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Hydrology and Earth System Sciences Discussions

Interactive comment on "Maximum entropy production: can it be used to constrain conceptual hydrological models?" *by* M. C. Westhoff and E. Zehe

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I apologize for the delay in posting my follow-up comments on the manuscript and the discussion so far. I remain uneasy about the paper, especially the "failure story", and in this sense I am in agreement with at least two of the reviewers.

I am always in favor of the idea that we can learn from our failures etc. For example, if the idea of constraining model predictions using MEP is tested and it turns out to be a failure, then we certainly learn something from it. Here, the authors have not reached that point. When they went through the test, they realized that the procedure

they followed was a failure, i.e., the model they used was "ill-posed", and so the main conclusion is that before any such tests can be undertaken, the model should be well-posed. I have concerns allowing this to be the basis for acceptance of the paper. A lot of people discover mistakes in problem formulation, and when they discover it, they correct the mistakes and start all over again. Otherwise, journals will be cluttered with articles like this. The question is, why is this case so unique?

The authors can do one of two things: (1) start again with a well-posed model and go through the rest of the analysis, and present the results, or (2) completely revamp the paper with a changed storyline that talks about failure, but about the protocol on how to test the validity of MEP. The first option requires new work (starting all over again), and the second option requires re-writing and re-framing the goals of the paper.

Either way, the paper requires major revision. I will urge the authors to come up with a strategy to revise the paper - in a way to satisfy both the reviewers and myself. It is possible I may have mis-stated the contribution of the paper, and so I am willing to be proved wrong. I look forward to this follow-up discussion.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 11551, 2012.