

Interactive comment on “Sensitivity analysis of Takagi-Sugeno-Kang rainfall-runoff fuzzy models” by A. P. Jacquin and A. Y. Shamseldin

E. Zehe (Editor)

e.zehe@bv.tum.de

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Dear Dr. Jacquin,

Thank you very, much for the revised manuscript. I am pleased to see that you thoroughly addressed the reviewer comments, in particular those of reviewer 3. I am convinced that this manuscript can make an important contribution to the audience of Hess. It is currently under a quick review.

I sincerely support Reviewer 3, who asked you to provide a table with the model performances in the different catchments. Currently you provide this table in your response

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but not in the manuscript due the length of the manuscript. I sincerely encourage you to add this table to the revised manuscript, including the additional performance measures. It provides interesting information about the model structural errors, although this is not the focus of your paper. You point out that 3 catchments (Sinkosi I, Yanbian and Brosnan) exhibit seasonality in their rainfall runoff behavior, however, model TKS2.5 does not necessarily outperform TKS1.5 in these catchments. In fact it is only superior in Brosnan. Maybe you could add a short comment on that. It would be furthermore interesting to see, how the models perform in terms of matching the water balance.

This information will be no means reduce the value of your sensitivity analysis. It will strengthen the value of your work in an earth system context, especially when you provide an explanation/estimate why some of models go off in validation periods. You pointed out that your sensitivity analysis gave similar patterns for the validation period. This maybe hints either on structural errors or observational errors.

Best regards

Erwin Zehe

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 1967, 2008.

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