

Many thanks to the reviewers and the authors for their reviews and responses. I think the authors have managed to respond well and meticulously to the technical queries and I do not foresee any problems in that area after the agreed-upon revisions have been made.

Clearly, the second reviewer had some issues with the style of the paper. Repetition, unnecessary parts and the introduction, in particular, seem to be a bone of contention between the reviewer and the authors. Having looked at the manuscript, I have tried to find what the reviewer has referred to as repetitions. One example could be the fact that the three key questions as listed on lines 30-34, page 3 appear again on lines 23-26, page 28, before re-appearing as the titles of subsections 5.1.1-5.1.3. Perhaps the authors can just skip the listing of the questions again on page 28, writing something to the effect ‘...so as to address the three key questions posed in the introduction’ since the very same questions follow immediately in bold font.

Concerning the introduction, two issues which I have thought long and hard about are the reversal of the climate (the paragraph at the bottom of page 2) and then the part about the ultimate use of stationary boundary conditions (first half of page 4). The authors have gone to great length to justify the inclusion of the whole of those sections in convincing fashion, so I am reluctant to ask for their removal, as the reviewer has suggested. However, I would like to ask the authors to try and somehow simplify /shorten those parts.

Reviewer 2 referred to the expression ‘these mechanisms explore the changes’ on line 4 of the abstract. I, too, could not really understand how a mechanism can ‘explore’ something, and I think this does need to be changed.

At the beginning of page 2, maybe the authors and reviewer 2 can meet each other halfway and write ‘The mid-Pliocene warm period (3.3-3 Mya)’, as was done at the start of the introduction in Chandan and Peltier (2017).

As for splitting the last section into separate discussion and conclusion sections (which, admittedly, I am more used to in long papers), I think this is more down to personal taste or style and doing so here would most likely add repetition to an already lengthy paper. Therefore, I am fine with leaving that part as it is, considering that the authors have divided the section clearly into three subsections, each one answering one of their key questions.

I would like to file this manuscript under ‘Reconsider after major revisions’ so that I can review this manuscript again before the final decision. However, I view these revisions more as ‘major tweaks’, including the changes the authors themselves have already agreed to make. I look forward to seeing the revised manuscript as it contains a wealth of very interesting results.

In addition, I would like to make some other minor points.

- Line 24, page 1: The values 1370 ppmv and 850 ppmv need to be switched around so that they refer properly to RCP6 and RCP8.5, respectively.
- Line 15, page 3: delete the comma after the word ‘Provided’.
- Line 23, page 23: Add an ‘s’ and move the comma for better readability: ‘But two additional components of the mid-Pliocene orography, (i) that due...’