Geophysical Research Abstracts Vol. 21, EGU2019-8446, 2019 EGU General Assembly 2019 © Author(s) 2019. CC Attribution 4.0 license.



Integration of Hydrologic Signatures for Model Evaluation

Melike Kiraz and Thorsten Wagener

University of Bristol, Civil Engineering, Bristol, United Kingdom

Rainfall-runoff models are widely-used tools in catchment hydrology. Their evaluation is mostly based on comparing observed and simulated discharge values. Various statistical objective functions have been proposed to evaluate the agreement between these time series. However, model evaluation that is based on statistical objective functions actually does not provide the modeller with much insight about how the model fails to represent the hydrology of the actual real-world system. Other, hydrologically meaningful indices or signatures have been proposed instead. Signatures are indicators that quantify hydrologic response characteristics of the catchment. They can also be regionalized and thus provide a potential opportunity for model evaluation in ungauged basins. Our study investigates how to best integrate hydrological signatures in an objective function for model evaluation. We test our ideas on a large and diverse sample of UK catchments.