Dear Sergio:

Thank you for your valuable feedback. We have carefully made the following minor and technical corrections. We believe these revisions have enhanced the clarity and quality of our manuscript. Thank you once again for your guidance.

The sections highlighted in blue have been revised according to your comments. The line numbers are indicated in the revised manuscript, and the changes are marked in red. Below are the revision notes, addressed point by point:

point-01

In some figures the color of the points of the legend (indicating Nc and Na, red, black and blue) is too small, is almost not possible to see it unless you zoom it, so please enlarge them. This is the case of almost all figures, but specially in fig. 2, 3, 4, 9

Response: Thank you for your comment. We have enlarged the colors of the points indicating Nc and Na (red, black, and blue) in all figures, particularly in the legends of Fig 1, 2, 3, 4, 6, and 9, to ensure they are more visible and easily distinguishable. The figures in the manuscript have been replaced.

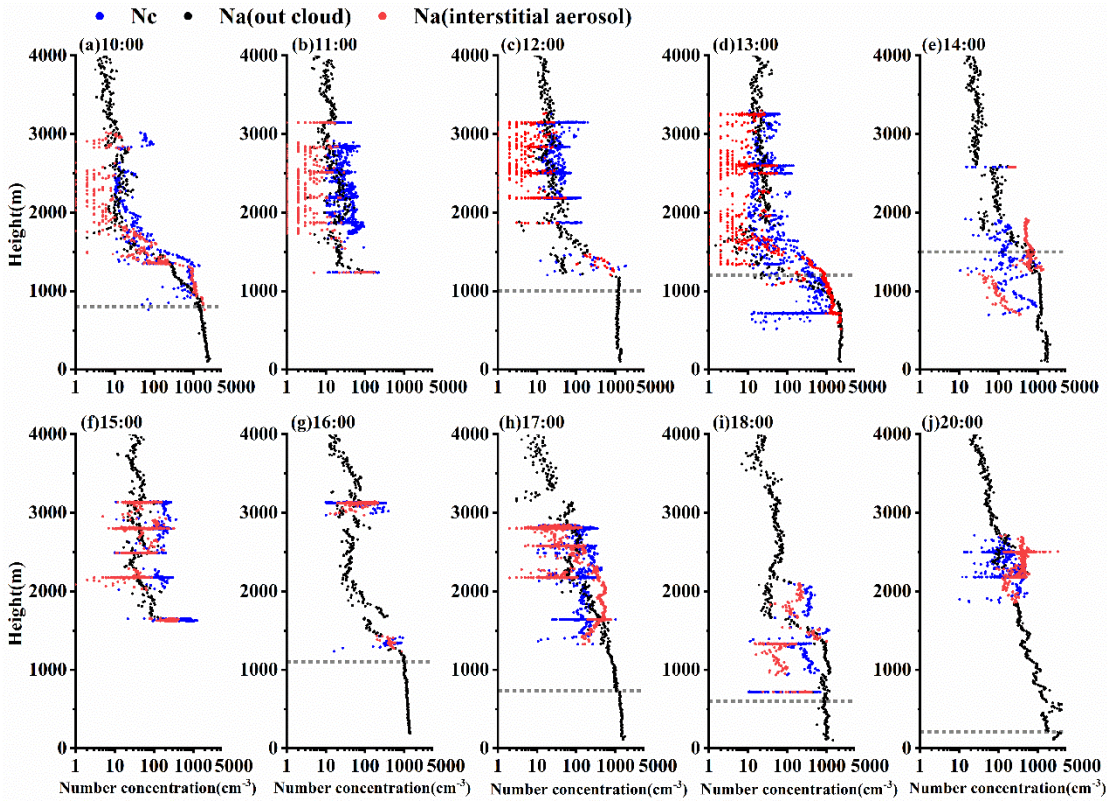

Fig. 2 Vertical profiles of cloud interstitial aerosol concentration, outside aerosol number concentration, and cloud droplet concentration at different times (a is 10:00, b is 11:00, c is 12:00, d is 13:00, e is 14:00, f is 15:00, g is

16:00, h is 17:00, i is 18:00, j is 20:00, the black dashed line represents the height of PBL)

point-02

Reviewer 1 raised some questions that are properly replied in your report, however such reply did not result in any change in the manuscript, so the future readers of the article may have the same doubt or question than the reviewer. It would be interesting that the information you give in your reply to the reviewer be introduced in the revised version of the article.

Response: Thank you for your comment. We have included relevant clarifications and explanations in the revised version of our manuscript. This addition aims to address potential questions from readers and enhance the overall clarity of our work. In addition, we re-checked our response to reviewer 1's comments and have revised all the contents that "the reply did not result in any change in the manuscript".

Some examples (Ex):

Ex-1.

Reviewer 1 asked (page 4 of the reply report) if the particle diameter is optical or aerodynamic. You replied that is optical, however such information was not introduced in the revised version of the manuscript, and should be included.

Response: Thank you for your comment. We have ensured to explicitly state that the particle diameter mentioned refers to the optical diameter in line 132 and lines 135-136.

A passive cavity aerosol spectrometer probe (PCASP-100X, DMT Inc, USA) was installed to provide aerosol number concentrations in the optical particle size range of 0.11 to 3 μm, with a time resolution of 1s, particle size uncertainty of 20%, and concentration uncertainty of 16%.

Its principle is to detect particles with an optical diameter ranging from 2 μm to 50 μm using forward scattering technology with a time resolution of 1s.

Ex-2.

Reviewer 1 asked (page 5 of the reply report) if the concentrations are in volumetric units or to standards conditions. You replied that in volumetric units, however such information was not been included in the manuscript, and should be included.

Response: Thank you for your comment. We have added the units for Na and Nc in lines 138-139.

Na and Nc are measured in volume units.

Ex-3.

Reviewer 1 comment: Line 28: Does "cloud microphysical quantity" refer to Nc and E_d?

Response: Thank you for your comment. In our manuscript, the term "cloud microphysical quantity" indeed refers to both the cloud droplet number concentration (Nc) and the cloud droplet effective diameter (E_d).

However, in the revised version of the manuscript (line 28, abstract), the term "cloud microphysical quantity" is still there without clarifying that it is referring to Nc and E_d. The reply to the reviewer is clear, but it would require a slight modification in the text to let clear to the reader to what parameters the authors are referring to (i.e. Nc and E_d).

Response: Thank you for your comment. We have added an explanation of the cloud microphysical quantity in lines 36-38.

The characteristics of cloud microphysical quantities (Nc and E_d) were also affected by the source of air mass and the height of PBL.

Ex-4.

Reviewer 1 asked (page 12 of the reply report) about the use of the term. In the report you replied that the text was modified, and that was replaced by, however, in the revised version of the manuscript with the changes tracked the term has not been replaced (line 94). This should be clarified.

Response: Thank you for your comment. We have updated lines 96-100 in the revised manuscript. Thank you for bringing this to our attention, and we apologize for any confusion caused.

Lu et al. (2007) compared the microphysical quantities of stratocumulus clouds influenced by aircraft flight tracks and those in undisturbed regions and found that the effective radius of cloud droplets in the flight path region was smaller, the number concentration of cloud drops was lower, and the cloud LWC was larger, providing

observational evidence for the first indirect effect of aerosols.

Ex-5.

Reviewer 1 asked (page 13 of the reply report) the correct the grammar of the sentence (We demonstrated that this region's correlation…), you replied with a corrected text, however in the version of the manuscript with the changes tracked still includes the old version of the text (lines 116-118) (incorrect grammar). This needs to be corrected or clarified. The reply and the revised version of the manuscript doesn't match.

Response: Thank you for your comment. We have updated lines 121-122 in the revised manuscript. We have checked the manuscript content to ensure that the responses are consistent with the revised version.

Our findings indicate that the interaction between aerosols and clouds in this region aligns with the Twomey effect.

Other comment:

The change of the term "diurnal variations" to "temporal variations" is OK.

You can also use the term "daylight variations", which would be more specific for your study; it would also be OK from my point of view. This is just a suggestion, is optional for you and the other authors.

Response: Thank you for your comment. We have decided to use 'daylight variations' to provide greater specificity in our study.