

We thank the editor for the thoughtful comments. Our response to these comments are marked in bold below.

1) I agree with reviewer #1 that a lot of section 4 is a continuation of the results rather than a discussion extending beyond the findings of your analysis. This has not been sufficiently addressed in your revision. This holds especially for sections 4.1, 4.2, and 4.4. This does require a more thorough reorganisation of the text as done so far.

We have revised the text to address this concern. We have moved major portions of the previous discussion section to the results section and created a new section (Sec. 4). The revised discussion section is substantially shorter. Please see diff_ed.pdf for tracked-changes.

2) Please add your aerosol perturbation flux in L104 in the methods section for clarity and reproducibility.

We have added that in L 104.

3) You may wish to extend your discussion section on the realisms of your climate change scenarios and potential limitations in context to potential stabilising effects between the sub-tropics and tropics that are unaccounted for in your climate change setup.

We have included a brief discussion about the lack of coupling between the tropics and sub-tropics in our study. Lines 456-459 in the revised draft. We also point out that there are a few studies (e.g. Chun et al 2025) that attempt to model the coupling between the tropics and sub-tropics using the WTG approximation. However, there is quite a bit of uncertainty regarding the accuracy of such methods/approximations. For instance, the presence of secondary circulations (e.g. shallow meridional circulations Zhang et al 2004 Jou. of Climate) may introduce additional time scales into the problem which are not considered in the WTG implementation. A more detailed analysis will be required to address these issues.

In our Summary and Outlook section, we present a brief picture of the above-mentioned discussion. Lines 456-459 in the revised draft.

Additional private note (visible to authors and reviewers only):
Editorial comment: I personally find your colour choices misleading. "red" for present-day (less warm) conditions? I leave it at your discretion to change or keep this.

We are comfortable with this color code. Black - SSP3 is the worst case scenario with very high emission rate and green - SSP1 is the most optimistic scenario with substantial clean up. Red - PD, present day is already in dangerous territory due to high emission rates.