Dear Dr. Huang,

Thank you very much for responding to the comments from the two referees and for revising the manuscript.

I have sent the revised manuscript to the two original referees for review, as they requested. While both referees stated that the revised manuscript has improved substantially, one of the referees mentioned that the concerns about the sulfate issue remain, and would like the authors to address this. Please see the referee's comments pasted below:

"I thank the authors for addressing my comments. The manuscript is largely improved. However, my concerns on the sulfate discussions remain.

The authors stated that they fully agree with that aerosol LWC is a better proxy for aqueous-phase reaction. Therefore, RH must be fully replaced by aerosol LWC throughout the manuscript when probing the role of aqueous-phase reaction. However, the authors still use RH as proxy, just because previous studies usually plot FSO4 vs RH! A method usually used in previous studies is not guaranteed the method is right.

The authors mentioned that there is no clear evidence between FSO4 and LWC, indicating limited role of aqueous-phase. To me, this is an important conclusion - A conclusion that challenges "well-established conclusion" from previous studies based on RH.

In figure 6 (d)(e)(f), data from different seasons should be presented in a consistent way. For example, in (d) and (f), data should be grouped by RH > / < 65% and then fitted. I am requesting this because FSO4 seems to have some correlation with Ox when RH<65% in panel (f) by eyeballing.

Lastly, to support the argument that sulfate is formed from photooxidation during regional transport, please show prove that Ox is regional as well (i.e., please show the bivariate polar plots of Ox of late summer)."

Please respond to the referee's comments and submit a revised manuscript, as appropriate.

Sincerely,

Luisa Molina