

Author Response

Thank you for the detailed replies to the reviewers' comments. I am happy to accept the manuscript for publication, pending the following technical corrections:

We thank the editor for his careful and positive assessment of our manuscript and revisions. We have applied the changes requested.

- You replied "The injection is specified as a uniform vertical profile of emission". Can you please add a statement about this in the manuscript?

We added a statement in the final manuscript.

SO₂ injection is specified via a uniform vertical profile in a single grid cell at the respective altitudes close to the Mt. Pinatubo location (15°N, 120°E).

- You made no manuscript changes regarding the diffusion coefficient question on original line 145 (reviewer #1). Although not necessary, it can be useful to have a statement about it somewhere; I will let you decide.

We updated this paragraph accordingly.

... We note, that the ensemble members were produced by increasing stratospheric horizontal diffusion by perturbing the respective parameter between 1.0, 1.0001, and 1.001 and setting it at the beginning of the simulation in January 1991.

- Regarding the caption of figure 2, you said in a reply "We explain what the asterisk means, for consistency, also in the figure caption now". I do not see any changes in the figure caption, please make sure that it is there. I would also recommend to rephrase the explanation of the star in the text, from "(EMAC* only in the figures and tables)" to something like "(for which reason we flag it as EMAC* in the figures and tables)".

Thank you, we followed your suggestion. We updated the caption and text accordingly.