

## Technical corrections for Manuscript No. ACP-2021-600-Revised

General: space between number and unit missing in several occasions

P1, L5: Add comma → Here, we compare

P4, L115: add “the” before “meteorological” and “TROPOMI” and I would suggest to split the sentence in two sentences starting the second one with “In Sect. 3.....”. Otherwise, rephrase the sentence so that it reads more smoothly and it becomes more clear what will be shown/done in these sections.

P4, L122: PSCs → PSC?

P5, L123: Something missing? Add “and thus” so that it reads “and thus consequently plays a role.....” or simply add a comma?

P5, L129: write “and” instead of colon between the references

P5, L131: I am not sure if the term “in limits” is correct. I would suggest to write it rather the other way that doing an other/larger SZA range would be beyond the scope of this study.

P5, L143: Abbreviation PT already used, but introduced one line later.

P5, L150: Abbreviation RTM has not been introduced.

P6, L156: PT already introduced.

P7, L188: boolean → “a” boolean (?)

P8, L215: add comma after “plotted”

P11, L228: write “degree” or use the degree sign instead of “deg”

P14, L247: space after full stop missing

P14, L249: Add comma after “However”

P16, L252: I would suggest to rephrase as follows: “.....complete lack of NAT and STS PSCs”. Further, what exactly do you mean with here? At a certain day, for this winter or this time period? This should be more clearly stated than solely “here”.

P16, L255: very → quite

P16, L260: barelly → barely

P16, L260: rephrase as follows: “at the longitudes (around 120°W) at which the largest OclO SCDs are observed”.

P17, L286: for a few → at a few and add “only? So that it reads “only at a few”

P17, L289: From the other hand → On the other hand

P17, L294: I would suggest to make a new sentence: “Further, these look like remnants of earlier chlorine activation”

P18, 297: add either a comma after T\_NAT or continue with “and”

P18, L301: very → quite

P18, L302: skip “very”

P18, L306: of the → for the

P18, L316: drop T\_NAT → drop below T\_NAT

P18, L318: till → until

P18, L323: change as follows: .....appear to be mixed with air from outside the polar vortex (with low PV values)

P18, L323: What is “8” the PV Value or date?

P19, L337: Sentence not clear → check. Maximum of what?

P21, L338: rather “could” than “can”?

P21, L345: space between opening parenthesis and number obsolete

P22, L350-351: Check sentence. Something missing here?

P22, L252: Same here? “but changes during the season” feels a bit lost.

P22, L355: lowers → decrease

P22, L358: “in the SH” obsolete → remove

P24, L364: beginning October → beginning of October

P24, L389: add comma after “seen”?

P27, L390: sudden warming → sudden stratospheric warming

P28, L396: SH winter 2020 → the SH winter 2020

P28, L398: I guess this holds for the time period October to December, thus I would suggest to write that more clearly: “ during the time period October to December”

P28, L401: either it should read “In June and August” or “During June to August”

P28, L410: of the → within?

P29, L433: Here it is not clear if you mean with the number the vortex size or the OCIO column. Thus, you should clearly state here that these are the OCIO values.

P29, L445: add comma after “both” and “horizontally” ?

P30, L465: typically → typically

P30, L469: righ → right

P30, L474: Add comma after “Therefore”

P31, L484: voundaries → boundaries

Fig A4: x-labels are not appearing fully

P34, L490: Add comma after “Here”

P34, L491: Add comma after “Therefore”

P34, L493: space between comma and “and” missing

P34, L495: right for just May → right just for May (and better to write “only” or “solely” instead of “just”?)

P34, L496: axis scales → y-axis scales

P34, L503: plot correlation → plot the correlation

P34, L504: respectively → respectively

P34, L504: I would suggest to write it as follows:”.....between the OCIO SCDs and either the PSC evidence or the mean backscatter ratio.....”

P35, L507: datapoints → data points