

## Technical corrections ACP-2021-749 Revised

P1, L4: radiation → radiative

P1, L15-16: “...ERA5 overestimates water vapor mixing ratios”. Do you mean: “...the by ERA5 overestimated water vapor mixing ratios.” (if yes, I would also suggest to write it like this)

P1, L19: Be more precise. What does it mean when the brightness temperature is low?

P2, L37: Space between “and” and reference “Wang and Huang (2020) missing.

P2, L40: particle → particles

P2, L47: in previous work → “in a previous work” or “in previous works”

P2, L53: simulation → simulations (or “a simulation”)

P3, L54: simulation → simulations

P3, L58: stratospere → stratosphere

P3, L59: within a MOSES → within the MOSES

P3, L60: investigate extreme events → investigate extreme weather events

P3, L64: add why is there rarely the opportunity for such studies?

P3, L70: section → Section

P3, L72: section 5 → Section 5 (capital letters and remember, these are written full length at the begin of the sentence, otherwise abbreviated to Sect.)

P3, L73: move “using backward trajectories and satellite data” behind in Section 3.5.

P3, L74, Section 2 header: methods → method

P4, L95: Change to “An ECC (Electrochemical ..... ) instrument (Smit et al., 2007).....

P4, L105: appendix A → Appendix A

P4, L106: in mid-latitudes → in the mid-latitudes

P4, L107: appendix A2 → Appendix A2 and move “(see Appendix A2)” at the end of the sentence.

P4, L109: times → time

P4, L115: flights without the ..... → flights that were performed without the.....

P5, L122: are → were

P6, L132: version 4 → Version 4 (?)

P7, L141: space missing between “where” and “1” and number and unit.

P7, L145: p is pressure → p is the pressure

P7, L147: potential temperature only shows → potential temperature shows only

P7, L147: and “thus”, so that it reads “and can thus be considered.....”

P8, L187: write “ranging” instead of “range” or write “with a temperature range”

P8, L190: either delete “pressure level” or write “is at a pressure level of .....”

P8, L202: in A3 → in Appendix A3

P8, Fig 4 caption: Add “that”, so that it reads ..... (Case 2) that passed the measurement site.....

P11, L253: can not → cannot

P11, L258: remove “obtained by the authors“ (obsolete)

P12, Fig 5 caption, 3<sup>rd</sup> line: show → shows and move “ascent and descent” after shows so that it reads “the ascent and descent data.....”. Also delete here “by the authors” and write “for the data obtained from 2018 and 2002” instead of solely “from 2018 to 2020” and add “the” so that it reads “in the mid-latitudes”.

P13, L278: ...and 8 → and Fig. 8

P14, L322: along towards → write either “along” or “towards”

P14, Sec. 3.5 header: Add “the”, so that it reads “....along the CLaMS trajectories”?

P15, Fig. 7 caption: space between “ERA5” and “(a-c)” missing

P17, L333: appear → appears

P17, L348: H2O in upright font

P17, L360: this is supported by that fact..... → this is supported by the fact that.....

P19, Fig 10 caption: space between full stop and “The time....” missing.

P19, Fig 10 caption: text misleading (what is shown by which line) → rephrase. The time is shown as vertical blue line and with the red symbols.

P19, L374: Panel a in Figure 11 → Figure 11a

P19, L383: Same here.

P19, L388: seems → seem

P20, L389: pass near convective events → pass by near convective events

P20, L389: at a greater distance from what?

P20, L394: that the water vapor → that the observed water vapor

P21, L397: add the dates

P21, L398: from gravity breaking -> from gravity wave braking

P22, L411: in Figure 6 → in Fig. 6

P22, L411: I would write here “...as provided (or given) in Fig. 6 shows.....”

P22, L428: as well as ERA5 → as well as by ERA5

P23, L448: move “into the LS” after “in the” and replace “in” by “of” so that it reads “.....due to the very humid conditions of the into the LS mixed-in tropospheric airmass”. Stop the sentence here and continue then with “Further, .....” and delete “which”.

P23, L456: Why sparse??

P23, L474: It should read “Overall, the ERA5 data indicates.....”

P24, L483: measurements → measurement

P24, L506: move “thoroughly” after “to” so that it reads “is crucial to thoroughly understand and quantify.....”

P25, L528: Reference missing (shown with “?”)

P28, Figure A2 caption: “F” after the full stop obsolete