

Reply to Editor of the manuscript “The enhanced capabilities of mid-infrared limb emission sounding to observe stratospheric aerosol injection geoengineering interventions”, Sellitto et al., third phase

Dear Editor,

Many thanks for corrections to the manuscript. Please find our replies to your comments (comments are in black and our replies in blue).

Thank you very much,

Pasquale Sellitto on behalf of all co-authors

Editor

Dear authors,

thanks for the updated version of your manuscript. I just read the manuscript myself and found a few minor inconsistencies that I ask you to correct, before the paper can be accepted:

1) New sentence in line 193: „For the year 2034, the average SO₂ emission flux is 0.035 Tg/year (0.00015 Tg/month or ~1.1 kg/s), at 15°N, and 0.005 Tg/year (0.00015 Tg/month or 0.16 kg/s), at 15°S.“

The numbers are not consistent, i.e. 0.035 Tg/year is not consistent with 0.00015 Tg/month. The numbers for 15S are not consistent either. The mass fluxes per year and seem to be consistent. Please correct.

Thank you for spotting! We corrected the emission/month at both occurrences.

2) Line 197: „Individual daily SO₂ injections are of only a few hundreds of tonnes of SO₂ (~150 tonnes at 15°S and ~1000 tonnes at 15°N)“

What period does the sentence refer to? This is not entirely clear and I suggest mentioning it explicitly.

We added the information in the sentence (this is for the year 2034). Please also note that we corrected the values, which were wrong (10x larger).

3) Regarding your reply to SC3: I also wonder – like the reviewer – whether any SO₂ was injected at 30N/S. Please clarify.

We slightly modified the sentence at L180-182 to be more explicit: “We note that in the first year (2034), which is the main temporal interval targeted in this paper, the feedback algorithm chose to inject only at 15°N, 15°S while it continued with injections also at the other latitudes (30°N, 30°S) in the following years.”

4) The list of references is not in a good shape overall. Several references lack the period at the end or are incomplete. Please provide the details of Funke et al. (which is not ordered alphabetically). Please check the list of references carefully.

Please note that a number of reference’s details were already added at the demand of the editorial staff. We made more corrections (periods and the Funke reference).