a very important aspect and should be highlighted more prominently in the manuscript (e.g. abstract and/or summary). One of the key reasons many scholars/practitioners use LISFLOOD-FP is its sub-grid scheme. This also holds for the comment made in point 2.

7. Chapter 3.3.2: For the analyses of flood extent, would it not be useful to include metrics like the hit rate, false alarm ration and critical success index to quantify the actual (dis)agreement between simulations and results?

8. Figure 16 and Figure 17: This figure is hard to read. While adding the OSM background map is appreciated for geographical reference, (as done in a figure above), it's diluting the actual information about the flood maps in the current form. Please consider revising this figure.

9. Summary/Conclusions: this section nicely wraps up the manuscript. However, recommendations for further studies and improvements, and the shortcomings of the current version (both feature-wise and technologically), are missing. Please set your work in context of what was done so far, how your work adds to that and opens up new possibilities, and what challenges are still lying ahead to fast hydrodynamic simulation over coarse and large domains.