In this study, the authors examined root water uptake in beech trees, along a soil moisture profile in two sites with different moisture conditions. There were some interesting findings. First, they found differences in depth of water taken up by the roots between the two sites (sandy soils use deeper water). This was particularly evident during the period of maximum transpiration rates. They also found that while RWU could be estimated from changes in soil moisture, there were also instances where transpiration was occurring, but RWU was not measured. In a comparison between the sand versus slate sites, although SF was similar throughout the year, RWU was quite different.

One of the main ways in which this manuscript can improve is to clearly discuss the reasons for comparing RWU and SF. The authors state that the aim of the study "is to evaluate the potential and limitations of the diurnal decrease of rhizosphere soil moisture measurements as an estimate for RWU in ecohydrological field studies." They make the point that RWU is an under measured observation, and that other proxies, such as changes in soil water content, are used to infer RWU. Meanwhile, sap flow sensors measure transpiration rates in trees, but because of stored water within trees, sap flow does not measure RWU uptake either. So linking RWU and SF (as mentioned in hypothesis 2) seems to be an important link. However, what wasn't clear for me is that if ET is an important metric to quantify for ecohydrological studies, what does RWU measurements provide that SF measurements don't? In other words, what additional processes related to ET do RWU measurements elucidate? I think this discussion could be enhanced more in the introduction. For example, in lines 28, the authors state, "Furthermore, spatially distributed monitoring of both RWU and soil moisture and SF could help to elucidate differences between the influence of the geological and pedological settings on water supply to transpiration and the influence of the plants themselves and their adaptations in root systems, dynamic sourcing of water and transpiration efficiency." Does this suggest that RWU influences the "geological and pedological settings on water supply to transpiration" while SF measurements assess the "influence of the plants themselves and their adaptation in roots systems…?" But SF also influences RWU, so shouldn't SF and RWU be considered in a framework that acknowledges that they influence each other?

Figure 3. Why are estimates of $\Delta\theta$ positive if the soil moisture decrease throughout the three day period? In page 6, line 22, does "change in soil moisture" refer to $\Delta\theta$? If so, again, why is $\Delta\theta$ positive? The positive values of $\Delta\theta$ during the daytime is confusing because in Figure 4B, $\Delta\theta$ during the daytime hours is shown as negative. In Equation 1, the authors also state that a check to evaluate the data is that " day slope of soil moisture is negative (decline in soil moisture during the day)…"

Page 7, line 1. Do the bolded a) and b) here refer to a subset of "soil moisture (b)" from page 6, line 15? If so, I would change "a) and b)" to "i) and ii)" as to not confuse the reader.

Page 7, line 4 and 5. No need to say "no STRONG decline in soil moisture" or "no TOO STRONG increase in soil moisture" since STRONG or TOO STRONG are quite subjective. I think that saying "no decline in soil moisture" or "no increase in soil moisture" followed by the rates of increase or decrease is sufficient.

Page 7, line 30. Why was the assumption made that measured sap flow originates in the soil moisture decrease? Could there be any storage of water in the trunks (i.e. might lags between RWU and SF exist)?

Page 7, line 31. “This is done by linear regression of daily sap flow to the sum of RWU over the soil profile with assumed zero intercept.” Is the assumption again here that water from the different soil layers instantaneously feeds into the transpirational stream – in other words, there is no lag in when water is taken up by the roots and then transported to the trunk of the tree?

Page 8, Line 1. “The resulting factor is the mean reference area required to supply to observed sap flow.” Is the ‘factor’ mentioned here the area or the volume? If RWU is summed across the different soil depths in which soil moisture is measured, how is the resulting factor estimated as area and not volume?

Page 10, Line 2. “In later summer, the RWU signal ceases although the sap flow signal continues at lower rates.” In Figure 6, I don’t see when this occurs across the entire instrument period.

Page 10, Line 32. “With a working-hypothesis of a closed water balance…the linear regression also results ….at the sandy site the cylinder would have a radius of 4.2m…slate site one would estimate a radius of 5.5m.” I may have missed this, but how did you reach these readius values? Where is the linear regression model reported? I see that there are radius values reported in Figure 7, but how were these calculated?

Page 12, Line 2. “However, the high initial correlation drops in July. At the sand site, this marks the shift to RWU ranging below SF. At the slate site, no such transition is apparent.” In Figure 8, when the spearman correlation drops, the precedes when RWU drops below sap flow. There are also instances later in July when RWU is consistently below SF but the spearman correlation ratio does not change. What does this mean?

Page 14. Line 9. I would recommend changing the work “ambivalent” to “mixed.”

Page 16, line 9. “What is the optimization function of the plant’s RWU sourcing and SF variability?” What do the authors mean by this? Please explain.

Page 16, line 12. Yes, wounding from sap flow sensors can indeed underestimate sap flux velocity, and non-homogenous xylem depths can influence estimates of total transpiration rates, but it seems unlikely that these effects would be most noticeable during periods when both sap flux and RWU begin to decline. The authors allude to other factors in the previous paragraph (e.g. stem storage, leaf level transpiration) that offer more likely explanations for why correlations between RWU and sap flux correlations decrease as the soils dry out.