

Dear Referees, Dear Editor,

Thank you for going over our manuscript once more and for your new helpful suggestion. Please see our response to these suggestions below. In addition to the modifications required by the referees, we noticed that  $\phi$ ,  $a$ , and  $p$  in equations 1-5 of Section 2.2 were no longer defined after the previous revision round and we added their definitions. This happened as we moved the definition of the Plumb flux to the supplement during the last revision round.

### **Referee #1**

The revisions made by the authors have address all the concerns raised in my initial review.

I have a minor suggestion for the authors to consider: In reading the original manuscript I did not pick up that the ocean included a higher resolution nested component, and even though it is stated in the manuscript it is still as prominent as it could be as readers may also miss this. E.g., in the Introduction the statements on line 110-111 could be moved to line 104. This fact could also be included when discussing the ocean changes.

We emphasized the fact that we are using a high resolution ocean nest at lines 104-105 in the Introduction, 581-583 in the section about the Agulhas leakage changes and 747-748 at the beginning of the Summary and discussion section.

### **Referee #2**

In the revised version of the manuscript by Ivanciu et al., the authors have considered all review comments appropriately and put great effort into incorporating the suggested changes and therewith improved the manuscript. All of my comments have been addressed satisfactorily. The phrasing around the zonally asymmetric structure of stratospheric temperature changes does now reflect the underlying change in planetary waves very well, and in particular the revised section on dynamical changes (new section 4.1.2) nicely analyses the detected changes in a consistent manner.

Only minor comment I would have is that the combined Summary and Discussion section is now (still) rather long, making it difficult to extract the essential new findings and conclusions. The authors might want to consider to shorten some parts (e.g. the discussion around future surface / SAM impacts reads a bit like a review, and might go beyond what is required to discuss the results of the current study in the context of other literature).

We shortened the Summary and discussion section by eliminating details from the suggested paragraph, as well as from other paragraphs.