

The authors thank the Editors for the comments and suggestions. We have revised our manuscript in response to the editor's suggestions and comments. All the changes and responses to the editor's comments are listed below, point-by-point in blue. The changes are highlighted in red in the revised manuscript.

Comments to the Author:

Dear Authors,

Thanks for carefully addressing the reviewer comments. I'm almost ready to accept this for full publication in ACP. However, I noted a few minor edits that need to be made before I can fully accept this. Once you address these, I'll be sure to quickly move in reviewing them and making a final decision. Most sincerely, Jason Surratt

Minor Comments:

1.) Line 58-60: Please add citations to the published literature that aromatic aldehydes can be degraded at night to yield SOA or have consequences for O₃.

Responses:

We had noted that the reaction can have consequences to SOA formation. In light of the possible misunderstanding, we have now changed the text to read: To the best of our knowledge, there are no studies that have measured the formation of secondary organic aerosol (SAO) from the title reaction in either a chamber or in the atmosphere. One could suspect that aromatic aldehydes may be degraded at night with consequences for ozone and secondary organic aerosol (SOA) formation.

2.) Line 585-586: please delete ", as pointed out by" as you don't need this wording here.

Responses: Done.

3.) Line 597: Can the authors provide more of a justification of the conclusion that "The NO₃ reactions can contribute significantly to removing aromatic aldehydes at night in a polluted area with high NO_x?" How do we know this? Is there literature you can cite that would suggest what levels of NO₃ would exist in these high-NO_x polluted areas to make NO₃ reactions with these aromatic aldehydes more substantial at night?

Responses: Thank you. Yes, there are many studies in the urban regions that have measured NO₃ levels approaching 0.5 ppbv. We have changed the text as follows:

The NO₃ reactions could contribute significantly to removing aromatic aldehydes at night in polluted areas with high NO_x. Various studies have seen large abundances of the NO₃ radicals. For example, the following NO₃ mixing ratios have been reported: Pitts et al. (1984) up to 430 pptv in the East Los Angeles basin, including Riverside; Wang et al. (2006) up to 200 pptv in the Phoenix downtown area; Brown et al. (2009;2011) up to 400 pptv in Houston urban area; (Platt et al., 1981) around 280 pptv at Deuselbach, Germany; and Asaf et al. (2009;2010) up to 800 around Jerusalem.) In addition, the NO₃ reactions also could lead to PAN-type compounds at night.