

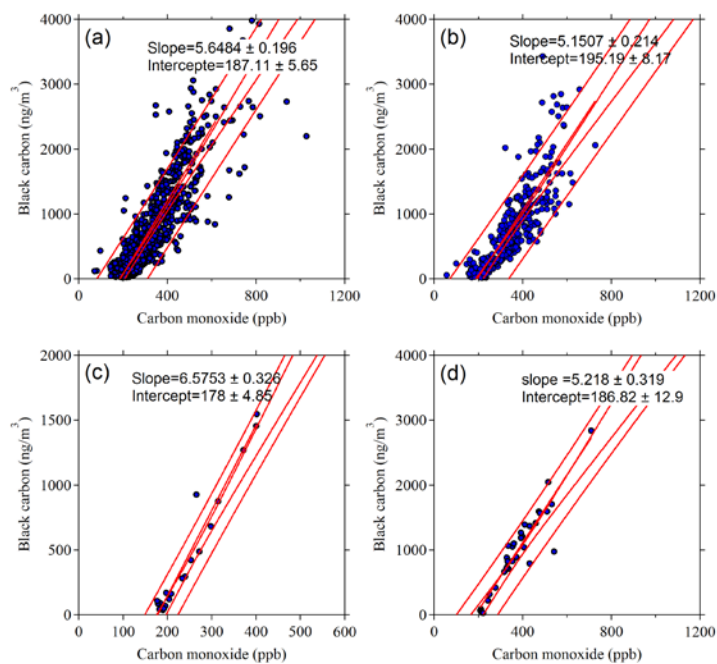
## Supplement materials: Correlation of black carbon aerosol and carbon monoxide concentrations measured in the high-altitude environment of Mt. Huangshan, eastern China

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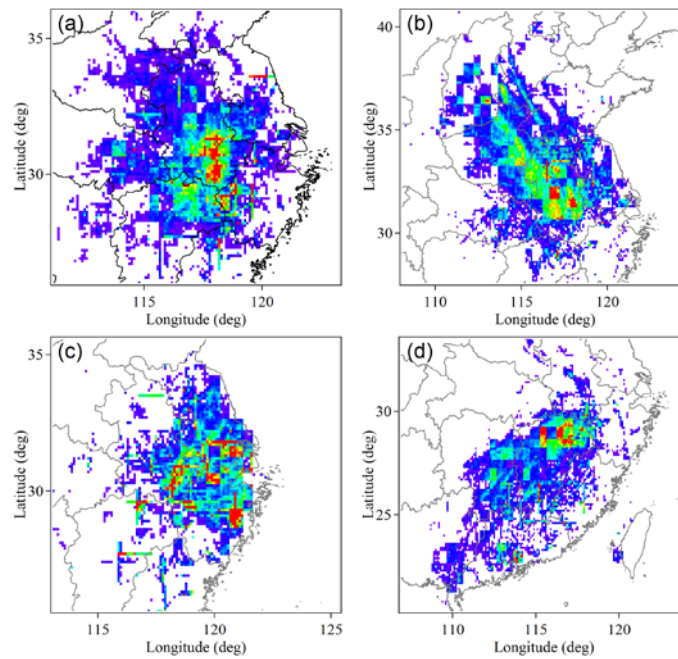
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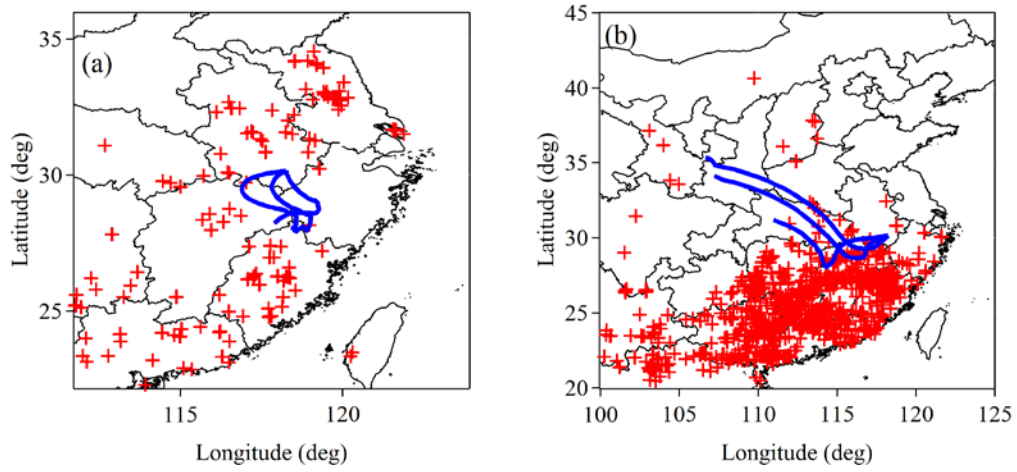
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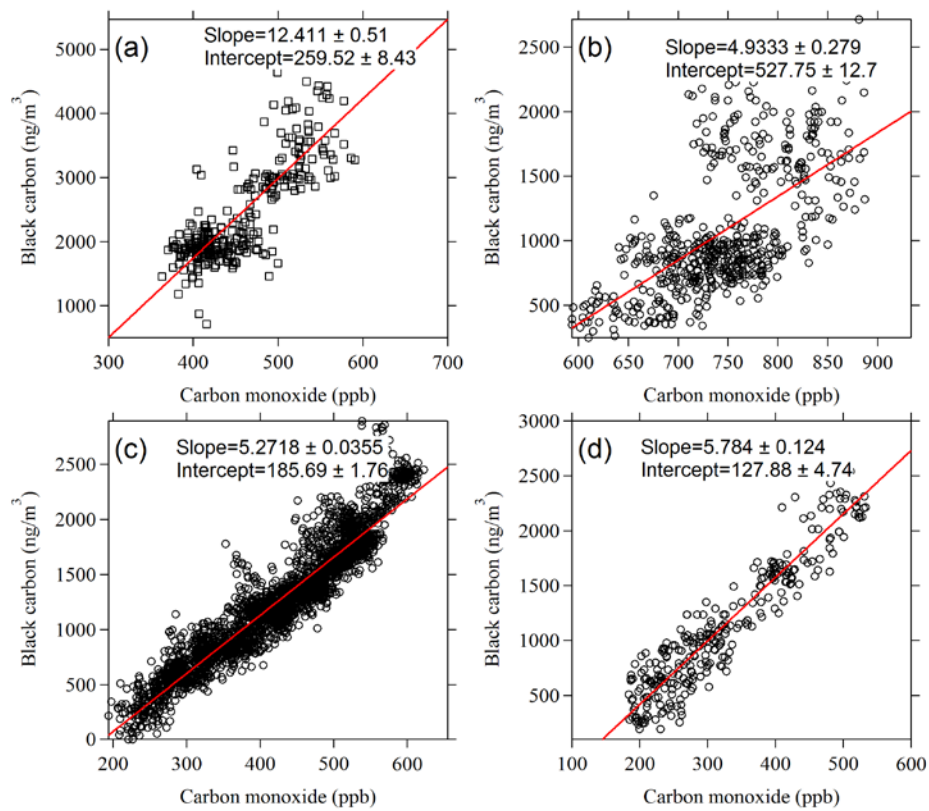
Supplementary Figure 1. BC–CO correlation for different back trajectory clusters. (a) Cluster #1; (b) cluster #2; (c) cluster #3; (d) cluster #4.



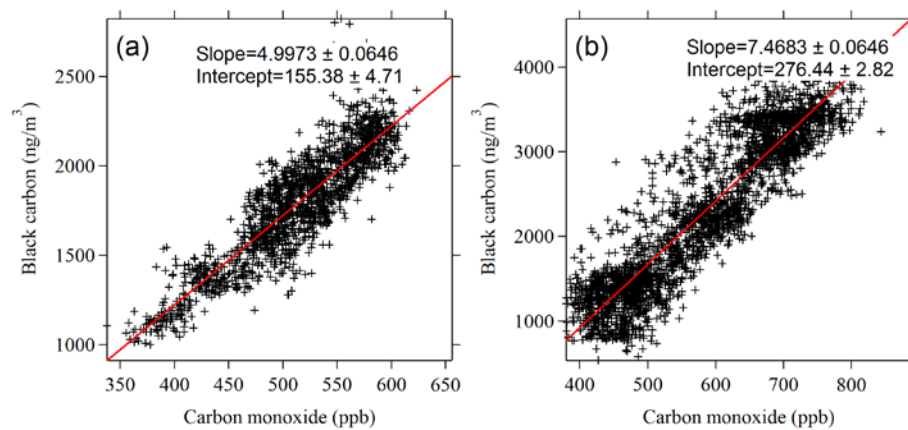
Supplementary Figure 2. Footprint analysis for each back trajectory cluster. The footprint was derived from the equation  $FP = N \times h \times E \times f(z)$ , where  $N$  is the number of air masses passing by;  $h$  is the stagnant time in the grid;  $E$  is the emission strength in units of  $Gg/yr/Grid$ ; and  $f(z)$  is the exponentially declining function with air mass height). (a) Cluster #1; (b) cluster #2; (c) cluster #3; (d) cluster #4.



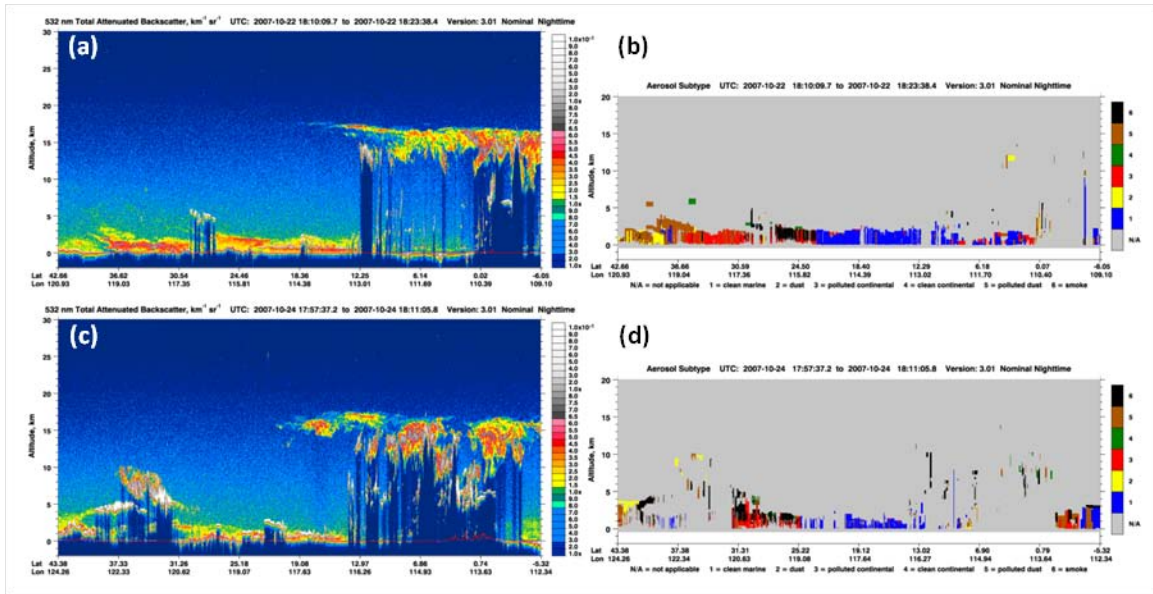
Supplementary Figure 3. Hotspots detected by MODIS for October 22–24, 2007 (a) and Jan 6–8, 2008 (b).



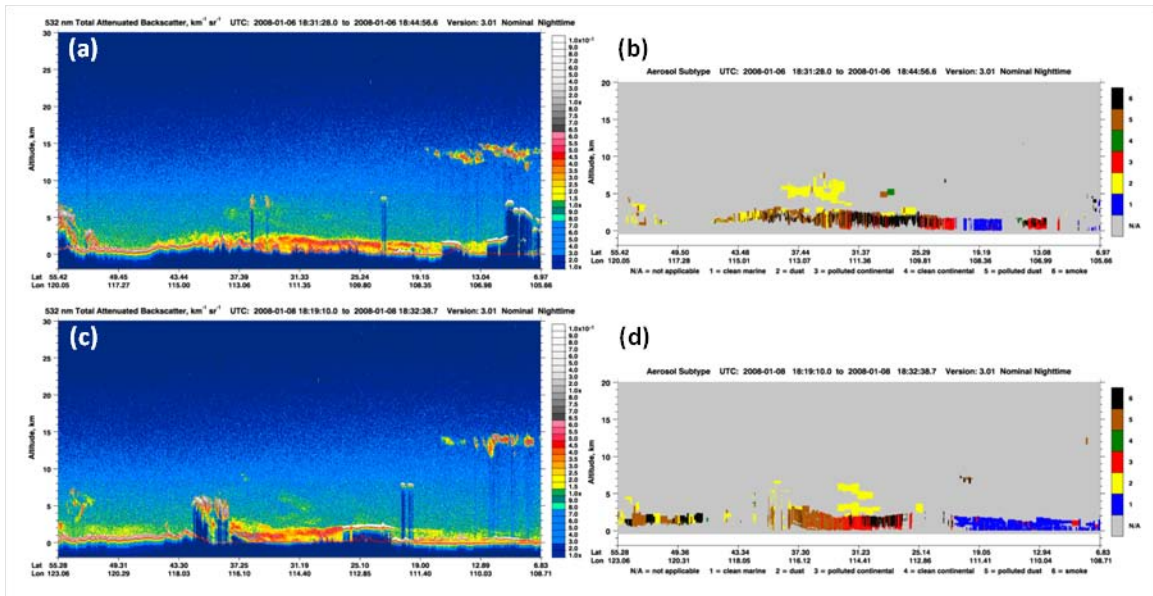
Supplementary Figure 4. BC–CO correlation for periods of urban plumes. (a) January 29–31, 2007; (b) February 6, 2007; (c) October 28, 2007; (d) October 29, 2007.



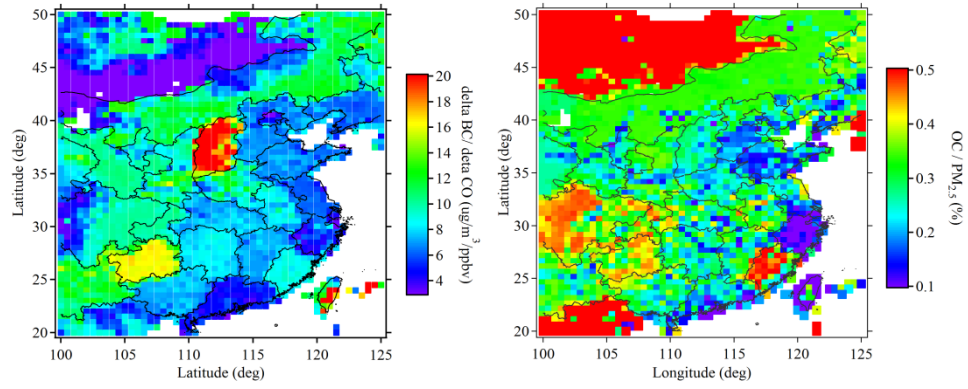
Supplementary Figure 5. BC–CO correlation for periods influenced by biomass burning. (a) October 22–24, 2007; (b) January 6–8, 2008.



Supplementary Figure 6. Vertical distribution of the aerosol layer (in the left panels) measured by CALIPSO and aerosol types (in the right panels) for episode 5; the upper two plots are for October 22, 2007, and lower two plots for October 24, 2007.



Supplementary Figure 7. Vertical distribution of the aerosol layer (left panels) measured by CALIPSO and aerosol types (right panels) for episode 6; the upper two plots are for January 6, 2008 and the lower two plots for January 8, 2008.



Supplementary Figure8. Spatial distribution of the BC/CO ratio in units of  $\text{ng}/\text{m}^3/\text{ppbv}$  (left) and the OC/PM<sub>2.5</sub> ratio (right).