

Interactive comment on “Size segregated particle number and mass emissions in urban Beijing” by Jing Cai et al.

Anonymous Referee #3

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In this study, by combined using both chemical fingerprints (OA-PMF) and particle size distribution (Size-PMF) analyses to resolve the particle mass and number contributions from various sources during the measurement period from April 6 to July 2, 2018, the authors have made efforts to better constrain the chemical and physical properties of primary organic aerosol in Beijing. They indicated that on days with no signs of new particle formation (NPF), primary emissions from traffic and cooking activities, contributed most to the particle number concentration below 100 nm while secondary mass formation dominated the total particle mass concentration. Overall, this manuscript is well organized and present with new interesting results to readers and policymakers, which benefit for better understanding of the sources of PM_{2.5} in megacities like Beijing. Thus, this reviewer recommend it be accepted for publication

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in ACP after made several minor revisions.

1. Title: I suggest the title should be “Size segregated particle number and mass concentrations in urban Beijing” because both the number and mass concentrations of PM_{2.5} sampled by ACSM and SMPS. 2. Line 306-308: you only mentioned four factors rather than five here. Please check. 3. If possible, some additional discussion on comparison with former studies in Beijing with ACMS is added for better tracking the change of emission sources in Beijing since 2013.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-248>, 2020.

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