

Supplement of

**Exploration of PM_{2.5} sources on the regional scale in the Pearl
River Delta based on ME-2 modeling**

Xiao-Feng Huang¹, Bei-Bing Zou¹, Ling-Yan He¹, Min Hu², André S. H. Prévôt³, Yuan-Hang Zhang²

¹Key Laboratory for Urban Habitat Environmental Science and Technology, School of Environment and Energy, Peking University Shenzhen Graduate School, Shenzhen, 518055, China.

²State Key Joint Laboratory of Environmental Simulation and Pollution Control, College of Environmental Sciences and Engineering, Peking University, Beijing, 100871, China.

³Paul Scherrer Institute (PSI), 5232 Villigen-PSI, Switzerland.

Correspondence to: L.-Y. He (hely@pku.edu.cn).

Table S1. Estimation of abundance of ions in sea salt particulate and elements in fugitive dust particulate.

	Abundance in seawater ^a	Abundance in sea salt particle ^a	Abundance in upper crust ^b	Abundance in soil dust particle ^b
Cl ⁻	1.9%	55.4%	O	46.60%
Na ⁺	1.1%	30.8%	Si	27.72%
SO ₄ ²⁻	0.3%	7.7%	Al	8.1%
Mg ²⁺	0.1%	3.7%	Fe	5.0%
Ca ²⁺	0.04%	1.2%	Ca	3.6%
K ⁺	0.04%	1.1%	Na	2.8%
F ⁻	0.0001%	0.003%	K	2.6%
Total	3.4%	100%	Mg	2.1%
			Ti	0.4%
			V	0.011%
			Ni	0.008%
			Zn	0.007%
			Pb	0.002%
			Total	99.1%
				100%

Notes: ^a, data from Mason (1982); ^b, data from Taylor and McLennan (1995).

Table S2. Enrichment factors of all metallic elements in PM_{2.5} using aluminum as the reference element at six sites.

The abundance of elements in the earth's crust is based on the data reported by (Taylor and McLennan, 1995).

	QA	DM	DP	UT	MDS	HS	PRD-annual
Ca	3	3	4	3	3	3	3
Ti	2	2	3	2	2	3	2
V	66	36	125	54	66	57	64
Ni	91	50	121	68	146	80	89
Zn	673	609	878	718	1182	1798	821
Cd	3223	2901	4857	3331	6124	8691	4121
Pb	532	439	941	611	986	1260	663
Na	5	4	7	4	7	7	5
Mg	2	1	2	1	1	1	2
K	6	5	8	6	8	12	7
Fe	2	2	3	3	4	3	2

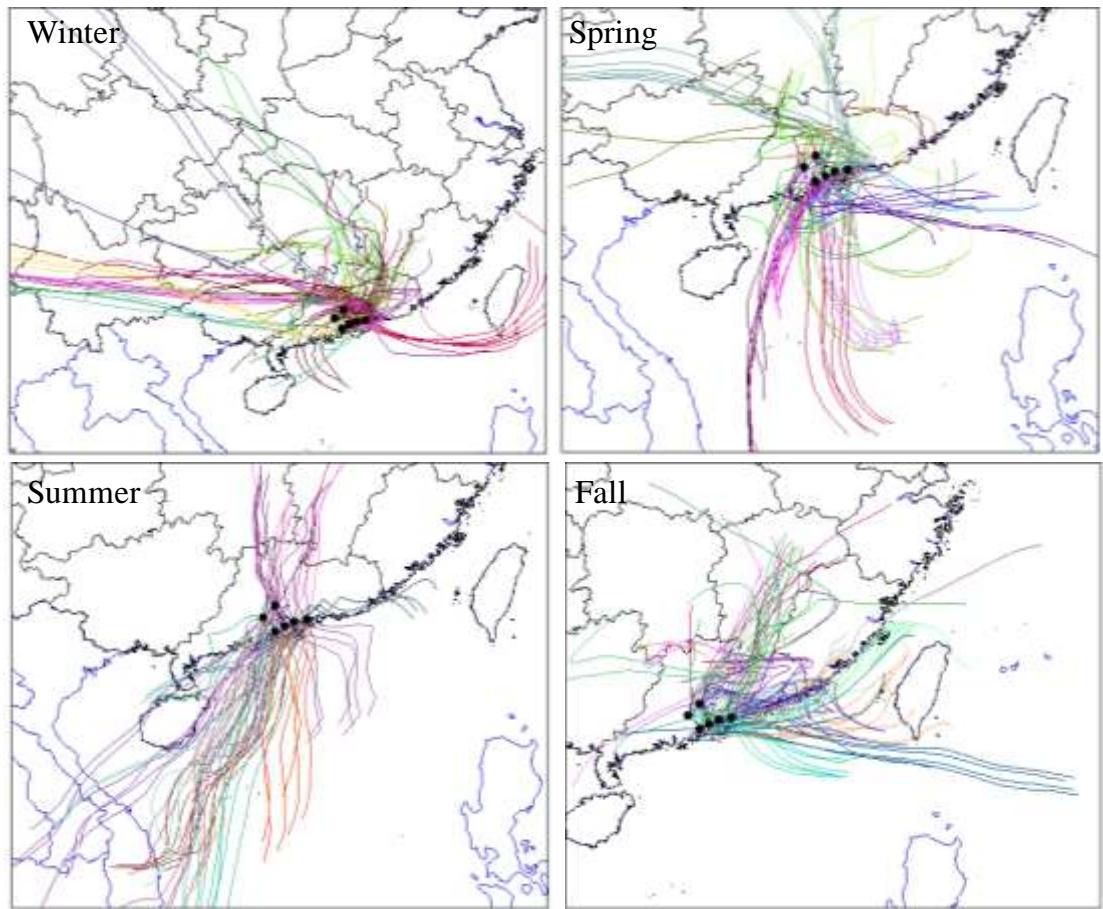


Fig.S1. Back trajectory during the four seasons observation in the Pearl River Delta (the same color of trajectory lines in each figure represents the same day at six sites).

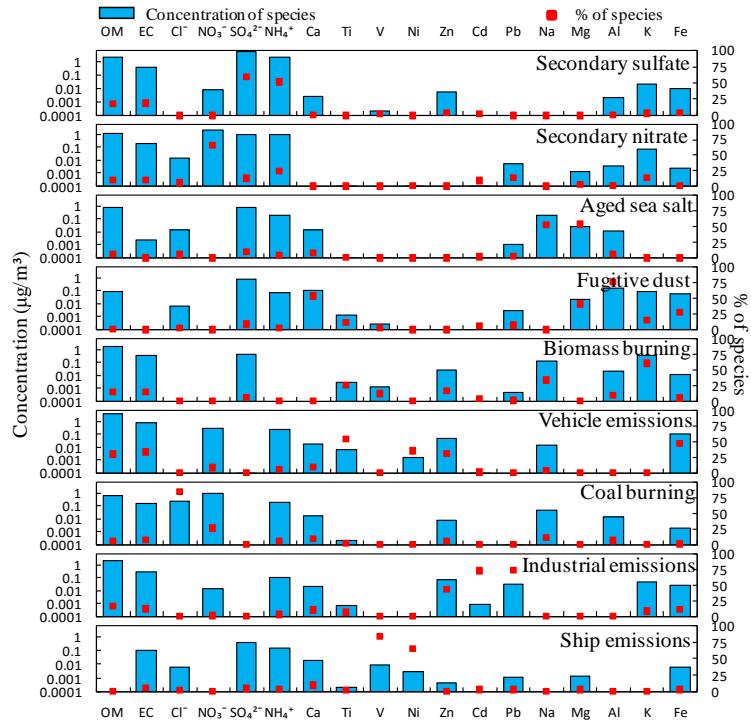


Fig. S2. Factor profiles and explained variations of nine factors deduced by PMF.

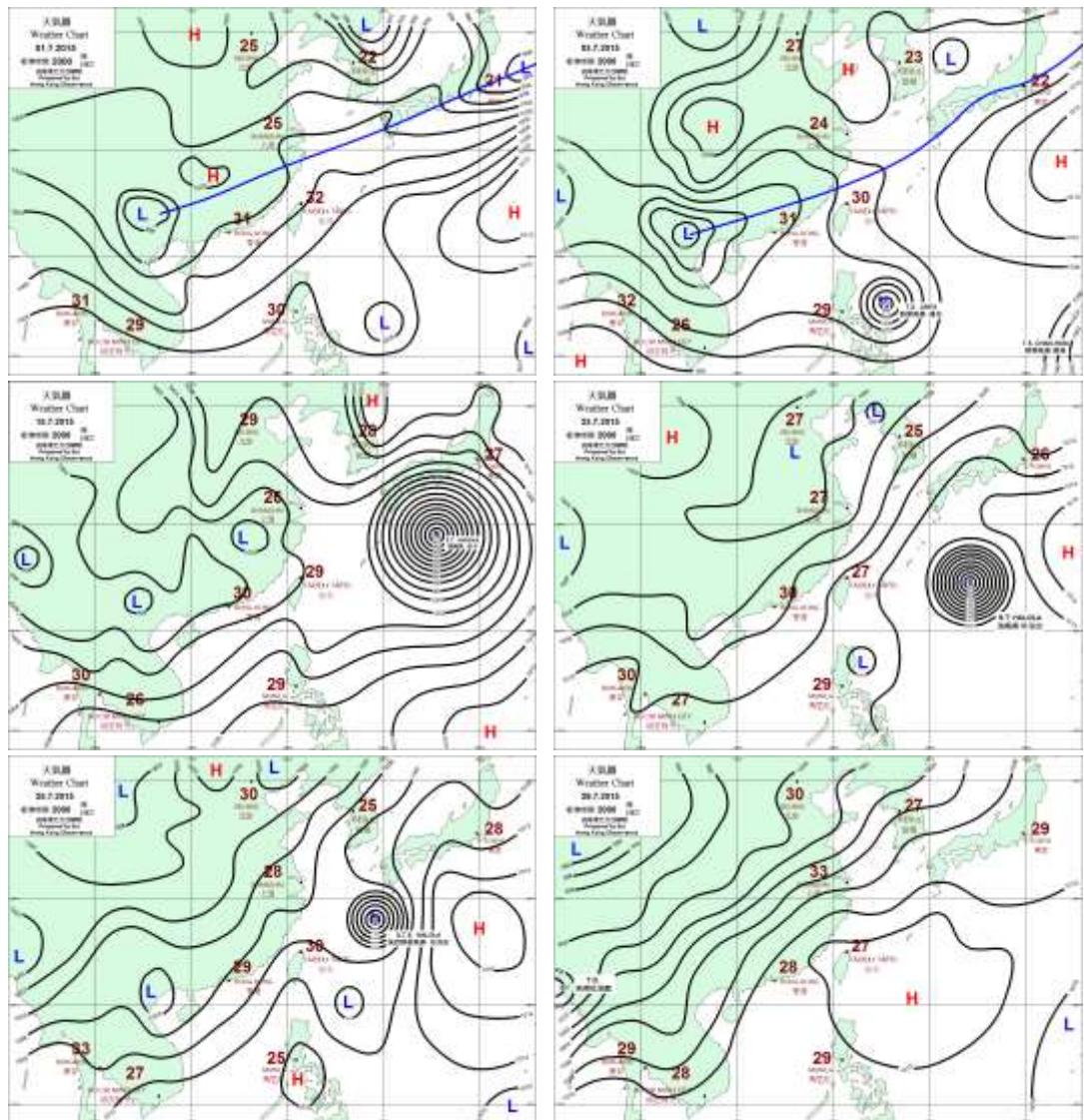


Fig. S3. Weather charts in southerly flow.

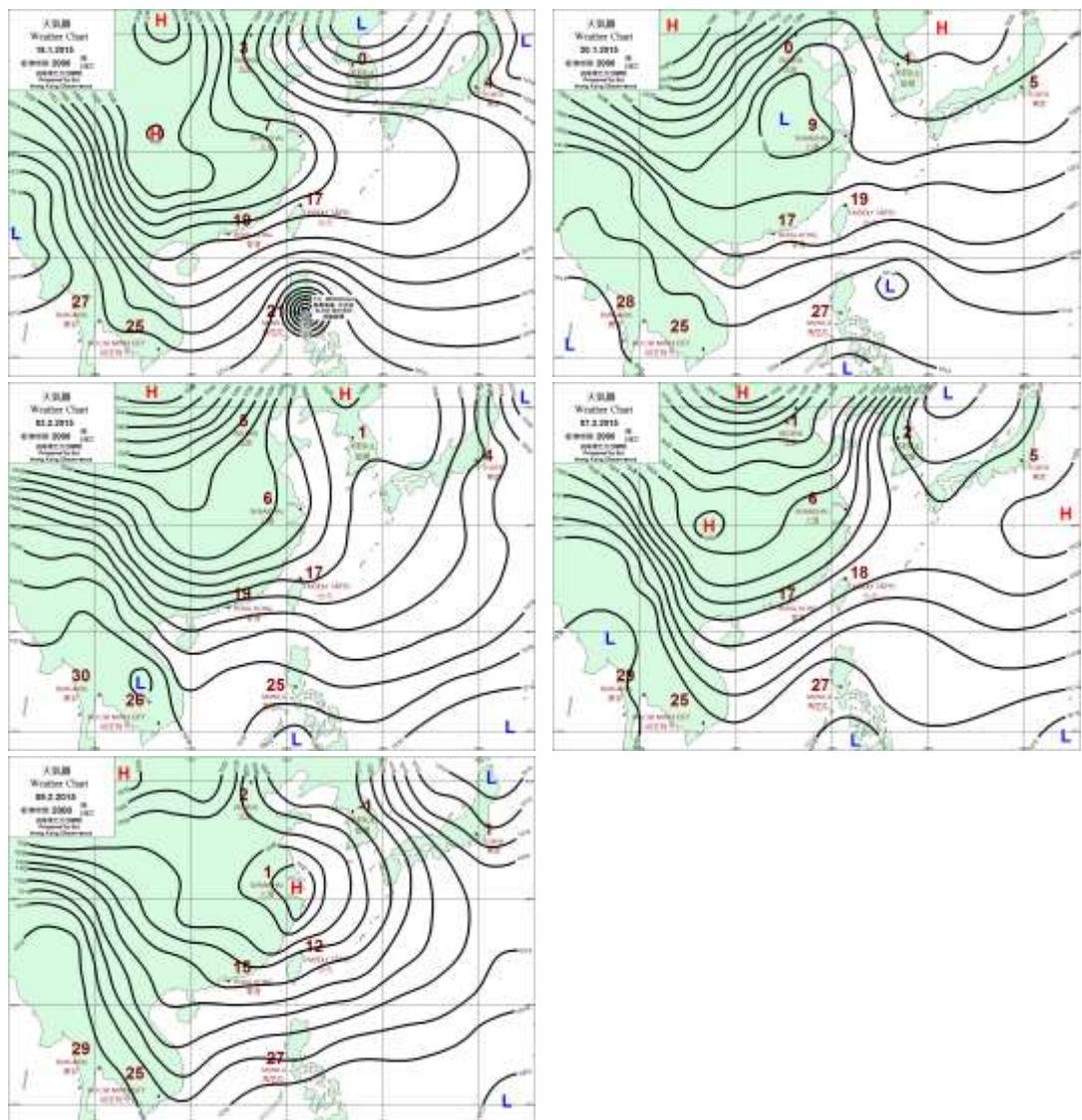


Fig. S4. Weather charts in northerly flow.

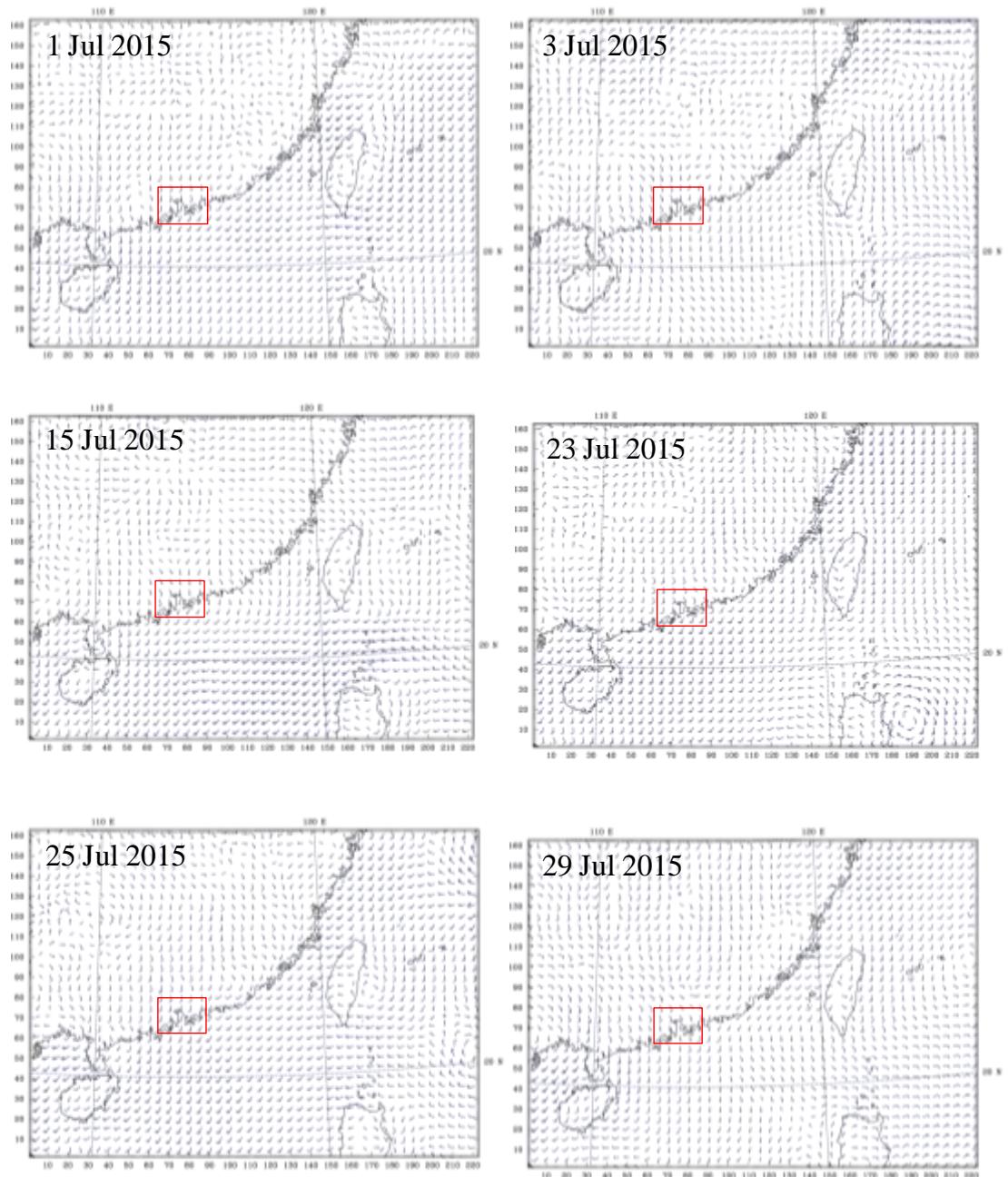


Fig. S5. Wind field charts in southerly flow.

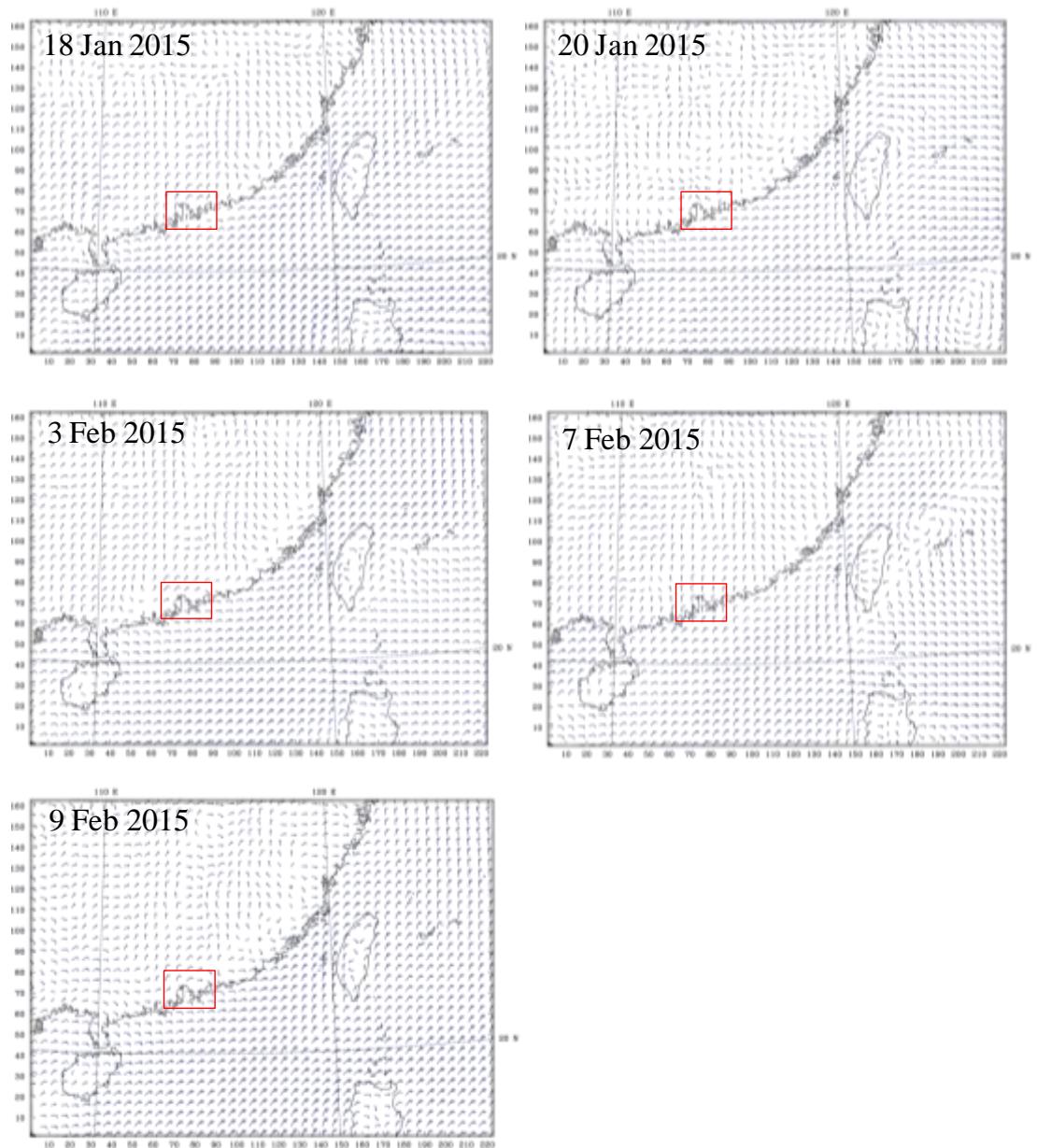


Fig. S6. Wind field charts in northerly flow.