

As you will see the feedbacks from referees confirm your paper is close to be accepted for publication. Nevertheless they raise a number of comments that need to be addressed before publication.

Revised.

The related contents have been revised as the reviewer suggested.

Another important point concerns the free accessibility of scientific resources, a policy of the Journal. I would ask you to upload your code and data on a public available repository, instead of this standard data availability statement "The model, input and output databases can be obtained from the first author and all the observed data sets used in this study can be available from the co-authors." Such statements hinder not only the review process, but also the reproducibility of the scientific work.

Revised.

The model, input, output and code can be obtained from <http://doi.org/10.6084/m9.figshare.14685441> (See line 426 in the revised manuscript).

I would like to thank the authors for their throughout revision, which improved the manuscript significantly. Before potential publication, I have just some minor revision points:

Thanks for you evaluation.

Line 233: Please stay consistent and use the unit "meter" to describe the soil layer thickness.

Revised.

The unit has been revised to stay consistent (See lines 222-223 in the revised manuscript).

Table 1: For the reader it would be easier, if the better performing values comparing original and modified model would be bold for each of the objective functions. ZIR-P is not introduced in the Materials und Methods nor in the Table captions.

Revised.

The table has been revised with the explanations for the ZIR-P. (See Table 1 and lines 237-238 in the revised manuscript).

Line 318 -323: I still think this scenario/experiment does not fit in the manuscript. In this revised version, it is not properly introduced. Neither in the introduction, material and methods and not much discussed in the discussion chapter. Further, it has not much to do with the rest of the paper. I suggest the authors to remove this and the corresponding parts (e.g. Line 243-244) and see this as a minor revision. Deleting this part is not meant to discourage the authors. I think the idea of such a scenario analysis is interesting and I recommend the authors to publish the idea properly worked out

and present it in an additional publication.

Revised.

The related contents have been deleted as the reviewer suggested.