

Geosci. Model Dev. Discuss., referee comment RC1
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Comment on gmd-2020-429

Anonymous Referee #1

Referee comment on "GP-SWAT (v1.0): A two-level graph-based parallel simulation framework for the SWAT model" by Dejian Zhang et al., Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2020-429-RC1>, 2021

This manuscript presents a two-layer graph-based parallel simulation framework for the SWAT model, which can provide valuable reference for watershed management. I suggest the manuscript can be accepted after major revision.

1. The specific results of the parallel-computing performance should be presented in the abstract.
2. Line 95: It's better to state why this research want to propose a new parallelization scheme?
3. Section 2.1 should be integrated to the introduction part, which can help to figure out what is the missing part of existing researches.
4. Fig. 3: it is not convinient for most reader to read the codes. Some diagrams are needed to express the same meanings.
5. Fig 5: How can the actual speedup ratios larger than te theoretical ones?
6. Line 230: some details of the study areas should be added.
7. Line 235: it seems that the computation amount is not very large in the case study. I wonder how the proposed parallel computing system performs for the applications with many different amount of simulation units.