

## Comment on hess-2021-351

Ying Zhao

---

Community comment on "Differential response of plant transpiration to uptake of rainwater-recharged soil water for dominant tree species in the semiarid Loess Plateau" by Yakun Tang et al., Hydrol. Earth Syst. Sci. Discuss.,  
<https://doi.org/10.5194/hess-2021-351-CC2>, 2021

---

The authors provide a compelling case demonstrating the differential response of plant water consumption to rainwater uptake for dominant tree species (*Hippophae rhamnoides* and *Populus davidiana*) in the semiarid Loess Plateau. I appreciated that the study used multiple indicators such as plant physiology (leaf water potential) and root morphology, sap flow and rainwater uptake proportion to comprehensively address this topic. This study suggested that *H. rhamnoides* and *P. davidiana* exhibited sensitive and insensitive response to rainfall pulses, respectively, which provides insights into suitable plantation species selection. While, I have three small questions that I don't understand, could you please answer them if it's convenient?

(1) line 189-190 I haven't figured out the relationship between Eqs 4 and 5. What does *PAP* mean?

(2) line 190 This study calculated RUP using D and  $^{18}\text{O}$ , respectively. Are the results of these two stable isotopes consistent?

(3) The study calculated the use of precipitation by plants after five rainfall events. I guess the use of precipitation by plants depends not only on the magnitude of the rainfall, but also on the antecedent soil water condition. How do you consider the potential impact that differences in antecedent soil water conditions may have on the results?