

Interactive comment on “Water ages in the critical zone of long-term experimental sites in northern latitudes” by Matthias Sprenger et al.

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Dear Referee 2,

I am very thankful for your time and patience to guarantee the quality of the study. You made your point very clear, I know understand your concern and I have to apologize for not having stated the methods correctly. Though, I should have known better, since I had a similar comment during the revision of my paper in WRR in 2016, using a similar approach. We would have saved quite some time if I would have been clearer in the manuscript, sorry.

All travel times and water ages that we present in the originally submitted manuscript were based on mass fluxes, where the concentration of the virtual tracer (Mass/Volume) in a flux was multiplied by the flow (Volume/Time), leading to a mass

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flux (Mass/Time). That I wrote about concentrations is misleading and does not reflect what was done in the analysis.

This will be clearly stated in the revised manuscript and in line with the suggestions made by Referee 2, the labeling in Figure 1 will be changed accordingly (see attached Figure). As suggested we will use letter “*M*”, representing “Mass flux” and not “*O*”, originally supposed to mean “Outflow” (in contrast to “*I*”, representing “Inflow”).

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-144>, 2018.

HESD

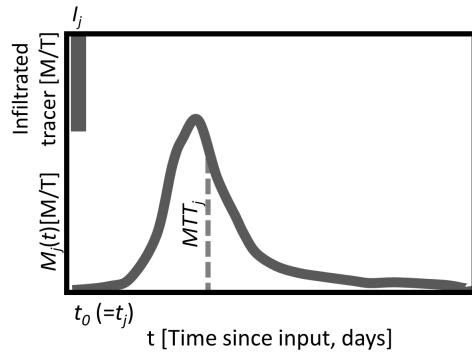
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Median travel time (MTT): time until 50 % of the virtual tracer (I_j) passed in the output flux



Median water age (A): age of the 0.5 percentile in the age distribution in outflow flux or storage

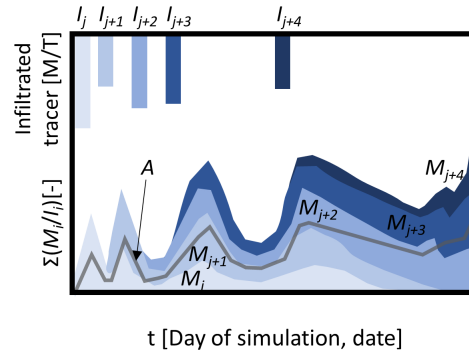


Fig. 1. Revised Figure 1 with changed labels.