Supplementary information

Figure S1. Comparison of monthly average temperatures for 2014 and average for the period 1991-2014 (IAG, 2014).

Table S1. Correlations between PM_{10}, $PM_{2.5}$ and atmospheric conditions.

	Min Temp.	Avg. Temp.	Max Temp	Avg. Precip.	Min RH	Avg. RH	Avg. WS
PM_{10}	**-0.52**	-0.28	0.02	-0.23	**-0.53**	**-0.38**	**-0.49**
$PM_{2.5}$	**-0.48**	-0.21	0.04	-0.21	**-0.55**	-0.26	**-0.54**

Table S2. Pearson correlations for $Ext_{2.5}$ (lower part) and $Ext_{2.5\text{-}10}$ (upper part) (Excel supplementary file).

Table S3. Enrichment factors for all campaigns.

	$Int_{2.5}$	$Ext_{2.5}$	Ext_{10}
Li	1.2	1.9	1.9
Mg	0.34	0.44	0.47
Al	1	1	1
K	3.5	3.5	2.8
Ca	1.1	1.0	1.2
Cr	8.5	**14.0**	**13.5**
Mn	1.3	2.3	2.6
Fe	0.7	1. 4	1.7
Co	0.7	1.2	1.7
Ni	3.3	7.0	5.6
Cu	**120**	**229**	**233**
Zn	**168**	**207**	**215**
As	**69**	**158**	**103**
Se	**5011**	**7496**	**4417**
Rb	3.3	3.8	2.8
Sr	0.8	1.0	1. 1
Cd	**710**	**754**	**642**
Sn	**417**	**639**	**495**
Cs	4.9	7.6	6.1
Tl	**13.7**	**27.9**	**18. 7**
Pb	**187**	**363**	**276**
Bi	**4233**	**7388**	**8822**

Table S4. Carbonaceous species in all campaigns.

	$Int_{2.5}$	$Ext_{2.5}$	Ext_{10}
(μg m^{-3})	**Average (Min - Max)**	**Average (Min - Max)**	**Average (Min - Max)**
OC	10.2 (3.0–20.8)	6.7 (2.3–14.1)	7.8 (2.6–17.7)
EC	7.0 (0.6–15.9)	4.1 (0.6–13.4)	4.4 (0.3–17.6)
TOM	16.4	10.7	12.5
OC/EC	1.5	1.7	1.8

Figure S2. Mass balance for all campaigns.

Table S5. Biomass burning tracers for all campaigns.

	$Int_{2.5}$	$Ext_{2.5}$	Ext_{10}
(ng m^{-3})	**Average (Min - Max)**	**Average (Min - Max)**	**Average (Min - Max)**
Lev	509 (69–1263)	262 (15–1263)	319 (11–1854)
Man	45 (6–137)	26 (<DL–137)	29 (3–158)
Gal	33 (5–89)	21 (<DL–89)	30 (4–159)
$NssK^+$	809 (237–2007)	366 (49–1137)	413 (63–1181)
Lev/Man	11.3	10.1	11
$NssK^+$/Lev	1.6	1.4	1.3

Table S6. Fraction (%) of species in the fine and coarse particles*.

	Fine	Coarse		Fine	Coarse
Lev	76	24	**Cor**	73	27
Man	77	23	**Ca**	34	66
Cl^-	49	51	**Fe**	46	54
NO_3^-	45	55	**Cu**	61	39
SO_4^-	66	34	**As**	78	22
Na^+	51	49	**Cd**	82	18
NH_4^+	80	20	**Pb**	77	23
nss-K^+	73	27	**OC**	82	18
BaP	82	18	**EC**	86	14

**The fractions were calculated for days when both PM_{10} and $PM_{2.5}$ were collected.*

Table S7. *Q* value to evaluate the number of factors.

	3 factors	4 factors	5 factors	6 factors
Qrobust (=Qtrue)	623	466	**367**	291
Qexpected	591	502	**413**	324
Qrobust/Qexpected	1.05	0.93	**0.89**	0.9

BS
Disp
Base Run
Error Estimation Concentration Summary - Run 20 - RD
Concentration
Lev
Man
NO_3^-
SO_4^{2-}
nss-K^+
NH_4^+
PM
Mg
Ca
Cr
Mn
Fe
Ni
Cu
Cd
Pb
OC
EC

(g)

BS
Disp
Base Run
Error Estimation Concentration Summary - Run 20 - IN
Concentration
Lev
Man
NO_3^-
SO_4^{2-}
nss-K^+
NH_4^+
PM
Mg
Ca
Cr
Mn
Fe
Ni
Cu
Cd
Pb
OC
EC

(h)

BS
Disp
Base Run
Error Estimation Concentration Summary - Run 20 - VE
Concentration
Lev
Man
NO_3^-
SO_4^{2-}
nss-K^+
NH_4^+
PM
Mg
Ca
Cr
Mn
Fe
Ni
Cu
Cd
Pb
OC
EC

(i)

(j)

(k)

Figure S3. PMF charts (factor contributions – a; constrained factor profiles – b, c, d, e and f; and error concentration summaries – g, h, i, j and k).

Table S8. Pearson correlations for PMF factors and gases for PM_{10} (a) and $PM_{2.5}$ (b).

(a)	RD	IN	VE	BB	SP	CO	NO_x
RD	1.00	0.19	0.20	**0.38**	-0.23	0.32	0.30
IN		1.00	**0.42**	**0.38**	0.14	**0.39**	**0.43**
VE			1.00	**0.89**	-0.05	**0.88**	**0.91**
BB				1.00	-0.07	**0.85**	**0.92**
SP					1.00	0.00	-0.08

(b)	RD	IN	VE	BB	SP	CO	NO_x
RD	1.00	0.29	0.28	**0.56**	**-0.34**	**0.42**	**0.39**
IN		1.00	**0.41**	**0.52**	0.16	**0.45**	**0.49**
VE			1.00	**0.73**	-0.15	**0.82**	**0.87**
BB				1.00	-0.28	**0.85**	**0.82**
SP					1.00	-0.02	-0.16