

Interactive comment on “Ecohydrological effectiveness of litter crusts in sandy ecosystem” by Yu Liu et al.

Yu Liu et al.

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Dear Referee,

Thank you for reviewing the manuscript and providing your short comments. We are glad to response all the comments, which would help to improve the message and the quality of our manuscript. The following is point-to-point responses to your comments.

Litter crusts significantly influenced the soil properties and hydrological functions. The paper quantified the ecohydrological effectiveness of litter crusts in desert ecosystems. The research is of great importance to understand the influence of litter crusts on desert ecosystems.

Response: Thanks for the reviewer's positive comment.

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Some comments as below 1. Before infiltration measurement, how was the litter or soil surface treated? Was the single-ring installed directly on the surface? It may be better for clearly stating the procedure.

Response: Thanks for your suggestion. A single-ring infiltrometry was driven carefully to a depth of 5 cm by means of a plastic collar and a rubber hammer. Before infiltration measurement, the land surface remains intact and is as undisturbed as possible due to the surface did not grow any plant.

2. L172-174. “After the infiltration experiment, the ring was removed, and then, a vertical soil profile was quickly excavated and the infiltration depth was directly measured using a tape”. Why was the profile quickly excavated as soon as the infiltration measure finished? After infiltration, the surface soil may be saturated and sticky, which may increase excavating difficulties.

Response: Very good comment! We quickly excavated a vertical soil profile and measured the infiltration depth. Because of water moves fast in the sand, if we wait a while for water to be stabilized in the sand and dig, the wetting area is not obvious or even visible. The measurement of infiltration depth by wetting front is very important.

3. L314-315 “which is affected by the rainfall intensity”, infiltration rate was measured by single-ring infiltrometer, why did this sentence discuss the rainfall intensity?

Response: Thanks for your suggestion. The infiltration test of different water supply was carried out. The effects of different water supply on infiltration is similar to that of different rainfall intensity here. Following your comments, to better understand the content of the article, we have deleted this sentence.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2018-579>, 2018.

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