

Interactive comment on “Quantifying CanESM5 and EAMv1 sensitivities to volcanic forcing for the CMIP6 historical experiment” by Landon A. Rieger et al.

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The authors would like to thank reviewer #3 for their comments. We have updated the model and experimental descriptions as per your suggestions and think this made for a much clearer manuscript.

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This manuscript presents the changes in simulated climate response (where climate is intended as temperature and precipitation) occurring when an error in the CMIP6 stratospheric aerosol forcing database in the post-Pinatubo period is corrected. The authors conclude that the correction does not significantly impact temperatures and precipitations (although there are changes in tropical stratospheric temperatures). This manuscript presents the results in a straightforward manner. The scientific significance is fair, in the sense that the scope of the manuscript is pretty limited, but it presents one of those results that should be documented in peer-review journals in view of the importance of the CMIP6 simulations.

Interactive comment

I do not have any major comment, except for the description of the models and simulations. The descriptions of the models report very few characteristics, but there is no remarks on why these two models were chosen. It is not clear if they were the models available, or if they were chosen because their characteristics complement each other. There should be some concluding remark in the section about model description that contrast the two models against each other and make clear in which respect the results are expected or could differ, given the different characteristics. A table could also be useful, where columns report items such as “interactive SSTs” or “stratospheric chemistry”.

Additionally, there is not initial description of the simulations. The simulations are introduced where they are analyzed, but it would be useful to have right after the model description a section where all simulations are presented.

Thank you, Section 3 has been updated with a description of the simulations and why the particular models were chosen has been added. Please see Page 6 lines 1-21,

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and table 1 in the revised manuscript.

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Interactive
comment