

## ***Interactive comment on “Dew formation on the surface of biological soil crusts in central European sand ecosystems” by T. Fischer et al.***

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### Scientific Significance

1. The manuscript presents on dew accumulation in different BSCs in a humid environment. Such data are rare and significant for the understanding of the role of BSCs in an ecosystem; especially at the initial phase of disturbed ecosystems. Special attention is given to dew accumulation of different BSCs; over a relatively short distance along a catena.
2. The paper presents useful tools on how to evaluate dew accumulation under natural conditions.
3. Yes; substantial conclusions are reached regarding the differential dew development;

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as well as to the fact that dew absorptions by the crusts and swelling of the crusts may limit infiltration depth with negative effects on the development of higher plants.

4. Are scientific and methods assumptions valid and clearly outlined: yes
5. Are the results sufficient to support the interpretation and conclusions?: yes (but see comments below)
6. Yes
7. Yes
8. Yes
9. Yes
10. Yes
11. Yes

### Comment

Two important questions, regarding the overall effects of data presented at the ecosystem scale, remain open:

1. Slight differences in microtopography result in differences of BSCs over distances of few centimeters. How do such differences affect spatial differences in water infiltration and water availability for higher plants?
2. Are dew amounts high enough to saturate the crusts and induce surface runoff? In the humid environment considered one would expect a high frequency of saturated crusts. Under such conditions a high frequency of surface runoff should be observed. This runoff may be absorbed at a downslope position where deep infiltration may occur. In other terms saturation of the BSCs may reduce infiltration at a small scale (with negative effects on the vegetation) but increase infiltration at a larger scale with positive effects on the vegetation.

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