

Responses to Reviewers' Comments on Manuscript EGUSPHERE- 2024-1325

(Molecular and seasonal characteristics of organic vapors in urban Beijing: insights from Vocus-PTR measurements)

Dear editor,

We appreciate both the reviewers' and the editor's comments and believe that our responses have improved this manuscript. We have addressed each comment in the following paragraphs and made the corresponding changes in the revised manuscript. The reviewers' comments are shown in blue italic text, followed by our responses. Changes in the revised manuscript are made using the track changes mode.

Regarding the data points below the LOD, we have redone the analysis with these points included. The m/z that were always below the LOD have been removed in the previous version.

Thank you again for your and the reviewers' time and efforts. We look forward to your continued feedback.

Best regards,

Zhaojin on behalf of the authors

Reviewer #1:

Lines 255-264: It is in general important to see that you accounted for those fragments and water clusters but this is very hard to read. Maybe you can make a table and/or put it in the supplement. Another way could be to just use bullet points.

E.g. "We accounted for several fragments and water clusters, specified in table X in the supplement."

Response: Thanks. We added a table in the supplement to clearly present the parent ions and their corresponding fragments or water cluster which we accounted for.

Supplement:

In general, I would like to understand the plots in the supplement without having to read the whole paper to understand what is plotted against what. You don't need to go into too much detail why you see what you see. But the general idea of what I see on a graph should be self-

explanatory.

The following figures are lacking with respect to being easily understandable without a surrounding text. Take the following comments as suggestions, where to improve.

Figure S11: specify the x and y axes. As the caption alone is not helping.

Figure S12: What does 1 and 2 mean? The day and nighttime clusters?

Figure S13: What does 0-4 stand for? The different seasons? If so, why does it differ to table S1?

Figure S15: Maybe repeat the color code in the caption

Response: Thanks for the suggestions. We have revised the figures in the supplement based on the reviewers' comments and carefully reviewed the entire SI, making adjustments to unclear figures and captions.

Reviewer #2:

Grammatical edit suggestions:

Line 35: change 'spectrometry' to 'spectrometer'

Line 43: delete 'of'

Line 45: change 'generate' to 'generated'

Line 47: change 'are' to 'were'

Line 61: change 'radial' to 'radical'

Line 76: change 'are' to 'have been'

Response: Revised.

Other comments:

Line 226: "Data below the LODs were excluded from further analysis." Does this mean you deleted all data points where the mixing ratio was < LOD? Data below LOD should not be removed, as it will bias results high when you are calculating statistics on the dataset.

Response: Thanks. We have already removed the m/z that were always below LODs, and we updated the whole analysis with data points below LODs included.

Line 268, 292: Not sure if this is considered 'semi-quantification', I think it's just 'quantification'. Most studies I am familiar with refer to this as quantification with an uncertainty of about 20-50% due to the range of potential kPTR values possible. Maybe choosing particular kPTR values could cause a lower uncertainty for certain compounds.

Response: Thanks. We changed 'semi-quantification' to 'quantification'.