

Supplement of Atmos. Chem. Phys., 16, 9109–9127, 2016
<http://www.atmos-chem-phys.net/16/9109/2016/>
doi:10.5194/acp-16-9109-2016-supplement
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Supplement of

Highly time-resolved urban aerosol characteristics during springtime in Yangtze River Delta, China: insights from soot particle aerosol mass spectrometry

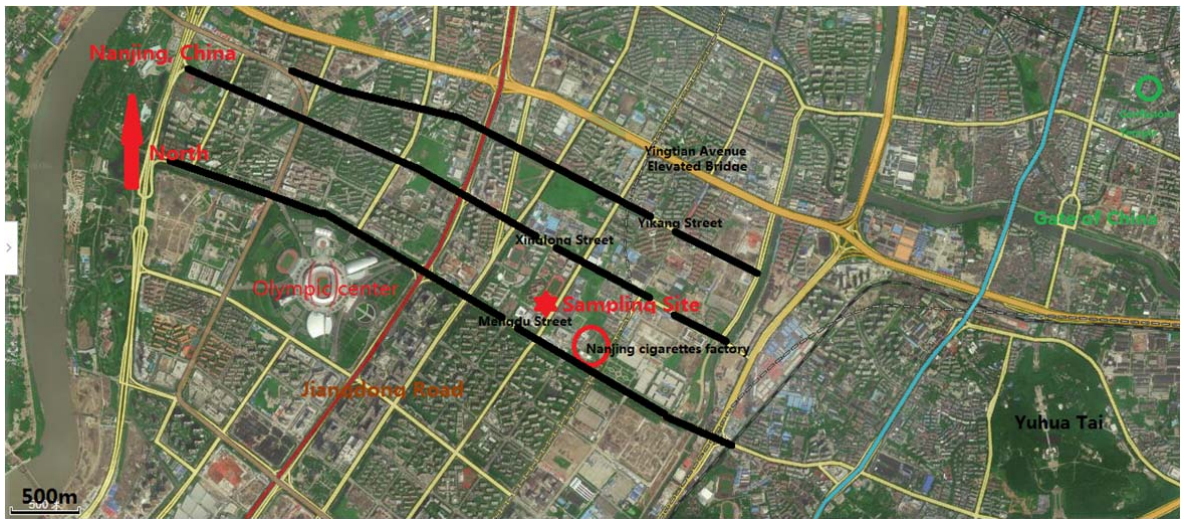
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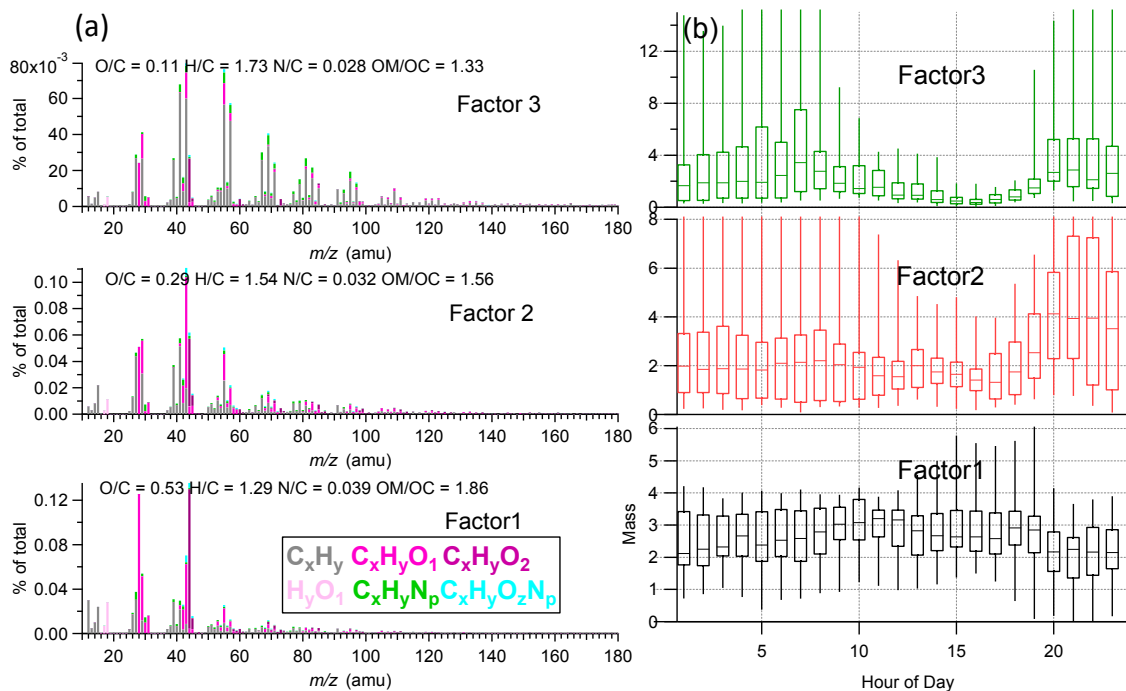


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33 Figure S1. Map of the sampling site and its surroundings.

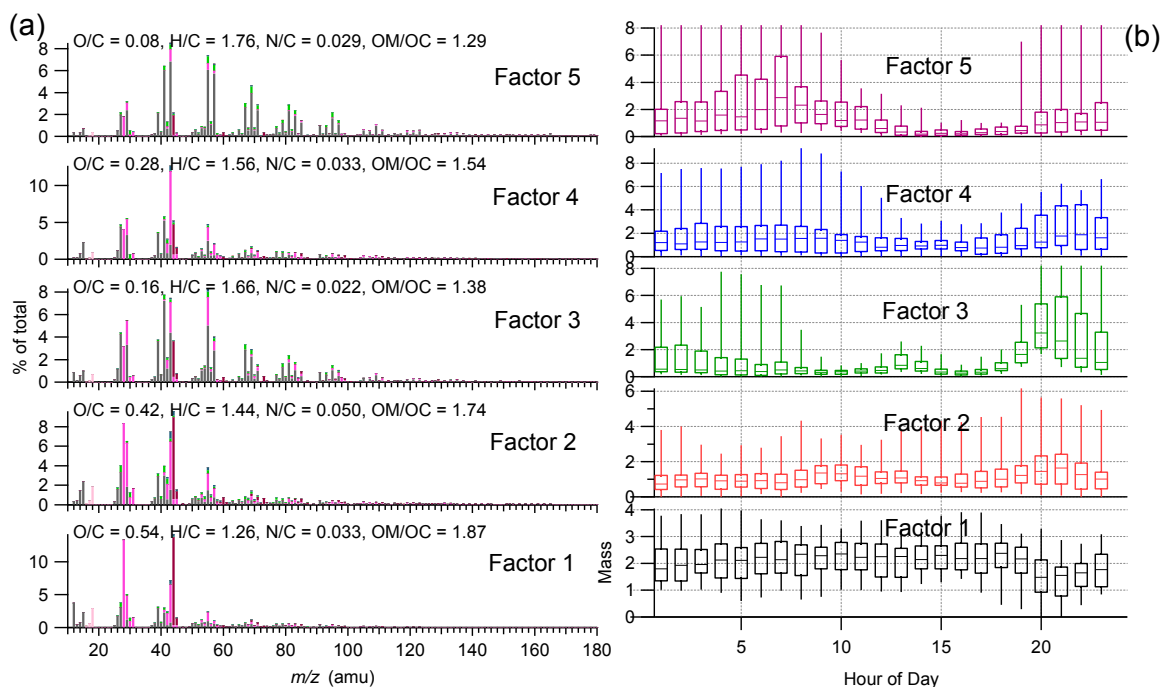
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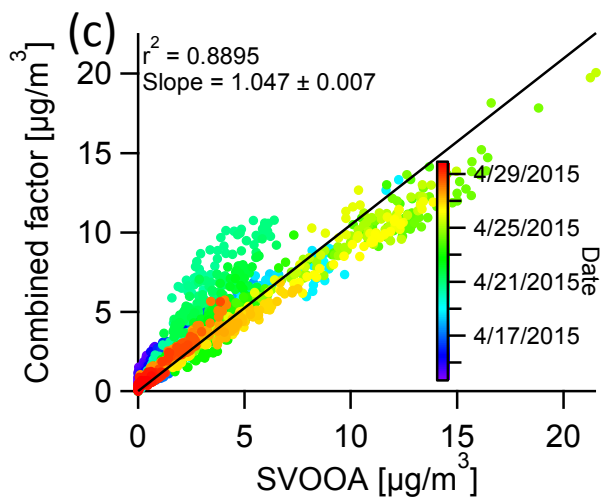
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36 Figure S2. High resolution mass spectra (a) and diurnal mass profiles of OA
 37 components of 3-factor solution from PMF analyses (b) (the lines in the boxes
 38 indicate the median values, the upper and lower boundaries of the boxes indicate the
 39 75th and 25th percentiles, and the whiskers above and below the boxes indicate the
 40 95th and 5th percentiles).

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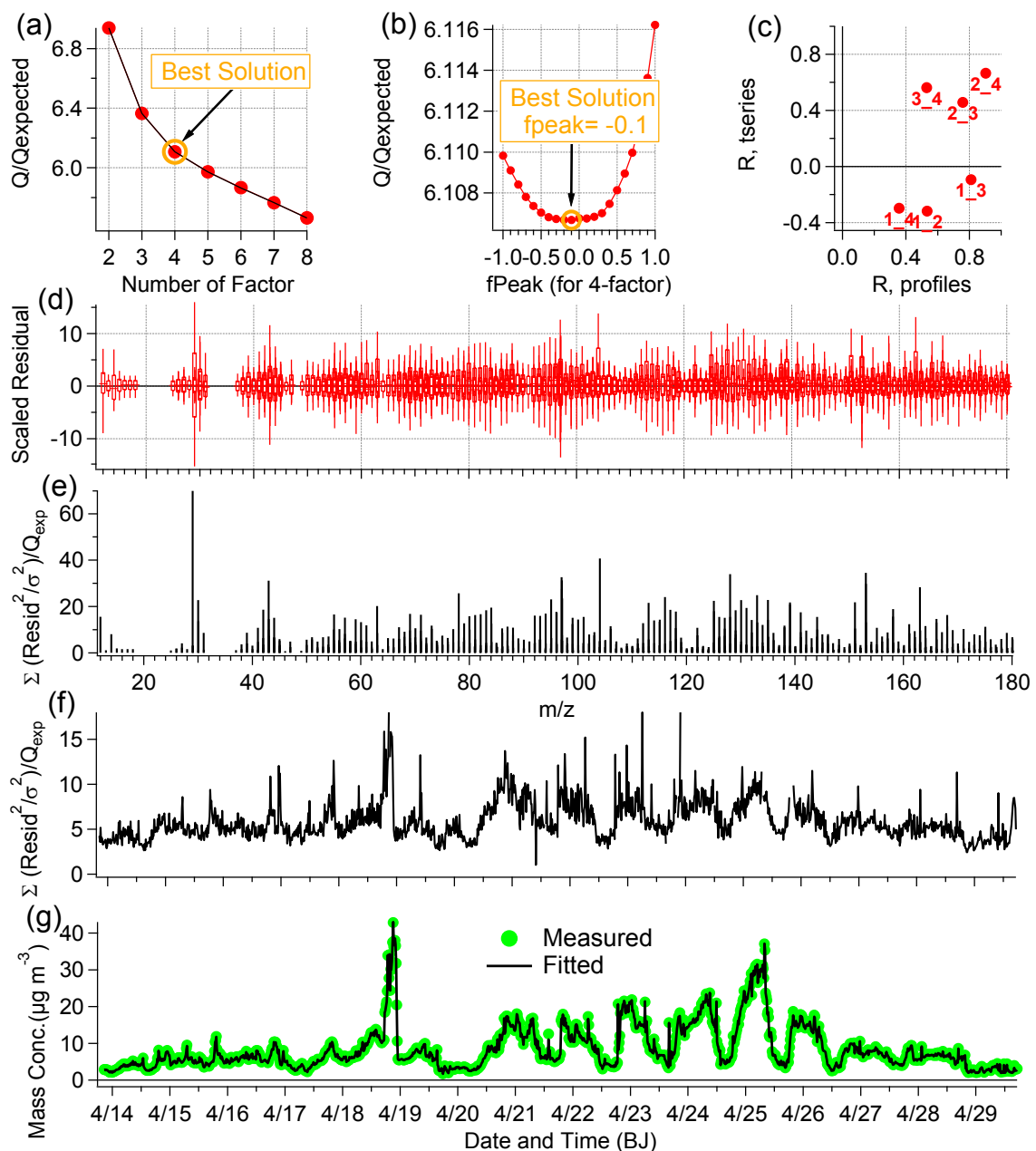
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46 Figure S3. High resolution mass spectra (a) and diurnal mass profiles of OA
 47 components of 5-factor solution from PMF analyses (b) (the lines in the boxes
 48 indicate the median values, the upper and lower boundaries of the boxes indicate the
 49 75th and 25th percentiles, and the whiskers above and below the boxes indicate the
 50 95th and 5th percentiles), (c) Scatter plot of the combined factor (Factor 2 and Factor
 51 4) versus the SVOOA in 4-factor solution (Fig. 9a).

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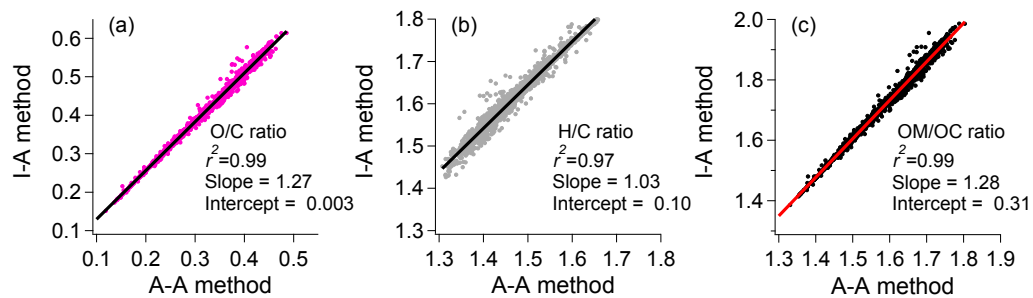


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55 Figure S4. Summary of key diagnostic plots of the PMF results: (a) Q/Q_{exp} as a
 56 function of number of factors (p) selected for PMF analysis. For the best solution (4-
 57 factor solution): (b) Q/Q_{exp} as a function of f_{peak} , (c) cross-correlation coefficients (R)
 58 of the time series and spectral profiles among the PMF factors, (d) the box and
 59 whiskers plot showing the distributions of scaled residuals for each m/z , (e) the Q/Q_{exp}
 60 values for each ion, (f) the Q/Q_{exp} for each point in time, and (g) time series of the
 61 measured OA mass and the reconstructed OA mass (= HOA + COA + SV-OOA +
 62 LV-OOA).

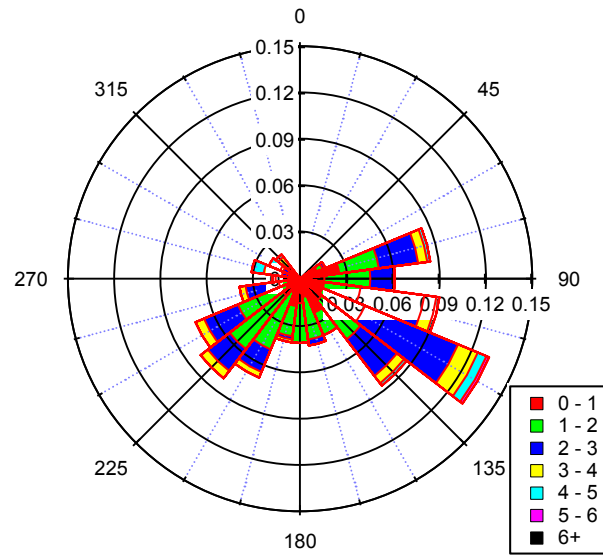
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Figure S5. Scatter plot of the O/C ratios (a), H/C ratios (b), and OM/OC ratios (d) calculated by using the I-A method versus those by using the A-A method.

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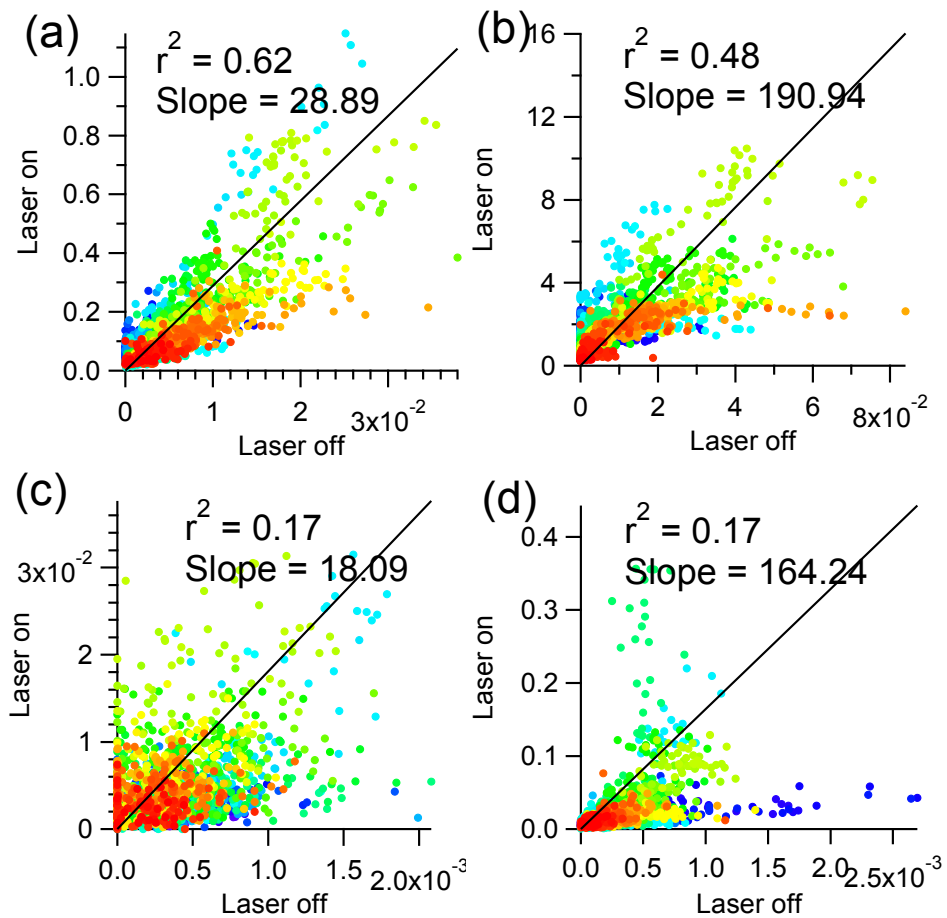


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70 Figure S6. Wind rose plot for the entire sampling period.

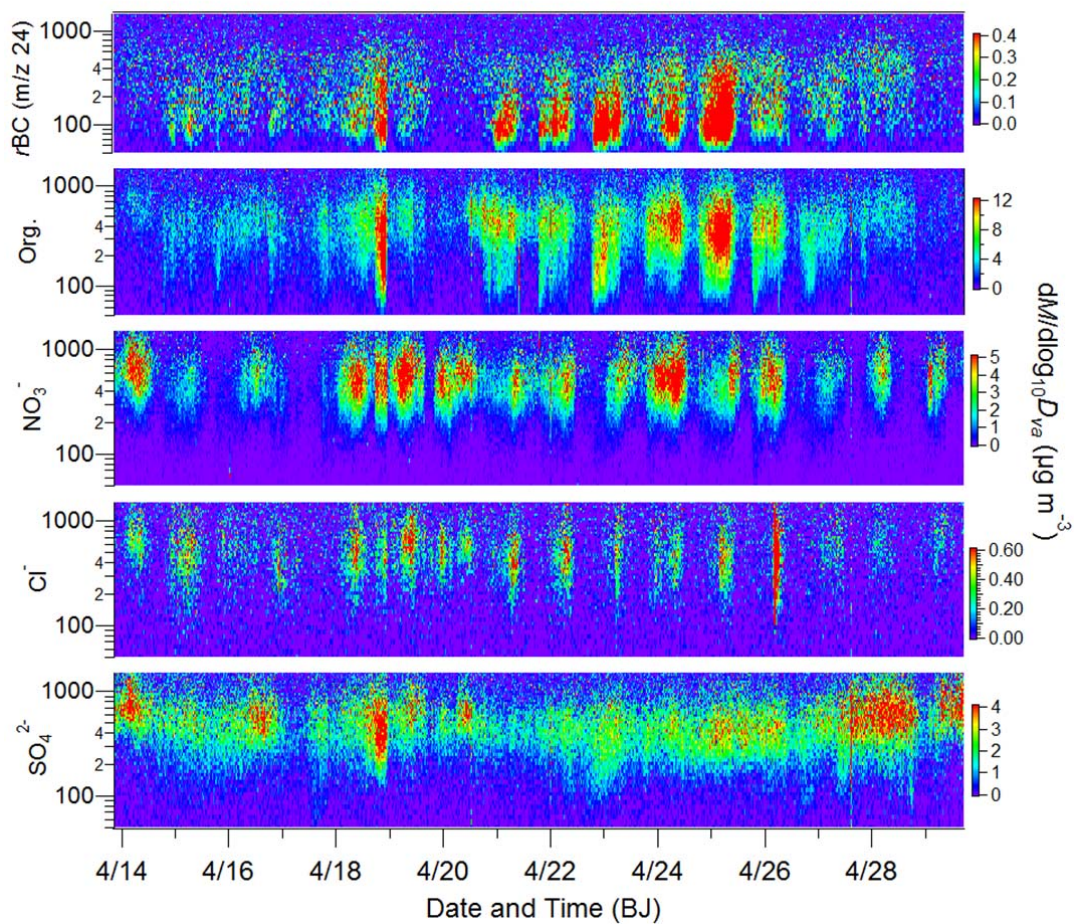
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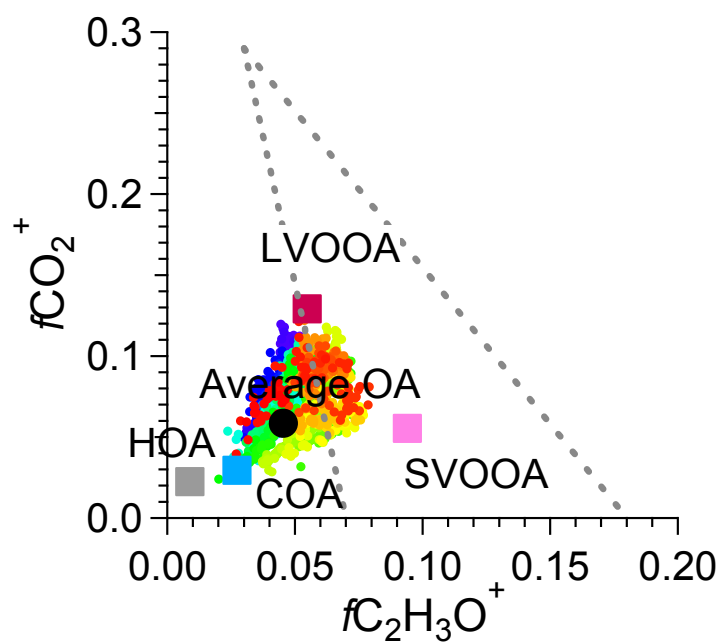
Figure S7. Scatter plots of a few selected metal ions of (a) Na, (b) K, (c) Al, and (d) Fe, obtained with dual-vaporizers setting (laser on) vs. tungsten only setting (laser off) (colored by time)



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81 Figure S8. Temporal variations of the mass-based size distributions of rBC, organics,
 82 nitrate, chloride, and sulfate over the sampling period.

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86 Figure S9. Triangle plot of $f_{\text{CO}_2^+}$ vs. $f_{\text{C}_2\text{H}_3\text{O}^+}$ for all OA (colored by time) and the
 87 four OA factors identified by the PMF analyses.

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