



EGUsphere, community comment CC1
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Comment on egusphere-2022-664

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Community comment on "GEB v0.1: a large-scale agent-based socio-hydrological model – simulating 10 million individual farming households in a fully distributed hydrological model" by Jens A. de Bruijn et al., EGU sphere,
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This work is very interesting as it combines the hydrologic model and agent-based model. I think this work is innovative and will attract more people to follow. But there might be more works that should be done before publishing.

- the paper has described the model very details. That is necessary. But more discussions on its advantages should be added. For example, "to fully comprehend how the human natural water system evolves over time and space, and to explore which interventions are suitable to reduce water stress, it is important to consider human behavior and feedbacks to the hydrological system simultaneously at the local household and large basin scales." But in the results and discussion section, I cannot find the comparisons or the differences between the results with and without human behaviors. I do think the comparisons are not only important to know the importance of the "human behavior and feedbacks to the hydrological system simultaneously at the local household and large basin scales.", but also ways to prove the advantages of the GEB.
- As there is "A large-scale agent-based model", how can you quantify the large scale? What are the challenges for constructing the large-scale model? What are the advantages of the large-scale agent-based model over a small-scale agent-based model?
- The scale issue is always one of the big challenges for hydrologic science. This work is a promising to find a way to solve the issue. But very few words have been found this current version. For example, "All other input data were obtained from CWatM input maps at 5' resolution and downscaled to 30" for CWatM input." How did you do on this work? What are the principles of the downscales?
- In line 155 "soil processes in all land use types are simulated individually", why does soil processes be simulated? What do you mean the soil processes? Is that soil water process?
- Lines 204, 230 and 378, there have been mentioned three time "see Section 0", where is it?
- More details of the results should be provided. As the Figure 8, there is a big difference between the simulated and observed discharge. What is the cause? Why chose this station as an example for proving the performances of the model?