

Reply to comments by the Editor

Thanks for your revisions and responses. My main concern is related to the strength of this study, namely that you are analyzing results from a highly detailed model. I argue it would be good to add a disclaimer that the results might vary for other models/parameterisations. I assume the main findings would still hold, but the effect of different parameterisations has not been studied here (it would probably also be challenging to do this). Thus, a shortly mentioning that results depend on model parameterization would be good.

Thank you for assessing our revised manuscript. We understand your concern and agree with your suggestion. Accordingly, we now explicitly address the dependence of our findings on the model used and the choices of parameterizations when discussing the limitations of our study (Section 4.3).

Other comments:

Tempus: my recommendation is always to describe one's own work in past tense, as by the time others read the paper, this work is in the past. I leave it to the authors to decide whether they want to change tis, but the mix of tenses as see, for instance, in the end of the intro with past, present and future tense in the same paragraph (L103ff) should be avoided. As another example, section 2.4 starts in present tense but ends with past tense. Again, I recommend describing all the work you DID in past tense.

Thank you for this comment. We have revisited the use of tenses and adapted them at various places for better readability.

Heading 2.3: change verification to validation; Verification is the wrong term for this type of testing. Also, in the following paragraph, you use the term validation

We agree that “validation” is more appropriate wording than “verification”, The heading has been adapted as requested.

L203: “Overall, the verification confirms” ... change to “Overall, the validation indicates” (or supports) . ‘confirms’ sounds very certain and I don’t think the model testing supports such a certainty. Honestly, I think it would be very hard to ‘confirm’ that the model is producing the right results for the right reasons, but for the way the model is used here, one can probably accept a reasonable indication.

We understand your concern and have adapted the sentence as suggested.

L281, “Large spread ...», I think this should be “The large spread ...”

This has been corrected, thank you for catching the issue.

L354, “Longwave radiation acts as a compensating flux. It is strongly negative ...», to be picky, I don’t think radiation can be negative. I assume what you mean is that the longwave radiation balance is negative.

Indeed, this formulation was unprecise. We have adapted the sentence to address “net longwave radiation” instead of “longwave radiation”.