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Lysimeter based evaporation and condensation dynamics in a Mediterranean ecosystem	
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Author's response to Referee #1

(Referee comments in black, *author's response in blue italic*)

General comments

This paper perfectly interprets the composition of non-rainfall water input using data from lysimeters and meteorological data. However, author pointed out that condensation processes are dew when water originates from the atmosphere or soil distillation when the water originates from the soil beneath. Therefore, difference between soil surface temperature and dewpoint temperature of nearby air is an important factor for dew. So, Dew was therefore assigned when $T_s < (T_{dew} - T_{dew;t})$ where $T_{dew;t}$ is set to $1:4 \text{ } ^\circ\text{C}$ in Flux partitioning (Lines 162-175). Then, how to quantify the part of dew from soil. This part of water is only the process of water migration in soil and not the input of external water.

We thank the referee for acknowledging the interpretation of our data and we are grateful for the comments posted that help us to clarify some assumptions that the analysis is based on.

There is a very well-written summary on the state of the art of quantification of soil distillation and the distinction from dew in the introduction of the manuscript from Li et al, 2021. In summary, they write that a combination of methods is always necessary for the quantification of soil distillation and its distinction from dew. Distillation water is either modeled by the vertical gradient method, relying on many assumptions (Monteith, 1957), or measured by using water stable isotopes in field campaigns. Li et al (2021) recommend combining lysimetric measurements with isotopic composition measurements to partition NRW from ambient water vapor and distillation.

Although one can argue indeed that the condensed water of soil origin shouldn't be counted as water input, the current literature lists it as NRW(I) (Li et al., 2021; Zhang et al., 2019a; Zhang et al., 2019b). Lysimeters readings, however, register the net water gain of the soil and plant monolith, and therefore mainly the input of external water (Meissner et al., 2007; Nolz et al., 2013). Because in theory, soil distillation shouldn't affect the lysimeter net weight if the water vapor condensing on the leaf surfaces stems from the soil below in the same lysimeter (Li et al., 2021). This is of course an assumption that might not always hold because it also depends on vapor transport characteristics and timing of the phase changes (evaporation from the capillaries, condensation on the leaves), but these speculations go beyond the scope of the analysis.

We fully agree with the reviewer that it is debatable whether soil distillation should be counted as water input or not. As we explained, however, in our setup the distinction is most likely of minor importance. Nevertheless, we understood from the reviewer's comment that this theoretical background should be clarified in the manuscript and we included this information in the Discussion to improve the understanding for the readers.

References

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