

## Comment on hess-2021-351

Anonymous Referee #1

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Referee 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.,  
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The manuscript entitled "Differential response of plant water consumption to rainwater uptake for dominant tree species in the semiarid Loess Plateau" provide a reasonable contribution to clarify the response of plant water consumption to rainwater uptake and water potential in water-limited region. The manuscript suggested that there were different response of plant water consumption to rainwater uptake and leaf water potential gradient of two species in pure and mixed forest types. The topic of this manuscript is interesting and the results are clear. However, it needs some clarifications to robust the findings, there are also some instances where the term seems inappropriately use and some results should be added to support the relative sentences.

### Main Comments:

1) Do you have any information about runoff generation of the studied plantation sites? Any runoff after rainfall pulse may influence the result of your manuscript since the contribution of precipitation to plant water uptake is central to your study, although precipitation amount was not the direct independent factor during the data analysis. Considering the potential runoff may strengthen and validity your result.

2) Potential/Reference Evapotranspiration is a key parameter indicator that reflect atmospheric evaporative demand, and also support some part of you conclusion. Please clarify why the Reference evapotranspiration (ET<sub>0</sub>) was used in the study - there are some other indicators also reflect the evaporative demand.

3) Throughout the manuscript, there are some instances where the term seems inappropriately use (e.g. only). I would suggest going through the entire paper and

refining the language to more accurately reflect the result.

4) This manuscript should be looked over by a language editing service and/or a native English speaker - there are some awkward phrasings.

#### **Minor Comments:**

1) Lines 22 "only" is too arbitrary

2) Lines 30-32 "Regardless of sensitivity to rainfall pulses" ? this short sentence should be rewritten.

3) Lines 54-57 The "water uptake" should also be clearly described.

4) Lines 69-71 the author should be clarified this sentence for pure or coexisting species? Because the similar meaning and sentence can be observed at Lines 57-60.

5) Lines 131-132 Please clarify why the Reference evapotranspiration (ET<sub>0</sub>) was used in the study, as a large number of indicators can reflect atmospheric evaporative demand.

6) Lines 213-214 This sentence is nonsense and should be deleted.

7) Line 306 There are 7 Figures in the paper and the Tables 1-4 are the statistical analysis. These Tables are unnecessary list in the paper and its better remove to Supplementary file to concise the manuscript.

8) Lines 313, 338, 342 Averaged ( $\pm$  SD) or Averaged (Mean  $\pm$  SD) ? Check it

9) Line 362 CV or CVs ? Clarify.

10) Line 366 Increased or enlarged  $\Psi_{pd}-\Psi_m$  ? the expression should be consistent through the text.

11) Line 415 Is "synchronization" correct in this sentence ? It's not correct, you should check it.

12) Lines 478-480 Table S3 does not indicated the relationship between rainfall amount and water source proportion from deep soil layer. You should added the relative result to support the sentence.