

# ***Interactive comment on “Using Satellite-Based Evapotranspiration Estimates to Improve the Structure of a Simple Conceptual Rainfall-Runoff Model” by Tirthankar Roy et al.***

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Evapotranspiration (ET) is an extremely important component of catchment water balance. Although calibrated conceptual hydrological models (eg, HYMOD) are able to simulate observed streamflow with relative confidence, past studies have lacked focus in validating another of its output, the model simulated ET. This article utilizes a newly available satellite based ET data over a sparsely gauged catchment in Africa to improve the model structure of HYMOD for a better representation of ET processes. The authors show that the modified model structure not only improves its simulation of ET over the basin by a significant margin, but also improves the overall simulated streamflow.

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Improving the structure of a conceptual hydrological model is extremely important for hydrological prediction and forecasting. In a sparsely gauged catchment, observed streamflows are often of poor in quality and are only available for a small number of years. Therefore, instead of only calibrating the model parameters against such data, its also important to incorporate additional information (eg, satellite based ET data) to improve the model structure in the first place. Once the structure is fixed the parameters can be calibrated, as done in this study.

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