Hydrology and
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Discussions

Interactive comment on "PERSiST: the precipitation, evapotranspiration and runoff simulator for solute transport" *by* M. N. Futter et al.

Anonymous Referee #2

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A semi-distributed, hydrological model is presented and applied to the Thames River basin.

General comments:

1) The paper claims that PERSiST would be very flexible and able to simulate solute transport. However, the model presented is a pure semi-distributed rainfall- runoff model. There are other semi-distributed models, e.g. SWAT, that probably have similar flexibility. and they are additionally designed to simulate solute transport. Therefore, the innovation of this paper remains unclear.

2) Bucket type of models, as applied for PERSiST, have limited capability to simulate transit times of water, which in turn is important for rate-limited, reactive transport.

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Characteristic time constants as presented in Figure 8b are likely much too short. This is suggested from studies by Howden et al. on nitrate transport in the Thames River basin.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 8635, 2013.