

Interactive comment on “Do effective properties for unsaturated weakly layered porous media exist? An experimental study.” by A. Bayer et al.

A. Bayer et al.

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We would like to thank referee 1 for his thorough review of our manuscript. We agree with almost all his constructive suggestions and changed the manuscript accordingly.

MAYOR COMMENTS:

- 1: The notation was changed from objective to unique.
- 2: We definitely agree with the referee that the three questions are critical for the hydraulic characterizataion of soil and we hope that our manuscript will stimulate this discussion.

SPECIFIC COMMENTS:

Abstract:

- 1: "heterogenous model" was changed to "layered model" to prevent confusion.
- 2: Instead of "internal behaviour" we now use "water content distribution".

Introduction:

- 1: p. 1088, l. 10: "naturally" was removed from the manuscript.
- 2: p. 1088, l. 13: We would like to keep the term "represent", because 'to lump' implies that things are put together at a given scale. We would like to express that small scale features are 'represented' at a larger scale.
3. p. 1088, l. 20,21,23: The sentence was rewritten.

Material and Methods:

- 1: The matric head/potential is now defined in the usual way. It becomes negative in the unsaturated state. This leads also to changes of the sign of some values for the matric head: the axis of Fig.6 and in the captions of Fig.3 and Fig.5.
- 2: p. 1092, l. 17: "porosity" was changed to "volume fraction".

Results and Discussion:

- 1: p. 1093, l. 17: "stationary states" was replaced by "hydrostatic states"
- 2: p. 1094, l. 5 to 9: The sentence was rewritten to explain the used method in more detail.
- 3: p. 1094, l. 10 and Fig.4: The third parameter θ_r was set to 0.0 for all layers of the layered material model and is therefore not shown in Fig.4.

Conclusion:

- 1: p. 1096, l. 26: "huge" was replaced by "significant".

References:

After a closer look to the numbers at the end of the references we found that this are interactive links to the page of the manuscript the citation was done. The numbers are

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the page number where the citation can be found.

Figures:

1: The suggested changes in the figure caption of Fig.3 (and also in Fig. 5) were done.

2: Fig.4: No changes were made, see point 3. of "Results and Discussion"

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