

Interactive comment on “Effects of terracing on soil water and canopy transpiration of Chinese pine plantation in the Loess Plateau, China” by H. Zhang et al.

Anonymous Referee #2

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This study quantifies the terracing on soil water dynamics and vegetation water use associated with tree plantation in the Loess plateau of China. The positive effects of terracing on conserving soil water and promoting canopy transpiration are highlighted comparing to natural slopes. Some useful and important first hand data and information are provided but somewhat site-specific. I think the authors may need to add more materials or at least some discussion on the large scale impact across a broader region. Probably a modeling work can be helpful to understand the terracing effect across large space and over longer time period. Some specific comments and suggestions are posted in the following text.

- Line 25: “considerable implications regarding forest management and water yields”

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what are considerable implications? Not clear and need a rephrase.

- Line 68: “artificial plants” is this a right word?

- Line 95-96: how many soil moisture stations are employed in each stand? How close are they to the roots? It seems to me only one station is there for each stand, and if so, the soil moisture measurement would not be representative enough and could be completed biased if too close to or far away the root area.

- Line 113-114: there are grammatical errors in the sentences.

- Line 143: how did you do the significant test without site replicates? If you have, you may need more explanation to clarify.

- Line 158-159: how did you do the significant test for the canopy transpiration? Are there measurements for different trees in each stand?

- Line 164: proportion of rainfall? Need more explanation.

- Figure 5: What do you mean “soil water variation” and “canopy transpiration variation”? The figure description in text and caption are needed to be improved for understanding.

- Figure 6: need a new figure. The subpanels are not clear and axis labels are vague.

- Line 214: what does the “low regression coefficient” refer to? Must be related to some correlations but without clear description.

- Line 231: Canopy conductance decrease with VDP? Do you mean Increase of VDP? More clarification is needed throughout the whole manuscript on this problem.

- How about the weather difference between the two years in your study? Did the weather/climate difference have any impact on your study? In addition, the stands selected in the study are both located in north facing slopes, how about the south facing slopes? Qiao et al. (2015) and Zou et al. (2015) have used both experimental wa-

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tershed data and modeling work to examine woody plant impacts on a broader region across climatic and physiographic settings in the southern Great Plains, USA. I think their studies could be useful references and provide some helpful hints to this study.

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