We thank the editor and reviewers for their valuable comments and suggestions. All points have been carefully addressed in the revised manuscript, and detailed responses are provided below.

Line 44: Replace “cloud condensation nuclei” by “cloud condensation nuclei (CCN)”

Done

Lines 52-53: Should “the particular organic nitrate” be “the particulate organic nitrate”?

Thanks for pointing out this spelling issue. It has been corrected now

Line 56: Replaces “of cloud condensation nuclei (CCN)” by “CCN”

Done

Line 74: Define “JULIAC”

Thank you for this comment. The revision is provided below.

Draft Line 74, The study by Liu et al. (2024), which investigates data from the JULIAC (Jülich Atmospheric Chemistry Project) campaign

Line 114: “Instruments measured radicals” such as?

Thanks for this suggestion. The revision is provided below.

Draft line 114, Instruments measured radicals (e.g., OH, HO_2, RO_2){Cho, 2023 #808}, trace gases, OH reactivity, submicron aerosol components, and the aerosol size distribution.

Line 119: Please add the CPC model and manufacturer

Thank you for this helpful comment. The revision is provided below.

Draft line 119, a scanning mobility particle sizer (SMPS 3080, TSI), and a condensation particle counter (CPC 3788, TSI).

Line 122: Replace “prior studies(Liu” by “prior studies (Liu”

Done

Line 131: This text is not completely clear. Maybe replaced by “flow rate measurements obtained with a Gilibrator” or something like that.

We thank the editor for this comment. The corresponding discussion has been revised as below.

Draft line 131, One flow rate correction was performed during JULIAC-II by comparing the AMS flow (derived from the lens pressure) with flow rate measurements obtained using a Gilibrator.

Line 135: Please add the Picarro model.

Picarro, G2401

Lines 137-138: Replace “Volatile organic compounds (VOCs)” by “VOCs”

We have carefully checked the entire manuscript and corrected this issue, as well as all similar occurrences throughout the text.

Line 165: Replace “measured by HR-ToF-AMS” by “measured by the HR-ToF-AMS”

Done

Line 178: Replace “the ionization efficiency” by “the EI”

Done

Line 184: Figures need to be called sequentially.

Done

Lines 237-239 and along the text: Please be consistent with the usage of a subscript in PM1

We have carefully checked the entire manuscript and corrected this issue, as well as all similar occurrences throughout the text.

Lines 245 and 249: Replace “organic aerosols” by “OA”

This issue has been corrected, and we have thoroughly reviewed the entire manuscript to ensure consistency.

Lines 272-273: Replace “ozone (O3)” by “O3”

Done

Lines 276, 354, 355, 464: Replace “secondary OA” by “SOA”

This issue has been corrected, and we have thoroughly reviewed the entire manuscript to ensure consistency.

Lines 287-288: Replace “organic aerosol (OA)” by “OA”

We have revised this part accordingly and have carefully examined the whole draft to eliminate similar issues.

Lines 355-356: Replace “of low oxidized OOA (LO-OOA), more oxidized OOA (MO-OOA), and nocturnal oxidized OOA (NO-OOA)” by “of LO-OOA, MO-OOA, and NO-OOA”

We have revised this part accordingly and have carefully examined the whole draft to eliminate similar issues.

Lines 364: Replace “Primary and secondary OA” by “POA and SOA”

Done, have looked through the whole draft

Line 370: Define “HOA” and “BBOA”

Done

Lines 426-433 and along the text: Either use “biomass-burning” or “biomass burning”

We have carefully checked the entire manuscript and corrected this issue, as well as all similar occurrences throughout the text.Thanks for this comments

Lines 479 and 480: I suggest replacing “transport from the marine area” with “transport from the ocean”

Thanks for this suggestion. The replacement has been done for the whole draft.

Lines 557: Replace “nocturnal OOA formation” by “NO-OOA formation”

Done for the whole draft

Figure S12 is not called in the main text.

Thanks for pointing this out. This plot has been deleted from the supplement.