**A point-to-point response to reviewers' comments**

We are very grateful to the helpful and insightful comments from Reviewer #1, and have carefully revised our manuscript accordingly. In the following point-to-point response, Reviewer #1's comments are repeated in ***italics*** whereas our responses are in plain texts labelled with **[R]**. Line numbers in the responses correspond to those in the revised manuscript (the version with all changes accepted). Modifications to the manuscript are in blue.

**Reviewer #1** (Formal Review for Author):

*The authors have well addressed most of my concerns, and the manuscript has been revised substantially. I recommend the publication as it is unless the editor thinks my following comment needs to be well considered.*

*I don't agree with the argument about the time resolution of the GC-FID/MS system, i.e., R5. The authors should pay attention that the the system (i.e., TH-300B) usually takes air samples for 10 - 30 min and then performs the GC-FID/MS analysis. Although one analysis cycle takes 1 hour, the air sample been detected is not the one sampled in the entire one hour. Therefore, when perform time average or time synchronization, the time period been considered should refer to the exact time period when the TH-300B takes air samples.*

**R:**

We appreciate the positive comments from Reviewer #1 and have revised our manuscript accordingly as shown below.

Indeed, the air sample detected by the GC-MS/FID system did not last the entire one hour, which may miss spikes of high/low concentrations of VOCs. However, for a long-time campaign (that lasted for 600 hours), the air sample taken in each sampling cycle can represent the general chemical composition and trend of the ambient air. We now state in our revised manuscript (Page 4, Line 110-115) that "Sampling of Photochemical Assessment Monitoring Station (PAMS) VOC compounds were performed for 10 min each hour, and the resulting data from GC-MS/FID (TH-PKU 300B) analysis were used to represent concentrations of PAMS compounds in that hour, given the time for heating and cooling of the GC oven (Li et al., 2015). This practice may miss spikes of PAMS concentration variation, but on a longer time scale, the general characteristics of ambient air composition and concentrations likely still show similar features in one hour (Kumar and Sinha, 2014; Li et al., 2015; Yuan et al., 2012; Yang et al., 2022)."

## References

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