

## ***Interactive comment on “Socio-hydrologic data assimilation: Analyzing human-flood interactions by model-data integration” by Yohei Sawada and Risa Hanazaki***

### **Anonymous Referee #2**

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This paper presents a study of data assimilation based on a conceptual socio-hydrologic model. The authors used the SIRPF method to assimilate human-flood interaction data based on the flood risk model developed by Di Baldassarre et al. (2013). The manuscript is well-written and the study topic is of interest to the audience of HESS. I have the following comments that I hope the authors could address in their revision. Specific comments:

1. Lines 251-252: The authors should be clear about the time scale of the model, which I assume is annual. The human-flood interactions will be different at different time scales. Also, in the time series figures, the authors should make clear statement

C1

about the annual time step.

2. In the Results section, the authors provided interpretations of the experiment results. It would be helpful if the study can include some validation of the method. For example, the authors could apply their proposed method in a realistic case study.

3. Section 4.3, the discussion about the experiment 3 results is too general. The study could include more temporally changing variables in experiment 3 (the cost of levee raising, the rate of new properties, and the decay rate of levees), since they are all changing with time in reality.

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