

**Table & Figure captions of supplemental material**

**Table S1**

Meteorological factors in Baoshan area of Shanghai during the spring and early autumn sampling periods.

**Table S2**

PAHs concentrations in 5 -size particle during spring and late summer sampling periods.

**Table S3**

Pearson's correlation matrix between PAHs, PM, meteorological factors and other contaminations.

**Figure S1**

Air quality factors in each day during sampling periods, a, spring, b, late summer.

**Table S1** Meteorological factors in Baoshan area of Shanghai during the spring and early autumn sampling periods.

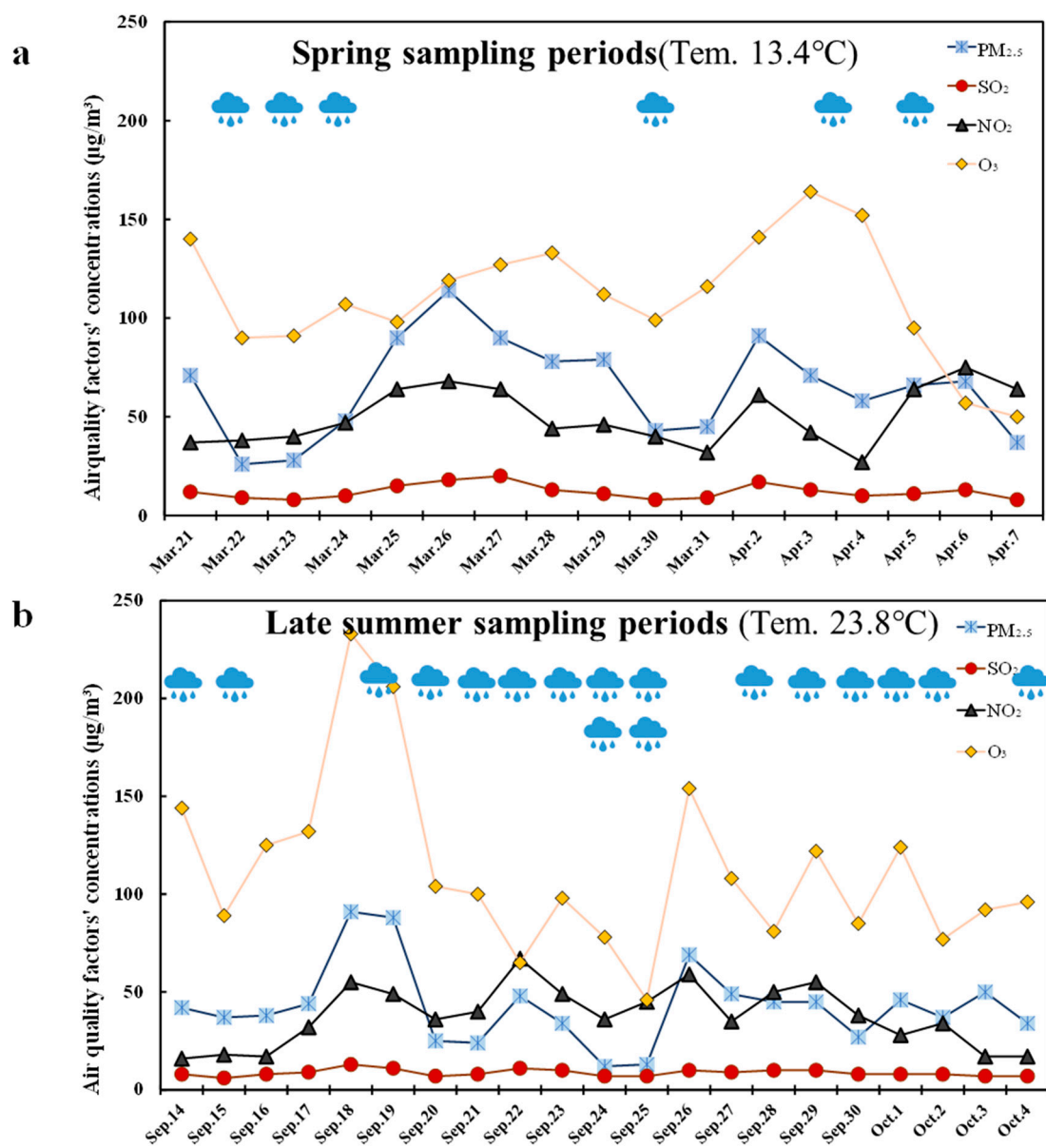
Date	Temperature (°C)			Humidity(%)			Wind speed (mph)			Weather
	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	
21-Mar	11.3	16.1	7.22	71.1	100	48	10.9	13	7	Cloudy
22-Mar	8.5	10	7.78	79	93	57	9.1	13	7	Light rainy
23-Mar	9.3	11.11	7.78	86.6	100	76	7.1	11	2	Light rainy
24-Mar	9.7	12.2	7.2	79	93	62	6.8	9	2	Light rainy/Cloudy
25-Mar	10.9	16.1	6.1	70.9	93	42	8.4	16	2	Cloudy
26-Mar	13.3	17.8	7.22	54	87	27	9.2	18	2	Cloudy/Sunny
27-Mar	14.06	21.1	6.11	46.2	81	21	6.9	13	2	Sunny
28-Mar	17	22.8	12.2	48.4	63	36	12.5	20	7	Cloudy
29-Mar	14.06	17.2	11.1	70.7	82	55	9.1	13	4	Cloudy
30-Mar	10.94	12.8	8.89	84.6	94	76	8	13	4	Rainy
31-Mar	10.9	15	7.78	71.7	100	44	12.9	18	4	Cloudy
1-Apr	11.7	17.2	5	54.7	82	36	7.2	16	0	Cloudy
2-Apr	14.5	22.2	6.11	58.1	93	30	8.1	18	2	Sunny
3-Apr	16.7	23.9	8.9	45.4	76	17	9.2	16	2	Sunny
4-Apr	16.4	20	12.8	60.4	72	49	15	22	9	Light rainy/Cloudy
5-Apr	19.8	25	17.2	71	88	50	7.2	16	2	Light rainy
6-Apr	17.8	20	16.1	87.5	94	73	6	13	0	Rainy
7-Apr	14.7	16.1	13.9	94.3	100	88	6.5	11	2	Wet
14-Sep	25.3	28.9	22.8	63.8	94	42	15.7	22	9	Light rainy/Cloudy
15-Sep	24.2	27.2	22.2	85.8	100	70	15.2	20	11	Light rainy/Cloudy
16-Sep	24.5	28.9	21.1	67.8	94	45	14.1	20	9	Cloudy
17-Sep	24.7	30	20	64.5	88	45	9.8	18	2	Cloudy
18-Sep	26.8	32.8	21.1	57.8	83	31	5.8	13	0	Sunny/Cloudy
19-Sep	26.7	30	23.9	67.7	83	45	6.3	9	2	Light rainy/Cloudy
20-Sep	20.9	23.9	18.9	88.8	94	73	9.2	16	4	Rainy
21-Sep	21.8	22.8	20	86.2	100	78	5.9	11	2	Light rainy
22-Sep	23.4	26.1	21	78.4	94	65	4	9	0	Light rainy
23-Sep	21.5	22.8	20	84.2	94	73	6	11	0	Rainy
24-Sep	21.9	23.9	20	95.4	100	94	6.9	11	2	Heavy Rainy
25-Sep	23.9	25	22.8	97.3	100	94	7.1	16	0	Heavy Rainy
26-Sep	28.1	32.8	23.9	84.2	100	63	5.2	11	0	Cloudy
27-Sep	25.4	27.8	22.8	81.1	94	73	11.2	20	4	Cloudy
28-Sep	22.06	23.9	18.9	71.7	83	57	8.7	13	4	Light rainy/Cloudy
29-Sep	22.06	26.1	17.2	68.3	100	44	6.1	13	0	Light rainy/Cloudy
30-Sep	21.67	23.9	21.1	83.7	94	61	10.4	16	4	Rainy
1-Oct	27.39	32	22.2	78.4	94	59	10.2	18	0	Rainy
2-Oct	23.8	27.2	22.2	89.8	100	73	8.6	13	2	Light rainy
3-Oct	22.2	23.9	21.1	67.8	78	61	14.2	18	9	Cloudy
4-Oct	20.7	22.8	18.9	61.7	73	53	11.8	18	7	Light rainy/Cloudy

Table S2 PAHs concentrations in 5 -size particle during spring and late summer sampling periods

	PM <sub>1-1</sub>			PM <sub>1.1-2.0</sub>			PM <sub>2.0-3.3</sub>			PM <sub>3.3-7.0</sub>			≥7.0 μm			TSP		
	Average	Max	Min	Average	Max	Min	Average	Max	Min	Average	Max	Min	Average	Max	Min	Average	Max	Min
Spring																		
Flu	0.008	0.021	0.000	0.014	0.035	0.000	0.017	0.035	0.000	0.020	0.076	0.001	0.013	0.046	0.001	0.067	0.024	0.024
Phe	0.072	0.170	0.021	0.050	0.141	0.014	0.036	0.100	0.000	0.056	0.227	0.000	0.037	0.099	0.003	0.251	0.604	0.057
Ant	0.012	0.036	0.000	0.004	0.012	0.000	0.007	0.055	0.000	0.013	0.084	0.000	0.006	0.012	0.000	0.043	0.096	0.010
FLN	0.135	0.307	0.037	0.103	0.300	0.014	0.062	0.175	0.013	0.046	0.112	0.003	0.055	0.125	0.013	0.401	1.019	0.116
Pyr	0.181	0.309	0.061	0.096	0.216	0.011	0.052	0.158	0.015	0.047	0.160	0.009	0.060	0.160	0.014	0.435	0.831	0.151
BaA	0.089	0.325	0.017	0.033	0.097	0.003	0.014	0.047	0.004	0.012	0.026	0.001	0.019	0.048	0.002	0.166	0.542	0.043
Chy	0.368	1.025	0.146	0.158	0.398	0.032	0.088	0.213	0.037	0.066	0.136	0.018	0.075	0.146	0.023	0.754	1.919	0.320
BbF	0.401	1.160	0.117	0.156	0.427	0.026	0.069	0.199	0.029	0.038	0.090	0.013	0.047	0.099	0.016	0.712	1.975	0.258
BkF	0.157	0.470	0.041	0.059	0.161	0.004	0.026	0.072	0.010	0.013	0.035	0.001	0.019	0.035	0.004	0.273	0.772	0.095
BaP	0.175	0.617	0.037	0.073	0.183	0.008	0.028	0.070	0.013	0.021	0.069	0.007	0.027	0.049	0.011	0.323	0.962	0.108
DB[a,h]A	0.020	0.043	0.004	0.013	0.023	0.004	0.008	0.018	0.002	0.005	0.008	0.003	0.006	0.007	0.004	0.052	0.085	0.023
IndP	0.306	0.908	0.080	0.116	0.252	0.021	0.046	0.110	0.020	0.031	0.061	0.011	0.032	0.052	0.015	0.530	1.379	0.179
BghiP	0.367	1.176	0.093	0.132	0.314	0.016	0.055	0.147	0.022	0.036	0.075	0.011	0.044	0.075	0.020	0.633	1.786	0.211
13 PAHs	2.290	6.459	0.668	1.008	2.550	0.161	0.507	1.345	0.199	0.404	0.812	0.088	0.438	0.901	0.132	4.647	12.060	1.713
LMW PAHs	0.092	0.226	0.023	0.069	0.180	0.017	0.060	0.151	0.002	0.089	0.319	0.009	0.056	0.155	0.004	0.366	0.832	0.094
MMW PAHs	0.772	1.876	0.273	0.390	1.010	0.061	0.215	0.594	0.069	0.175	0.387	0.030	0.209	0.432	0.052	1.505	4.276	0.323
HMW PAHs	1.426	4.356	0.372	0.549	1.360	0.081	0.231	0.617	0.100	0.144	0.319	0.049	0.177	0.314	0.076	2.524	6.952	0.875
COMPAHs	2.178	6.206	0.640	0.926	2.347	0.135	0.439	1.193	0.188	0.319	0.664	0.075	0.375	0.742	0.123	3.475	9.233	1.260
CANPAHs	1.148	3.506	0.297	0.450	1.143	0.068	0.191	0.517	0.082	0.123	0.277	0.038	0.149	0.287	0.053	2.524	6.952	0.875
Late summer																		
Flu	0.012	0.033		0.010	0.022		0.012	0.023		0.010	0.024		0.010	0.021	0.000	0.053	0.114	-0.010
Phe	0.116	0.162	0.060	0.026	0.076	0.076	0.013	0.029	0.006	0.024	0.047	0.008	0.034	0.075	0.000	0.229	0.296	0.111
Ant	0.013	0.021	0.005	0.000	0.001	0.000	0.001	0.013	0.000	0.001	0.008	0.000	0.005	0.012	0.000	0.020	0.040	0.009
FLN	0.105	0.282	0.039	0.023	0.034	0.009	0.023	0.033	0.012	0.019	0.034	0.009	0.031	0.051	0.003	0.201	0.322	0.099
Pyr	0.139	0.224	0.088	0.023	0.036	0.009	0.027	0.043	0.013	0.025	0.063	0.006	0.039	0.067	0.012	0.252	0.322	0.099
BaA	0.245	0.543	0.101	0.003	0.023	0.000	0.011	0.056	0.000	0.006	0.040	0.000	0.013	0.034	-0.005	0.279	0.588	0.077
Chy	0.583	1.070	0.197	0.068	0.179	0.016	0.062	0.120	0.019	0.064	0.163	0.018	0.076	0.119	0.018	0.853	1.468	0.280
BbF	0.627	0.957	0.260	0.090	0.197	0.029	0.083	0.124	0.026	0.052	0.107	0.023	0.060	0.090	0.019	0.912	1.320	0.357
BkF	0.204	0.351	0.033	0.025	0.056	0.010	0.026	0.039	0.006	0.017	0.031	0.005	0.020	0.034	0.004	0.293	0.424	0.123
BaP	0.155	0.269	0.055	0.017	0.026	0.005	0.025	0.089	0.004	0.020	0.090	0.000	0.031	0.112	0.004	0.248	0.534	0.087
DB[a,h]A	0.024	0.035	0.014	0.005	0.010	0.000	0.009	0.054	0.000	0.002	0.008	0.000	0.004	0.012	0.000	0.044	0.086	0.016
IndP	0.281	0.397	0.178	0.033	0.058	0.009	0.025	0.053	0.004	0.016	0.027	0.000	0.027	0.074	0.007	0.381	0.508	0.232
BghiP	0.348	0.588	0.000	0.049	0.100	0.007	0.036	0.068	0.010	0.023	0.040	0.000	0.046	0.096	0.014	0.501	0.766	0.266
13 PAHs	2.853	4.139	1.484	0.372	0.716	0.163	0.368	0.511	0.165	0.279	0.473	0.123	0.396	0.693	0.113	4.267	5.745	2.058
LMW PAHs	0.142	0.191	0.076	0.035	0.095	0.012	0.042	0.063	0.000	0.034	0.061	0.011	0.049	0.090	0.019	0.302	0.426	0.166
MMW PAHs	1.072	1.835	0.526	0.117	0.261	0.064	0.124	0.190	0.063	0.113	0.243	0.041	0.159	0.260	0.040	1.585	2.549	0.737
HMW PAHs	1.647	2.381	0.955	0.219	0.359	0.073	0.203	0.287	0.071	0.131	0.201	0.053	0.188	0.343	0.054	2.380	3.043	1.133
COMPAHs	2.687	3.917	1.389	0.331	0.618	0.142	0.240	0.423	0.095	0.242	0.441	0.095	0.342	0.591	0.095	3.921	5.292	1.854
CANPAHs	1.536	2.244	0.776	0.173	0.343	0.051	0.179	0.268	0.047	0.115	0.220	0.035	0.155	0.280	0.034	2.659	3.374	1.209

**Table S3** Pearson's correlation matrix between PAHs, PM, meteorological factors and other contaminations.

	TEM	HUM	PAHs						SO <sub>2</sub>	NO <sub>2</sub>	O <sub>3</sub>	PM <sub>2.5</sub>
			TSP	PM <sub>1.1</sub>	PM <sub>1.1-2.0</sub>	PM <sub>2.0-3.3</sub>	PM <sub>3.3-7.0</sub>	>7.0μm				
<b>Spring</b>												
TEM												
HUM	-0.29											
P(TSP)	-0.16	-0.36										
P(PM <sub>1.1</sub> )	-0.14	-0.35	0.99									
P(PM <sub>1.1-2.0</sub> )	-0.14	-0.33	0.98	0.97								
P(PM <sub>2.0-3.3</sub> )	-0.36	-0.33	0.96	0.93	0.942							
P(PM <sub>3.3-7.0</sub> )	-0.54	-0.30	0.76	0.72	0.659	0.780						
P(>7.0μm)	-0.01	-0.49	0.96	0.95	0.975	0.896	0.643					
SO <sub>2</sub>	0.22	-0.83	0.61	0.62	0.559	0.600	0.448	0.631				
NO <sub>2</sub>	0.34	-0.02	0.52	0.56	0.528	0.450	0.140	0.478	0.498			
O <sub>3</sub>	0.05	-0.86	0.13	0.10	0.111	0.138	0.256	0.270	0.491	-0.408		
PM <sub>2.5</sub>	0.29	-0.75	0.67	0.69	0.626	0.653	0.380	0.696	0.920	0.504	0.478	
<b>Early autumn</b>												
TEM												
HUM	0.10											
P(TSP)	0.60	0.11										
P(PM <sub>1.1</sub> )	0.58	0.30	0.95									
P(PM <sub>1.1-2.0</sub> )	0.57	0.00	0.87	0.77								
P(PM <sub>2.0-3.3</sub> )	0.63	-0.07	0.91	0.75	0.802							
P(PM <sub>3.3-7.0</sub> )	0.51	-0.34	0.89	0.74	0.801	0.903						
P(>7.0μm)	0.29	-0.14	0.67	0.44	0.528	0.832	0.741					
SO <sub>2</sub>	0.14	-0.17	0.23	0.14	-0.136	0.318	0.318	0.595				
NO <sub>2</sub>	-0.05	0.41	0.09	0.16	-0.335	0.053	-0.066	0.307	0.776			
O <sub>3</sub>	0.49	-0.55	0.47	0.34	0.383	0.620	0.649	0.414	0.388	-0.042		
PM <sub>2.5</sub>	0.38	-0.69	0.27	0.08	0.138	0.532	0.565	0.556	0.627	-0.032	0.818	



**Figure S1** Air quality factors in each day during sampling periods, a, spring, b, late summer.