

Interactive comment on “HESS Opinions “The art of hydrology”¹” by H. H. G. Savenije

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I think the HESS Opinion by Savenije (2008) is extremely enlightening. I found it interesting and providing very useful hints for discussion.

My comment is very short and relates to the section “What is a model?”. Savenije (2008) states therein: “We do not need fixed model structures, and models that can be applied everywhere”. And, a few lines below: “A real hydrological model is a theory to be tested and the tool that reflects this model should be completely flexible, transparent and tailor-made. This makes the “one-size-fits-all” models useless for the purpose of hydrological research”.

¹Invited contribution by H. H. G. Savenije, the EGU Henry Darcy Medallist 2008 for outstanding contributions to Hydrology and Water Resources Management.

I perfectly understand and fully agree the meaning of Savenije's message. However, I find that it might be excessively sceptical with respect to decades of hydrological research, during which many "traditional", fixed-structure models were proposed, often without assuming they were included in the category "one-size-fits-all". Many of these models were developed to provide a useful tool for a particular situation. For instance, we all know there are models which fit well the situation where Hortonian flow is dominant and, on the other hand, models that work satisfactorily when the surface flow is supposed to origin for saturation excess. To identify the model that works better may indeed help us to understand the physical process, as Savenije rightly stated.

In my opinion it is the modeller who should be flexible, not necessarily the model. If the modeller is flexible, than he can well follow the learning process Savenije is recommending, by considering many and many fixed model structures. I fully agree with Savenije that we need to "... see studies that compare models and we need tools that are able to assess the relative merits of different models". However, in my opinion this does not necessarily imply that "While these considerations may be trivial, they show that much of our research is going the wrong direction". For what reason should we dismiss models that proved to work well in their context? May be I am too optimist? I am not sure I am correct and I would like to see this issue discussed herein.

Congratulations to Hubert Savenije for this very nice Opinion paper!

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