

## ***Interactive comment on* “Technical Note: Real-time updating procedure for flood forecasting with conceptual HBV-type models” by Th. Wöhling et al.**

### **Anonymous Referee #2**

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The paper introduces a simple updating method for conceptual rainfall runoff models. As there is a need to have such methods, the results are interesting and the idea is very simple but smart, I found it a valuable contribution for HESSD. For publication in HESS, I think the method should be tested on other models/catchments, that are straighter forward when it comes to the handling of the temporal resolution (i.e. confusing time step during the modeling procedure; see below). For a real HESS paper I would also expect a comparison with other updating methods and a more thorough analysis of the performance.

The complicate and for me confusing way the hourly model is simulating (page 929f;

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incl. equation 1) is the most difficult part in the paper, but this is self-imposed and the simple updating method could be easily applied to another box-model. This is also indicated in the last paragraph. I did not understand the advantage of the way the model is simulating daily/hourly time steps for the different HRUs.

The impact of the updating on the water balance and conservation of mass is not discussed.

Some specific remarks (page and line numbers refer to the print version): - I found the title confusing, as the paper is not really showing a real-time flood forecasting application. Of course, the method could be integrated in such a scheme. - General: I suggest to call the model a semi-distributed model to indicate to difference to a fully distributed model (i.e. raster models). - P. 927: Clarify the HBV version you are using. The 2-box and 3-outflow version (classical) or the HBV96 version with only 2 outflows. - P. 927-928: Describe briefly the data base; in particular the climate data and number and location of stations. - P. 928: As long as the management of the reservoirs in the Linth basin is not known and not incorporated in the model, I found it not a good study site. From the description I understand that the impact on floods can be enormous, even if the calibration to a several year period (table 1) was successful. At line 23 it should be clarified what 'partly' means. - P. 929, 4: Misleading heading, and using only one sub-heading is not a good style. - P. 929, 15: How is the channel routing done? This must be very relevant as the different HRUs (how many?) must have different distance to the gauging station. Why did the authors investigate the impact of updating the channel stages/parameters that should be very sensitive for an hourly model in the given basin sizes. - Equation 1:  $j$  is not defined. - P. 930, 15: the 'side effect' is not clear. - Table 1: NSE is not the 'agreement' but a statistical measure that describes the model goodness (agreement between simulated and observed discharge). Clarify that you mean with logarithmic formulation the use of log discharge values and a classical calculation of NSE. Can positive and negative values in VOL average each other out?

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