

Interactive comment on “Using NDII pattern for a semi-distributed rainfall-runoff model in tropical nested catchments” by Nutchanart Sriwongsitanon et al.

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Dear editor,

We are very happy with the three reviews we have received: the supportive SC1 by Castelli, and the two RCs by Referee#1 and Referee#2. Referee#1 was very positive, recommending publication, but Referee#2 was very critical, recommending rejection.

The critical evaluation by Referee#2, however, in our opinion, is based on a misunderstanding. He interprets our work as a modelling study, whereby we wanted to show the ‘best’ calibrated model. But this is not the case. Our paper deals with a methodological

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innovation on how additional independent information can help to determine the internal flows of nested sub-catchments within a river basin where there is only discharge information at the main outflow of the basin. For that purpose, we use topographical information and a spatially distributed RS-derived proxy for root zone soil moisture stress (the NDII). In fact this is a contribution to PUB and not a contribution to calibration or model development. What probably put the Referee on the wrong footing is that we used established models such as URBS and FLEXL as benchmarks to show that our new approach FLEX-SD-NDII compares well to these models which were calibrated at internal stations. So the use of performance statistics was not done to show the level of calibration, but purely to allow comparison between different methods.

The criticism that there was no validation (the referee demanded split-record tests) is also not correct. We validated the performance against two external sources of information not used in calibration: 1) the runoff observations done at internal stations, and 2) the data sets of the soil wetness index (SWI). This way of validation is far more valuable than a split-record test, which is known to give similar results as the calibration set, if sufficiently long periods for calibration have been used.

Of course, we blame ourselves for this misunderstanding and we shall revise our paper, if given the opportunity, to make sure this misunderstanding will not occur in the final paper.

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