



Supplement of

Fossil vs. non-fossil sources of fine carbonaceous aerosols in four Chinese cities during the extreme winter haze episode in 2013

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- 1 Table S1. The sampling data the selected PM2.5 samples for ¹⁴C analysis and the corresponding
- 2 PM2.5, OC and EC concentrations (µg/m³)

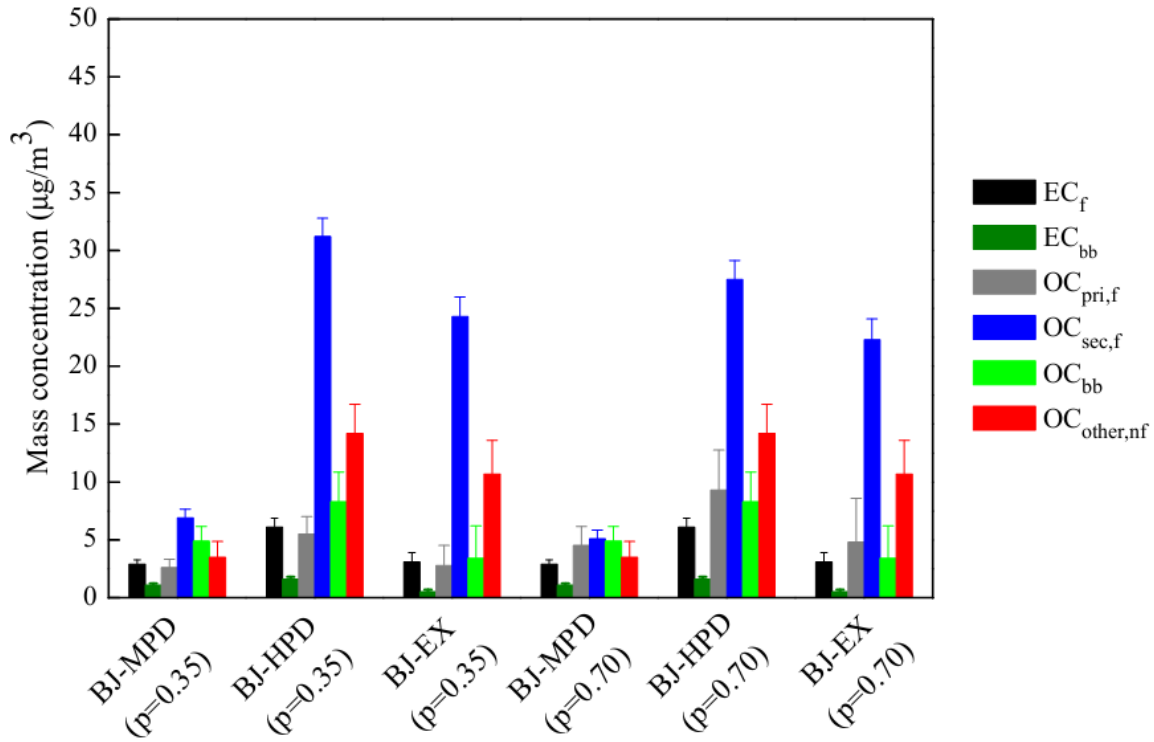
Location	Label	Data	PM2.5	OC	EC
Xian	XA-MPD-1	1/20/2013	106.9	19.4	4.6
	XA-MPD-2	1/21/2013	126.7	20.9	8.2
	XA-MPD-3	1/25/2013	172.1	33.5	8.9
	XA-HPD-1	1/7/2013	446.9	84.7	19.4
	XA-HPD-2	1/6/2013	483.6	99.8	18.9
	XA-HPD-3	1/8/2013	507.4	98.1	21.0
Beijing	BJ-MPD-1	1/5/2013	62.4	14.0	4.3
	BJ-MPD-2	1/21/2013	89.3	17.5	3.8
	BJ-MPD-3	1/19/2013	104.2	22.4	3.8
	BJ-HPD-1	1/7/2013	199.6	50.4	8.6
	BJ-HPD-2	1/11/2013	279.9	58.6	6.5
	BJ-HPD-3	1/13/2013	317.9	68.7	8.0
Shanghai	SH-MPD-1	1/19/2013	45.6	5.9	1.8
	SH-MPD-2	1/5/2013	61.3	5.2	1.8
	SH-MPD-3	1/17/2013	69.6	7.5	2.0
	SH-HPD-1	1/15/2013	127.9	15.8	3.8
	SH-HPD-2	1/7/2013	132.6	16.1	4.4
	SH-HPD-3	1/23/2013	134.1	14.9	4.4
Guangzhou	GZ-MPD-1	1/5/2013	28.0	3.3	1.2
	GZ-MPD-2	1/6/2013	28.1	4.3	1.4
	GZ-MPD-3	1/9/2013	58.4	8.6	2.2
	GZ-HPD-1	1/14/2013	90.8	20.7	5.7
	GZ-HPD-2	1/16/2013	93.7	23.3	6.0
	GZ-HPD-3	1/20/2013	104.7	26.0	6.7

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4 **Table S2.** Average TC concentration and relative contribution to TC from OC and EC source
5 categories for samples collected in Beijing (BJ) during the moderately polluted days (MPD) and
6 the heavily polluted days (HPD) as a result of different central values for p (see Eq. (8) in the
7 main text). Distributions from Latin-hypercube sampling (LHS) are given as medians as well as
8 the 10th and 90th percentiles (in parentheses).

Sample code	TC $\mu\text{g}/\text{m}^3$	EC _f %	EC _{bb} %	OC _{pri,f} %	OC _{sec,f} %	OC _{bb} %	OC _{other,nf} %
BJ-MPD (p=0.35)	22.0	13 (12-15)	5 (4-5)	12 (9-16)	32 (27-35)	22 (17-29)	16 (8-20)
BJ-HPD (p=0.35)	66.9	9 (8-10)	2 (2-3)	8 (6-11)	47 (44-49)	12 (9-17)	21 (16-23)
BJ-MPD (p=0.70)	22.0	13 (12-15)	5 (4-5)	20 (13-28)	23 (15-30)	22 (17-29)	16 (8-20)
BJ-HPD (p=0.70)	66.9	9 (8-10)	2 (2-3)	14 (9-19)	41 (35-46)	12 (9-17)	21 (16-23)

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12 **Figure S1.** Average mass concentrations of OC and EC from different sources for samples
 13 collected in Beijing (BJ) during the moderately polluted days (MPD), heavily polluted days (HPD)
 14 and their corresponding excess (EX=HPD-MPD) as a result of different central values for p (see
 15 Eq. (8) in the main text). Uncertainty bars represent 10 and 90 percentiles from LHS calculations.