

Interactive comment on “Monitoring infiltration and subsurface stormflow in layered slope deposits with 3D ERT and hydrometric measurements – the capillary barrier effect as crucial factor” by Rico Hübner et al.

Anonymous Referee #1

Received and published: 27 April 2017

The manuscript presents an experimental test on multi-layered soils, where seepage, percolation and potential effects of capillary barriers are monitored by the contemporary use of tensiometers and 3D geo-electrical tomography. The Authors implemented their experimental system on three layers, where the bottom confining layer is made of a fine-grained layer over a coarse layer. This combination allows for capillary barriers, which divert flow, at least upstream, until their effect is compensated, in the downstream zone of the slope. The Authors test two inflow scenarios: the earlier in an almost dry starting point and the latter follow the earlier inflow. In this way, they can analyze the effect of saturation. Moreover, the contemporary presence of tensiometers

[Printer-friendly version](#)

[Discussion paper](#)



and time-lapsed electrical tomography allows for an accurate monitoring as well as for a mutual validation. Overall, I think this an interesting and well written manuscript, which deserves of being published. The scientific approach is good, as well as the assumption of the experimental setup. From a practical point of view, the results of this work can be useful for slope stability as well as for studying erosional effects or in agriculture. However, I think the Authors should better explicitate the targets of this work, given the particular assumptions they made on the stratigraphy. Moreover, the Authors should better point out the limits of their experimental setup, since in the present version this is not reported. Finally, I would suggest to simplify figures A8 and A9, since they are not easy to be interpreted.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., doi:10.5194/hess-2017-144, 2017.

HESSD

[Interactive
comment](#)

[Printer-friendly version](#)

[Discussion paper](#)

