

Interactive comment on “Spatial organisation of catchments – assessment and usage for impartial sub-basin ascertainment and classification” by H. Oppel and A. Schumann

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Received and published: 5 October 2016

I would like to thank the authors for their prompt reply.

Regarding the first point made by the authors; I don't agree that the classification can be meaningful without a context. Let's give a simple example. Imagine a case in which we need to group people of a society into bins. From an economical point of view the people in a society can be classified into low, medium and high income groups. If the context is health, then for example weight and height can be used for classification. To have more classes depending on the need we can take into account the blood group of every individual as well. For more sophisticated modeling or planning we may need all the information regarding income, weight, height, education and blood type of every

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individual in the society.

The point I want to make here is that classification needs a context a priority. I give a similar example on my own work. In Gharari et al, 2011 we classified a Luxembourgish catchment into three landscape units. However when we started modeling, the delineation to two or three landscape units were not so much different in the context of constrained or calibrated TOPO-FLEX model (Gharari et al, 2014). In fact this was not the classification which told us what the best number of HRUs is, this was the context, in this example the modeling framework, which indicated the needed level of complexity. Going back to my simplified example from the previous paragraph, classification of people into any groups (small or large) doesn't tell me much about the need of that classification and complexity of related modeling effort.

If the authors want to show that their approach is truly showing the optimal complexity in context of rainfall runoff modeling while representing heterogeneity, they should show this using a modeling context or framework such as SWAT or any other available modeling strategy.

Regarding the second point; maybe I missed the point the authors trying to make, but if something cannot be validated it means it cannot be reproducible as well. I am just puzzled how does this strategy work for in a new case. I believe clarification in the text is needed.

Regarding the third point; now it became clear, but I also encourage the authors to state the fact that they comparing the result of two different models. AWC is in itself a model and might be associated with bias and high uncertainty which apparently are ignored here

With regards

Shervan Gharari