Corrigendum to Geosci. Model Dev., 8, 2009–2034, 2015
https://doi.org/10.5194/gmd-8-2009-2015-corrigendum

Geoscientific Model Development
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EGU

Corrigendum to "SPHY v2.0: Spatial Processes in HYdrology" published in Geosci. Model Dev., 8, 2009–2034, 2015

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Published: 11 February 2016

Updated information in the affiliations (15 March 2024)

The affiliations of the first author have been updated because this author now works for Q-Hydrology (https://q-hydrology.co.nz, last access: 11 March 2024).

Correct equation for lateral flow (Eq. 40)

In the original SPHY publication, the equation for lateral flow (Eq. 40) was written incorrectly. This is explained below.

For short travel times, the (TT_{lag}) and $\left(1-\exp\left[\frac{-1}{TT_{lag}}\right]\right)$ part becomes more or less equal to 1. This means that, although there may not be any lateral flow generated in the current time step t, it can infinitely continue generating lateral flow from the previous time step.

The correct Eq. (40) should therefore be

$$LF_l = LF_l^* \cdot \left(1-\exp\left[\frac{-1}{TT_{lag,l}}\right]\right) + LF_{l,t-1}^* \cdot \exp\left[\frac{-1}{TT_{lag,l}}\right]. \quad (1)$$

Published by Copernicus Publications on behalf of the European Geosciences Union.