

This updated version of the study is much improved on the initial draft, with many of my concerns addressed with detailed changes. However, I would still suggest several minor revisions. In particular, I think the paper would still benefit significantly from edits to the figures to improve the visual quality, including the resolution, font size, choice of annotated text, and choice of colormaps. See detailed comments below:

Lines 523-525:

“The decadal and inter-decadal variability modes of all the historical climate indices (except for Atlantic-based indices under SSP5-8.5) are not preserved in the GHG warming scenario and the SAI does not restore them.”

I find it difficult to understand exactly which changes are referred to here, I suggest listing specifically which modes of variability are not restored, and where the reader can see this from the figures.

Line 527

“AMO and no effective impact” should read *“AMO and **have** no effective impact”*

Lines 450-465

This description of some of the theoretical background to changes in the modes of studied, is very useful. However, I think the section could benefit from explicitly stating how SAI would be expected to change the patterns of variability studied under this theoretical framework.

Figure 1 has text of very small font size on the axis labels, titles running into data, and most importantly, the data itself is too small to comfortably compare the index variation between scenarios. The y-axis labels have unneeded square brackets following the label. Panels g-l are missing ‘NAO’ from the label.

Figure 2: authors might consider increasing the size of this figure by making it a 3x2 grid (three rows of 2 subplots). The p-values annotated on the figure are quite confusing, because the position nearly aligns with the x-axis position of the bars. I initially thought each value referred to one bar and so struggled to understand what they represented. I suggest re-arranging somehow to avoid this (e.g. perhaps list vertically rather than horizontally?), or perhaps moving these values to a table. I would also suggest that the precise values here are not necessary, and e.g. <0.01 , $<10^{-5}$ etc. could be used instead. Finally, I wonder if the blue text with date ranges could be better placed in the x-axis tick labels.

Figures 3-6: The authors might consider using a colormap with white at centre to allow better distinguishing of positive and negative anomalies.

Figure 7: similarly to Figure 2, I suggest the authors might consider making this figure larger, with 4 rows of 3 subplots to improve readability.

Line 236: it would be clearer to split these equations across two lines, as the comma is easy to miss