

Atmos. Chem. Phys. Discuss., referee comment RC2  
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## Comment on acp-2022-289

Anonymous Referee #2

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Referee comment on "Measurement report: Characterisation and sources of the secondary organic carbon in a Chinese megacity over 5 years from 2016 to 2020" by Meng Wang et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2022-289-RC2>, 2022

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The manuscript entitled "Measurement report: characterization and sources of the ambient secondary organic carbon in a Chinese megacity over five years from 2016 to 2020" conducted a long-term field campaign at a regional site in the YRD region from 2016 to 2020 and aimed to investigate the characteristics of carbonous aerosol pollution and their seasonal and diurnal variations, as well as the relationship between the meteorological factors and carbonaceous aerosol concentrations. This study enhanced the understanding of the variation and sources of SOC in the PM<sub>2.5</sub> fraction, and was in favor of evaluation of the effectiveness of the current air pollution control policies. The manuscript is overall well organized, and can be read easily. I broadly agree with the discussions and findings of this manuscript. I therefore recommend a minor revision of this manuscript before final publication in ACP.

- In the conclusion, it is difficult for me to find research findings with strong regularity or regional characteristics of the Yangtze River Delta. Therefore, it is suggested to condense the conclusion.
- In 3.2.3, The discussion on the formation of photochemistry should have become one of the highlights of the paper, but unfortunately, the reviewer found that the author basically stayed at the level of the discussion on the correlation between ox and SOC, and lacked in-depth analysis of radiation intensity and liquid phase processes, suggesting further in-depth discussion.