Review report hess-2022-7.

Referee comments are shown with black text and the responses from the authors are in blue with italic font.

RC2: 'Comment on hess-2022-7', Anonymous Referee #2, 20 May 2022

The paper uses numerical simulations to test the idea that a vertically compartmentalized model of groundwater flow can in some situations provide a good representation of streamflow recession, as opposed to results using the Boussinesq solution (homogeneous assumption). The paper is well written, the methodology is technically sound and the results are coherent and well presented. I only have minor comments that will hopefully help improve the paper.

A: We are grateful to the reviewer for the very positive assessment of our work.

In section 2.2 the authors explain that they performed CFD simulations of groundwater flow. There is no description of the model used, it is not clear whether it is the author's own model or another model. Please clarify and provide either more information or the corresponding references.

A: We used COMSOL Multiphysics to handle and solve Richard's equations. In the revised version of the manuscript we will include more details on the model setup.

Figure 3: I did not fully understand the explanation in the caption about the dashed lines. Maybe clearly state: solid lines correspond to…; dashed lines correspond to …

A: We will revise the caption of Figure 3 to avoid confusions.

Eq 4 a should be replaced by *a* (italic)

A: Thank you.