

Reply Report #1

The authors have addressed my comments. In particular, they now discuss the uncertainties and limitations of the study in a separate section (Sect. 5.3).

I just have one remaining comment regarding the sentence p29 L601-603 which needs to be reformulated. I cannot make sense of the end of the sentence 'due to equifinality often suffer from model structural uncertainties'. Models that have been calibrated over a given time period may fail to make predictions under different conditions because of equifinality, as stated by the authors, but also because model structures and parameter values may not be transferrable in time (see e.g. Thirel et al., 2015).

References:

Guillaume Thirel, Vazken Andréassian & Charles Perrin (2015) On the need to test hydrological models under changing conditions, *Hydrological Sciences Journal*, 60:7-8, 1165-1173, DOI: 10.1080/02626667.2015.1050027

Thank you for pointing out this confusing paragraph, we have amended the sentence and added this very relevant reference to the paper:

Experience shows that models that are used for making predictions beyond conditions for which they are calibrated (such as land use or climate change in the present study), often suffer from model structural uncertainties (Refsgaard et al., 2012), equifinality or that parameters may not be transferrable in time (Thirel et al., 2015).