

Interactive comment on “Soil water migration in the unsaturated zone of semi-arid region in China from isotope evidence” by Yonggang Yang and Bojie Fu

Anonymous Referee #4

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Soil moisture for vegetation growth is very important in the Loess Plateau. Soil water migration is essential to describe the movement of salt, carbon, nitrogen and other nutrient. Although there are many studies on the Soil moisture, there are less works on the mechanism of soil water migration in the unsaturated zone in the Loess Plateau of arid region in China based on successive observations and isotopes. The scientific issue of this paper is sure, research idea is clear, research method is correct, and research results are reliable. From my point of view, the work is well-done and provides reliable results to soil water migration in arid region of China.

1. Adding relevant detailed introduction about soil and hydrology in the research area.
2. As mentioned in the paper, “Soil moisture content was determined by oven dry-

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ing method simultaneously” How much about the depth of soil sample? Does every depth be concluded respectively? Does the measured depth be in accordance with that of time domain reflectometry ? 3. Please explain the reason for choosing caraganakorshinshikom as the object of study, and illustrate its characteristics in the part of research area summary. 4.there are many mentioned in the paper, such as“Plant Xylem” “The isotopic composition of soil layer is similar to the xylem water is confirmed by comparing δD and $\delta^{18}O$ of xylem water and soil water, which reflect the signatures of soil at the depth of soil water uptake by plants.”“ soil water from the surface horizons (20-40cm) contributed to 8%-21% of plant xylem water,” plant roots. Is it the xylogen and root system of a certain kind of plant? Caraganakorshinshikom? In general, this is a well-written paper containing reliable results which merits publication.

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