

Hej Sophie---

Thank you for your valuable comments and suggestions. Please find our replies below in italics. We have also updated the manuscript accordingly.

Kind regards,
Klaus

My main remark concerns the need to clarify the number of members. In Table 1, you show 9 starting dates for each of the 6 historical simulations: this would make 54 members and not 50; can you clarify?

We have added "The branch_time 1974-1-1 is only used for r1 and r2 of the CMIP6 historical experiment, yielding members 149 and 150 of the large ensemble." to the caption of table 1 which hopefully explains how we get the 50 members.

And also, I suppose that each of the 50 members run for the period 1970-2014 is continued for each of the 4 scenarios mentioned, i.e. you have 50 members for each scenario, right? Can you clarify this up front in section 2.3, I had to read until section 3.4 to be fully sure that this is the case.

We have added "Each of the scenarios comprises 50 members that start from the end of the corresponding member of the historical experiment." to the 1st paragraph of Sec. 2.3.

Regarding reviewer 1's suggestion to provide normalised patterns, you reply that it is not worth including them in your paper as they are very similar to the non-normalised ones. To show this, you provide the figure of the normalised patterns. I would say that your conclusion is not convincing, as: 1- the color scales of the two figures are not the same (one goes from 0.2 to 5 while the other goes from 0 to 10); 2- the two plots for SSP5-8.5 2080-2099 look quite different to me. Can you clarify and further argue why you think it is not appropriate to include the normalised patterns?

In the reply to Reviewer 1 we have included a figure showing the normalized temperature changes for 4 scenarios (rows) and 2 different time periods in the future (columns). We find that the patterns of normalised changes are very similar across all scenarios (for each time period), and therefore we decided to not include this figure in the manuscript. By no means is this figure comparable to Fig. 3 of the paper that was never intended. Our point is that normalised patterns are similar across scenarios and therefore do not contribute much to the discussion.

And I have the following technical points:

- In the title, you have to mention the version of EC-Earth3 used so please add "3.3.1"

Done.

- Please define MPI-GE the first time it appears on p.2. Currently, it is defined on p.12.

Done.

- Please use "Fig." everywhere to refer to figures.

Done.