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Supplement of

Characterization of black carbon-containing fine particles in Beijing during wintertime

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Figure S1. Map of the sampling site (IAP-Tower Division, CAS).

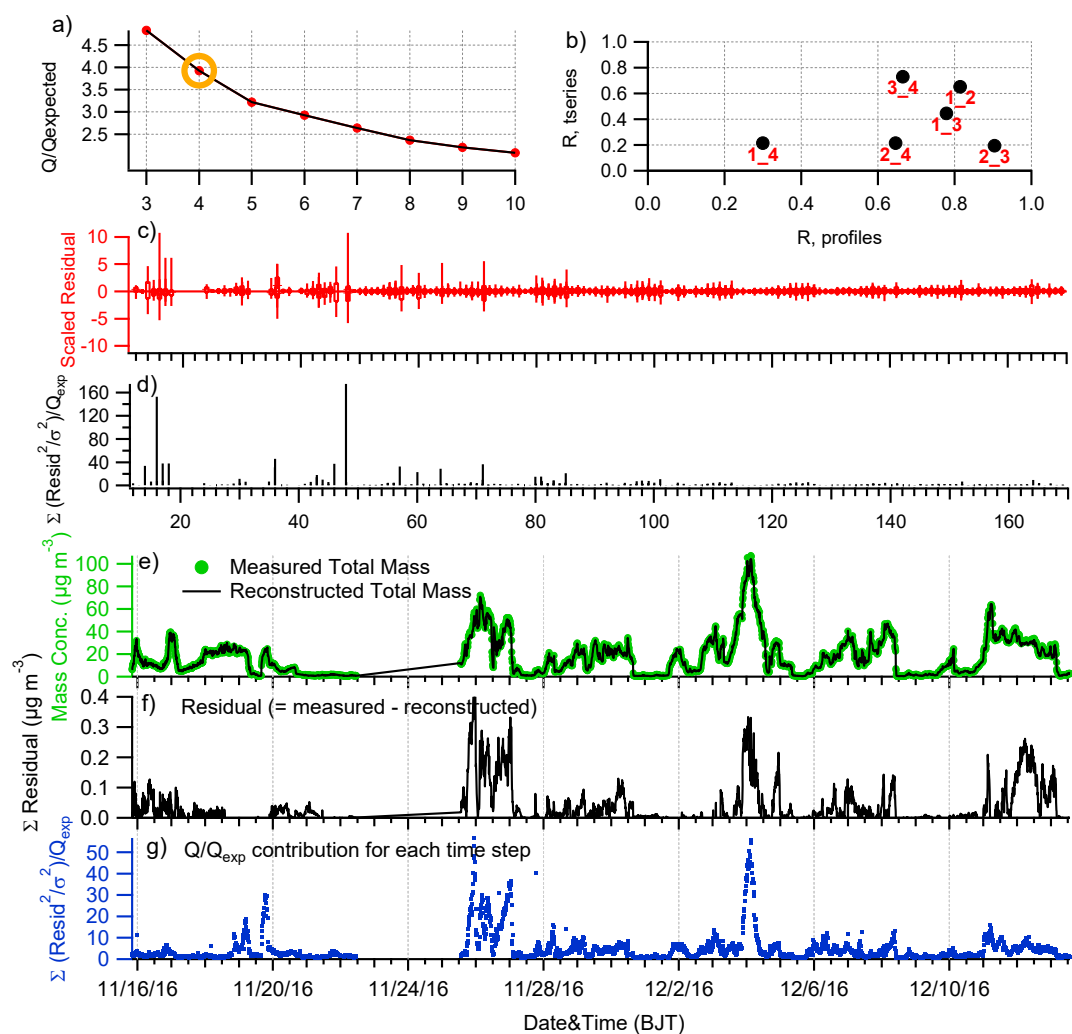


Figure S2. Summary of key diagnostic plots of the PMF results: (a) Q/Q_{exp} as a function of number of factors (p) selected for PMF analysis. For the best solution (4-factor solution): (b) correlations among PMF factors, (c)(d) the box and whiskers plot showing the distributions of scaled and summed residuals for each m/z , (d)(e) time series of the measured organic mass and the reconstructed organic mass, (f) variations of the residual (= measured - reconstructed) of the fit, and (g) the Q/Q_{exp} for each point in time

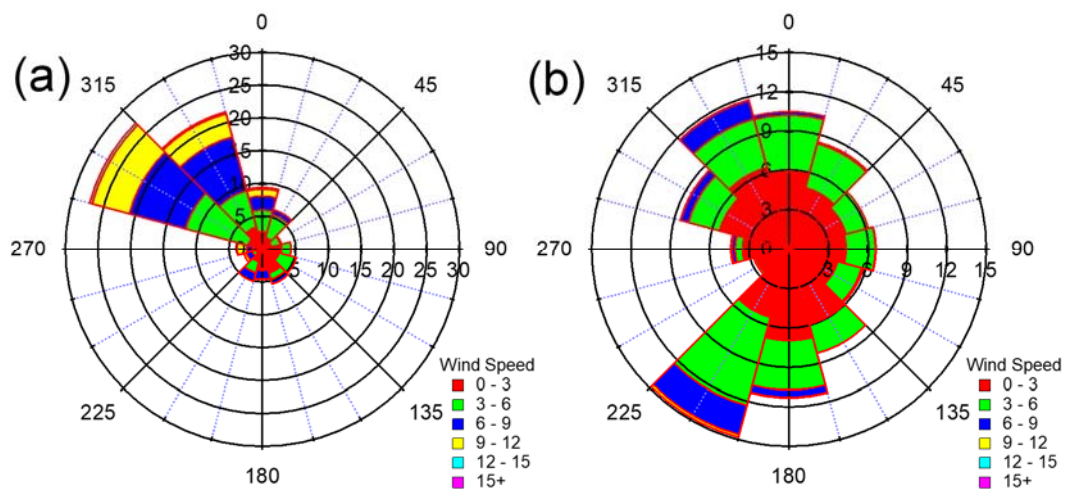


Figure S3. Rose-plots of wind direction and wind speed of (a) clean periods and (b) pollution periods.

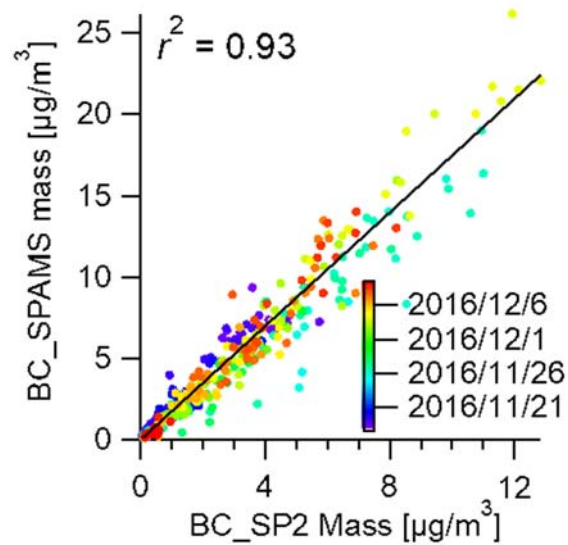


Figure S4. Scatter plots of SP-AMS measured BC vs. SP2 measured BC.

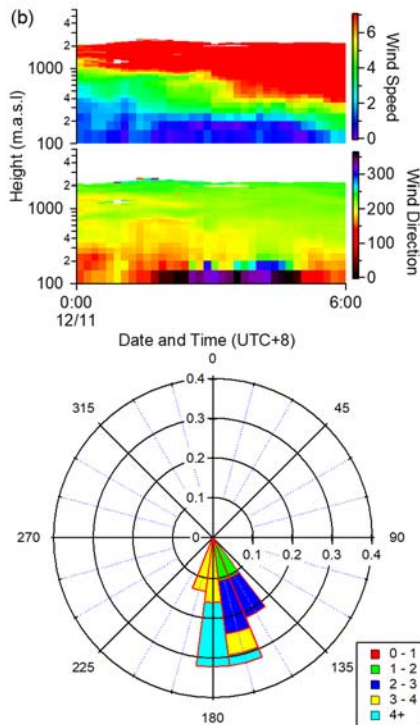
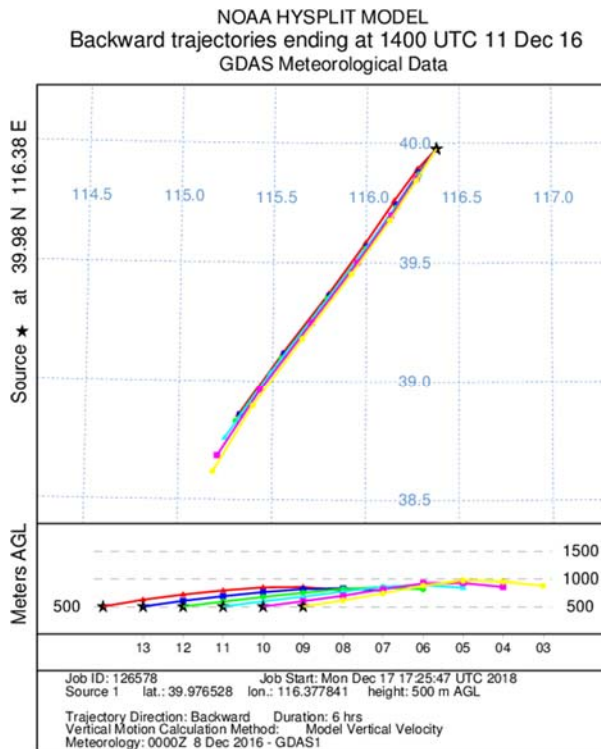
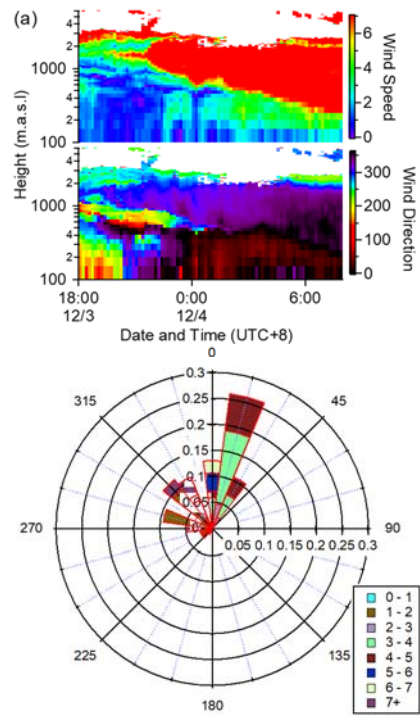
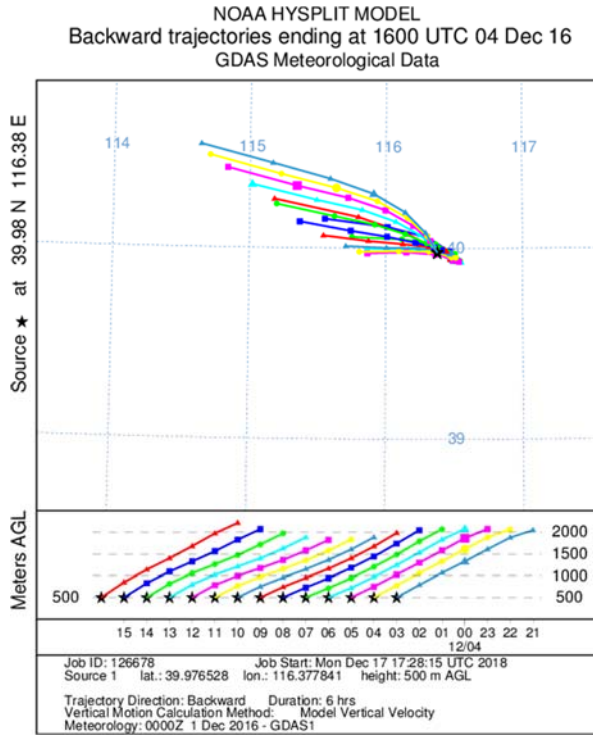


Figure S5. 6-hour back trajectories, wind rose plots and vertical distributions of wind speeds/directions of (a) FE (first episode), and (b) SE (second episode).

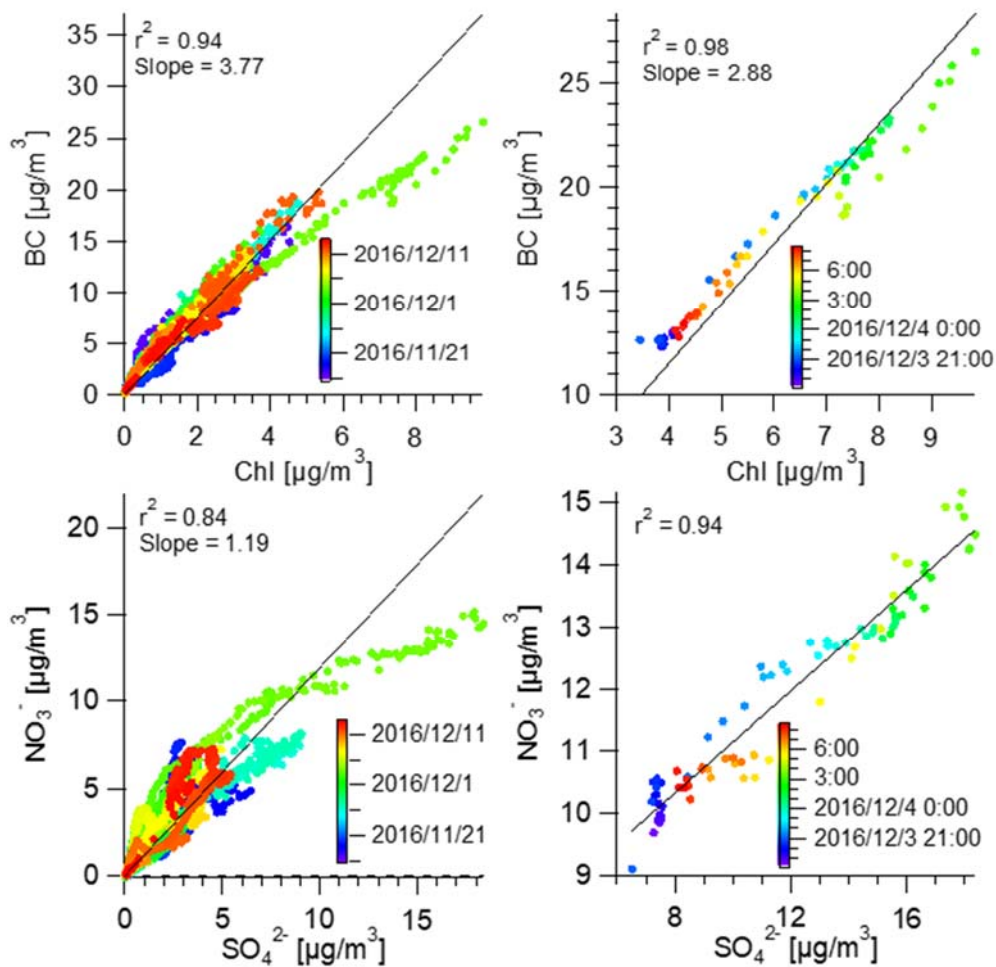


Figure S6. Scatter plots of BC vs. chloride, and nitrate vs. sulfate during the whole campaign (left panel) and the first episode (FE) (right panel).

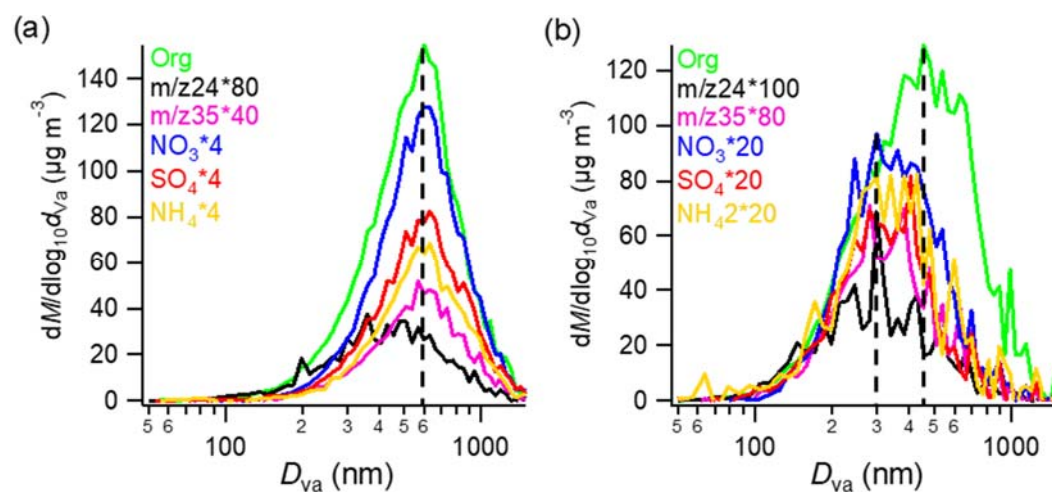


Figure S7. Mass-based average size distributions of BC cores and its coating components during (a) first episode (FE) and (b) second episode (SE).