Hydrology and Earth System Sciences Discussions

Interactive
Comment

Interactive comment on "Analysing the temporal dynamics of model performance for hydrological models" *by* D. E. Reusser et al.

D. E. Reusser et al.

Received and published: 3 February 2009

We would like to thank Bernardara (2009) for his review. We are glad about the positive general opinion. Two comments point out possibilities for improvement of the manuscript. First, presentation of the consequences resulting from the method with respect to identification of model structural errors can be improved. This has also been pointed out by Clark (2009) in his specific comment 8. We agree that this point is missing in the current manuscript and we will add a corresponding paragraph to the discussion in the revised manuscript. Second, the description of the methods could be improved. We would like to thank for the specific comments, which will help - together with the comments of Pebesma (2009) and Clark (2009) - to improve the description of the method. As we state in our answer to Pebesma (2009), we hope to also somewhat

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

simplify the method.

Specific comments

2. It seems to me that the section 5.1 contains a huge amount of information about the general behavior of error measures. Namely from line 8/3185 to the end of the section. This paragraph should be placed in the section methods and not in the section case study. In particular, the information about the general behavior of error measures in section 5.1 could be given in table 3 "summary of performance measures" instead of into the main text. That could simplify the lecture of table 3 and make the reading lighter.

We agree that this paragraph fits into the method section and we like the idea of presenting the information in table 3. We will adjust the manuscript accordingly.

3. The figure 4 is valid for the case study of Weisseritz and the WaSim-ETH model or for both? Make this point more clear.

Figure 4 is valid for the synthetic peak errors as they have been used in for the Weisseritz case study. The time window and peak size of the synthetic errors is adjusted to fit the characterstic of the case study. Therefore, slightly different values would result for the Malalcahuello case, but the genereal picture does not change. We will make this clearer in the revised manuscript.

4. The table 2, "Performances measure to remove based on high correlation for the Weisseritz case study" is valid for the case study of Malalcahuello or not? The correlations between the performance measures depend on the case study, on the hydrological model or what? I think that this point could be made more clear.

The correlations between the performance measures do depend on the case study and table 2 is only valid for the Weisseritz case study. For the purpose of conciseness, we intentionally provided only the final results for the Malalcahuello case study instead of a detailed description of each step of the analysis.

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

However, we hope to simplify the method by leaving out this step during the analysis. While presenting the results, we will most likely present only a subset of all performance measures selected based on correlation. We plan to select the measures in a way that applies to both case studies.

5. I would also find the paper more readable if Figure 7 comes before Figure 8

As stated in our answer to Clark (2009) we will change the order of these figures.

6. The sensitivity of the method on the choice of the size of the window is evocated at line 12 page 3190 for the Weisseritz case study. For the Malalcaheullo case study a size of 5 days has been chosen following physical consideration, page 3190. Please make clear the suggested procedure for the choice of the size of the window as it is done in the section methods, page 3177; while you can give the actual chosen value for each case study in the section concerning each case study.

We agree that the manuscript is easier understandable if we present the general procedure for the selection of the time window in the method section and the actual values for each case study in the relevant section. We will include this in the revised manuscript.

7. I do not agree with the sentence at page 3174 "these two case studies differ in catchments characteristics (size). We have indeed two small catchments <50km2."

We will remove the size from the list of the differing catchment characteristics.

8. What doest it means the sentence at page 3182 "the climate is moderate" on Weisseritz catchments. Explain more.

In addition to annual precipitation and snow cover information, we will report mean temperatures in the revised version.

9. Figure 5 could be spitted in at least three different figures.

We will splitt figure 5 for the revised manuscript.

10. I do not like (very personal opinion) the wide use of references to some results obtained by the authors but not shown on the paper, see page 3186, 3192, for instance. A reader should be able to appreciate the conclusion and the discussion contained into paper from results showed in tables and figure.

We agree with the author that the discussion and the conclussions must be reproducible using the results presented in the manuscript. We do not want to further increase the length of the manuscript. Instead we will present the additional figures on the authors homepage.

_____

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 3169, 2008.