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Hydrology and Earth System Sciences Discussions

Interactive comment on "Prognostic simulation and analysis of the impact of climate change on the hydrological dynamics in Thuringia, Germany" *by* P. Krause and S. Hanisch

Anonymous Referee #2

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The paper is a description of a meso-scale hydrological model application for a meso-scale river basin in Central Germany. The hydrological model and the climate down-scaling procedure (statistical-empirical) seem to be state-of the art. However, the presented results do contain not very much novel information:

The presented results contain a description of two climatic variables of the regional climate scenarios (temperature, section 4.1, and precipitation, 4.2) and the simulated hydrological response of selected processes of the hydrological cycle (evaporation, 4.3, and runoff 4.4 and 4.5). Describing these simulation results does not bear a con-

siderable innovation.

For example, the authors could at least try to quantify the uncertainty involved in this simulation exercise. It is definitely not enough to state: "The large amount of uncertainty in the different parts of the methodology is limiting the results of this study to some extent." How about estimating the errors involved in the different modelling steps and linking those by error propagation analysis. This would direct towards an uncertainty quantification. A second possible analysis of the uncertainty relates to the scenario method: What is the performance of the downscaling procedure for present day climate? What kind of correction has to be imposed to the climate scenarios in order to yield consistent scenarios for present day climate?

The literature review could be more thorough. Many quotations are technical papers (in German), hardly accessible for the international reader.

The English language requires significant improvements

Legends, axis labelling, etc. are hardly readable in any of the figures, considering the final size of the figures

I recommend this paper not to accept for publication in HESS.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 4, 4037, 2007.