Interactive comment on "glmGUI v1.0: an R-based Geographical User Interface and toolbox for GLM (General Lake Model) simulations" *by* Thomas Bueche et al.

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Dear Dr. Fenocchi,
many thanks for your helpful comments on our paper. I can only refer to the points that relate to my area of expertise within this study, which consists mainly of half of the programming work and minor contributions to the text of the paper.

The first specific comment I'm referring to is the following: "P4, L10-11. Use of a Kalman filter to fill missing values of meteorological time series should be briefly discussed, highlighting the advantages with respect to simpler interpolation methods."

For the interpolation of meteorological time series I have tested several different methods, e.g. linear interpolation, spline interpolation, moving average with simple, linear and exponential weighting, last-observation-carried-forward (LOCF) and the Kalman smoothing. I have tested these methods by manually removing values from existing time series of meteorological data and interpolating these missing values. The Kalman smoothing could deliver the best and most constant results for all kinds of meteorological data within this test and was therefore implemented in the package.

The second (and last) specific comment I'm referring to is the following: "P7, L21-22. The "r" parameter should be the size of the sample (i.e.the number of tested values) for each calibrated parameter, not the resolution (i.e. thespacing between tested values)."

Yes, you're absolutely right; that was misleading. We will change the explanation and formula and express it like this:

"The runtime of the calibration algorithm (t_{cal}) increases exponentially with the number of parameters (p) to be calibrated
(Eq.(1))
$$t_{cal} = r^p \cdot (t_{GLM} + t_{RMSE}),$$
with r as the number of tested values for each parameter p and t_{GLM}, t_{RMSE} as runtimes of the lake model and the calculation of the output RMSE."