

Response to Review Comments by Editor on “Chemical evolution of secondary organic aerosol tracers during high PM_{2.5} episodes at a suburban site in Hong Kong over 4 months of continuous measurement” by Q. Wang et al.

Comments to the author:

The following two responses to the referee’s comments should be included in the revised manuscript, because they comprise relevant information for readers. Figure R1 could be included in the supplement if authors consider so.

Response to General Comments: We thank the editor for the comments. We’ve included the two responses in the revised manuscript. Below is our point-by-point response to each comment, marked in blue. Changes made to the main text are also marked in blue in the revised manuscript file.

REFEREE # 1

3. Lines 190-194: Why the authors only selected the “before-episode period” to evaluate the evolution of SOA tracers, instead of using all measured data?

Response: The campaign-wide average is not representative to the normal condition specific to individual seasons, as the emission sources and meteorological conditions varied among seasons. The selection of the “before-episode period” can minimize the interference from the different meteorological conditions such as temperature and boundary layer height among seasons. This comparison (i.e., before-episode period vs. episodic period) can better examine the rapid formation of the high PM episodes.

Response: suggestion taken; the following statement has been added into the main context in **Lines 194-198**:

“To characterize chemical features in the formation of PM episodes, we examined the PM composition before and during each episode. The campaign-wide average is not representative to the normal condition specific to individual seasons, as the emission sources and meteorological conditions varied among seasons. The selection of the “before-episode period” can minimize the interference from the different meteorological conditions such as temperature and boundary layer height among seasons. This comparison (i.e., before-episode period vs. episodic period) can better examine the rapid formation of the high PM episodes.”

REFEREE # 2

2. Line 220: What about levoglucosan and nitrocatechol correlation in different periods? Have authors also checked other meteorological parameters? Sometimes meteorology could affect the existing correlation.

Response: Yes, we’ve examined the correlation between 4-nitrocatechol and levoglucosan, and the meteorological factors including temperature, relative humidity and wind speed. They did not affect the moderate correlation feature between the two species (Figure R1).

Response: suggestion taken; the following statement has been added into the main context in **Lines 229-231**:

“In our dataset, a moderate correlation of 4-nitrocatechol with levoglucosan was observed (R_p : 0.43), in line with their common material origin from BB. The moderate correlation feature between the two species was not affected by the meteorological factors (Figure S14).”

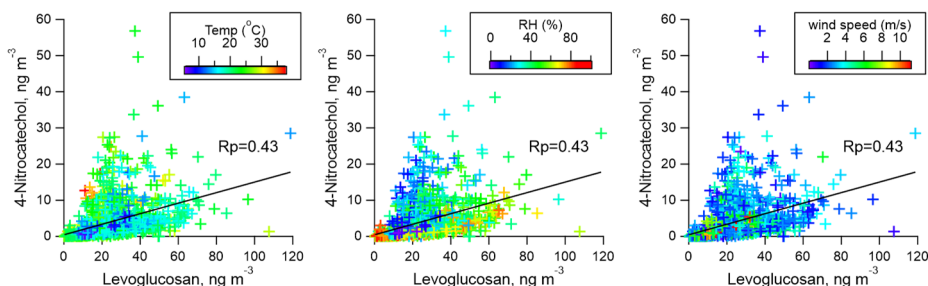


Figure S14. Scatter plots between 4-nitrocatechol and levoglucosan, color coded by temperature, relative humidity (RH) and wind speed.