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Organic aerosol volatility and viscosity in the North China Plain: contrast between summer and winter

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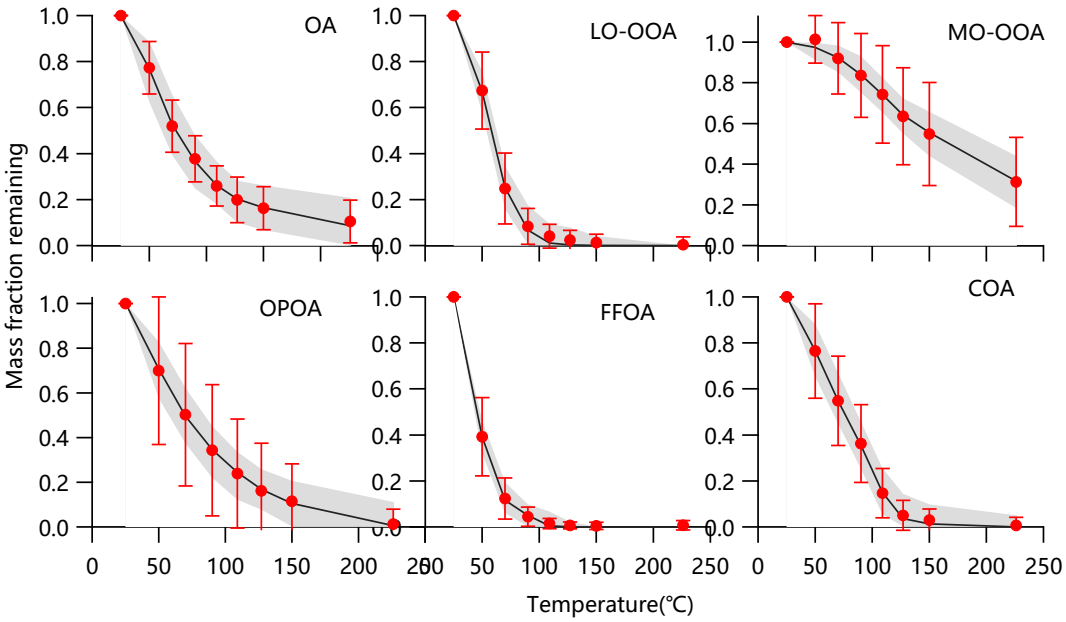

Figure S1. Thermograms of OA and OA factors measured by TD-AMS in winter of 2018 in Beijing. The solid circles represent the measurements and the error bars are one standard deviation. The black lines refer to the best-predicted MFR using the algorithm of Karnezi et al. (2014).

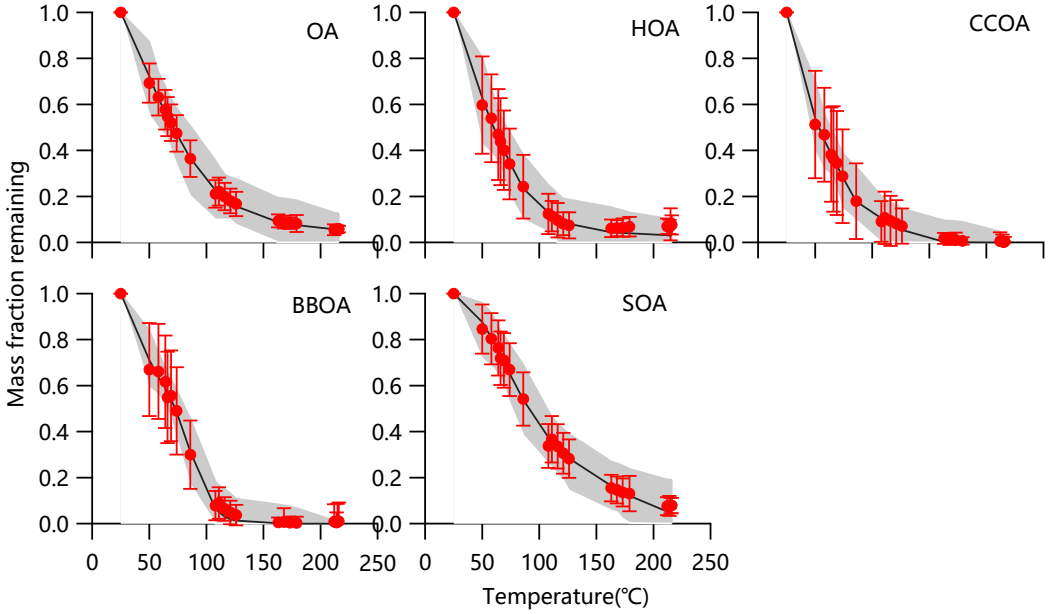

Figure S2. Thermograms of OA and OA factors measured by TD-AMS in winter of 2019 in Gucheng. The solid circles represent the measurements and the error bars are one standard deviation. The black lines refer to the best-predicted MFR using the algorithm of Karnezi et al. (2014).

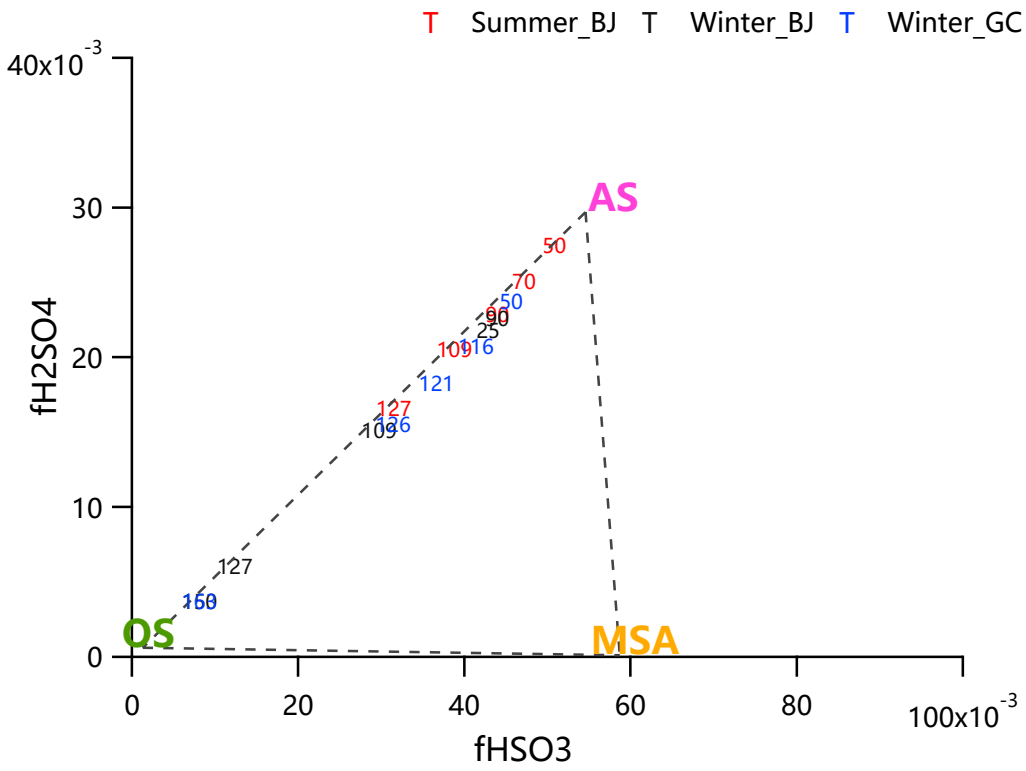

Figure S3. f_{H2SO4+} **vs.** f_{HSO3+} **for ambient and TD data. The marker indicates TD temperature. The triangle region defined by the OS/SS-AS-MSA triangle (Chen et al., 2019)**

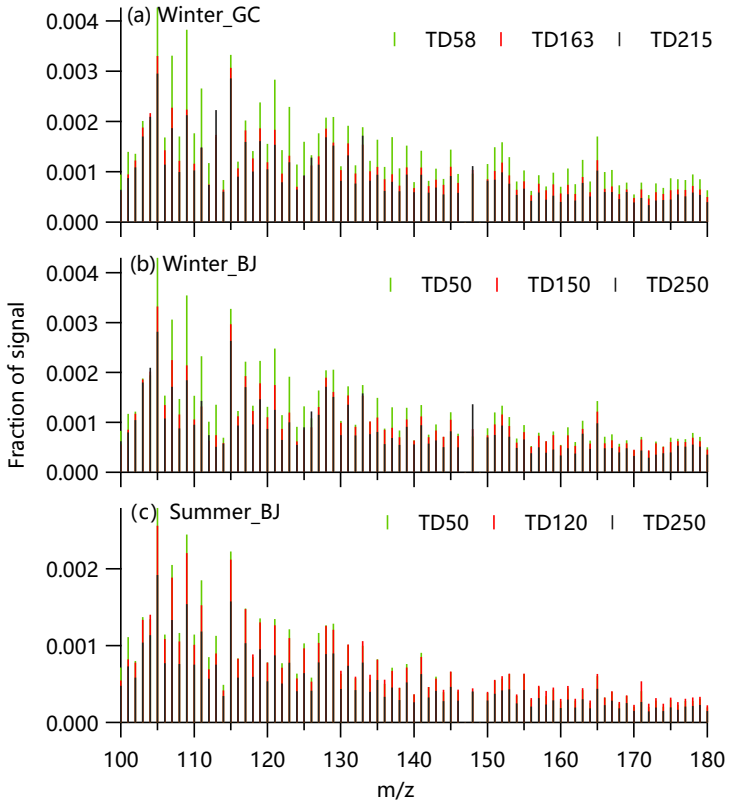

Figure S4. The intensity of high ***m/z*** **(i.e., from 100 to 180 amu) for different TD temperatures.**

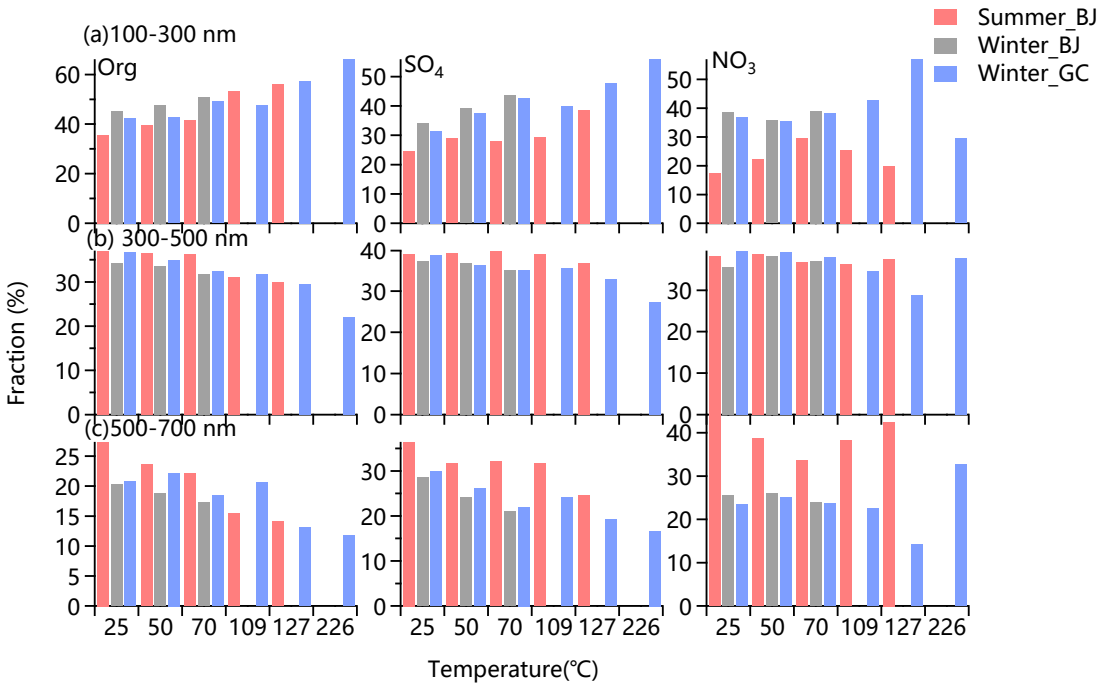

Figure S5. Mass fraction of different size ranges versus TD temperature.

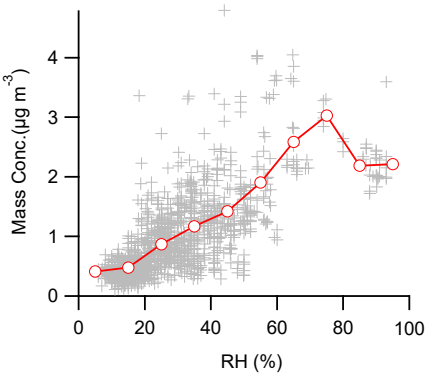

Figure S6. Variations of OA mass concentrations as a function of RH in winter of 2018 in Beijing

Table S1. A summary of average mass concentrations of total, volatile, non-volatile PM and OA species in Beijing and Gucheng.

BJ_{Sum}= Summer in Beijing; BJ_{Win} = Winter in Beijing.

	tot_{BJSum}	tot_{BJWin}	tot_{GC}	vol_{BJSum}	vol_{BJWin}	vol_{BJ}	non-vol_{BJSum}	non-vol_{BJWin}	non-vol_{BJ}
PM_1 species (μg m^{-3})									
Org	12.7	15.1	23.1	8.3	9.4	14.7	1.03	0.97	1.44
SO_4	6.5	3.2	10.5	1.7	1.0	1.9	0.39	0.15	0.51
NO_3	7.4	10.0	15.5	6.8	9.2	14.7	0.39	0.10	0.11
NH_4	4.3	4.9	8.3	3.2	4.0	6.6	0.20	0.07	0.03
Chl	0.2	2.1	3.9	0.1	1.8	3.3	0.02	0.05	0.13
OA species (μg m^{-3})									
BBOA		2.9	3.4		2.8	2.4		0.03	0.0005
FFOA	1.7	2.0	7.0	1.1	1.0	5.5	0.15	0.02	0.29
SOA			10.9			5.0			0.96

COA	2.0	3.7	1.0	2.2	0.08	0.017
LO-OOA	5.7	3.8	4.7	3.3	0.15	0.015
MO-OOA	3.4	2.4	1.2	0.4	0.68	0.74

References

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