Review of: "Exploring the Impact of Future Land Uses on Flood Risks and Ecosystem Services, With Limited Data: Coupling a Cellular Automata Markov (CAM) Model, With Hydraulic and Spatial Valuation Models"

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Potential competing interests: No potential competing interests to declare.

The author(s) suggest the integration of a Cellular Automata Markov (CAM) model with hydraulic and spatial valuation models to assess the impact of future land uses on flood risks and Ecosystem Services.

To Editors.

It is an interesting approach that shows the strength exploited by combining these techniques, even though they are also subjected to different data scarcity and limitations, as were exposed by the author(s), but provide good estimate performance, particularly in data scarcity conditions. CA and MK models' approaches to estimating land use evolution for flood risk are an ongoing research topic. However, the authors have given careful consideration by addressing that the approach should not replace conventional rainfall-runoff modeling with surrogate synthetic storms, which indeed may not capture the complexities of a real storm event.

The paper is written in good scientific English and can be considered for publication. However, there are a few typos to be addressed.

To Author(s).

In section 4, the following could be addressed further within the discussion:

- It would be interesting if the author(s) had shed more light on the flood extent and water depth differences, as was indicated in the manuscript, which is not seen in Figure 5, given the relatively small scale on which changes in land use occur.
- Also, the predictions of the model for the years 2041 and 2046 should be explained thoroughly.
- Although it has limitations, the rain-on-grid routine is still useful for estimating rainfall in areas without direct measurements. However, users should be cautious and consider the limitations and uncertainties when using the estimated rainfall data for decision-making. What are the implications of the modeling approach given these limitations, especially when the “rain-on-grid” algorithm method is closely linked to the number of rain gauges in the network? Other factors such as spatial resolution, interpolation errors, measurement errors, temporal resolution, and extreme precipitation events are important for flood forecasting and can affect the routine's ability to capture them. Assumptions

may not hold in all cases, leading to errors in rainfall estimation, and calibration is crucial to the overall accuracy of the flood estimates.