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Hydrology and Earth System Sciences
Discussions

Interactive comment on "A comprehensive sensitivity and uncertainty analysis for discharge and nitrate-nitrogen loads involving multiple discrete model inputs under future changing conditions" *by* Christoph Schürz et al.

Anonymous Referee #2

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This manuscript by Schürz et al. gives a detailed sensitivity and uncertainty analysis for modelling of hydrology and nitrate export in two medium-size catchments. The sensitivity analysis is elaborated for three groups of input scenarios (land use, point sources, climate) and alternatives of model setup and model parameters. The uncertainty of the modelled flow and nitrate exports is done separately for these five model-specific groups, which enabled evaluations of their influence on the reliability of modelling outputs.

I like the study. It shows a well-designed example how to transparently present mod-

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Discussion paper

elling results. The methods are sound, using contemporary approaches, and sufficiently described. The results are suitably visualized and a discussed, and support conclusions.

Major comments:

From my view, more credibility can be given to the parametrization of model (which shows very high impact to simulated results and uncertainty) when the selected parameter values that were used in the uncertainty analysis are given, at least in the Appendix.

Specific comments:

p.5, l. 25: Shouldn't be the Raab catchment area 988 km2?

p.19, l. 12-13: I suggest to join the sentences: "While a grouping of the individual climate scenarios with respect to their temperature anomalies shows a more indefinite picture, all climate scenarios simulated an increase in temperature."

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