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Atmospheric Chemistry and Physics Discussions

Supplement of

The impacts of fireworks burning at Chinese Spring Festival on air quality and human health: insights of tracers, source evolution and aging processes

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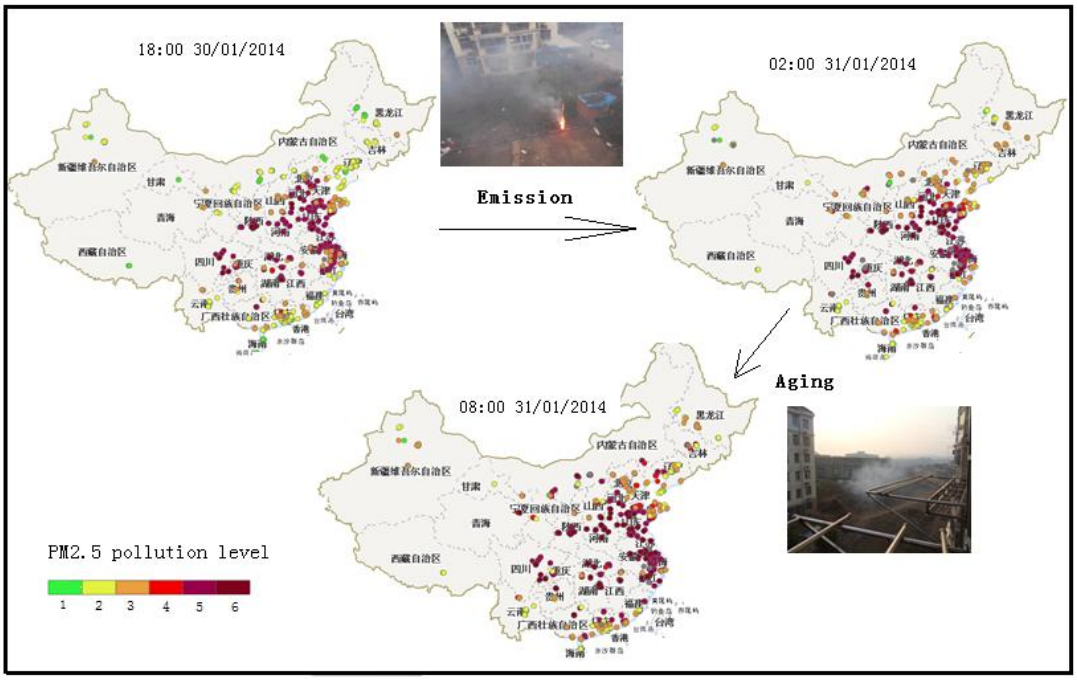


S1 The regional pollution situation of atmospheric $PM_{2.5}$ at Chinese New Year ś Eve of 2014.

S2 The materials used for producing fireworks

No.	Name	Chemical formula	CAS Number	Role	Characteristic
1	Potassium nitrate	KNO_3	7757-79-1	to produce purple sparks	The basic formule of black powder reaction: $S+2KNO_3+3C \rightarrow K_2S+N_2\uparrow+3CO_2\uparrow$ Melting point: 334 ℃ Boiling Point: 400 ℃
2	Potassium perchlorate	$KClO_4$	7778-74-7	oxidant	Melting point: 610 ℃ Solubility in 20 ℃ water:1.5 g/100 mL
3	Potassium chlorate	$KClO_3$	3811-04-9	oxidant	Melting point: 356 ℃ Solubility in 20 ℃ water: 1 g/16.5 mL
4	Ammonium Perchlorate	NH_4ClO_4	7790-98-9	oxidant	Melting point: 350℃ Solubility in 20 ℃ water: 7 g/100mL
5	Barium nitrate	$Ba(NO_3)_2$	10022-31-8	to produce green sparks	Melting point:590 ℃ Solubility in 20 ℃ water: 9.02 g/100mL
6	Strontium nitrate	$Sr(NO_3)_2$	10042-76-9	to produce red sparks, or serve as oxidant	Boiling Point:645℃ Melting point: 570℃ Solubility in 20 ℃ water: 660 g/L
7	Potassium dichromate	$K_2Cr_2O_7$	7778-50-9	oxidant	Melting point: 398℃ Boiling Point: 500℃
8	Potassium Permanganate	$KMnO_4$	7722-64-7	oxidant	Melting point: 240℃ SW: 6.38 g/100 mL
9	Copper(II) oxide	CuO	1317-38-0	to produce blue sparks, or serve as oxidant	Melting point: 1326℃
10	Copper carbonate basic	$Cu_2(OH)_2CO_3$	12069-69-1	to produce blue sparks	Melting point: 220℃
11	Sodium oxalate	$Na_2C_2O_4$	62-76-0	to produce yellow sparks	Melting point: 250-257 ℃ Solubility in 20 ℃ water: 37 g/L
12	Sodium silicate	Na_2SiO_3 $9H_2O$	1344-09-8	to produce yellow sparks	Melting point: 40-48℃
13	Aluminum	Al	7429-90-5	serve as luminescence agent or deoxidizer, or to	Melting point: 660℃

				produce tracer bullets	
14	magnesium powder	Mg	7439-95-4	to produce white sparks, or serve as luminescence agent and deoxidizer	
15	Aluminium magnesium alloy powder	Mg_4Al_3	12604-68-1	luminescence agent and deoxidizer	
16	Sulfur		7704-34-9	deoxidizer	Melting point: 112 ℃ Boiling Point: 444.6 ℃
17	Antimonous sulfide	Sb_2S_3	1345-04-6		Melting point: 550 ℃
18	Lead tetroxide	Pb_3O_4	1314-41-6	oxidant	Boiling Point: 500℃
19	polyvinyl alcohol	$[C_2H_4O]_n$	9002-89-5	adhesive	Melting point: 230-240 ℃
20	Polyvinyl chloride	$[C_2H_3Cl]_n$		toner and fuel	Melting point: 212˚C
21	Phenol Formaldehyde		9003-35-4	adhesive and fuel	Softing at 80-85 ℃
22	Shellac		9000-59-3	adhesive	Melting point: 115-120˚C
23	Potassium benzoate	$C_2H_5KO_2$	582-25-2	to form howling sound	Melting point: 121.5-123.5℃
24	Nitrocellulose	$C_{12}H_{16}N_4O_{18}$	9004-70-0	to produce smokeless powder	
25	Paraffin	C_nH_{2n+2}	8002-74-2	desensitizer for explosive	Melting point: 47-64℃
26	Stearic acid	$C_{18}H_{36}O_2$	57-11-4	desensitizer for explosive	Solubility in 23 ℃ water: 0.1-1 g/100 mL
27	Paper tube			serve as barrel of fireworks with specific shape and size	
28	Furnish paper			rolling the paper tube to furnish it	

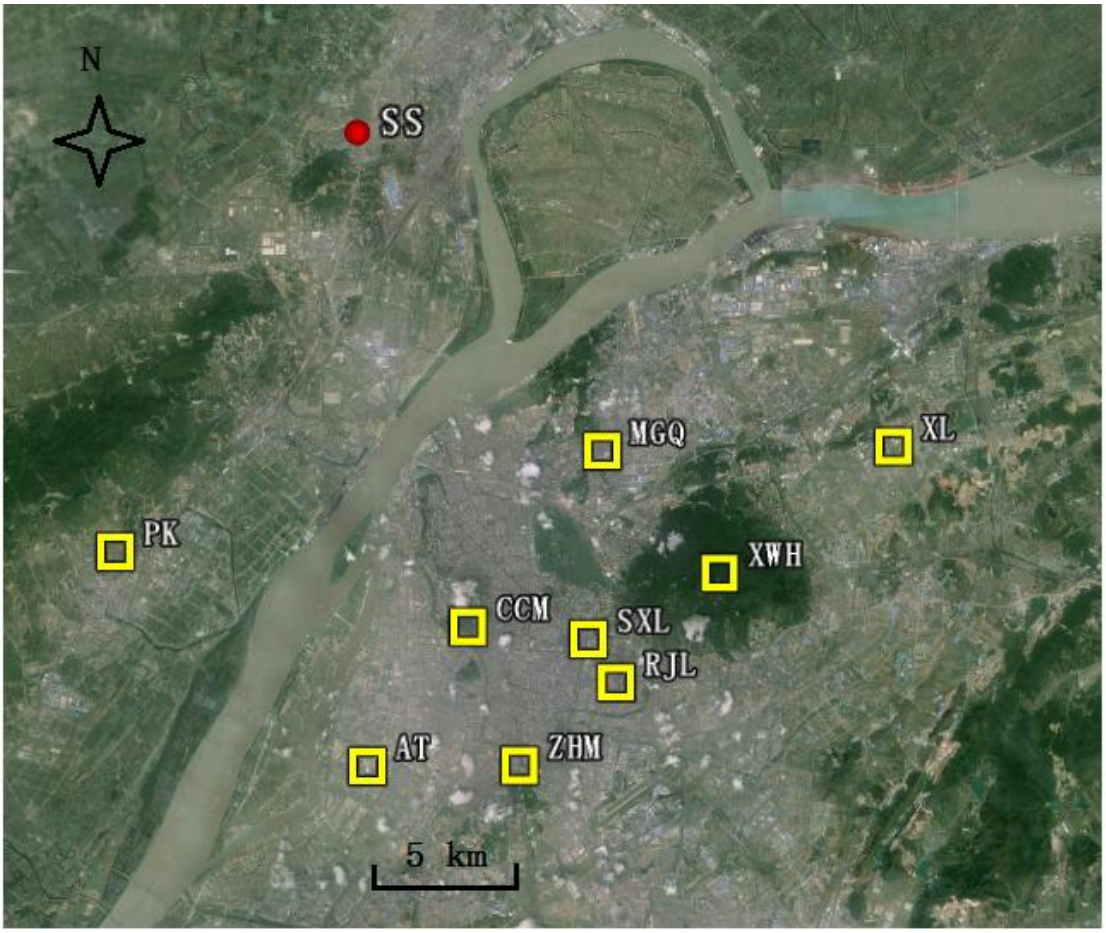
(1) Rolling paper tube

(2) Sealing the bottom of paper tube with clay

(3) Filling black powder into paper tube and sealing the top of tube

(4) Furnish the tube with colorful papers

S3 Manufacture procedures for fireworks



S4 Locations of the nine air quality monitoring sites at urban Nanjing set by Jiangsu Environmental Monitoring Center and the sampling site (SS) of this study at Nanjing University of Information Science and Technology (NUIST).

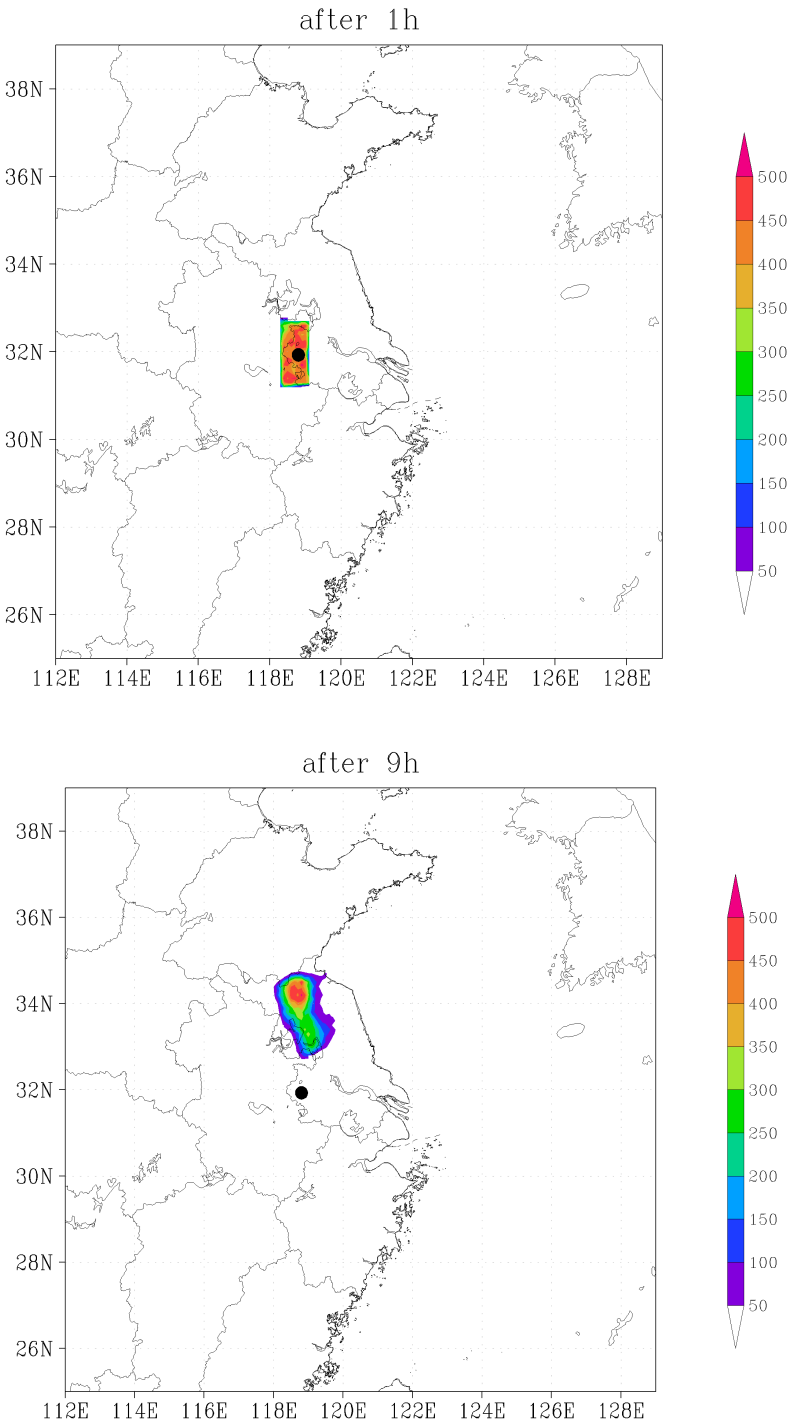
S5 Quartz and polypropylene fiber filters obtained for each day

S6 Correlations of $PM_{2.5}$ mass concentrations at NUIST and other nine sites at urban Nanjing

	MGQ	CCM	SXL	ZHM	RJL	XWH	PK	AT	XL	NUIST
MGQ	1									
CCM	0.99**	1								
SXL	0.99 **	0.99**	1							
ZHM	0.99**	0.99**	0.99**	1						
RJL	0.98 **	0.97**	0.97**	0.98**	1					
XWH	0.98**	0.99**	0.99**	0.99**	0.96**	1				
PK	0.97**	0.99**	0.99**	0.98**	0.95**	0.99**	1			
AT	0.97**	0.99**	0.99**	0.99**	0.96**	0.99 **	0.99 **	1		
XL	0.98**	0.99**	0.99 **	0.99**	0.95**	0.99**	0.99**	0.99 **	1	.
NUIST	0.97**	0.97**	0.97**	0.97**	0.97**	0.96**	0.96**	0.96**	0.96**	1

** Pearson correlation is significant at the 0.01 level (2-tailed).

The locations of the nine sites and NUSIT can be found in S4.



S7 Movements of the center with highest $PM_{2.5}$ mass concentrations by WRF-FLEXPART simulating at the Chinese New Year´Eve, 2014 in Nanjing. The initial hour was set as 02:00 h of Jan. 31. The right colorful column indicated the mass concentrations of $PM_{2.5}$ ($\mu g\ m^{-3}$).

S8 Factor loading matrix for pricipal component analysis of $PM_{2.5}$ at Pre-SF (a), SF (b), after SF (c) and the whole period (d)

(a)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Cl^-	0.10	0.40	0.27	0.86	-0.12
Na^+	-0.17	0.66	0.14	0.72	0.02
P	0.48	0.51	0.06	0.61	-0.03
Be	0.66	0.16	0.30	0.61	-0.27
Na	0.23	-0.03	0.77	0.60	0.01
U	0.67	0.37	0.27	0.55	-0.21
K^+	-0.45	0.76	0.02	0.45	0.09
Sc	0.65	-0.13	0.61	0.43	0.06
Y	0.52	-0.07	0.76	0.37	0.07
Li	0.88	0.29	0.07	0.33	0.15
Sm	0.40	0.18	0.85	0.29	0.08
NO_2^-	0.08	0.54	0.04	0.28	-0.79
Sn	0.91	0.23	-0.19	0.28	0.08
OC	0.86	0.40	-0.20	0.26	-0.02
V	-0.20	0.89	0.21	0.26	-0.23
Sb	0.93	-0.15	-0.13	0.23	0.20
Zn	0.84	0.17	-0.10	0.23	0.44
NO_3^-	0.30	0.88	0.00	0.21	-0.31
Co	0.84	0.00	0.50	0.20	-0.08
Ti	-0.04	0.16	0.42	0.18	0.87
Zr	0.94	0.30	0.05	0.15	-0.04
Ce	-0.13	0.21	0.96	0.15	-0.01
Si	0.97	0.01	0.20	0.14	0.06
La	-0.27	0.24	0.92	0.13	-0.02
Mn	0.97	-0.10	0.12	0.11	0.15
Ca^{2+}	-0.40	-0.78	-0.11	0.09	-0.46
Ca	0.88	-0.42	0.04	0.08	0.20
Cs	-0.11	-0.94	-0.13	0.06	-0.30
Ni	-0.14	0.41	0.90	0.03	-0.07
Cr	0.87	0.16	0.46	0.02	-0.09
Mo	0.96	0.04	0.14	0.00	-0.24
F^-	0.82	0.39	0.41	-0.01	0.10
NH_4^+	0.27	0.90	0.24	-0.01	-0.24
K	0.94	0.27	-0.01	-0.02	-0.22
Th	0.14	0.11	0.98	-0.02	0.04
Sr	0.79	-0.29	-0.01	-0.05	0.54
Al	0.95	-0.15	0.19	-0.08	0.16
SO_4^{2-}	0.96	0.62	0.28	-0.08	-0.07
Rb	0.60	-0.70	-0.05	-0.09	-0.38
As	0.98	0.20	0.01	-0.09	-0.05
Ba	0.71	-0.08	-0.01	-0.10	0.69
Bi	0.94	0.14	-0.08	-0.12	0.26
EC	0.98	0.03	0.05	-0.20	0.07

Pb	0.94	0.06	-0.13	-0.22	0.20
Cd	0.96	0.06	-0.01	-0.25	-0.07
Tl	0.91	-0.21	-0.04	-0.27	-0.23
Fe	0.82	-0.20	0.27	-0.30	0.35
Mg	0.53	0.06	0.64	-0.32	0.46
Cu	0.32	-0.01	-0.50	-0.50	0.64
W	0.15	0.16	-0.51	-0.55	0.63
Mg^{2+}	0.34	0.26	-0.34	-0.84	0.06
% of Variance	45.6	17.0	16.5	11.5	9.4
Cumulative %	45.6	62.6	79.2	90.6	100.0
Sources	Coal combustion	Vehicle emission	road dust	Sea salt	Firework

Pre-SF indicated the period before Spring Festival (SF) of 2014, covering the days from Jan. 24 to Jan. 29; SF indicated the period during SF, covering the days from Jan. 30 to Feb. 6; After-SF indicated the period after SF, covering the days from Feb.12 to Feb.21.

(b)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Na^+	0.16	-0.14	0.03	0.11	0.96
Ca	0.44	-0.56	-0.13	0.39	0.56
Mg	0.69	-0.05	0.14	0.63	0.31
Zr	0.28	-0.33	0.09	0.84	0.30
Fe	0.67	-0.01	0.23	0.65	0.28
Be	0.66	0.54	0.40	-0.09	0.26
V	0.55	0.57	0.06	0.58	0.18
Bi	0.91	0.14	0.07	0.34	0.15
OC	0.80	0.36	0.28	0.36	0.15
Sr	0.96	-0.03	0.06	0.23	0.14
Sn	0.90	0.11	0.16	0.36	0.14
K^+	0.91	0.30	0.16	0.21	0.13
Y	0.51	0.32	0.45	0.64	0.13
Mn	0.79	0.29	0.27	0.45	0.13
Ce	0.32	0.11	0.92	0.12	0.13
U	0.70	0.41	0.43	0.37	0.13
Co	0.70	0.35	0.41	0.45	0.12
Ba	0.97	0.00	0.08	0.19	0.12
Sc	0.53	0.30	0.58	0.52	0.10
Mo	0.78	0.21	0.39	0.44	0.06
Al	0.98	-0.02	0.13	0.05	0.06
Ni	0.55	0.49	0.40	0.54	0.04
Sb	0.83	0.35	0.30	0.30	0.04
Cs	0.80	0.35	0.36	0.32	0.04
Pb	0.92	0.28	0.23	0.18	0.03
Li	0.79	0.28	0.40	0.37	0.03
NO_3^-	0.84	0.47	0.23	0.16	0.02
K	0.95	0.20	0.21	0.12	0.02
Cu	0.76	0.46	0.38	0.24	0.02
Cr	0.84	0.33	0.26	0.34	0.02
La	0.04	0.05	0.98	0.14	0.01
Sm	0.50	0.18	0.67	0.50	0.00
Cd	0.87	0.35	0.29	0.18	0.00
EC	0.81	0.40	0.38	0.20	-0.01
Si	0.94	-0.25	-0.01	0.09	-0.01
Zn	0.84	0.44	0.28	0.15	-0.02
Rb	0.80	0.38	0.40	0.22	-0.03
As	0.77	0.54	0.26	0.21	-0.03
Cl^-	0.97	0.04	0.25	-0.05	-0.03
Th	0.67	0.50	0.31	0.45	-0.04
NH_4^+	0.78	0.45	0.38	0.19	-0.09
Ca^{2+}	0.32	0.76	0.53	0.17	-0.09
Tl	0.76	0.36	0.50	0.20	-0.09
Ti	0.48	-0.42	0.22	0.73	-0.10
Mg^{2+}	0.11	0.97	-0.08	-0.09	-0.13

W	0.40	0.72	0.52	-0.06	-0.20
NO_2^-	-0.22	0.28	0.18	0.88	-0.24
Na	0.59	0.49	0.35	0.44	-0.25
F^-	0.46	0.67	0.48	0.15	-0.27
SO_4^{2-}	0.74	0.40	0.40	0.18	-0.33
P	0.31	0.24	0.71	0.34	-0.46
% of Variance	50.0	15.6	14.6	14.4	4.8
Cumulative %	50.0	65.7	80.3	94.6	99.4
Sources	Firework	Coal combustion	Soil	Vehicle emission	Sea salt

(c)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Mn	0.13	0.23	-0.09	0.01	0.13	-0.14	0.05	0.92
K^+	0.17	0.72	0.55	0.09	0.01	0.02	0.14	0.34
V	0.31	0.80	0.35	-0.09	0.00	-0.09	0.09	0.32
Sb	0.52	0.55	0.50	0.12	0.22	-0.05	0.09	0.31
Mo	0.43	0.71	0.14	0.02	0.26	-0.07	0.03	0.27
NH_4^+	0.59	0.44	0.38	0.31	0.26	0.23	0.13	0.24
EC	0.49	0.25	0.30	0.39	0.47	0.37	0.16	0.24
Cr	0.74	0.49	0.28	0.04	0.19	0.00	0.09	0.23
Sn	0.89	0.37	0.13	0.04	0.11	0.03	0.07	0.20
Co	0.22	0.09	0.10	0.03	-0.02	-0.93	-0.05	0.16
Mg^{2+}	0.77	0.11	0.18	0.00	-0.45	0.35	0.00	0.15
Zn	0.88	0.28	0.08	0.29	0.08	0.09	0.12	0.12
Ca^{2+}	0.85	0.17	0.15	0.33	0.23	0.16	0.07	0.12
SO_4^{2-}	0.73	0.07	0.20	0.52	0.11	0.35	-0.02	0.11
Cl^-	0.05	0.79	0.38	0.32	0.30	0.07	-0.06	0.10
Li	0.87	0.43	0.11	0.14	0.04	-0.02	0.13	0.10
U	0.75	0.45	0.25	0.18	0.26	0.05	0.05	0.10
Ni	0.23	0.20	0.05	-0.09	0.13	0.15	0.92	0.08
NO_3^-	0.69	0.23	0.34	0.29	0.35	0.33	0.14	0.07
Na	0.71	0.60	0.29	0.09	0.17	-0.01	0.01	0.07
Cd	0.69	0.47	0.28	0.32	0.17	0.08	0.27	0.06
Na+	0.40	0.20	-0.02	0.85	0.13	-0.06	-0.21	0.06
Fe	0.70	0.57	0.19	0.27	-0.20	0.10	0.10	0.06
As	0.67	0.48	0.21	0.38	0.22	0.07	0.16	0.06
Be	0.69	0.58	0.03	0.23	-0.03	-0.19	0.26	0.04
Y	0.90	0.33	0.12	0.20	0.00	-0.10	0.15	0.03
OC	0.51	0.39	0.47	0.17	0.49	0.26	-0.04	0.02
Si	0.92	0.17	0.19	0.26	-0.09	0.01	0.06	0.02
Sm	0.94	0.24	0.08	0.19	0.03	-0.05	0.12	0.02
Ca	0.57	0.39	0.29	0.63	-0.03	-0.11	0.13	0.01
Ce	0.98	0.15	0.05	0.04	-0.03	-0.12	0.04	0.01
Tl	0.61	0.70	0.20	0.26	0.09	0.02	0.14	0.00
Al	0.73	0.20	0.54	0.36	-0.06	0.03	0.03	-0.01
W	0.06	-0.03	0.71	-0.08	0.63	0.19	0.20	-0.01
Bi	0.49	0.44	0.67	0.28	0.07	0.05	0.15	-0.01
Pb	0.58	0.56	0.41	0.23	0.27	0.09	0.08	-0.02
F^-	0.28	0.24	0.49	0.19	0.12	-0.29	0.68	-0.02
K	0.26	0.48	0.81	0.07	0.18	0.06	0.01	-0.02
Ba	0.07	0.12	0.97	0.02	-0.11	-0.09	0.02	-0.02
Sr	0.14	0.15	0.97	0.09	-0.05	-0.07	0.04	-0.03
Ti	0.37	0.00	-0.14	-0.10	-0.83	0.29	-0.13	-0.03
Cs	0.54	0.79	0.08	0.10	-0.06	-0.02	0.23	-0.04
Sc	0.84	0.39	0.15	0.25	0.03	-0.11	0.20	-0.04
Rb	0.51	0.77	0.20	0.24	-0.02	0.00	0.19	-0.04

Cu	0.15	0.34	0.68	0.28	0.55	-0.01	0.14	-0.05
La	0.95	0.04	0.04	-0.04	-0.05	-0.27	-0.05	-0.05
Mg	0.54	0.33	0.28	0.25	-0.18	0.51	-0.11	-0.06
Zr	0.34	0.11	0.20	0.26	0.26	0.03	0.13	-0.09
P	0.69	0.37	0.25	0.18	0.18	-0.49	0.03	-0.10
NO_2^-	-0.26	-0.27	0.19	-0.24	-0.84	-0.11	-0.01	-0.22
Th	0.52	0.55	0.00	0.10	0.19	-0.01	0.01	-0.23
% of Variance	37.0	18.5	13.9	8.2	7.6	4.9	4.0	3.4
Cumulative %	37.0	55.4	69.3	77.5	85.1	90.0	94.0	97.5
Sources	Coal combustion	Soil	Firework	Sea salt	Vehicle emission	Road dust	Heavy oil burning	Industrial

(d)	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Li	0.36	0.63	0.42	0.38	0.28	0.12	0.09	0.06
Be	0.10	0.69	0.41	0.34	0.30	-0.01	0.13	-0.14
Na	0.18	0.68	0.59	-0.01	0.12	-0.08	0.23	-0.03
Mg	0.56	0.28	0.28	0.21	0.14	-0.10	-0.11	0.54
Al	0.96	0.05	0.07	0.20	0.01	0.05	0.09	0.09
Si	0.31	0.50	0.38	0.62	0.07	-0.08	0.10	0.19
P	0.14	0.52	0.72	0.08	-0.04	-0.13	-0.07	-0.28
K	0.97	0.00	0.14	0.00	0.04	0.17	0.06	0.00
Ca	0.13	0.26	0.28	0.80	0.21	-0.13	0.19	0.15
Sc	0.03	0.78	0.34	0.42	0.24	0.02	0.12	0.06
Ti	-0.01	0.48	0.05	-0.06	-0.22	-0.18	-0.06	0.65
V	0.54	0.37	0.27	-0.13	0.47	0.21	-0.08	-0.07
Cr	0.63	0.43	0.42	0.21	0.36	0.17	-0.04	0.11
Mn	0.01	0.14	0.10	0.11	0.70	-0.04	-0.11	-0.03
Fe	0.14	0.33	0.47	0.48	0.30	-0.02	0.10	0.54
Co	0.33	0.29	0.21	0.14	0.46	-0.05	-0.36	-0.07
Ni	0.02	0.62	0.06	-0.17	0.33	0.11	-0.14	0.11
Cu	0.66	0.07	0.46	-0.01	0.23	0.36	0.21	0.07
Zn	0.14	0.54	0.45	0.51	0.23	0.15	0.13	0.13
As	0.45	0.20	0.74	0.30	0.18	0.19	0.03	0.09
Rb	0.44	0.45	0.33	0.24	0.41	0.19	0.36	0.03
Sr	0.99	-0.08	-0.02	0.04	0.01	-0.01	0.00	0.07
Y	0.04	0.82	0.29	0.39	0.23	0.03	0.07	0.10
Zr	0.09	0.24	0.23	0.76	0.10	0.01	-0.05	-0.15
Mo	0.14	0.42	0.23	0.27	0.73	0.07	0.07	0.04
Cd	0.36	0.11	0.78	0.31	0.16	0.06	0.12	0.19
Sn	0.66	0.28	0.53	0.31	0.19	-0.04	0.05	0.07
Sb	0.47	0.14	0.79	0.16	0.12	-0.03	0.19	0.10
Cs	0.18	0.51	0.05	0.23	0.53	0.13	0.44	0.04
Ba	0.99	-0.09	-0.03	0.01	0.00	0.02	0.01	0.05
La	0.07	0.90	-0.04	0.01	-0.09	0.08	-0.14	0.04
Ce	0.02	0.95	0.02	0.16	0.02	0.03	-0.02	0.10
Sm	0.01	0.86	0.19	0.40	0.16	0.07	0.04	0.09
W	0.24	-0.02	0.49	-0.15	0.13	0.61	0.25	0.09
Tl	0.28	0.35	0.58	0.36	0.39	0.15	0.27	0.12
Pb	0.74	0.14	0.54	0.19	0.17	0.15	0.19	0.14
Bi	0.93	-0.01	0.29	0.12	0.07	0.05	0.01	0.13
Th	0.09	0.74	0.29	0.01	0.25	0.02	0.12	0.15
U	0.08	0.67	0.37	0.35	0.43	0.08	0.04	-0.08
Na^+	0.06	0.44	0.57	-0.01	-0.27	-0.36	0.26	-0.30
NH_4^+	0.70	0.34	0.10	0.14	0.27	0.48	-0.02	-0.10
K^+	0.96	-0.02	0.01	-0.07	0.03	0.23	-0.06	-0.04
Ca^{2+}	0.43	0.23	-0.23	0.23	0.08	0.74	-0.05	-0.15
Mg^{2+}	0.28	-0.04	0.13	-0.16	-0.07	0.79	-0.08	-0.06

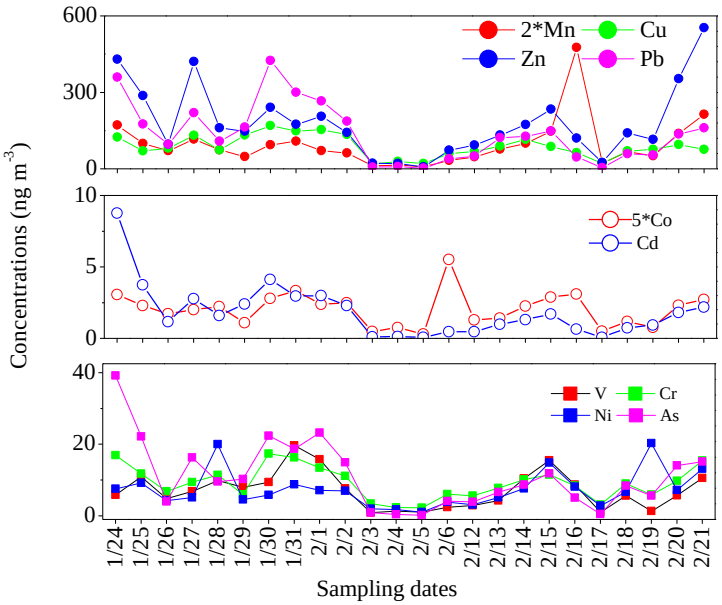
F^-	0.57	0.18	0.43	-0.01	0.03	0.54	-0.20	-0.01
Cl^-	0.80	0.25	0.25	-0.01	0.18	-0.06	0.32	-0.17
NO_2^-	-0.09	-0.03	-0.20	-0.12	0.12	0.09	-0.81	0.06
NO_3^-	0.68	0.36	0.19	0.18	0.16	0.41	-0.03	-0.10
SO_4^{2-}	0.80	0.14	0.02	0.14	-0.20	0.47	-0.04	-0.10
OC	-0.02	0.27	0.88	0.14	0.12	0.09	-0.02	-0.06
EC	-0.01	0.15	0.87	0.25	0.16	0.20	0.00	0.19
% of Variance	24.02	19.34	16.52	8.09	7.15	6.35	3.71	3.26
Cumulative %	24.02	43.36	59.89	67.97	75.12	81.47	85.18	88.44
Sources	Firework	Coal combustion	vehicle emission	soil dust	Iron smelt	road dust	Industrial 1	Industrial 2

Industrial 1: element Cs is used in phototube, chemical and medical industries; Rb is used in phototube, photovoltaic cells, glass and ceramics. Industrial 2: element Ti is widely used in producing tanks, pipelines and other equipments of petrochemcial industries; Mg is widely used in iron smelt, petrochemcial and manufacturing industries. These industries are all existed at the surroundings of the sampling site. In Fig. 9, the contributions of industrial 1 and industrial 2 are combined together.

S9 Correlation coefficients (R^2) of NO_3^- and SO_4^{2-} with metals-Fe, Cu and Mn under certain relative humidity (RH) bins.

RH (%)	R^2			RH (%)	R^2		
	Fe-NO_3^-	Mn-NO_3^-	Cu-NO_3^-		Fe-SO_4^{2-}	Mn-SO_4^{2-}	Cu-SO_4^{2-}
>25	0.11	0.04	0.54	>25	0.01	0.00	0.39
>40	0.25	0.05	0.56	>40	0.07	0.00	0.42
>50	0.29	0.03	0.58	>50	0.07	0.00	0.46
>55	0.48	0.03	0.68	>55	0.19	0.00	0.57
>60	0.47	0.03	0.68	>60	0.16	0.00	0.57
>65	0.40	0.01	0.81	>65	0.20	0.00	0.63
>70	0.47	0.00	**0.84**	>70	0.31	0.00	0.63
>75	0.68	0.01	0.82	>75	0.43	0.00	0.59
>80	0.58	0.01	0.75	>80	0.45	0.01	0.71
>85	**0.95**	**0.89**	0.70	>85	**0.65**	**0.60**	0.65
>90	0.44	0.92	0.54	>90	0.08	0.07	**0.94**

The highest R^2 for each combination were shown in bold.



S10 Time series of heavy metals during sampling period. Jan. 30-Feb.7 belongs to the Chinese Spring Festival in 2014; Jan. 30 is the Chinese New Year day; Feb. 14 is the Lantern Festival day.