Electronic Supplementary Material to: Black Carbon Size in Snow of Chinese Altai Mountain in Central Asia*

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Table S1. Surface snow (0–5 cm) and sub-surface snow (5–10 cm) sampling information and BC concentrations in snow at Kuwei Snow Station for this study (LST=UTC+8).

Sample code	Sampling time (LST)	BC Surface snow 0–5 cm	BC in sub-surface snow 5–10 cm
KW-S01	2016/11/26 10:00	0.64	0.24
KW-S02	2016/11/26 19:00	0.43	0.15
KW-S03	2017/1/22 10:00	1.16	0.72
KW-S04	2017/2/2 19:00	1.71	1.42
KW-S05	2017/2/12 10:00	3.05	2.16
KW-S06	2017/2/22 10:00	2.33	3.09
KW-S07	2017/3/2 10:00	3.10	3.08
KW-S08	2017/3/13 10:00	1.85	2.72
KW-S09	2017/3/22 10:00	3.12	2.03
KW-S10	2017/3/26 19:00	5.37	3.54
KW-S11	2017/3/27 10:00	6.00	3.32
KW-S12	2017/3/27 14:00	3.08	1.43
KW-S13	2017/3/27 19:00	4.74	–
KW-S14	2017/3/28 10:00	3.67	1.17
KW-S15	2017/3/28 19:00	5.79	2.12
KW-S16	2017/3/29 10:00	7.52	1.67
KW-S17	2017/3/29 14:00	5.51	–
KW-S18	2017/3/29 19:00	8.30	1.88
KW-S19	2017/3/30 10:00	5.03	2.94
KW-S20	2017/3/30 14:00	7.02	–
KW-S21	2017/3/30 19:00	5.98	1.97
KW-S22	2017/3/31 10:00	7.34	2.69
KW-S23	2017/3/31 14:00	5.69	–
KW-S24	2017/3/31 19:00	3.35	1.85
KW-S25	2017/4/1 10:00	3.65	1.62
KW-S26	2017/4/1 14:00	3.36	–
KW-S27	2017/4/1 19:00	2.94	2.45
KW-S28	2017/4/2 10:00	3.12	2.81
KW-S29	2017/4/2 14:00	5.72	–
KW-S30	2017/4/2 19:00	3.51	2.07
KW-S31	2017/4/3 10:00	5.16	2.77
KW-S32	2017/4/3 14:00	2.84	–
KW-S33	2017/4/3 19:00	5.43	3.49
KW-S34	2017/4/4 14:00	8.73	–
KW-S35	2017/4/4 19:00	9.81	3.70
KW-S36	2017/4/5 10:00	10.00	3.71
KW-S37	2017/4/5 14:00	10.59	–
KW-S38	2017/4/5 19:00	8.71	2.10
KW-S39	2017/4/6 10:00	8.64	2.86
KW-S40	2017/4/6 14:00	8.79	–
KW-S41	2017/4/6 19:00	7.07	5.05
KW-S42	2017/4/7 10:00	9.45	4.32
KW-S43	2017/4/7 14:00	12.52	–
KW-S44	2017/4/7 19:00	8.81	7.33
KW-S45	2017/4/8 10:00	8.12	8.08
KW-S46	2017/4/8 14:00	10.32	–
KW-S47	2017/4/8 19:00	12.17	6.18

Table S2. The comparison of BC mass size distributions in atmosphere from different regions.

Study area		Latitude	Longitude	Elevation	BC size measurement range	BC mass median size (nm)	BC concentrations	References
Arctic regions	Finnish Arctic (The Sammaltunturi mea- surement site at the Pallas GAW)				75–655 nm	194 nm	0–120 ng m^{-3}	Raatikainen et al., 2015
High Canadian Arctic (>70°N)	Resolute Bay, Alert, Eureka				142-207 nm spring 119-134 nm summer	200 nm	average: ~32 ng m^{-3}	Schulz et al., 2019
Middle latitudes	Los Angeles, USA	34.05°N	118.25 °W	–		170 nm	–	Krasowsky et al., 2018
	Xiamen, China	24.52°N,	118.09°E	~10 m	~175 nm non-polluted ~195 nm polluted	185 nm	range: 0.3–11.3 μg m^{-3} average: 2.3 ± 1.7 μg m^{-3}	Wang et al., 2016a
	Shenzhen, China	22.55°N	114.05°E	–	210–222 nm	–	–	Huang et al., 2011
	Beijing, China	39.99°N	116.39°E	15 m	200–220 nm	207 nm	1.65 μg m^{-3}	Sun et al., 2012
	urban Beijing city, China	39.97°N	116.37°E	8 m	–	213 nm winter haze episodes	–	Wu et al., 2017
	Kanpur, India	26.46°N	80.32°E	142 m	–	180 nm	range: 0.7 and 17 μg m^{-3} average: 4.06 μg m^{-3}	Thamban et al., 2017
	Qinghai Lake, China	36.98°N	99.88°E	3200 m	–	~175 nm	0.36 μg m^{-3}	Wang et al., 2014
	southeast Tibet, China	94.44°E	29.46°N	3300 m	173–184 nm	160 ± 23 nm	0.31 ± 0.55 μg m^{-3}	Wang et al., 2018
	Jungfraujoch, Swiss Alps	–	–	3580 m	130-150 nm	–	–	Motos et al., 2020
	western Siberia	–	–	–	140-220 nm	–	–	Yausheva et al., 2017

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