



## Supplement of

## Characteristics and sources of submicron aerosols above the urban canopy (260 m) in Beijing, China during 2014 APEC summit

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## Supplementary Information



**Fig. S1.** Summary of key diagnostic plots of the ACSM PMF results for 2-factor solution: (a)  $Q/Q_{exp}$  as a function of number of factors (P) selected for PMF modeling. For the 2-factor solution, (b)  $Q/Q_{exp}$  as a function of fPeak;(c) fractions of OA factors vs. fPeak, (d) correlations among PMF factors, (e) the box and whiskers plot showing the distributions of scaled residuals for each m/z, (f) time series of the measured organic mass and the reconstructed organic mass (= OOA+HOA), (g) variations of the residual (= measured – reconstructed) of the fit, (h) the  $Q/Q_{exp}$  for each point in time, and (i) the  $Q/Q_{exp}$  values for each m/z.



**Fig. S2.** (a) Time series of NR-PM<sub>1</sub> and RH, (b) evolution of vertical profiles of meteorological variables (WS, WD) during the cleaning period of Ep1. The NR-PM<sub>1</sub> data were color coded by the WD with black represent south, yellow represent northeast, and red represent northwest.



Fig. S3. Wind rose plots of RH (a) before APEC and (b) during APEC.



Fig. S4. Vertical profiles of extinction from lidar measurements.

fPeak	$HOA(r^2)$	$OOA(r^2)$
0	0.76	0.88
0.2	0.83	0.87
$0.4^{\mathrm{a}}$	0.89	0.87
0.6	0.87	0.87

**Table S1.** Summary of correlation coefficients  $(r^2)$  between the ACSM PMF spectral with the standard spectral (Ng et al., 2010) at different fPeak.

<sup>a</sup> The optimal fPeak for 2-factor solution.

## References

Ng, N., Canagaratna, M., Jimenez, J., Zhang, Q., Ulbrich, I., and Worsnop, D.: Real-time methods for estimating organic component mass concentrations from aerosol mass spectrometer data, Environ. Sci. Technol., 45, 910-916, 2010.