

I believe that your statement that soil water plots along the evaporation line (of constant slope) is often limited to the upper soil. In your experiment (Rothfuss et al. 2015) the observations are limited to the upper 60 cm. However, I doubt that for thicker soil profiles, the slope of the soil water isotope samples will be constant across the profile. Soil water isotopes in the subsoil often plot along the LMWL. We have shown that for a study site in Luxembourg in Figure 2 and Figure 3b in Sprenger et al. (2016). That this trend towards higher d-excess (or lc-excess) (meaning less negative) with deeper depth occurs also for other study sites and climates is shown in Figure 5 in Sprenger et al. (2016). One can see there, that the lc-excess is not constant over depth, but approaches a more stable value with depth. Under such conditions, one could group the soil water isotope data into topsoil, plotting along an evaporation line, and subsoil, plotting along the LMWL (depending on the range of precipitation input). The simulations shown in Figure 9 in Sprenger et al. (2016) support that, since there is little variation in lc-excess below ca. 50 cm. Therefore, the soil water below 50 cm will plot along the LMWL, while the topsoil that experience evaporation will be plotting along an evaporation line. I hope I could clarify what I mean and that under the above described (natural occurring) conditions, a dual isotope approach would be beneficial.

*Dear Matthias,*

*Thanks for this. You made yourself very clear and we will follow your comment. It is true that our laboratory experiment (Rothfuss et al., 2015) was run on rather shallow soil profiles (height of the soil columns was 60 cm). We think that, in general, the determination of relative RWU profiles in the context of a dual isotopic approach under both natural and artificial isotopic abundance could be a nice follow-up contribution to the present manuscript. We can think of several scenarios differing this time in the nature ("position" on the LMWL) and magnitude of the rain event (natural isotopic abundances scenarios) or differing in the nature (e.g., location, isotopic composition values) and amount of labeling pulses (artificial isotopic abundances scenarios).*

Rothfuss, Y., Merz, S., Vanderborght, J., Hermes, N., Weuthen, A., Pohlmeier, A., Vereecken, H., and Brüggemann, N.: Long-term and high frequency non-destructive monitoring of water stable isotope profiles in an evaporating soil column, *Hydrol. Earth Syst. Sci.*, 19, 4067-4080, doi: 10.5194/hess-19-4067-2015, 2015.