

1 *Supplement of*  
2 Highly time-resolved urban aerosol characteristics during  
3 springtime in Yangtze River Delta, China: Insights from soot  
4 particle aerosol mass spectrometry

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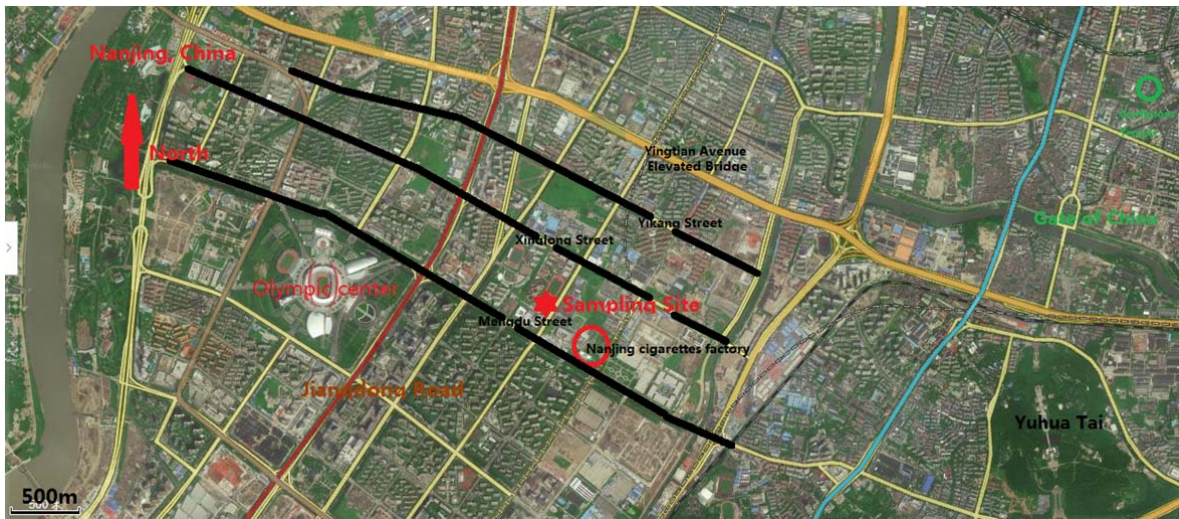
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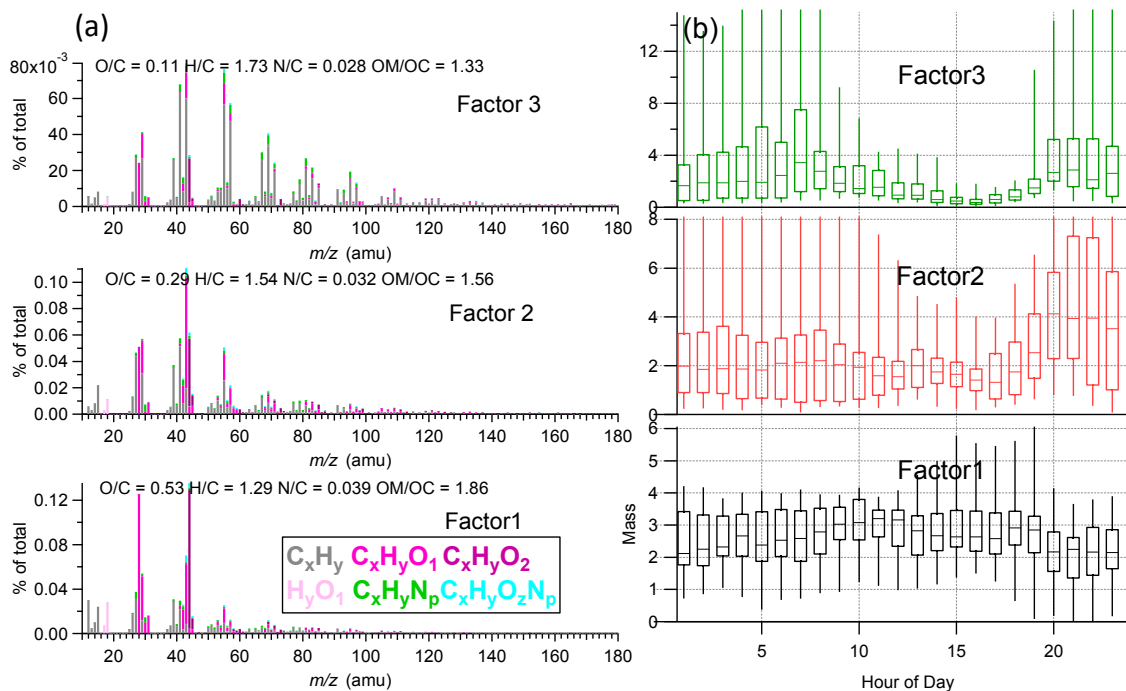


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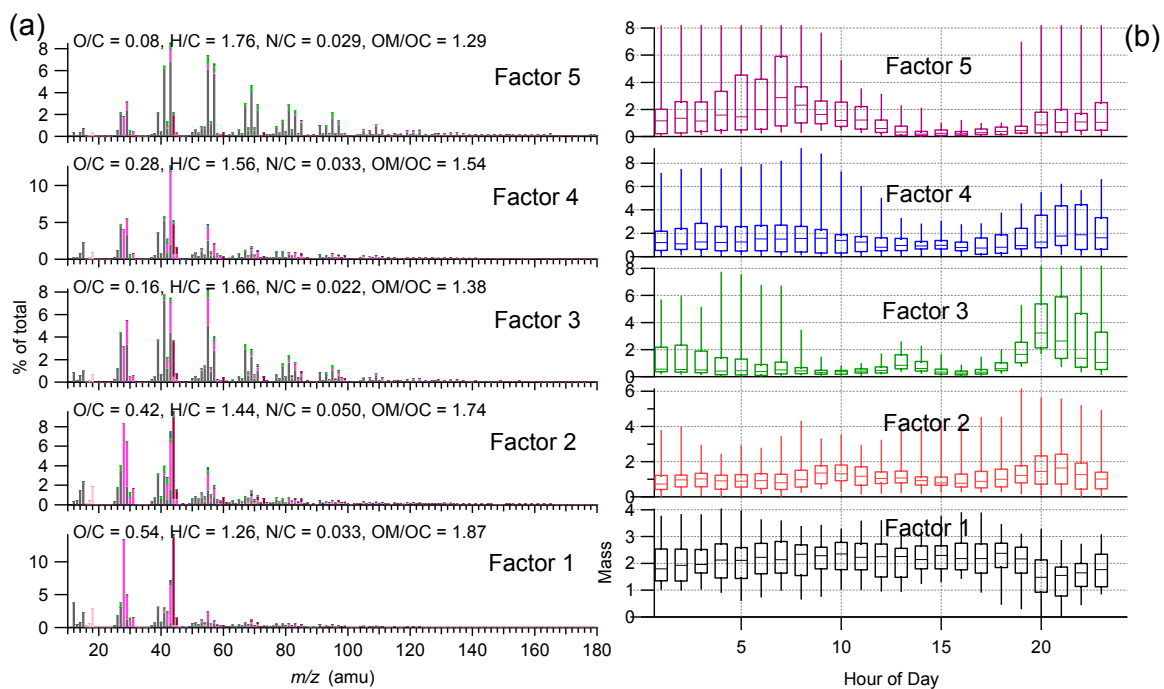
32 Figure S1. Map of the sampling site and its surroundings.

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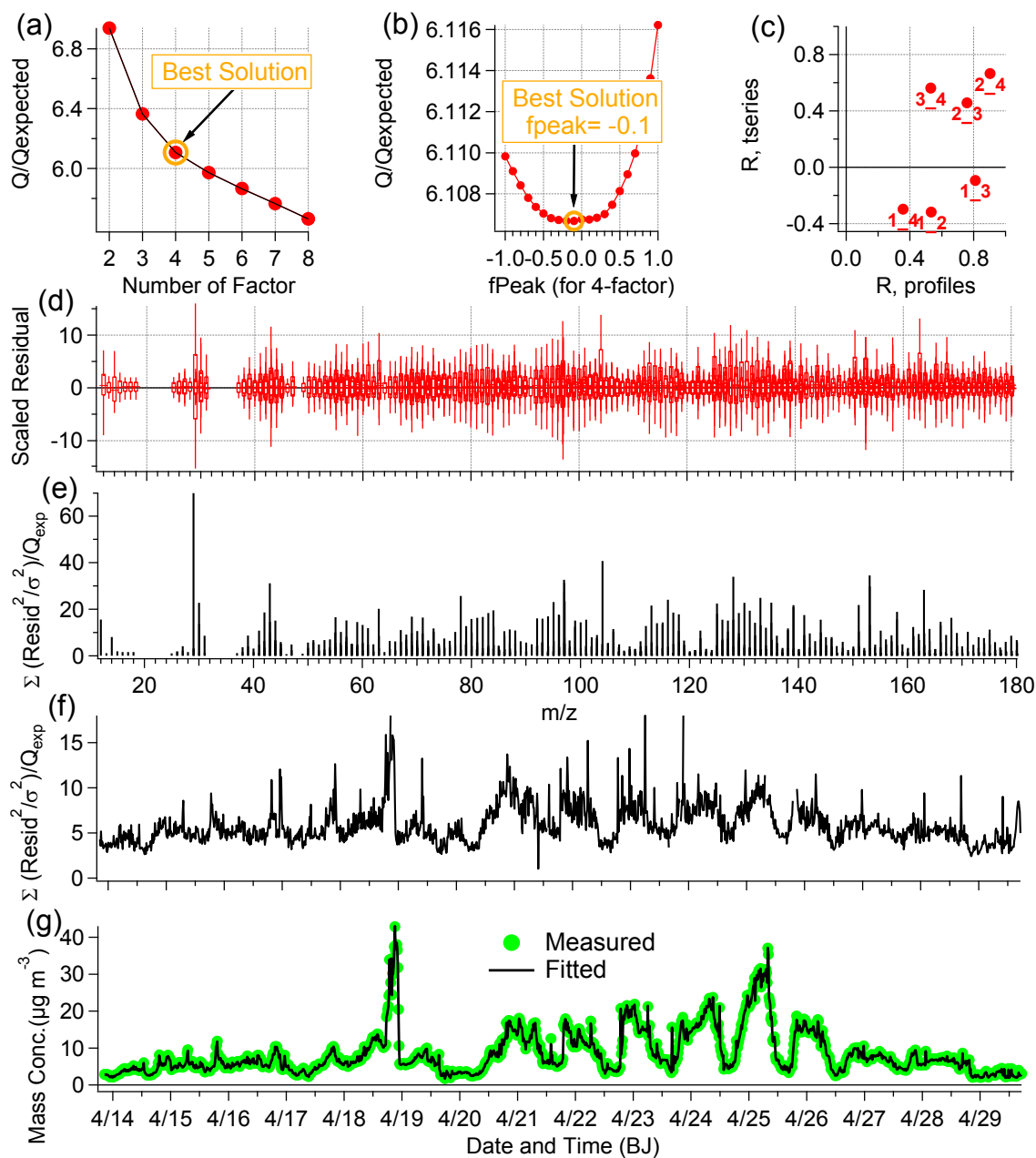
Figure S2. High resolution mass spectra (a) and diurnal mass profiles of OA components of 3-factor solution from PMF analyses (b) (the lines in the boxes indicate the median values, the upper and lower boundaries of the boxes indicate the 75th and 25th percentiles, and the whiskers above and below the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



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42 Figure S3. High resolution mass spectra (a) and diurnal mass profiles of OA  
 43 components of 5-factor solution from PMF analyses (b) (the lines in the boxes  
 44 indicate the median values, the upper and lower boundaries of the boxes indicate the  
 45 75th and 25th percentiles, and the whiskers above and below the boxes indicate the  
 46 95th and 5th percentiles).

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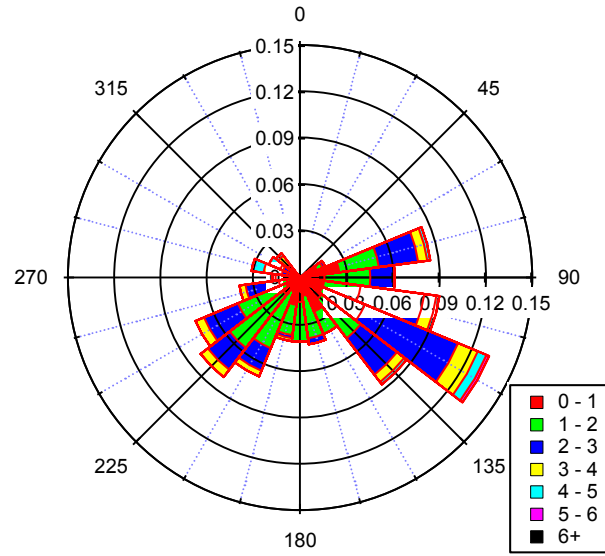


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50 Figure S4. Summary of key diagnostic plots of the PMF results: (a)  $Q/Q_{\text{exp}}$  as a  
 51 function of number of factors ( $p$ ) selected for PMF analysis. For the best solution (4-  
 52 factor solution): (b)  $Q/Q_{\text{exp}}$  as a function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

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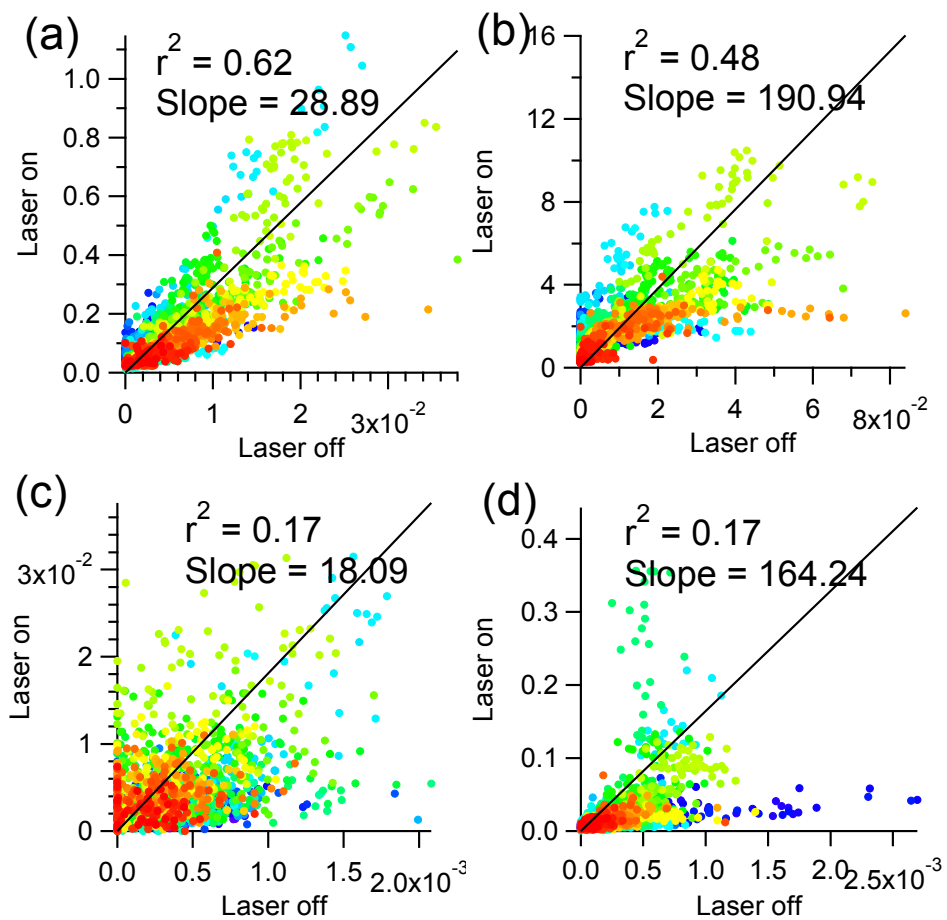
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60 Figure S5. Wind rose plot for the entire sampling period.

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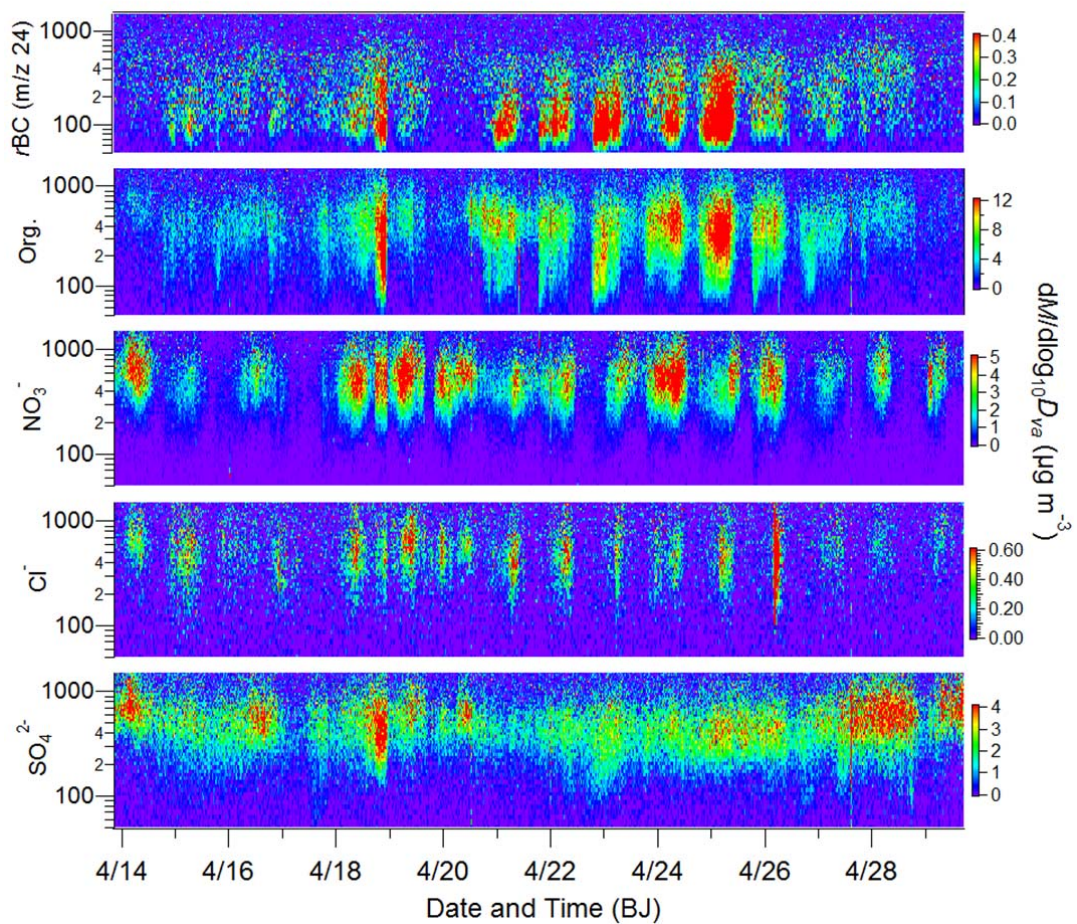


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66 Figure S6. Scatter plots of a few selected metal ions of (a) Na, (b) K, (c) Al, and (d)  
67 Fe, obtained with dual-vaporizers setting (laser on) vs. tungsten only setting (laser off)  
68 (colored by time)

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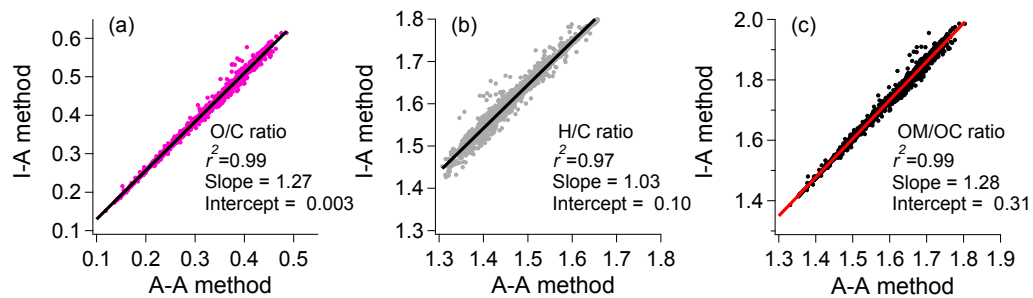


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71 Figure S7. Temporal variations of the mass-based size distributions of rBC, organics,  
 72 nitrate, chloride, and sulfate over the sampling period.

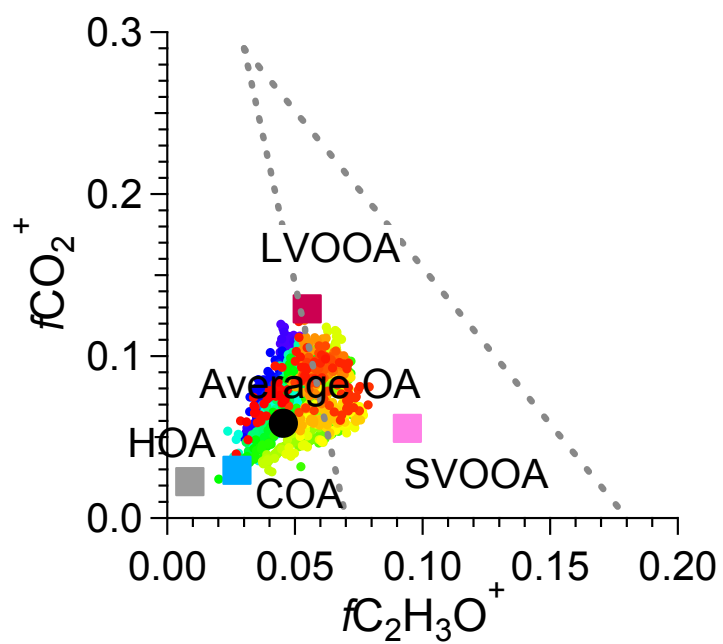
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Figure S8. Scatter plot of the O/C ratios (a), H/C ratios (b), and OM/OC ratios (d) calculated by using the I-A method versus those by using the A-A method.



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80 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  
 81 four OA factors identified by the PMF analyses.

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