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Hydrology and Earth System Sciences Discussions

Interactive comment on "HESS Opinions "Ensembles, uncertainty and flood prediction"" by S. L. Dance and Q. P. Zou

Anonymous Referee #1

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This paper follows the need of documenting the outcome of a workshop on ensemble predictions held in UK in 2009. The paper touches a large variety of problems related to meteorology and hydrology such as parameter estimation, discharge predictions, computational costs, and the need of dealing with different sources of errors including model parameters, model structure and data errors. The paper proposes some recommendations for dealing with these sources of errors and to approach the various environmental modeling related problems.

The problem of this paper is that its scope is too broad for a commentary of the size of a journal article, and that its arguments are too uncontroversial for a commentary. It reads as a long listing of topics, touching very broad research areas necessarily

superficially. The proposed solutions are either trivial or they rephrase the problem in a different way. In most cases instead of saying what should be done and how, they just indicate who should do the job.

How to characterize observational errors? We need to carry out field campaigns. Are ensemble methods numerically stable? We need to work together with mathematicians How to deal with parameter errors? The model developers should think about it. How to manage model structural errors? The model developers should think about it What about sampling strategies? Dynamicists and statisticians should think about it

And so forth, with descriptions on who should work together on what, fostering collaboration and dialogue between researchers.

Overall the paper is well written, but I don't see its utility. Such a listing of problems without a specific focus is not very useful.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 3591, 2010.