

**Comparison of PM_{2.5} carbonaceous pollutants between an urban site in Shanghai and a background island in Coastal East China Sea in
summer: Concentration, Composition and Sources**

Fengwen Wang^{abc*}, Tian Lin^d, Yuanyuan Li^b, Zhigang Guo^b, Neil L. Rose^e

^aState Key Laboratory of Coal Mine Disaster Dynamics and Control, Chongqing University, Chongqing 400030, China

^bShanghai Key Laboratory of Atmospheric Particle Pollution and Prevention (LAP³), Fudan University, Shanghai 200433, China

^cDepartment of Environmental Science, College of Resources and Environmental Science, Chongqing University, Chongqing 400030, China

^dState Key Laboratory of Environmental Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang 550002, China

^eEnvironmental Change Research Centre, University College London, Gower Street, London WC1E 6BT, United Kingdom

*Corresponding author: fengwenwang@cqu.edu.cn

Table S1 The complete forms of targeted 10 hopanes and 12 steranes in this study.

hopanes (10 species)	
Ts	18 α (H)-22,29,30-trisnorneohopane
Tm	17 α (H)-22,29,30-trisnorhopane
C29 $\alpha\beta$	17 α (H),21 β (H)-norhopane
C29 $\beta\alpha$	17 β (H),21 α (H)-norhopane
C30 $\alpha\beta$	17 α (H),21 β (H)-hopane
C30 $\beta\alpha$	17 β (H),21 α (H)-hopane
C31S	22S-17 α (H),21 β (H)-homohopane
C31R	22R-17 α (H),21 β (H)-homohopane
C32S	22S-17 α (H),21 β (H)-bishomohopane
C32R	22R-17 α (H),21 β (H)-bishomohopane
steranes (12 species)	
C27 $\alpha\alpha\alpha$ (20S)	Where $\alpha\alpha\alpha$ = 5 α (H), 14 α (H), 17 α (H)-steranes
C27 $\alpha\beta\beta$ (20R)	$\alpha\beta\beta$ = 5 α (H), 14 β (H), 17 β (H)-steranes
C27 $\alpha\beta\beta$ (20S)	20R = C-20R
C27 $\alpha\alpha\alpha$ (20R)	20s=C-20S
C28 $\alpha\alpha\alpha$ (20S)	
C28 $\alpha\beta\beta$ (20R)	
C28 $\alpha\beta\beta$ (20S)	
C28 $\alpha\alpha\alpha$ (20R)	
C29 $\alpha\alpha\alpha$ (20S)	
C29 $\alpha\beta\beta$ (20R)	
C29 $\alpha\beta\beta$ (20S)	
C29 $\alpha\alpha\alpha$ (20R)	

Table S2 Individual PAH and *n*-alkanes in all PM_{2.5} samples (in ng/m³), “-” indicates “under detection limit”.

Shanghai	Nap	Ac	Ace	Fl	Phe	Ant	Flu	Pyr	BaA	Chr	BbF	BkF	BaP	IP	DBA	BghiP
7/21/2011	0.27	0.04	0.29	0.23	0.93	0.1	0.81	0.66	0.29	0.84	1.91	0.6	0.47	1.8	0.65	1.27
7/22/2011	0.29	0.05	0.3	0.25	1.09	0.12	0.78	0.63	0.23	0.47	1.29	0.4	0.43	1.17	0.38	0.86
7/23/2011	0.25	0.04	0.27	0.22	0.73	0.1	0.37	0.28	0.15	0.25	1.02	0.28	0.18	0.9	0.37	0.6
7/24/2011	0.24	0.04	0.23	0.18	0.73	0.08	0.42	0.32	0.17	0.3	0.91	0.26	0.18	1.6	0.25	0.58
7/25/2011	0.27	0.04	0.22	0.18	0.77	0.09	0.36	0.26	0.17	0.13	1.44	0.36	0.15	1.18	0.43	0.89
7/26/2011	0.24	0.04	0.2	0.18	0.8	0.13	0.97	0.67	0.55	0.9	1.85	0.56	0.63	1.47	0.81	0.94
7/27/2011	0.25	0.04	0.21	0.17	0.73	0.09	0.8	0.59	0.52	0.97	2.34	0.69	0.42	1.84	0.85	1.24
7/28/2011	0.29	0.03	0.27	0.18	0.75	0.11	0.44	0.35	0.18	0.37	1.45	0.35	0.13	1.21	0.5	0.86
7/29/2011	0.3	0.04	0.27	0.19	0.72	0.08	0.54	0.42	0.22	0.34	1.05	0.28	0.15	0.85	0.3	0.64
HNI	Nap	Ac	Ace	Fl	Phe	Ant	Flu	Pyr	BaA	Chr	BbF	BkF	BaP	IP	DBA	BghiP
7/21/2011	0.23	0.03	0.24	0.15	0.43	0.03	0.15	0.1	0.07	0.06	0.1	0.04	0.09	0.06	-	0.04
7/22/2011	0.15	0.03	0.23	0.17	0.61	0.05	0.2	0.12	0.05	0.05	0.07	0.03	0.07	0.02	-	0.02
7/23/2011	0.28	0.04	0.3	0.22	0.77	0.05	0.24	0.14	0.05	0.05	0.07	0.03	0.06	0.04	-	0.03
7/24/2011	0.25	0.03	0.14	0.2	0.58	0.04	0.18	0.1	0.03	0.03	0.05	0.03	0.05	0.02	-	0.02
7/25/2011	0.2	0.03	0.26	0.19	0.62	0.05	0.19	0.12	0.03	0.03	0.06	0.03	0.06	0.04	-	0.03
7/26/2011	0.23	0.03	0.22	0.18	0.57	0.04	0.16	0.09	0.03	0.05	0.02	0.01	0.02	-	-	-
7/27/2011	0.22	0.03	0.24	0.18	0.52	0.06	0.14	0.09	-	-	-	-	-	-	-	-
7/28/2011	0.27	0.03	0.26	0.22	0.72	0.06	0.21	0.11	0.03	0.03	0.02	0.01	0.03	-	-	-
7/29/2011	0.23	0.03	0.21	0.18	0.59	0.04	0.17	0.09	0.02	0.02	0.01	0.01	0.01	-	-	-

Shanghai	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32	C33
7/21/2011	0.32	0.3	0.41	0.3	0.33	0.43	1.57	1.56	1.31	2.31	4.18	9.67	0.75	0.99	10.58	14.26	10.81	12.51	5.76	3.52
7/22/2011	0.27	0.22	0.36	0.25	0.25	0.29	0.34	0.9	0.95	1.69	2.65	7.13	0.34	0.52	3.63	6.7	2.56	4.64	0.88	1.52
7/23/2011	0.3	0.31	0.5	0.38	0.37	0.38	0.41	0.7	1.21	1.78	27.25	7.5	0.46	0.76	7.61	13.9	8.03	10.99	3.63	4.09
7/24/2011	0.23	0.26	0.28	0.23	0.25	0.3	0.28	0.99	0.86	1.77	2.8	6.28	0.39	0.55	2.98	7.5	2.19	4.64	0.79	1.26
7/25/2011	0.38	0.31	0.51	0.45	0.6	0.53	0.55	1.41	1.26	2.01	3.31	6.6	0.47	0.69	5.45	9.06	2.72	8.92	1.91	3.92
7/26/2011	0.3	0.27	0.36	0.32	0.33	0.33	0.36	1.15	2.29	1.01	3.02	3.81	0.23	0.47	2.52	8.95	2.34	7.17	1.17	2.08
7/27/2011	0.55	0.47	0.79	0.69	0.89	0.94	1.35	1.75	2.74	3.87	7.03	17.09	1.86	2.57	24.69	28.59	15.89	24.51	5.17	5.84
7/28/2011	0.31	0.26	0.35	0.28	0.36	0.32	0.4	0.89	1.17	1.86	3.24	16.4	0.58	0.73	6.61	9.42	5.72	5.87	2.08	1.84
7/29/2011	0.4	0.37	0.54	0.5	0.52	0.59	0.76	1.21	1.74	2.32	4.53	9.82	0.84	1.09	10.37	12.03	5.92	11.23	3.06	3.12
HNI	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24	C25	C26	C27	C28	C29	C30	C31	C32	C33
7/21/2011	0.09	0.12	0.09	0.06	0.04	0.04	0.07	0.1	0.2	0.44	0.69	0.83	1.06	1.25	1.27	1.96	2.25	2.6	2.11	1.37
7/22/2011	0.14	0.16	0.13	0.08	0.06	0.06	0.09	0.15	0.24	0.51	0.77	0.9	1.12	1.45	1.7	2.58	3.69	4.01	3.57	1.96
7/23/2011	0.09	0.1	0.09	0.04	0.03	0.03	0.05	0.08	0.13	0.27	0.4	0.48	0.57	0.58	0.43	0.48	0.29	0.33	0.16	0.18
7/24/2011	0.09	0.09	0.09	0.06	0.04	0.05	0.06	0.09	0.15	0.27	0.4	0.43	0.51	0.54	0.4	0.42	0.3	0.36	0.19	0.16
7/25/2011	0.13	0.11	0.09	0.05	0.05	0.05	0.09	0.11	0.17	0.32	0.43	0.54	0.58	0.63	0.51	0.64	0.42	0.51	0.4	0.43
7/26/2011	0.22	0.21	0.18	0.09	0.08	0.08	0.09	0.1	0.19	0.34	0.52	0.56	0.75	0.82	0.53	0.59	0.35	0.42	0.19	0.33
7/27/2011	0.2	0.19	0.16	0.08	0.07	0.07	0.08	0.1	0.16	0.31	0.48	0.55	0.61	0.68	0.6	0.7	0.45	0.61	0.36	0.39
7/28/2011	0.1	0.12	0.11	0.07	0.07	0.05	0.06	0.06	0.09	0.17	0.22	0.28	0.31	0.37	0.33	0.44	0.32	0.52	0.23	0.35
7/29/2011	0.12	0.17	0.12	0.07	0.06	0.05	0.07	0.07	0.1	-	0.27	0.26	0.32	0.31	0.21	0.26	0.18	0.23	0.1	0.16

Figure S1 The biplot with scores and loadings using correlation matrix of selected 8 PAHs in PM_{2.5} collected at Shanghai.

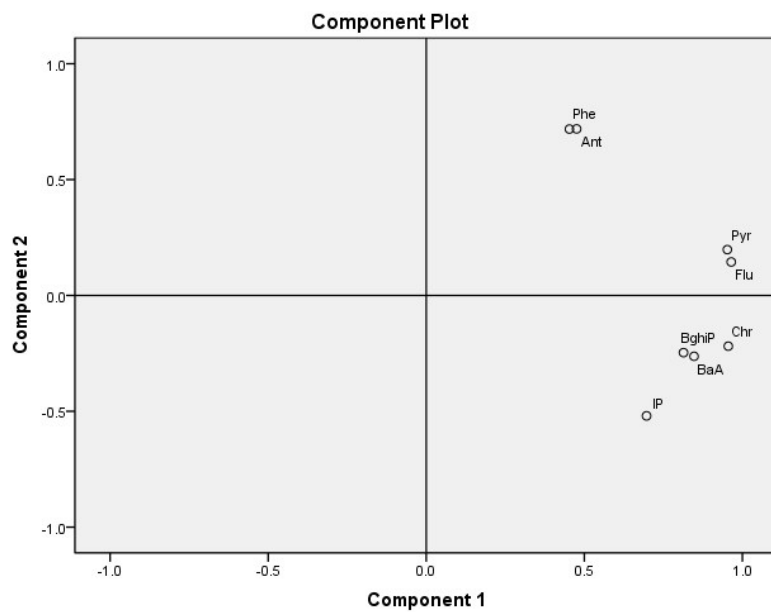


Figure S2 The biplot with scores and loadings using correlation matrix of selected 8 PAHs in PM_{2.5} collected at HNI.

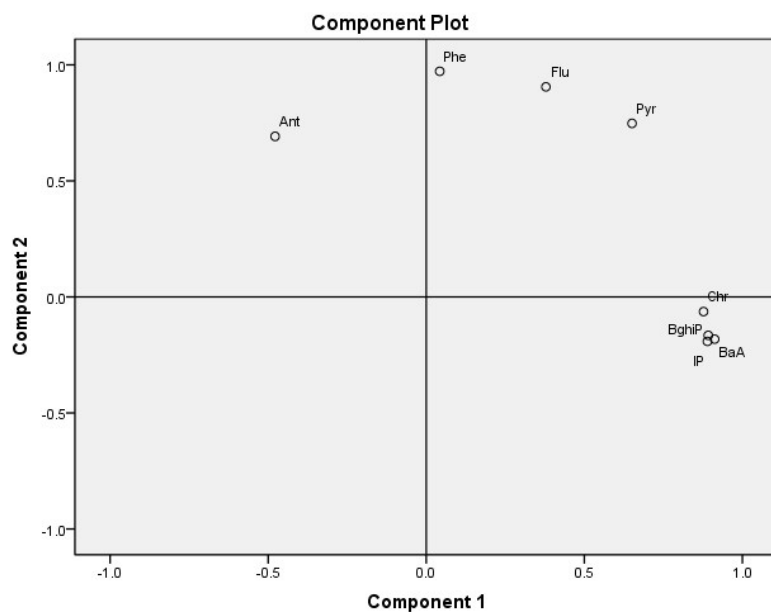


Figure S3 The biplot with scores and loadings using correlation matrix of selected 8 *n*-alkanes in PM_{2.5} collected at Shanghai.

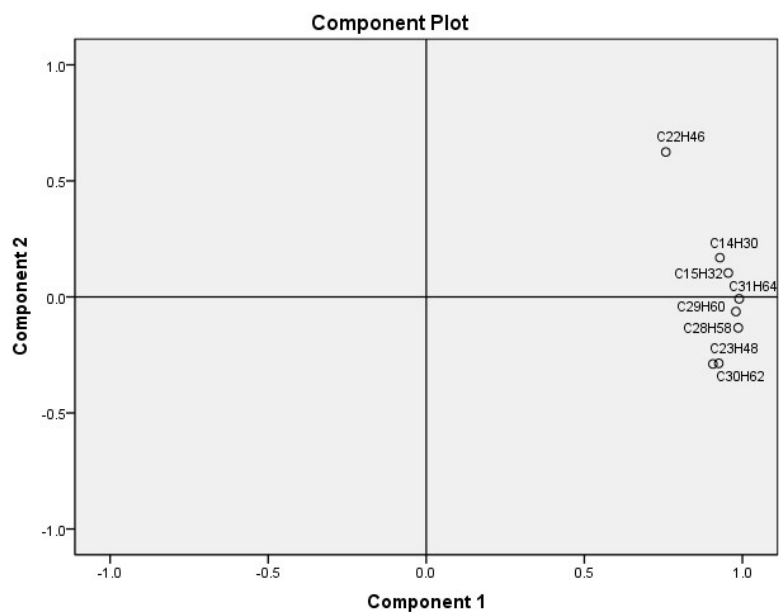


Figure S4 The biplot with scores and loadings using correlation matrix of selected 8 *n*-alkanes in PM_{2.5} collected at HNI.

