Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2018-219-RC1, 2018

Hydrology and Earth System Sciences
Discussions
Open Access
EGU

Interactive comment on "Hydrological functioning of West-African inland valleys explored with a critical zone model" *by* Basile Hector et al.

Anonymous Referee #1

Received and published: 19 June 2018

Hess-2018-219

Hector et al present a synthesis of observations and modeling to better understanding water resources in West-Africa. The work is highly relevant to the interests of the readership of HESS and this group and the AMMA-CATCH project have a long history studying this region. I found this work to be well written, well organized and novel. I have a special appreciation for how well the model and observations agree, how extensive the datasets are and how hard it is to work in this region. I have some comments below which i feel will improve the quality and clarity of this work but in general I find it suitable for publication in HESS with minor revisions.

minor comments:

Printer-friendly version

Discussion paper

1. The experiments with low-K layers were interesting and provided some counter-intuitive findings. Did the authors conduct any experiments where the layers were discontinuous? If not, can they comment about how this might impact results?

2. Domain geometry. Did the authors experiment with other domain configurations? It would be interesting to see how changes in slope for the v-catchment "banks" changed response. Do the choices in slope represent something in the real catchment?

3. Boundary conditions. Perhaps I missed it, but how were the boundaries set for the tilted-V catchment? Did this have an impact on e.g. water table dynamics and fluxes?

typographical comments:

p3 line 23, double parentheses

p5 line 32, double parentheses

p4. line 29, double parentheses– issue with a reference manager?

p2. line 15, URL better as a footnote than inline citation

p6, line 27, Manning's EQ

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2018-219, 2018.

Printer-friendly version

Discussion paper