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Chemical characteristics of brown carbon in atmospheric particles at a suburban site near Guangzhou, China

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Text:

Text S1:

The mass spectra of different OA factors are shown in Figure S2. Overall, the N-containing ions are distributed within all the OA factors, while the relative contribution is higher in BBOA. However, as in the signal intensities are already normalized in the PMF analysis, the distribution of these fragments among the OA factors also depends on the mass concentration of each OA factor.

Text S2:

The diurnal variation of absorption coefficients from each OA component and its relative contribution to absorption at 370 nm is shown as Figure S3. Overall, there was no obvious diurnal variation for the absorption coefficients of LVOOA, while there were obvious nighttime and rush hour increases for HOA. The absorption coefficients of BBOA also slightly increased during nighttime and decreased in the mid-day. As these absorption coefficients are tightly related to the mass concentration of each OA source, they shared exactly the same diurnal pattern as the mass concentration of each OA factors.

Figures and Tables:

Table S1 AAE_{BC} estimation from Mie theory model

Model run number	Refractive index				AAE
	Core		Shell		
	Real part	Imaginary part	Real part	Imaginary part	
1	1.6	0.54i	1.55	0.0000001i	0.848518188
2	1.7	0.54i	1.55	0.0000001i	0.871846684
3	1.8	0.54i	1.55	0.0000001i	0.89561921
4	1.9	0.54i	1.55	0.0000001i	0.919776955
5	2	0.54i	1.55	0.0000001i	0.943934591
6	1.8	0.4i	1.55	0.0000001i	0.979578577
7	1.8	0.5i	1.55	0.0000001i	0.91879886
8	1.8	0.6i	1.55	0.0000001i	0.862171196
9	1.8	0.7i	1.55	0.0000001i	0.809566808
10	1.8	0.8i	1.55	0.0000001i	0.760456075
11	1.8	0.9i	1.55	0.0000001i	0.714608394
12	1.8	1.0i	1.55	0.0000001i	0.671630187
13	1.8	0.54i	1.35	0.0000001i	0.885192669
14	1.8	0.54i	1.4	0.0000001i	0.887286337
15	1.8	0.54i	1.45	0.0000001i	0.8885085
16	1.8	0.54i	1.5	0.0000001i	0.890599011
17	1.8	0.54i	1.55	0.0000001i	0.89561921
18	1.8	0.54i	1.6	0.0000001i	0.905391588
19	2	0.4i	1.6	0.0000001i	1.035139318

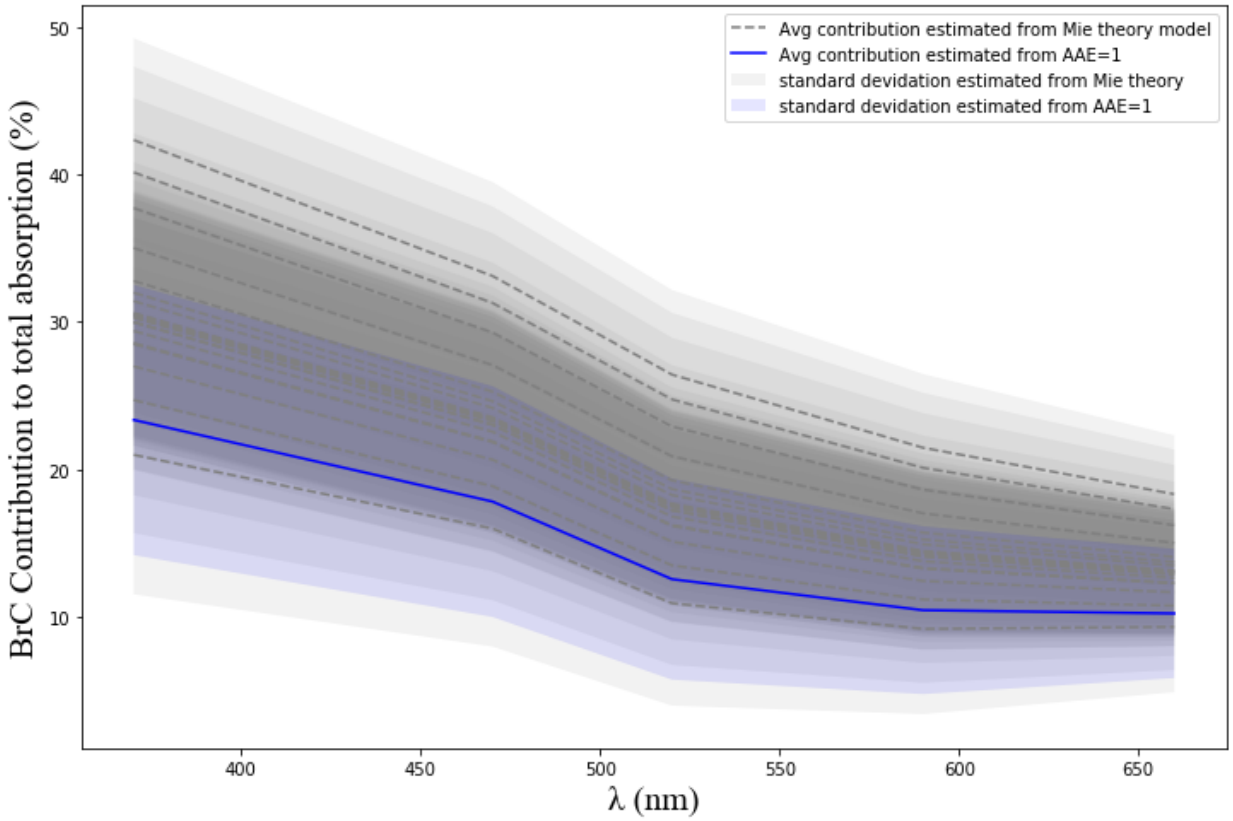

Figure S 1 BrC light absorption contribution based on the AA_{EBC} from Mie theory model output and AAE=1.

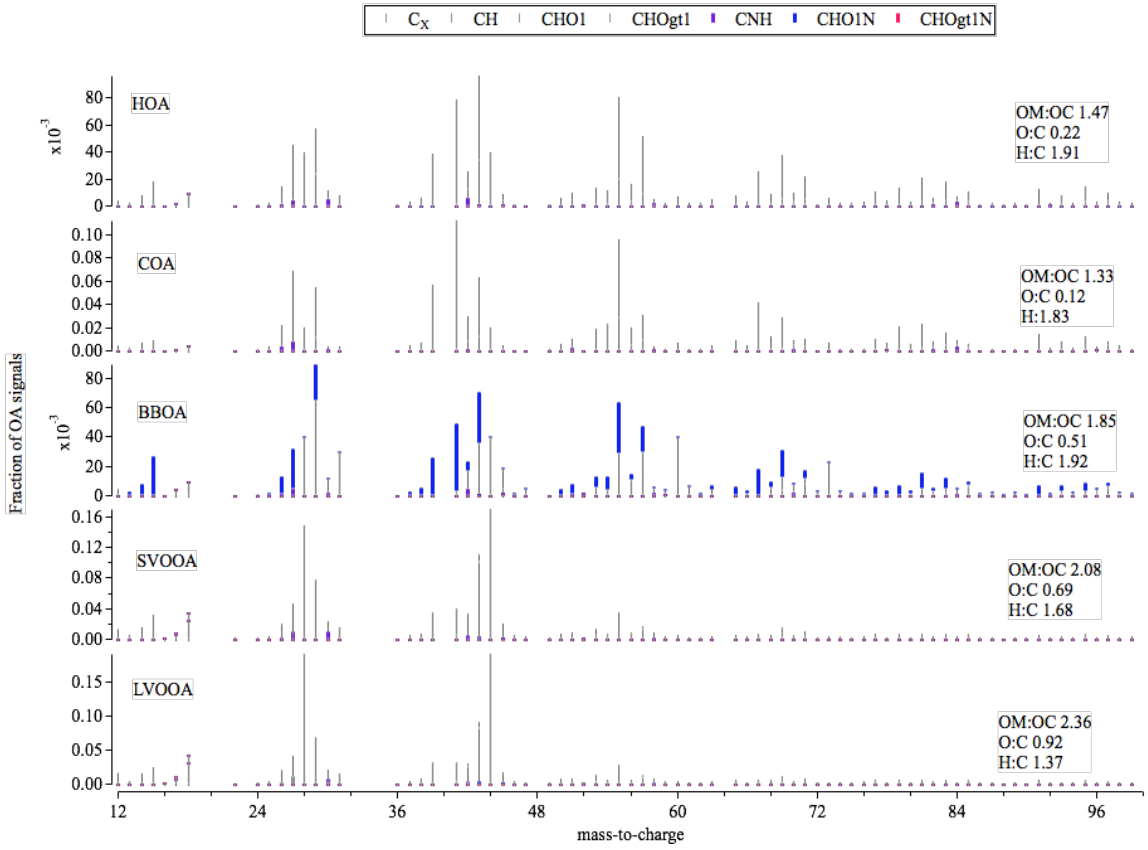

Figure S 2 Mass spectra of different OA factors

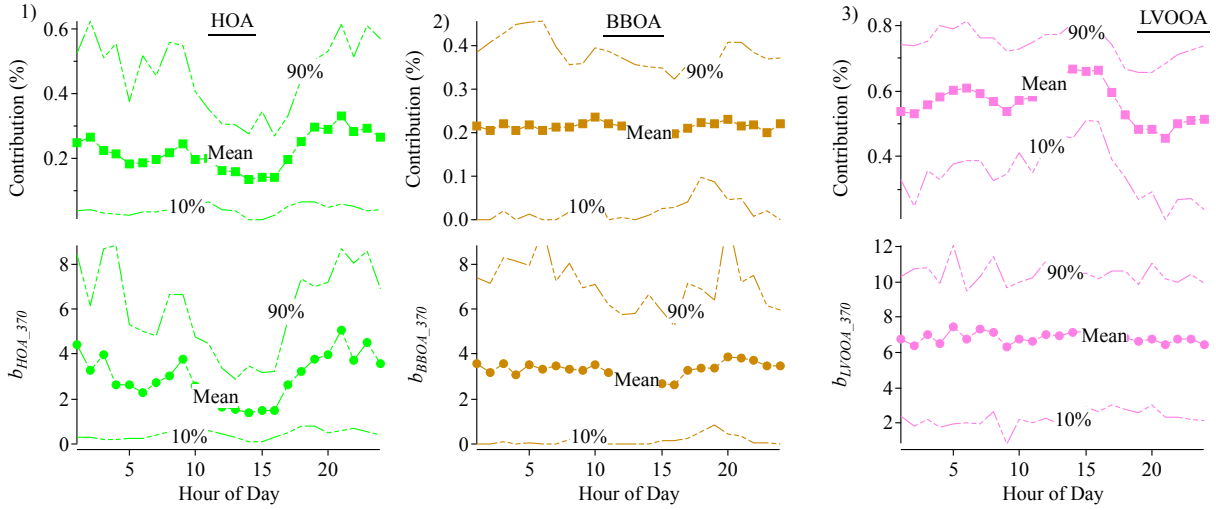

Figure S 3 Diurnal variation of absorption coefficients from each OA component and its relative contribution to absorption at 370 nm