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Supplement of

Source apportionment of organic aerosol from 2-year highly time-resolved measurements by an aerosol chemical speciation monitor in Beijing, China

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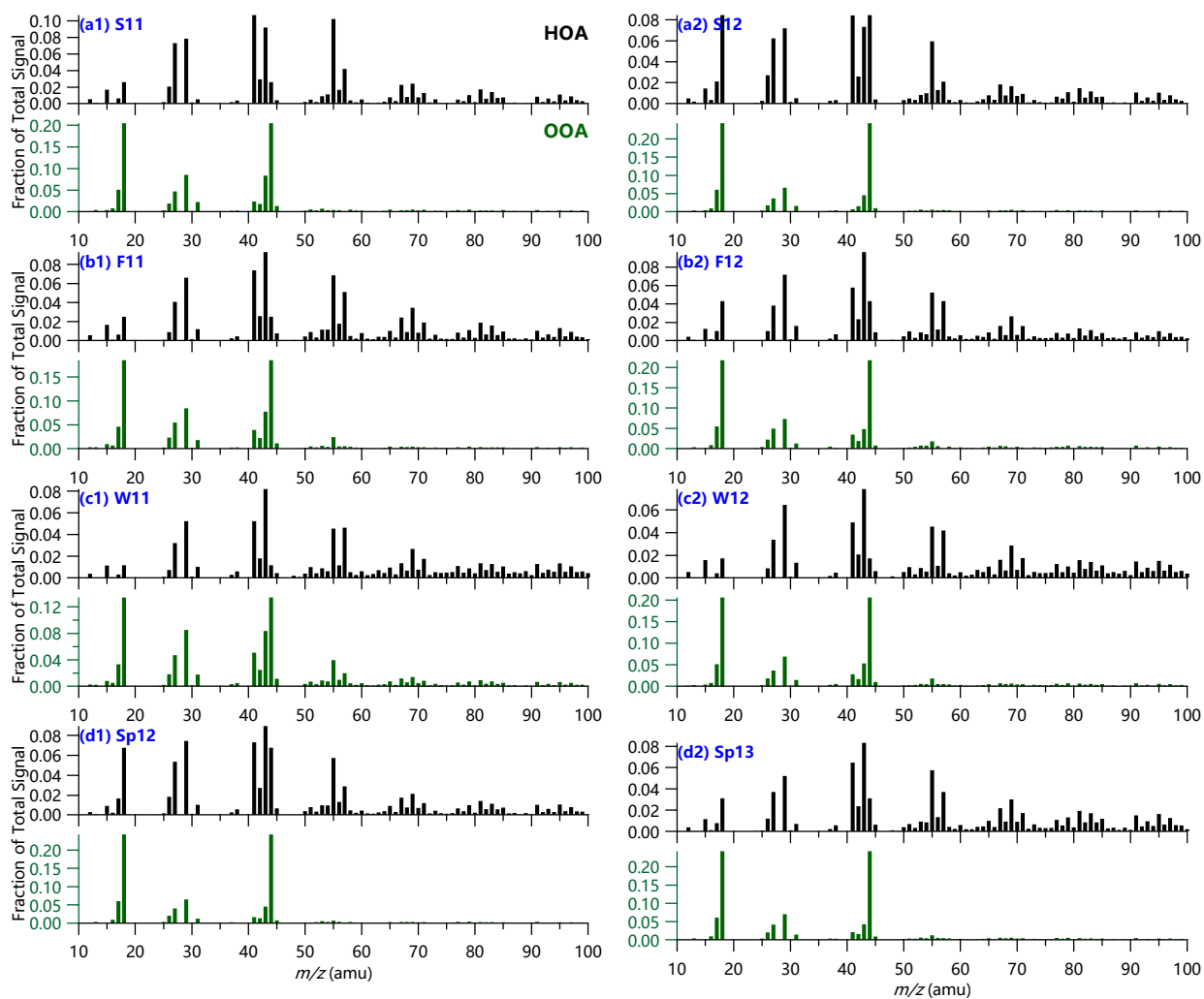


Figure S1: Mass spectral profiles of HOA and OOA from two-factor solution of PMF analysis of ACSM OA mass spectra in (a) S11, summer 2011, (a2) S12, summer 2012, (b1) F11, fall 2011, (b2) F12, fall 2012, (c1) W11, winter 2011, (c2) W12, winter 2012, (d1) Sp12, spring 2012, and (d2) Sp13, spring 2013.

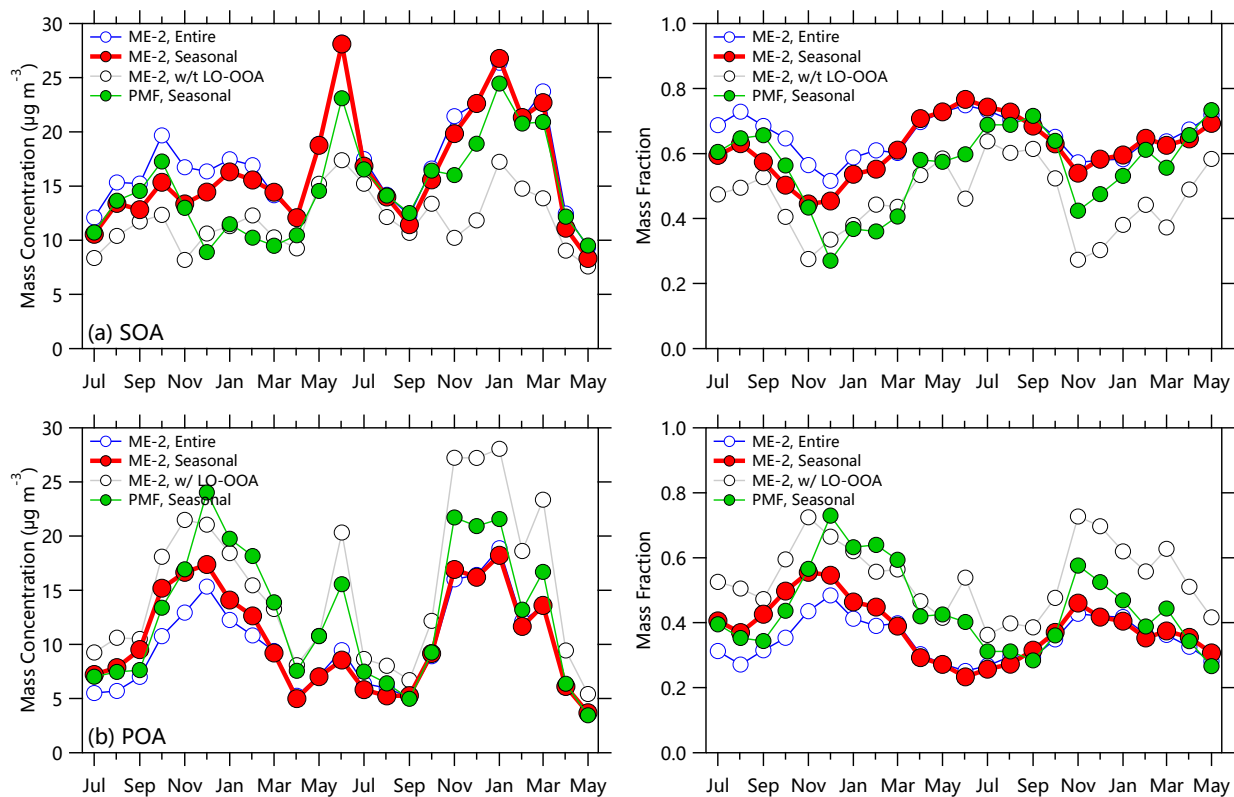


Figure S2: Comparisons of monthly-average mass concentrations and mass fractions of POA and SOA between three different analysis, including seasonal PMF-ACSM and ME2-ACSM, and ME2-ACSM for the entire dataset. In addition, the results of SOA by subtracting LO-OOA and POA by adding LO-OOA are also shown.

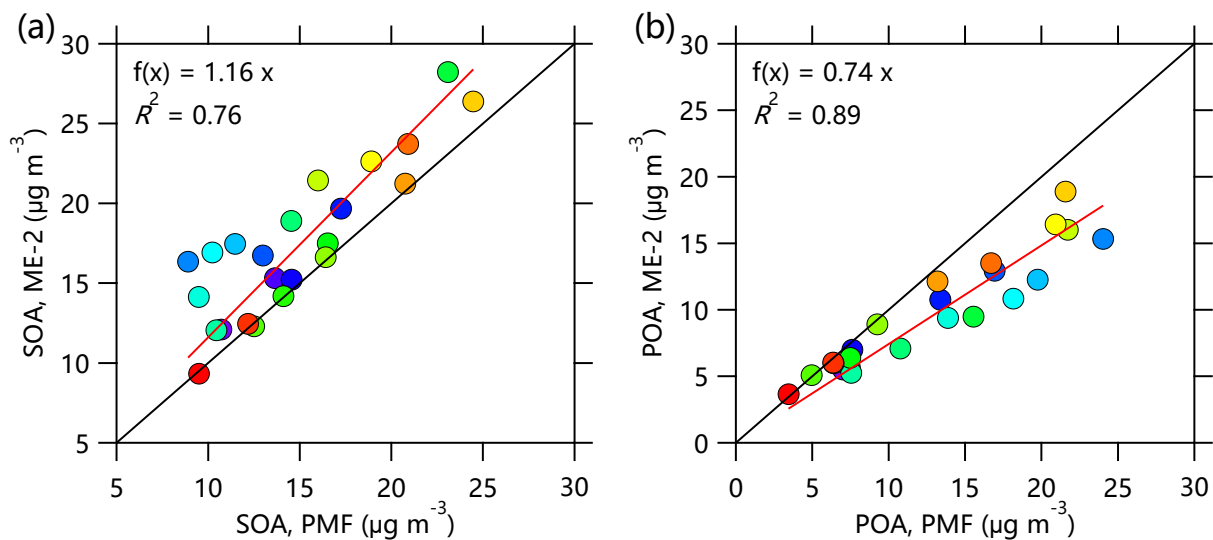


Figure S3: Scatter plots of monthly average POA and SOA concentrations from ME2-ACSM and PMF-ACSM.

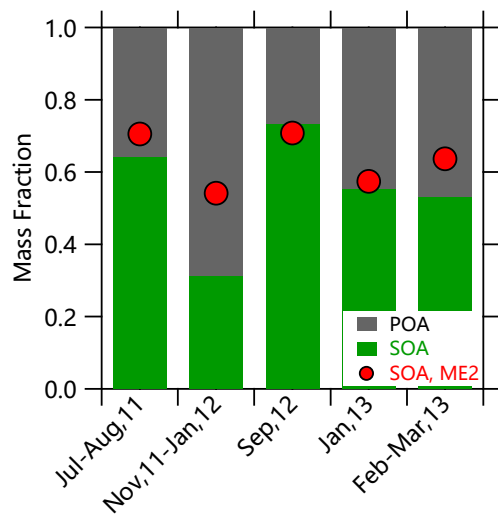


Figure S4: Comparisons of POA and SOA from ME2-ACSM in this study with those reported previously from PMF-ACSM in July – August 2011 (Sun et al., 2012), November 2011 – January 2012 (Sun et al., 2013), September 2012 (Jiang et al., 2013), January 2013 (Sun et al., 2014), and February – March 2013 (Jiang et al., 2015).

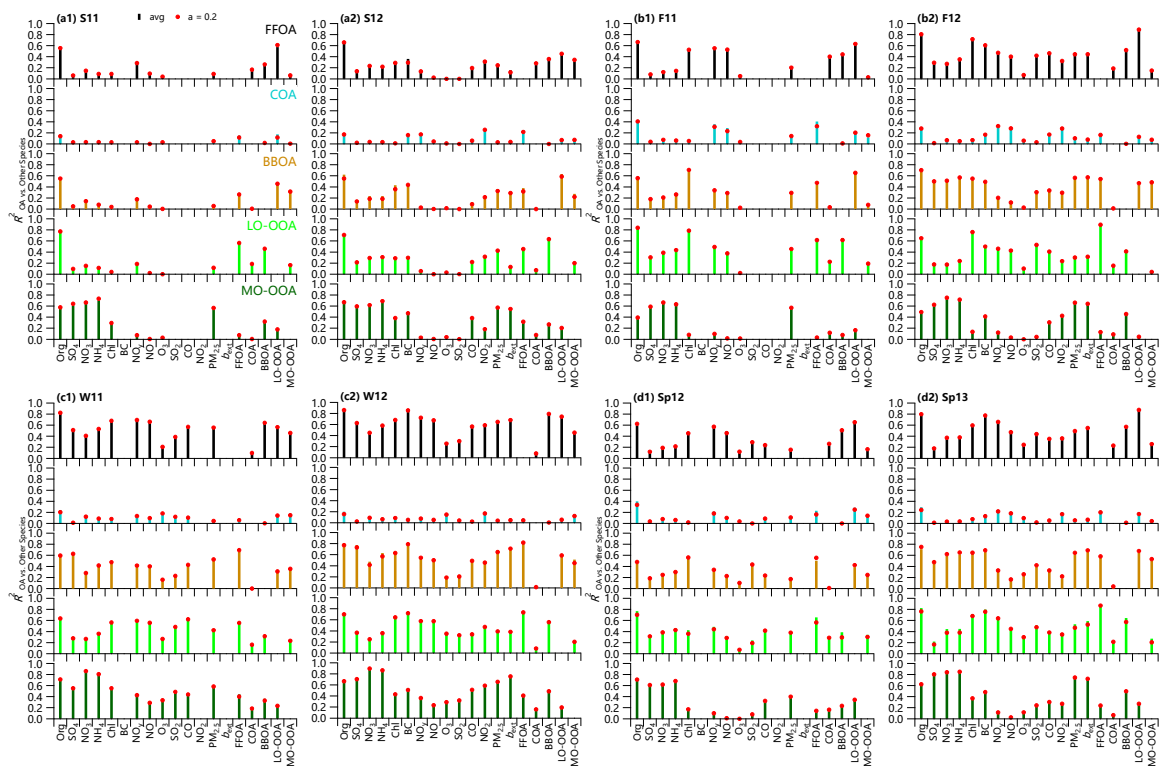


Figure S5: Correlation coefficients of five OA factors with other species, including Org, SO₄, NO₃, NH₄, Chl, black carbon (BC), NO, NO₂, NO_y, O₃, SO₂, CO, PM_{2.5}, light extinction, FOA, COA, BBOA, LO-OOA and MO-OOA in (a1) S11, summer 2011, (a2) S12, summer 2012, (b1) F11, fall 2011, (b2) F12, fall 2012, (c1) W11, winter 2011, (c2) W12, winter 2012, (d1) Sp12, spring 2012, and (d2) Sp13, spring 2013.

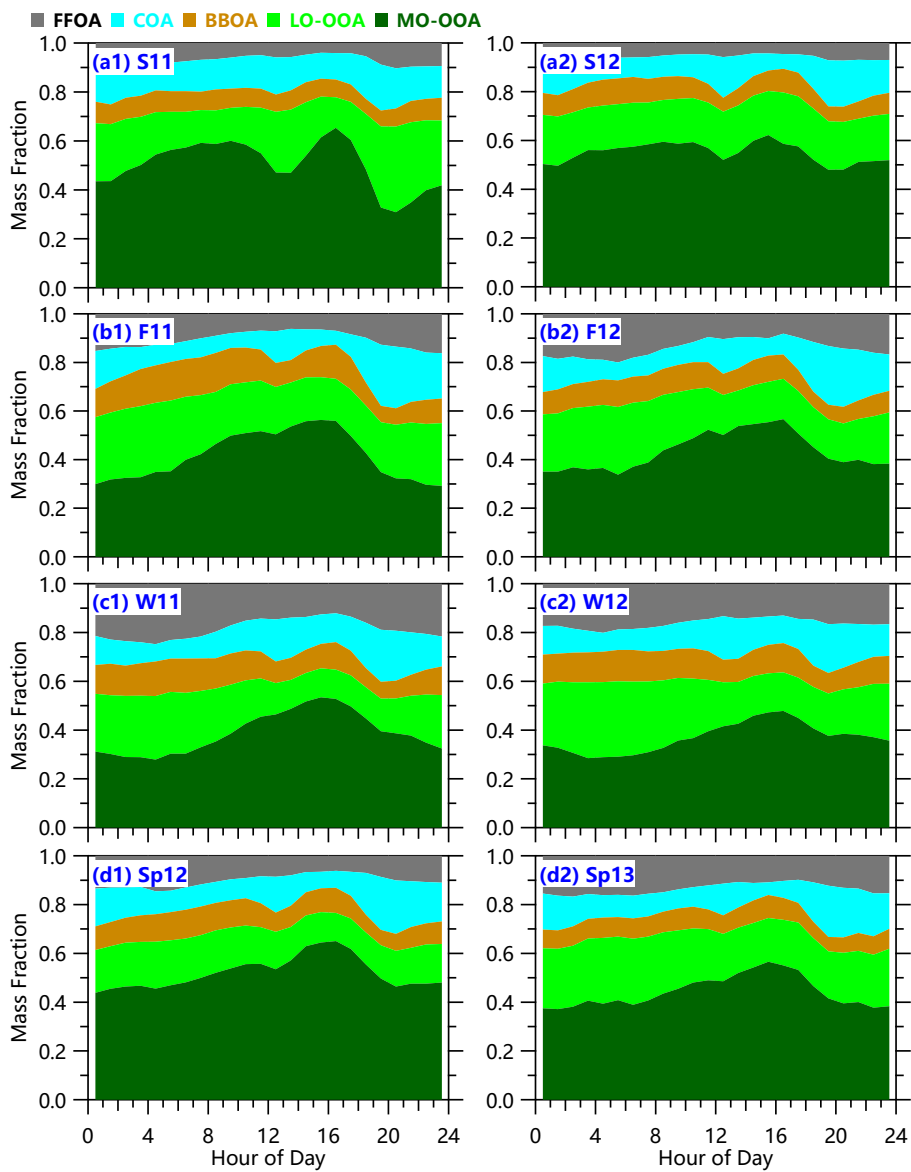


Figure S6: Average diurnal OA composition during four seasons.

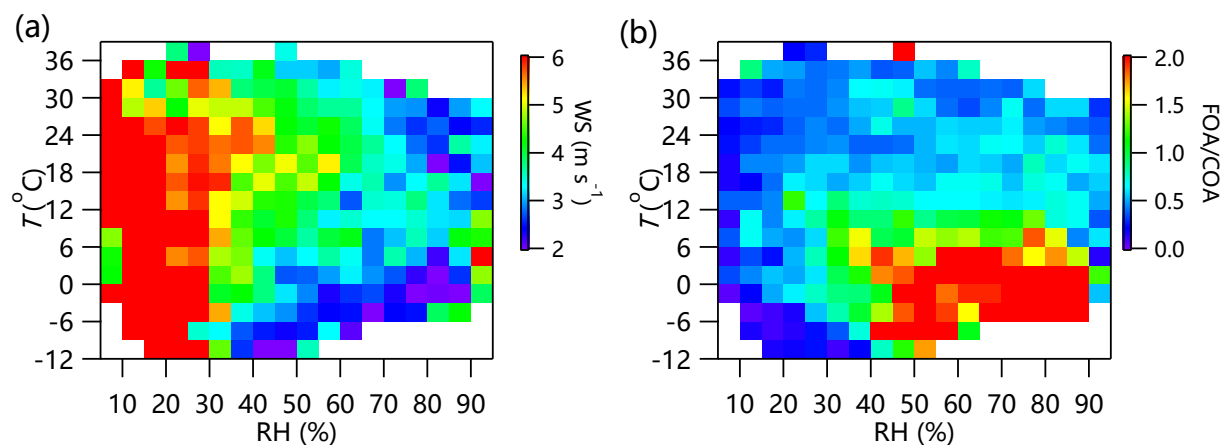


Figure S7: RH/ T dependence of (a) wind speed and (b) FOA/COA for the entire study. The data are grouped into grids with increments of RH and T being 5% and 3 °C, respectively. Grid cells with the number of data points fewer than 10 are excluded.

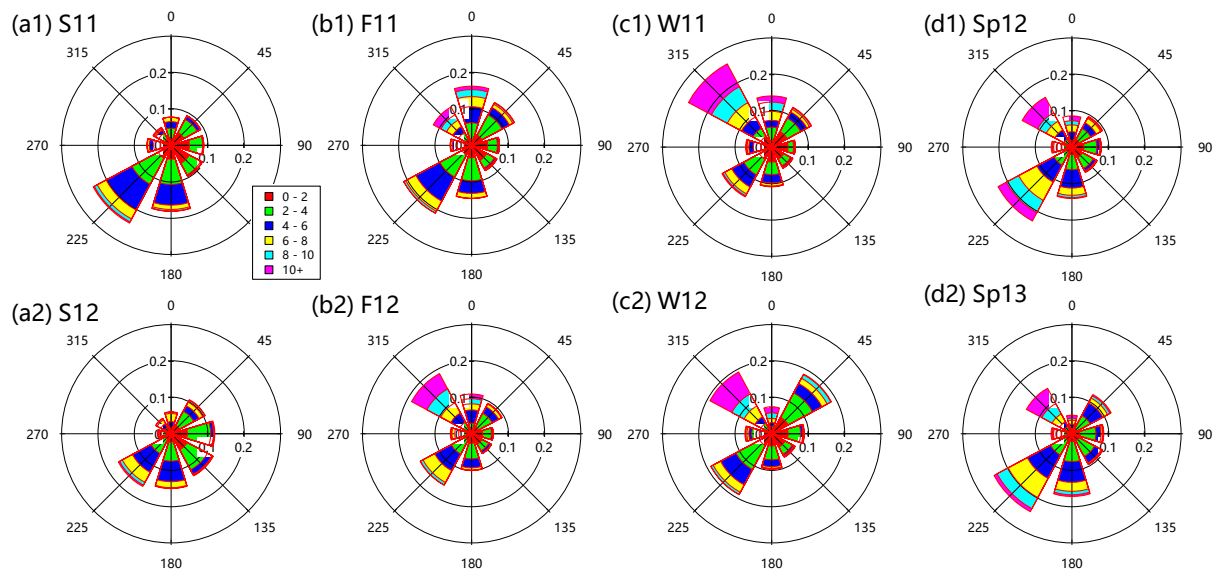


Figure S8: Wind rose plots color coded by wind speed (m s^{-1}) during four seasons. The wind speed and wind direction were measured at 240 m, and the scales are set to the same during all seasons.

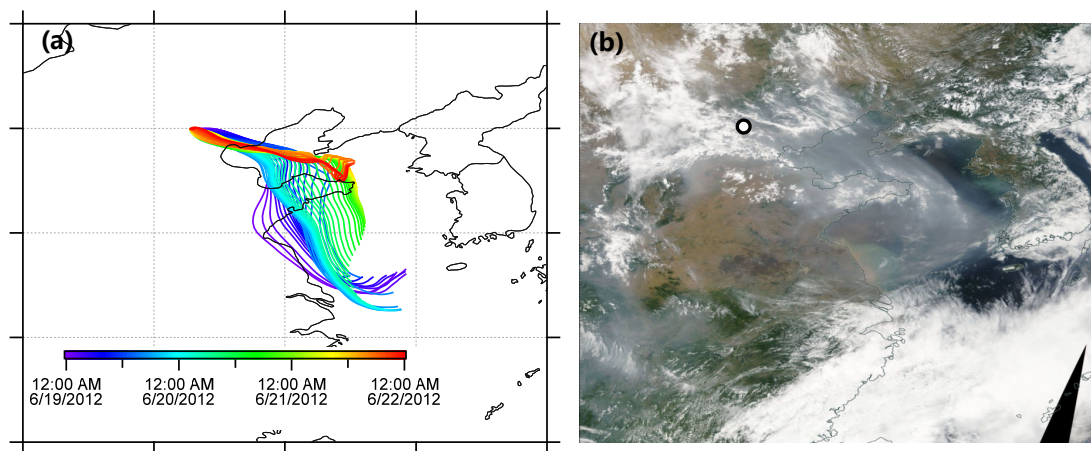


Figure S9. (a) 72 hr back trajectories arriving at Beijing during the period of 19 – 21 June, 2012, (b) the MODIS image on 20 June, 2012 (<https://earthdata.nasa.gov/labs/worldview/>).

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