Supplementary Captions:

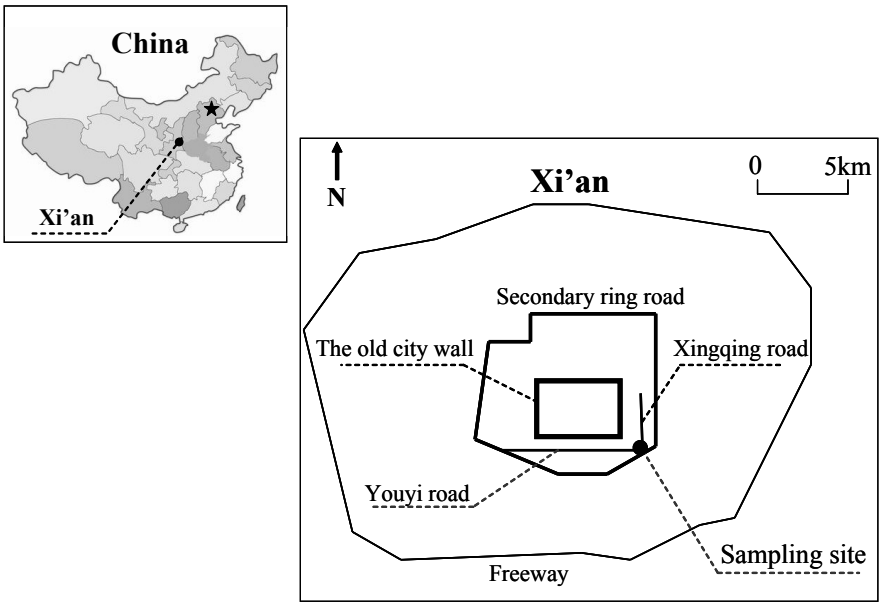


Fig.S1 Location of the ambient aerosol sampling site

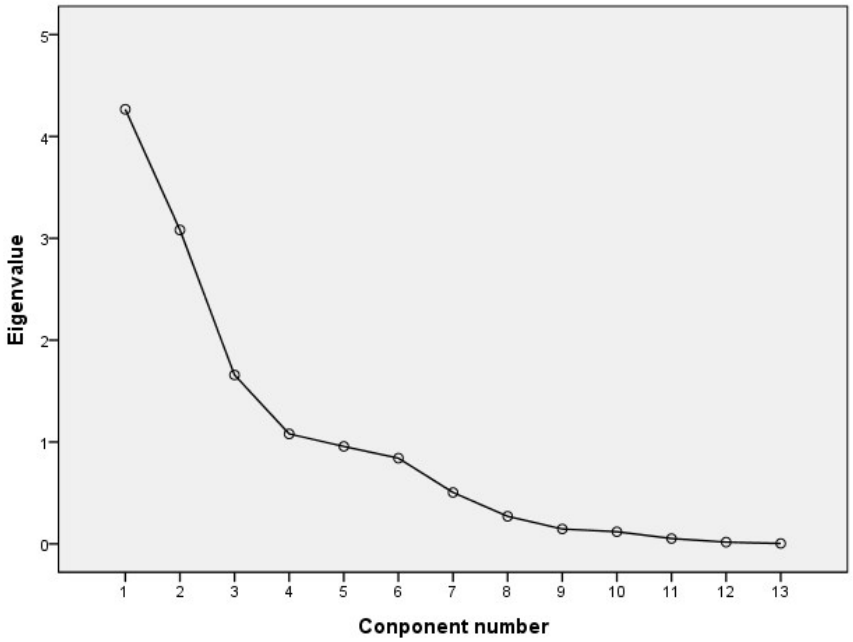
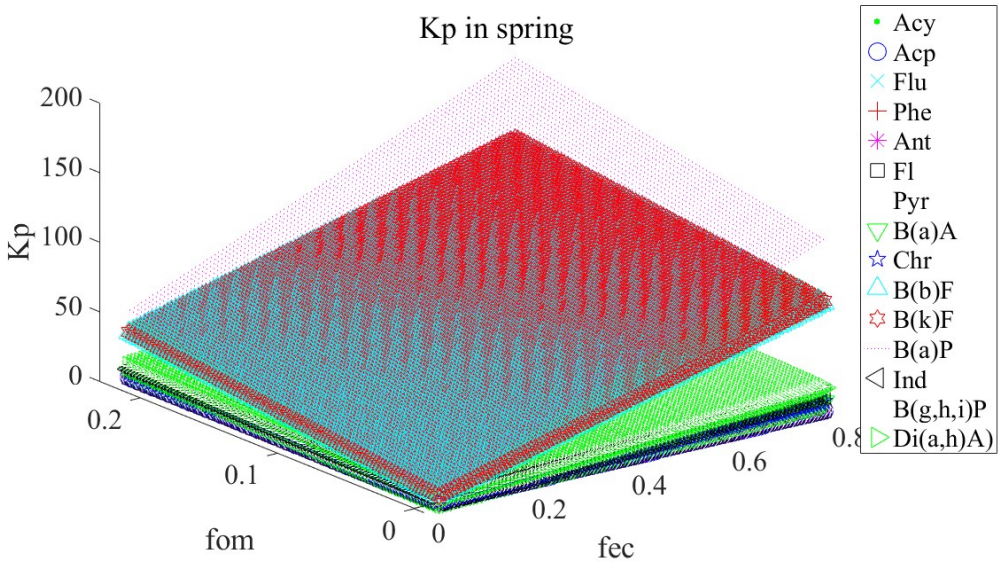
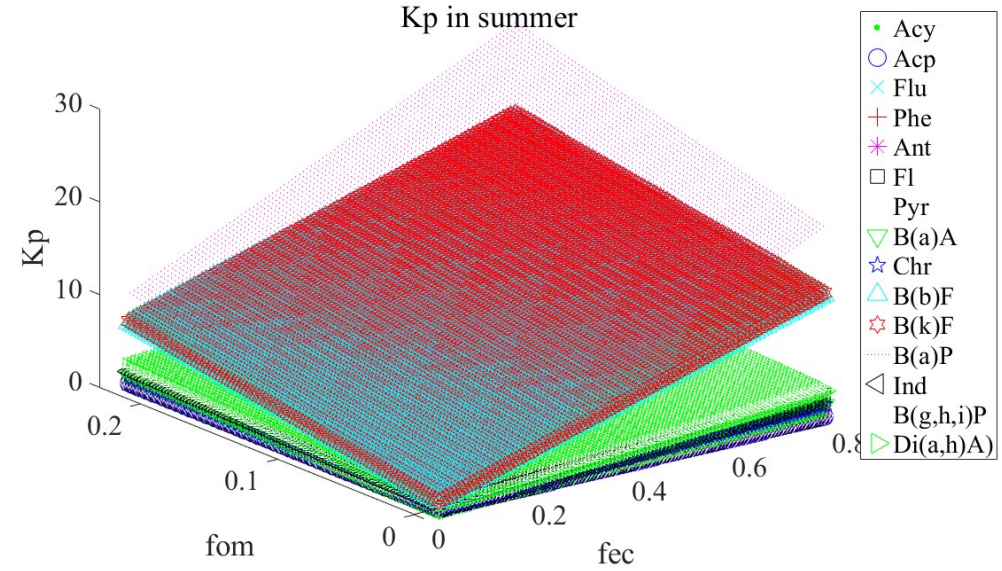


Fig. S2 Scree plot of PCA


Kp in spring
Kp
200
150
100
50
0
0.2
0.1
0
fom
0
0.2
0.4
0.6
fec
Acy
Acp
Flu
Phe
Ant
Fl
Pyr
B(a)A
Chr
B(b)F
B(k)F
B(a)P
Ind
B(g,h,i)P
Di(a,h)A)


Kp in summer
Kp
30
20
10
0
0.2
0.1
0
fom
0
0.2
0.4
0.6
fec
Acy
Acp
Flu
Phe
Ant
Fl
Pyr
B(a)A
Chr
B(b)F
B(k)F
B(a)P
Ind
B(g,h,i)P
Di(a,h)A)

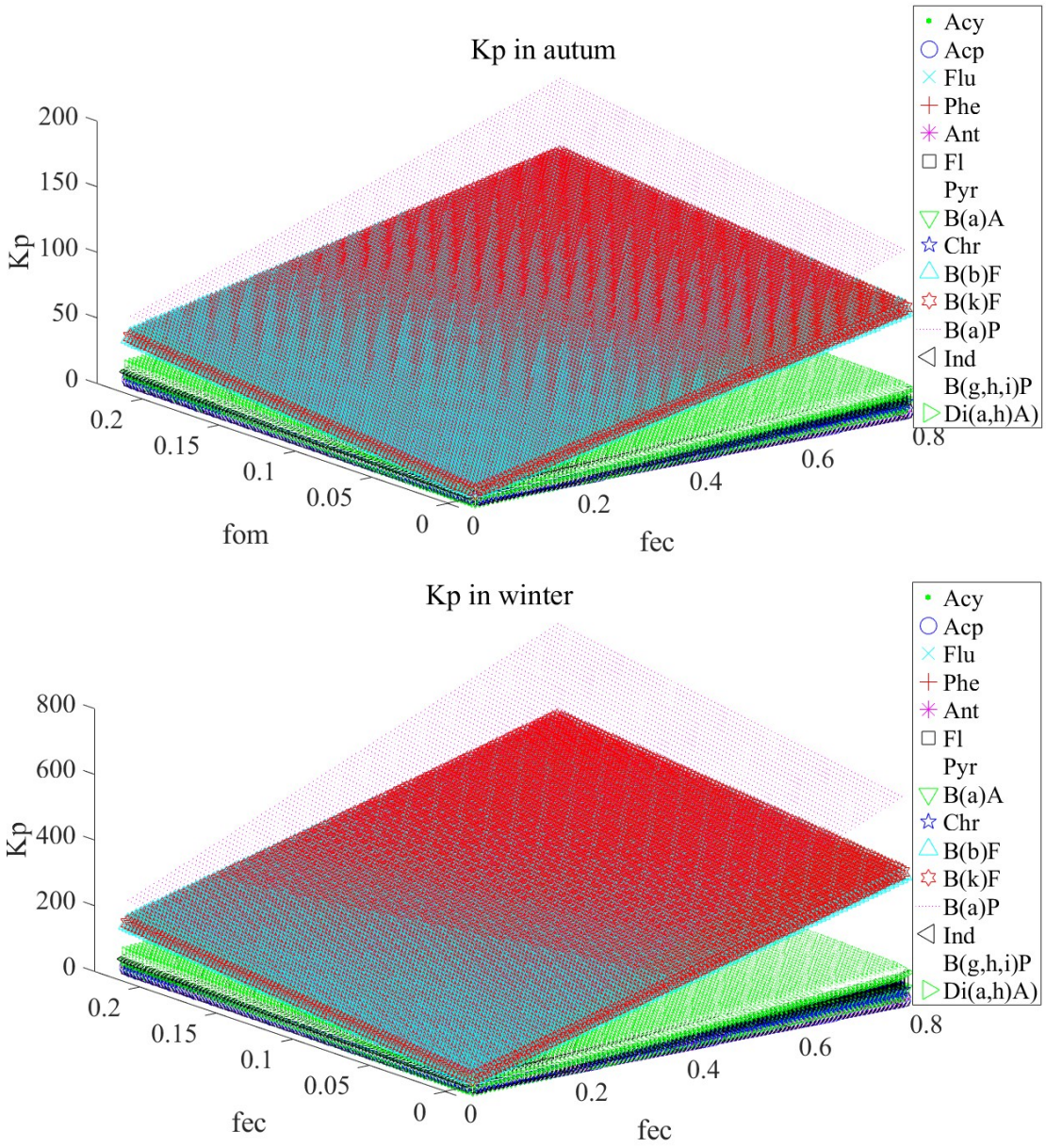


Fig. S3 K_P in four seasons with chemical compositions change

Table S1 Detection limit, recovery and standard deviation of analyses

Analyte	Detection limit	Recovery %	Standard deviation
Nap	0.70 ng•L^{-1}	52.12%	0.07
Acy	1.17 ng•L^{-1}	57.27%	0.12
Acp	0.84 ng•L^{-1}	63.19%	0.08
Flu	1.83 ng•L^{-1}	90.06%	0.18
Phe	2.76 ng•L^{-1}	99.01%	0.28
Ant	2.10 ng•L^{-1}	86.01%	0.21
Fl	1.58 ng•L^{-1}	89.01%	1.06
Pyr	5.00 ng•L^{-1}	88.96%	1.50
B(a)A	4.81 ng•L^{-1}	89.70%	0.48
Chr	7.47 ng•L^{-1}	96.44%	0.75
B(b)F	3.21 ng•L^{-1}	95.06%	1.32
B(k)F	9.94 ng•L^{-1}	92.55%	0.99
B(a)P	6.25 ng•L^{-1}	95.02%	0.62
Ind	2.56 ng•L^{-1}	77.98%	0.26
B(g,h,i)P	2.28 ng•L^{-1}	75.68%	0.23
Di(a,h)A	0.36 ng•L^{-1}	80.22%	0.04
OC	0.39μg cm^{-2}	-	0.46
EC	0.01μg cm^{-2}	-	0.12
NO_3^-	0.43 ng•L^{-1}	79.01%	0.15
SO_4^{2-}	1.1 ng•L^{-1}	88.73%	0.18
levoglucosan	1.7 ng•L^{-1}	98.96%	8.32

Table S2 Temperature Dependence of Subcooled Liquid Vapor Pressures (P_L^0)

PAHs	Formula
2 Acenaphthylene	$\log P_L^0 = 9.95 - 2885/T_a$
3 Acenaphthene	$\log P_L^0 = 10.17 - 2979/T_a$
4 Fluorene	$\log P_L^0 = 9.68 - 3632/T_b$
5 Phenanthrene	$\log P_L^0 = 10.09 - 3982/T_b$
6 Anthracene	$\log P_L^0 = 10.14 - 4004/T_b$
7 Fluoranthene	$\log P_L^0 = 10.70 - 4464/T_b$
8 Pyrene	$\log P_L^0 = 10.73 - 4529/T_b$
9 Benzo(a)anthracene	$\log P_L^0 = 11.66 - 5179/T_b$

10 Chrysene	$\log P_L^0 = 11.69 - 5200/T_b$
11 Benzo(b)fluoranthene	$\log P_L^0 = 12.37 - 5711/T_b$
12 Benzo(k)fluoranthene	$\log P_L^0 = 12.36 - 5711/T_b$
13 Benzo(a)pyrene	$\log P_L^0 = 12.39 - 5777/T_b$
14 Indeno(1,2,3-cd)pyrene	$\log P_L^0 = 13.13 - 5691/T_a$
15 Dibenzo(a,h)anthracene	$\log P_L^0 = 13.31 - 5794/T_a$
16 Benzo(g,hi)perylene	$\log P_L^0 = 13.15 - 5737/T_a$

a Odabasi et al. (2006); b Finlayson-Pitts and Pitts (1999)