Reviewer report for the revised manuscript “Effects of spatial resolution of digital terrain obtained by drone on mountainous urban fluvial flood modelling”

Summary: The revised manuscript investigates the impact of Digital Terrain Model (DTM) resolution derived from drone-based photogrammetry on flood modeling accuracy in mountainous urban riverine environments. Using Xuanhan City, China, as a case study, the authors employ HEC-RAS 2D hydrodynamic modeling to simulate flood inundation across resolutions ranging from 6 cm to 30 m. Key findings highlight that resolutions finer than 10 m are critical for capturing terrain undulations affecting flood extent, while resolutions ≤5 m are necessary for accurate flood depth simulations. The study integrates topographic attribute analysis (e.g., TPI, TRI, VRM) to explain simulation biases and proposes optimal resolution thresholds for balancing computational efficiency and accuracy.

General Comments:

1.The authors have significantly improved the clarity and detail of the methodology section. They have added comprehensive descriptions of the steps involved in processing drone imagery to generate DTMs, including the use of PCI Geomatica software for filtering vegetation and other non-ground features. This addition enhances the reproducibility of the study and addresses the previous concerns regarding the lack of clarity in data preparation.
2.The manuscript now includes a more detailed presentation of the study site, highlighting the unique characteristics of Xuanhan City as a mountainous urban area. The authors have also provided additional information on the drone flight missions, including the hardware specifications and flight parameters. This information is crucial for understanding the context and setup of the study.
3.The validation procedure has been clarified and expanded. The authors have provided a detailed explanation of the six inundation points used for validation, including their selection criteria and the historical flood data used. Additionally, they have included spatial and statistical comparisons of the simulation results at different resolutions, enhancing the overall assessment of model performance.
4.The authors have included information on the computational resources and processing times required for simulations at different resolutions. This addition addresses the practical considerations of using high-resolution data and provides a more complete picture of the trade-offs between resolution and computational efficiency.

Minor Comments/Technical corrections:

Line 52: there is a typo "freely"

Line 97: "simulation results based on different resolution terrain data..." should be corrected to "simulation results based on terrain data of different resolutions..."

The revised manuscript has addressed the major comments raised by the reviewers effectively. The improvements in the methodological description, validation procedure, and overall clarity of the

manuscript significantly enhance its scientific rigor and readability. The detailed presentation of the study site, data setup, and validation process ensures that the study is well-grounded and reproducible. Additionally, the enhanced discussion on the impact of terrain resolution on flood modeling outcomes provides valuable contributions to the field.

Given these improvements, I believe the manuscript now meets the requirements of the HESS journal. I recommend that the manuscript be accepted for publication.