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Hydrology and Earth System Sciences Discussions

Interactive comment on "Effect of spatial distribution of daily rainfall on interior catchment response of a distributed hydrological model" *by* J. M. Schuurmans and M. F. P. Bierkens

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- Firstly, the spatial resolution of all the 8 used rainfall scenarios is the same. A point prediction of rainfall is made for every model node. However, the spatial variability of the rainfall is different for all 8 scenarios.
- Indeed this study is a model sensitivity study. This is why we have chosen the title '..catchment response of a distributed hydrological model'. Although the model is a simplification of the truth, we assume that the model is a good representation of the real catchment. The model used is a physically based distributed model and the code has proven to represent hydrological processes very well. Besides that the model is calibrated and results are verified with the local water board. Given that the model

represents the catchment, the sensitivity of the model reflects the sensitivity of the catchment. This was indeed missing in the manuscript and we have changed that. Great advantage of using models in general is that scenario studies can be performed to see how the catchment will react on events that did not occur in reality. Of course a precondition is that the model reflects the catchment sufficiently. To be able to test this precondition we need real data. However for scenario studies we cannot use real data because they are not available.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 3, 2175, 2006.