

Interactive comment on “Hydraulic and transport parameter assessment using column infiltration experiments” by A. Younes et al.

Anonymous Referee #1

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General comment: The paper presents a study on the quality of the statistical calibration of hydraulic and transport soil properties using an infiltration experiment. In the experiment, tracer-contaminated water is injected into a laboratory column filled with a homogeneous soil in a given period. Influences of different experimental factors on the calibration results were studied.

In general, this paper deals with an interesting issue. I find some merits in the both methodology and results. As the authors describe, the soil parameters that influence water flow and contaminant transport in unsaturated zones are not generally known a priori and have to be estimated by fitting model responses to observed data. The authors realized this issue and pointed out the limitations of their work. Overall, this paper has a good potential to be published in the journal. English is also very easy to read in the manuscript. Authors have done much work and give us an exciting

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theoretical and experimental study results. However, there are some issues, listed below, that need to be addressed before it is ready for publication.

Revised comment: 1. From the abstract, we want to know what you have done in your manuscript, but I can not know which parameters you have calibrated in your abstract. Please describe them in the abstract.

2. In the introduction section, please describe the development on soil parameters in more detail, and please highlight the innovation of this manuscript.

3. In the results and discussion section, please analyze in more detail.

4. In the conclusions section, please describe the further work needs to be done.

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