

We thank the editor for the constructive suggestions on presentation and logical flow. We repeat the comments below in italics, then give our responses.

1 – Please note that most of the figures and tables are depicted before they are cited in the main text. Providing some context or explanation before introducing these elements improve the logical flow of the manuscript, that is because it allows readers to understand why the figure or table is being presented and what they should focus on. Thus, I would kindly ask the authors to revise the manuscript accordingly.

We have revised the manuscript so that the figures and tables are introduced in the preceding text before they are presented. The list includes Fig. 1, Table 1, Fig. 2, Table 3, Fig. 3, Fig. 4, Fig. 5, Fig. 6, Table 4, Fig. 7, Fig. 8, Table 5, Fig. 9/Table 6, Fig. 10, Fig. 11 and Fig. 12. Where the original text introduced a figure or table only after it appeared, the corresponding introductory wording has been moved or rewritten to avoid repetition.

2 – The Conclusions section reads more like a summary of the study than a Conclusions section. Therefore, I suggest that the authors consider changing its title to better reflect its content.

We agree that the section combines a synthesis of the principal results with the resulting scientific conclusions and implications. We have therefore changed the section title from “Conclusions” to “Summary and conclusions”, which more accurately reflects its content.

3 – Another point concerns Figure 12. This figure provides an interesting visual summary of the scientific findings; however, it is neither explained nor cited in the Conclusions section. I recommend that the authors either move this figure to the Results or Discussion section, where its content can be properly discussed, or, if they intend to keep it at the end of the manuscript as a summary figure, explicitly cite and explain it in the text.

We have retained Fig. 12 in the final section because its purpose is to provide a conceptual summary of the mechanisms identified through the preceding analyses. The revised text now explicitly introduces and cites Fig. 12 before it is presented and explains the main contrasts represented in the figure: the stronger temperature-amplified BVOC influence in the Shanghai-like VOC-limited environment, the greater role of radical-NO_x chemistry in the Lishui-like lower-NO_x environment, and the modulation of both responses by humidity and temperature diurnal structure. Figure 12 therefore now serves as an integrated visual synthesis of the mechanistic conclusions developed throughout the manuscript.

Additional corrections. In addition to the revisions made in response to the editor’s comments, we made several minor corrections to improve consistency and accuracy throughout the manuscript. First, subscripts and superscripts in chemical species, reactions, and units were corrected and standardised throughout the text, tables, and figure captions. Second, the column headings and references in Table 2 were corrected to clearly distinguish the observational urban constraints for Shanghai from the observational rural constraints for Lishui. Third, we identified an inconsistency in the air density used for the unit conversion in Sect. 4.2. The

affected values have now been recalculated using the same air-density assumption applied in the other unit conversions throughout the manuscript, and the corresponding values in Sect. 4.2 have been corrected accordingly. Finally, several sentences in the Summary and conclusions section were revised for language clarity and readability, without changing their scientific meaning. These corrections are limited to notation, labelling, and numerical consistency and do not affect the interpretation of the results, the mechanistic conclusions, or the overall conclusions of the manuscript.