

Interactive comment on “A measure of watershed nonlinearity: interpreting a variable instantaneous unit hydrograph model on two vastly different sized –watersheds” by J. Y. Ding

J. Y. Ding

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In the variable IUH model, the scale parameter has two different symbols or notations, the so-called “internal c ” and the “standard C_h ”, which are related by Equation (24): $C_h = c/|\Delta t|^{1/N}$, where N is the shape parameter and Δt is the computational time-step size.

In the paper, Column (6) of Appendix A, Column (14) of Table 2b for Edwardsville catchment and Column (11) of Table 5b for the Naugatuck River are all mislabelled as “internal c ” and should be relabeled “standard C_h ”. Column (4) of Appendix A, Column (15) of Table 2b and Column (12) of Table 5b all now labeled “standard C_h ” are redundant.

These changes do not invalidate the calibration and verification of parameter C_h , ex-

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cept its values as reported in the text, Table 5c and Fig. 1 should be corrected by a factor of $|\Delta t|^{1/N}$.

With corrected C_h values, the peak characteristics generated by the variable IUH model will be shown to be insensitive to change in the size of time step once it has been divided into smaller and smaller ones. Since the model is quite robust in the time domain, this negates the use of the adjustment factor a_m as described in Section 7.4 and Table 3. The use of the adjustment factor b_p in the space domain as described in Section 7.5 and Table 4 remains valid, but is trivial.

The author regrets the errors and will take steps to correct the text and illustrations as warranted.

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