

Response to the Editor

The authors thank the editor and reviewers for providing detailed and valuable feedback. We have addressed the remaining comments in the manuscript.

Response to Reviewer 1

Line 249: "relative" should be "relative to the tropopause"

Thank you, we have changed this in Line 250.

Line 446: for which season?

We have clarified the paragraph by changing “For this season” to “[In summer](#)” in Line 448.

Lines 453-454: parenthetical citations should be in-text

Thank you, we have adjusted the citation for Lines 453-454.

Figure 7: the colors here are difficult to distinguish, especially the blues and oranges. Further, the mix of oranges, red, and green is not readily discernible for those with color-vision deficiency. Lastly, I don't see any of the light blue lines (i.e., N₂O)...

Thank you, we agree that the colours are not as easily distinguishable as they should be. The N₂O label also should not have appeared in the legend. We have decided to introduce different line-styles to allow differentiation, which we also show as Fig. 1 in this response.

Response to Reviewer 2

I can understand that the authors don't want to add a complex sensitivity study on the impact of the one-station ozone climatology on the chemical tropopause results. I agree that it is acceptable to leave this point for future discussions. However, it would be good to communicate this point with the future audience of the paper. I would suggest that the authors add 1-2 sentences on the fact that the representativeness and potential impact of the one-station ozone climatology are not explored here and subject of future work.

Thank you, we agree that this point needs to be discussed in the manuscript. We have added the following sentences in Lines 194–195:

[It should additionally be noted that the representativeness of this single-station ozone climatology is not explored in detail here. The sensitivity to latitudinal differences in the ozone distribution may be of interest for future work.](#)

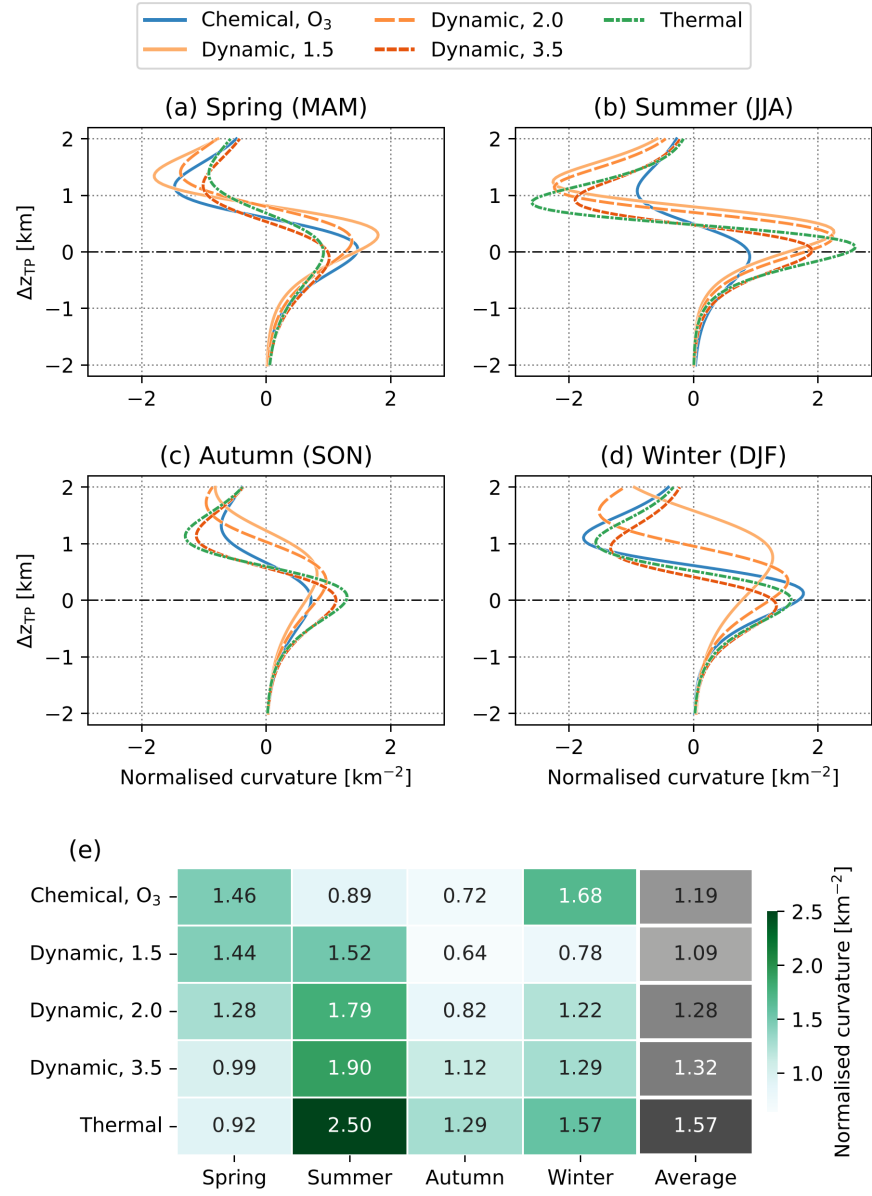


Figure 1: Updated Figure 7 from the manuscript.