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Atmospheric Chemistry and Physics Discussions

Supplement of

Seasonality of ultrafine and sub-micron aerosols and the inferences on particle formation processes

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Table S1. Mass concentration of the major components of UFPs and PM_1 in each season

Unit: μg/m^3		*Total Mass*	*OC*	*EC*	*SO_4^{2-}*	*NO_3^-*	*NO_2^-*	*NH_4^+*	*Others*
UFPs	***Autumn***	0.74	0.22	0.06	0.048	0.014	0.054	0.013	0.34
	Winter	0.73	0.20	0.02	0.025	0.004	0.012	0.003	0.47
	Spring	0.96	0.32	0.06	0.034	0.002	0.009	0.009	0.53
	Summer	1.62	0.47	0.06	0.064	0.006	0.032	0.019	0.97
	Average	1.01	0.30	0.05	0.043	0.007	0.027	0.011	0.57
PM_1	***Autumn***	13.9	1.29	0.70	6.521	0.154	0.093	1.846	3.34
	Winter	14.7	1.82	0.74	5.652	0.549	0.078	1.883	4.01
	Spring	18.5	1.88	0.94	6.859	1.044	0.171	2.377	5.19
	Summer	11.6	1.65	0.64	3.913	0.044	0.091	1.385	3.84
	Average	14.7	1.66	0.76	5.736	0.448	0.108	1.873	4.10

Table S2. Time periods defined as under the influence of continental outflows

Start date/time (LT)	*End date/time (LT)*	*Duration (hr)*
24 Oct 2012 00:00	27 Oct 2012 02:00	74
27 Oct 2012 21:00	31 Oct 2012 02:00	53
31 Oct 2012 16:00	3 Nov 2012 20:00	76
4 Nov 2012 11:00	8 Nov 2012 10:00	95
11 Nov 2012 12:00	12 Nov 2012 15:00	27
13 Nov 2012 13:00	16 Nov 2012 00:00	59
4 Jan 2013 00:00	5 Jan 2013 02:00	26
5 Jan 2013 10:00	8 Jan 2013 04:00	66
8 Jan 2013 09:00	9 Jan 2013 00:00	15
9 Jan 2013 12:00	11 Jan 2013 20:00	56
14 Jan 2013 13:00	15 Jan 2013 17:00	28
16 Jan 2013 14:00	19 Jan 2013 23:00	81
22 Jan 2013 12:00	24 Jan 2013 10:00	46
20 Mar 2013 19:00	21 Mar 2013 23:00	28
24 Mar 2013 22:00	26 Mar 2013 04:00	30
27 Mar 2013 11:00	28 Mar 2013 21:00	34
29 Mar 2013 08:00	30 Mar 2013 22:00	38
2 Apr 2013 11:00	3 Apr 2013 21:00	34
7 Apr 2013 05:00	8 Apr 2013 06:00	25
9 Apr 2013 20:00	12 Apr 2013 00:00	52

Table S3. Time periods defined as the new particle formation events and the particle growth and formation rates

Date	***Time period (LT)***	***Growth rate (nm h^{-1})***	***Formation rate (cm^{-3} s^{-1})***
26 Mar 2013	06:00-10:00	3.4	1.91
4 Apr 2013	07:00 – 10:00	3.7	1.13
5 Apr 2013	08:00 – 12:00	5.5	1.10
4 Aug 2013	09:00 – 12:00	3.9	1.84
5 Aug 2013	09:00 – 13:00	4.9	2.44
7 Aug 2013	06:00 – 12:00	3.5	0.84
8 Aug 2013	09:00 – 12:00	5.0	2.76
11 Aug 2013	06:00 – 09:00	4.8	0.58
Average		4.3 (±0.8)	1.6 (±0.8)

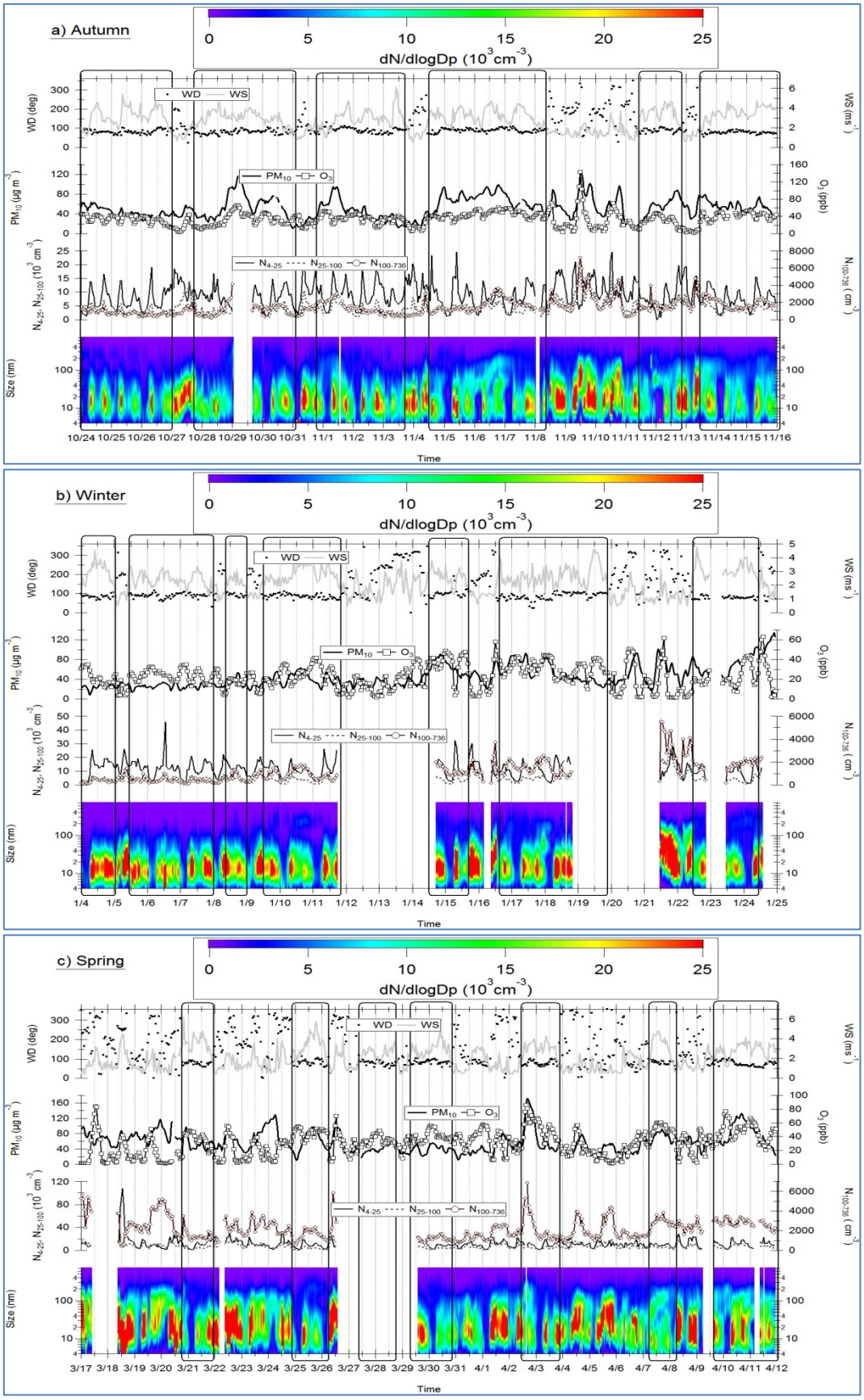

Figure S1. Time series of measured parameters during **a**) autumn, **b**) winter and **c**) spring, the periods under the influence of continental outflow were highlighted. From the bottom to top: PSD, the $N_{4\text{-}25}$, $N_{25\text{-}100}$, $N_{100\text{-}736}$, PM_{10}, ozone (O_3) and wind direction/speed.