

Interactive comment on “HESS Opinions: Advocating process modeling and de-emphasizing parameter estimation” by A. Bahremand

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The author's interactive comment on Prof. Sadeghi's short comment:

I would like to thank Prof. Sadeghi for his valuable suggestions and expressing interest in this opinion paper. I agree with him that reaching at the white box model seems impossible. But, as I have mentioned in the last sentence of the opinion paper such a seemingly unreachable target could at least act as a beacon for hydrologists. I believe all hydrological models are only approximation of the true process. As It was suggested by Beven (1989) "that most current applications of physically-based models use them as lumped conceptual models at the grid scale", I see the situation has not changed much today. I also agree with Prof. Sadeghi's view as seeing conceptual modeling the

C5311

back bone of modeling process. In section 3 of the opinion paper, I have described the model development process as a series of several steps, and "the conceptual model" is described as the first formal and the main step after formation of "perceptions" about the system. It is a stage that our physics based modeling is built upon it. Although, there are some disagreements regarding some terminology in hydrological modeling, but I did my best not to be ambiguous and avoid confusion. However, in the last sentence of the abstract, where I have mentioned "more physics and less conceptual", I have made it clear that I meant more hydraulic approach to development and implementation of hydrological models. I also agree with the phrase less subjective with the meaning of less conceptual and less clear-cut. I really appreciate this short comment as it helped to more clarification on the terminology of some important words.

Reference:

Beven, K. J.: Changing ideas in hydrology-The case of physically-based models, *Journal of Hydrology*, 105 (1), 157-172, doi: 10.1016/0022-1694(89)90101-7, 1989.

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C5312