

Atmos. Chem. Phys. Discuss., referee comment RC2
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Comment on acp-2022-302

Deepchandra Srivastava (Referee)

Referee comment 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 Qiongqiong Wang et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2022-302-RC2>, 2022

The current study has been designed to monitor SOA tracers at a suburban site in Hong Kong for four months. Results showed regional characteristics for anthropogenic and biogenic SOA including for biomass burning SOA. This study also highlights the need of high time resolution organic marker measurement at multiple sites to fully capture the spatial variability and implement control measures. I think such kind of field study should be promoted in future to completely understand the role of SOA formation during haze events.

My suggestions are given below:

Please add reference "PM pollution was observed to have a clear seasonal pattern, with lower concentrations in summer and higher in fall and winter."

Please add reference "In this work, we define that a PM_{2.5} pollution episode occurred when the PM_{2.5} concentration was higher than 35 µg/m³ (24-hour standard)"

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.

Line 230: "This likely reflects that 4-nitrocatechol has precursor sources other than BB and joint measurements of potential precursors (e.g., catechol, phenol, benzene) in the future would help to discern the relative importance of precursors from BB versus anthropogenic sources." Yes, nitrocatechol has other precursors and author should cite those references here. Have author checked nitrocatechol to levoglucosan ratio for different season?

Line 260: Did author suggest the role of ozone in the formation of phthalic acid and DHOPA? I will appreciate if more information can be provided on their formation pathways.