GMD review MS gmd-2018-314: glmGUI v1.0: an R-based Geographical User Interface and toolbox for GLM (General Lake Model) simulations

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The authors introduce an "R" based GUI for running and analysing simulations conducted with the lake 1D hdyrodynamic model, GLM. The tool they developed allows setting up and visualising input and output data, conducting an auto-calibration process and quantifying model success. The authors use two case samples to demonstrate the tool and it's abilities. I view the tool to be potentially very useful for modelers at different stages of their modelling study and for modelers of varying abilities. While some starting the process of setting up simulations or a calibration process will find visualization of the data very handy, at a more advanced stage visualization of the output data or the autocalibration tool will be useful. Nevertheless, I think major revisions are required prior to publication.

Major comments

1. Autocalibration routine- this is perhaps one of the most value features in the GUI as the calibration process can be difficult and time consuming. However, no information is given on how the calibration is actually performed, what are the objective functions, how is the parameter space sampled, what are the stopping criteria, how flexible is the routine to user definitions, and other issues. Furthermore, how good is the calibration tool in relation to manual calibration? I would like to see a much more extensive description, testing and discussion of the calibration process.
2. Sensitivity analysis- This too is very useful however there is insufficient information on how it is actually conducted. How is SI calculated? Is the analysis conducted by changing one parameter (or variable) at a time or changing all at the same time? How is the parameter space sampled for the analysis? While some of the meteorological variables are included in the SA I would also expect shortwave and longwave radiation to be included as they can be difficult to measure accurately, especially the later.
3. Along these lines, including quantifiable indices for the goodness of fit of the model to lake-based data is critical and the authors have included RMSE and MBE. I think the authors should include a range of indices which the user can select from when conducting the analysis.
4. In the Lake Baratz lake level results (fig. 5) there is a period during which the fit between the model and lake data is not good in contrast to the other periods. I would like to see discussion of this and possible explanations. Similarly for Lake Ammersee. You mention the issue in lines 10-13 (pg 16) but don;t attempt to explain the discrepancy. I think the large discrepancies that are obvious on Fig. 8 need to be explained.

5. Conclusions section- I think this section requires significant strengthening in order to better convey the key points. The way it is currently written does not touch on all the important points and mentions issues that are not necessary.
6. Input data for Lake Baratz- you mention a 5 month gap in met data (pg 20 lines12-13) how did you deal with this gap? Fig. A1- the air temperature data from Fertila station does not look like continuous data. What type of data were these? Fig. A6- Isn't it possible that the unique water transparency event in 2017 affected the relationship shown in this figure and that a different equation is required for that period? Please discuss.
7. Section A4.2 field data- in the main text you mention that mixing occurs in the winter however here you state that you assume isothermal conditions from 24.09.13. Do isothermal conditions develop as early as September?

Minor comments

8. English- the MS needs to be edited by a native English speaker or professional editor. Currently there are many sections/sentences that need rewriting.
9. The shutdown button in the GUI is in German and not English. Better to have it in English like the rest of the GUI.
10. Pg 5 ln 18: erroneously - what do you mean?
11. pg 13 ln 6- outflow or inflow?
12. Pg 16 ln 4- the RMSE reduced significantly- under which conditions? Why?
13. Fig 9- isn;t the lake 83 m deep? If so, why is only 9 m shown?
14. Pg 19 ln11- "This includes a data quality assessment..."- That is not the case. The GUI allows visualization but does not include, as far as I understand, QA tools.
15. Pg 19 ln 15- sentence not clear.
16. Pg 20 ln 17- R2 between which two sets of data?
17. Pg 22 ln 7- why correct only data after 21.6.2016 and not the earlier data if they are much lower than Fertilia station