

Interactive comment on “Characterization of Anthropogenic Organic Aerosols by TOF-ACSM with the New Capture Vaporizer” by Yan Zheng et al.

Anonymous Referee #2

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This manuscript reports a thorough study on the characterization of different organic aerosol types using a ToF-ACSM equipped with a capture vaporizer. An important finding from this work is that the POA marker ions identified previously by the standard vaporizer (SV) instruments are valid for the CV instruments and that aerosol mass spectrometers equipped with CV may provide improved mass quantification as well as robust aerosol source apportionment capability in urban areas. This work is of high quality and the paper is well written. I recommend acceptance for publication on AMT after minor revisions.

Line 92, assigning m/z 55 to cooking seems questionable as m/z 55 has significant

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contributions from different types of OA, including combustion POAs and SOA.

Line 140, were the UMR and HR data from LTOF-AMS used together or separately for PMF analysis? What's the reason for not using organic ions between 12-19 in the PMF analysis?

The paragraph starting at Line 228, how likely was the discrepancy between the ACSM and AMS chloride due to the low mass resolution of ACSM? Was C3+ contribution at m/z 36 properly subtracted from the ACSM Chl quantification? How was chloride size distribution shown in Fig. S8 determined? If it was based on the ptof data of m/z 36, one needs to be aware of that m/z 36 may have significant contribution from C3+.

Line 304, it maybe helpful that that authors explain the meaning of “related to the mass resolution”

Line 304 - 306, the CV and SV instruments are collocated, thus sampled the same air mass, did not they? Then why is the lower f_{60} and f_{73} in the CV BBOA MS due to aging?

Line 316, cite references for the standard PM1 lens transmission efficiency.

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