Interactive comment on “On the use of spring baseflow recession for a more accurate parameterization of aquifer transit time distribution functions” by J. Farlin and P. Maloszewski

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Received and published: 21 February 2013

Subject: Linear vs. quadratic storage-discharge relation

Comment on Sec. 2.2 Recession curve analysis

The authors need to provide the intermediate steps from the Boussinesq quadratic law (Eq. 5) to the linear storage-discharge relation (Eq. 6) attributed to Drogue (1972).

From Eq. (5), the writer obtains a different, quadratic relation as follows (e.g., Ding, 1966, Eq. 31):

\[ V(t) = \int_{t_0}^{\infty} Q(t) dt = \frac{\sqrt{Q(t_0)}}{k} \sqrt{Q(t)} \]

Note the power of one-half, not one, in the discharge variable \( Q \), and that \( Q(t_0) \) is a constant.

References


Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 14109, 2012.