

## ***Interactive comment on “Impact of capillary rise and recirculation on crop yields” by Joop Kroes et al.***

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Received and published: 30 August 2017

Reviewer’s first major concern is with the title: “I do not agree with the term “recirculation” here, much better would be “water retention”

Our reply to the first major concern: This seems logical but this change will have a large impact on the paper and make it too static. Indeed water is retained first and then recirculated. We feel that we would then have to insert “water retention” as additional process. It would complicate the article and have no impact on the conclusions. We had a lot of discussions about the title and feel that the current title is the best and most clear one.

Reviewer’s second major concern: “suggest to add some remarks about CROP model

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which is still in use in many countries”

Our reply to the second major concern: We will make a reference to the historical development of the SWAP model and mention the CROPR model (Feddes et al., 1978) as one of the models to describe the above ground dry matter production. In later years SWATR was succeeded by SWAP and CROPR by WOFOST.

Reviewer’s third major concern is about the synthetic modelling option : “it is not logical and realistic. The fantasy of authors is too great here”

Our reply to the third major concern: We agree that the incorporated synthetic modelling option is unrealistic. But that is exactly the point we want to make! This synthetic option is used to stop all upward flow, which in turn reduces simulated yields. This is practically impossible to carry out in field experiments and we therefore used this synthetic modelling experiment. We are convinced that we implemented this well and we made it available online as we indicated to the 2nd reviewer in SWAP4.0. We feel that by doing so our fantasy is not too great and can at least be shared with many others. In this way we were able to mimic the boundary conditions of bucket type of models.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2017-223>, 2017.

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