Keynote:
Do we need research results from small basins for the further development of hydrological models?

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Abstract Small basins are well suited to testing models as hypotheses about the function of the basin system, in that they may allow more detailed testing on internal state variables and tracer residence time data as well as the reproduction of hydrographs. However, in this type of hypothesis testing, account must be taken of the potential for epistemic errors in input data, evaluation observations and model structures as well as aleatory errors that can be dealt with by statistical theory. Treating errors as if they were aleatory might result in overestimation of the information content of observations in model inference. This then poses the question of what constitutes an adequate hypothesis test in the face of such (unknown) epistemic errors. One possible framework is outlined, making use of the limits of acceptability approach within the GLUE methodology. This results in treating model testing as a learning process, with the possibility of learning most from rejecting all the models tried.

Key words multiple working hypotheses; uncertainty; commensurability; internal states; tracer data