

Yes, naturally occurring isotopic compositions of hydrogen and oxygen are linearly linked. However, as you point out in your section 2.1 and 2.2 of the manuscript, this linear relationship between the two isotopes can be different depending on having un-fractionated soil water (slope of the regression line in the dual isotope space is about 8) or having fractionated soil water (slopes between 2 and 8). I think that this information as the deviation from the GMWL or LMWL (e.g., described as d-excess or lc-excess) would provide additional constraints on the root water uptake depth. I can imagine a situation, where there are two soil depths matching isotopically with the plant isotopes for deuterium, but there is not a match between soil and plant water oxygen isotopes for the shallow soil depth, because the shallow depth experienced evaporation fractionation, while there is no evaporation signal in the deeper soils. Under that naturally occurring soil water isotope profile, a dual isotope approach would help delineating the root water uptake depth.

Therefore, I am currently not convinced that a dual isotope approach is only interesting when applying artificially isotopically enriched/depleted waters for root water uptake studies. Maybe this aspect of additional information due to the dual isotope relation (d-excess or lc-excess) is worth adding in the discussion. I am not asking to include that in the current modeling.

*Dear Matthias, thanks your comment,*

*We agree with you that a partial reset of the isotopic profile due to, e.g., a rain occurrence, has for consequence to produce at first two regions (one upper and one lower) of distinct evaporation lines (i.e., distinct d-excess). Depending on soil boundary conditions and physical properties (in addition to the (self-)diffusion properties of water stable isotopologues), this d-excess vertical (if we stay in 1D) distribution will fade out until, when equilibrium for soil water is reached, one evaporation line is observed, i.e., d-excess is constant across the soil profile. This could be observed in the study Rothfuss et al. (2015) in the days following the "irrigation" event. Ideally, one would therefore have to measure "not too long" after the rain event to capture the d-excess spatial distribution for determination of the relative RWU profiles.*

*In a revised version, we propose not to state that "[ ] a dual isotopic framework only adds value in the context of isotopic (<sup>18</sup>O and <sup>2</sup>H) labelling pulses across the soil profile to artificially deconvolute oxygen and hydrogen stable isotopic composition profiles". Rather, the content of your comment and our answer to your comment will be added to the section 2.2 and to the discussion of the inter-comparison.*

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/hessd-19-1-2015, 2015.