

# ***Interactive comment on “Characterization of Submicron Organic Particles in Beijing During Summertime: Comparison Between SP-AMS and HR-AMS” by Junfeng Wang et al.***

**Anonymous Referee #2**

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Wang et al. compare the OA properties by parallel measurements using SP-AMS and HR-AMS respectively, in summer Beijing. The AMS technique is suitable for online quantification of OA and in particular SP-AMS can provide a unique piece of OA that coated on rBC cores. The findings are therefore unique and valuable to understand the OA composition and chemistry in megacities like Beijing. The overall interpretation of the data is reasonable and the paper is well written, I suggest its acceptance in ACP after the following minor issues are well addressed.

(1) During the APHH campaign, another type of mass spectrometer (single particle mass spectrometry) was used to elucidate the OA properties too. Some studies should

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be included here to facilitate the interpretation. (2) Some typos or citation formats do not follow the ACP style, please check and revise. (3) In the instrumentation section, some necessary technical details are missing. For example, what is the m/z range of the OA mass spectra for HR-AMS and SP-AMS? Time resolution? Operation modes (V or W?) Is the tungsten vaporizer physically removed or turned off in SP-AMS? (4) Xie et al (Atmos Environ 2019;213:499-504) shows different PMF results from this study, is it because the datasets used for PMF analysis are different? (5) Line 316-319: The ABBOA is not separated in HR-AMS dataset, is it likely because that the ABBOA contains more refractory components? (6) References: Line 504-516, the references are the same, but repeated twice. (7) Figure 5: There are only four ion families here. How about the nitrogen-containing organic ions, although they may have little influences?

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