

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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I really appreciate the authors' work that does an excellent job of improving the model performance in terms of two important hydrological processes, ET and streamflow, by using both process constraining and structure retrofit.

This paper begins with the important observation that satellite-based ET (SET) estimates have the potential to be useful for hydrologic applications. Using a new satellite-based AET product, authors constrained the ET, one of the outputs of the model to improve the model performance in a physically consistent process modification.

Then the authors intellectually modified the model structure rather than just re-

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calibrating the model parameters. This nice work shows an authoritative manner of 'diagnostic structural improvement' for a model. Gupta et al. (2012) proposed 'model structure adequacy approach' comprehensively and this work provided a case study to show the ideas in detail.

References

Gupta, H. V., Clark, M.P., Vrugt, J.A., Abramowitz, G., Ye, M., 2012. Towards a comprehensive assessment of model structural adequacy. *Water Resour. Res.* 48, W08301. doi:10.1029/2011WR011044

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