

### 1) Language

Before further consideration, the manuscript has to undergo language editing. Please note that the publisher does not provide this service. Therefore, please seek external services by a proficient English speaker or a professional language editing service.

Particular attention should be paid to the correct use of tenses, articles, plural vs singular and grammar.

### 2) Your responses to the previous editor comments are too brief and general:

- *Critical Limitations and Temporal Context*

*The study was conducted during the autumn harvest period (October-November 2022) when biomass burning is particularly frequent ( is it?) in the Sichuan Basin. This represents a significant limitation that **must be thoroughly addressed**:*

- *Annual Relevance: What is the relevance of these findings on an annual basis? How representative are autumn conditions of year-round aqSOA formation processes?*
- *Seasonal Variability: How might aqSOA formation and brown carbon properties differ during other seasons when biomass burning is less prevalent?*
- *Quantitative Significance: Provide quantitative estimates or at least a qualitative discussion of how seasonal variations in biomass burning might affect the broader implications of your findings.*

The first two points are only addressed by one sentence each. The response to the last point seems largely off-topic. The editor asked how seasonal variations would affect your conclusions. I acknowledge that you added new text in l. 651 – 667. However,

L. 651 – 660 are a very general, at most a qualitative comparison. Can you quantify how much lower emissions are in other seasons?

l. 660 – 667 is text that seems out of place here as it does not add to the discussion of how your results compare to different seasons. Such considerations are more fitting for a conclusion section, if substantiated by the findings of the current study.

Please improve this discussion and add some quantitative comparison, e.g. of OA loading or emissions.

### 3) Additional comments:

a) Section 3.1: Use a different, more descriptive Section title that tells the reader what to expect in this section.

b) l. 717: “...aqSOA formation via aqueous-phase reactions instead of photo-chemical reactions”

Are you implying that aqueous phase reactions are not photochemical? I do not think that this is correct, since many aqSOA products are formed by OH and other photochemically driven reactions.

c) Data availability: I checked the data set deposited on Zenodo. I could only find a table with 8 columns, including date, the six major aerosol constituents without any unit (is it % or ug/m3 or...?) and Abs 370. This data set is certainly not complete. Please provide a full data set so that your analysis can be reconciled. Note that the full data availability is a requirement for Measurement Reports.