



Supplement of

Understanding aerosol composition in a tropical inter-Andean valley impacted by agro-industrial and urban emissions

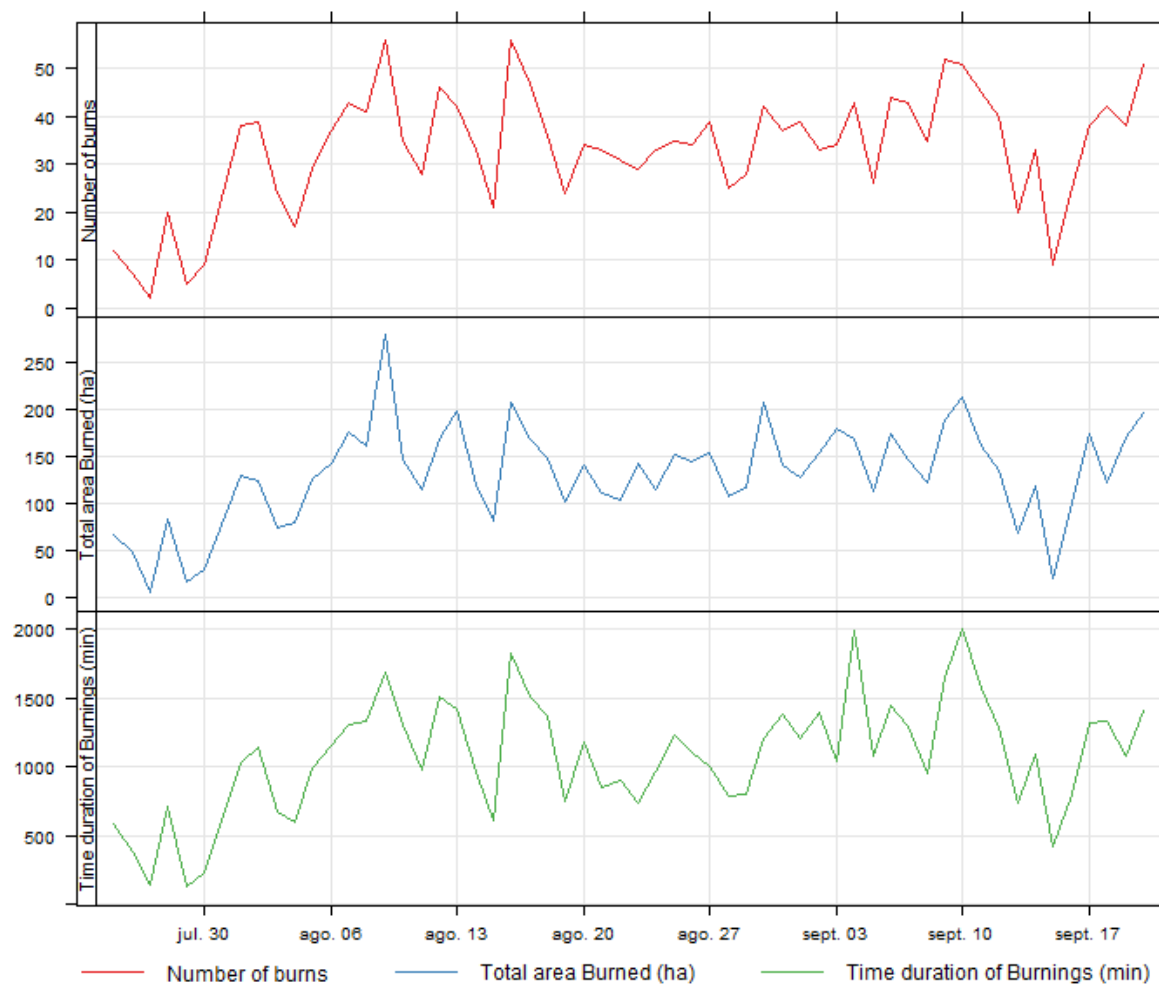
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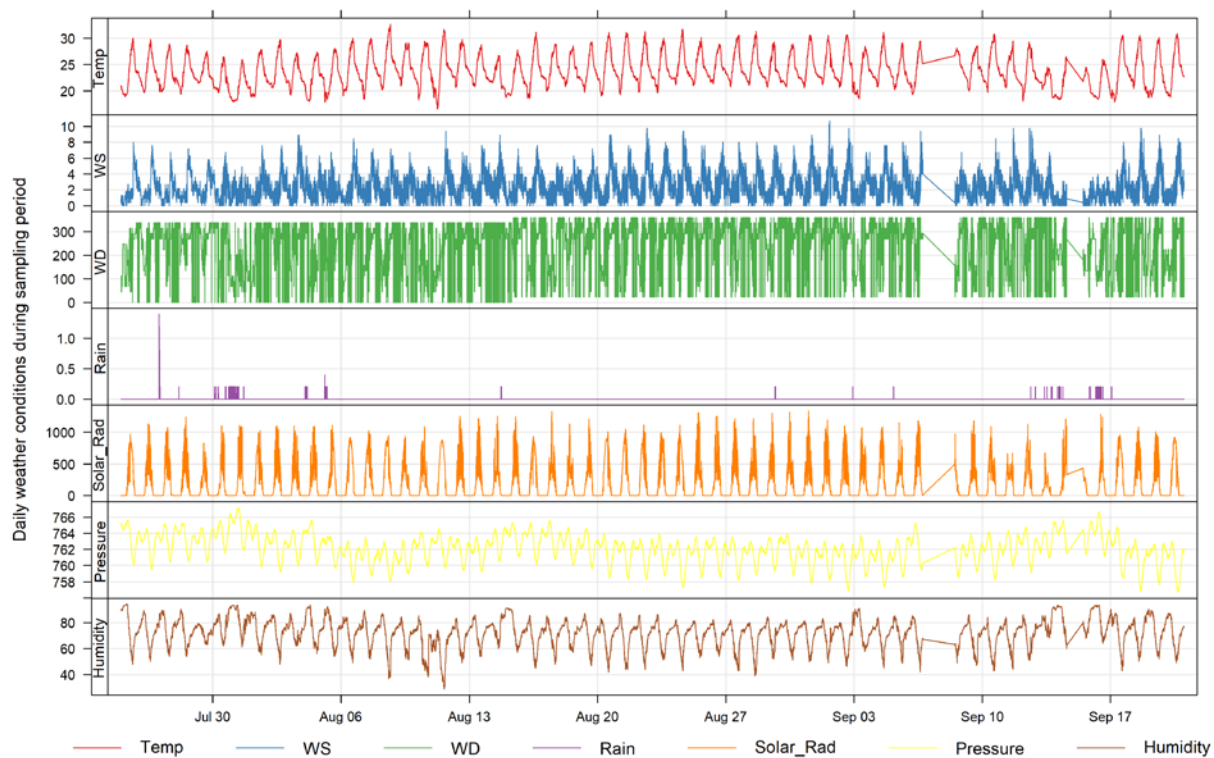
Table S1. Preliminary PM10 emission estimate in CRV region reported in Ton year.

Sector	Source Emission	Year	Emission (Ton PM10 year ⁻¹)	Reference
Manufacturing processes	Food and beverage industry	2017	6853.81	(CVC and Fulecol, 2018; CVC and K2, 2018b, 2018c, 2018d, 2018a;CVC, 2012)
Mobile	Traffic	2017	3425.36	(CVC and Fulecol, 2018; CVC and K2, 2018b, 2018c, 2018d, 2018a)
Manufacturing processes	Paper and printing industry	2017	2766.9	(CVC and Fulecol, 2018; CVC and K2, 2018a; CVC, 2012)
Sugarcane burning	Sugarcane burning	2018	1740.31	(Cardozo et al., 2019)
Manufacturing processes	Power generation, incinerators, and other services	2017	608.39	(CVC and Fulecol, 2018; CVC and K2, 2018c, 2018d, 2018a; CVC, 2012)
Manufacturing processes	Production of cement, asphalt, and tiles	2017	585.07	(CVC, 2012)
Manufacturing processes	Metallurgical industry	2017	260.13	(CVC and Fulecol, 2018; CVC and K2, 2018c)
Manufacturing processes	Luminaire and battery industry	2012	27.37	(CVC, 2012)
Manufacturing processes	Chemistry Industry	2012	27.71	(CVC, 2012)
Manufacturing processes	Leather and textile industry	2012	18.27	(CVC, 2012)
Other	Other	2018	21.27	



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Figure S1. Number of preharvest sugarcane burnings registered, area burned and time of those burnings, aggregated by day, happens while this study was conducted (July 25th and September 19th, 2018).



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Figure S2. Weather conditions during the sampling period in CRV.

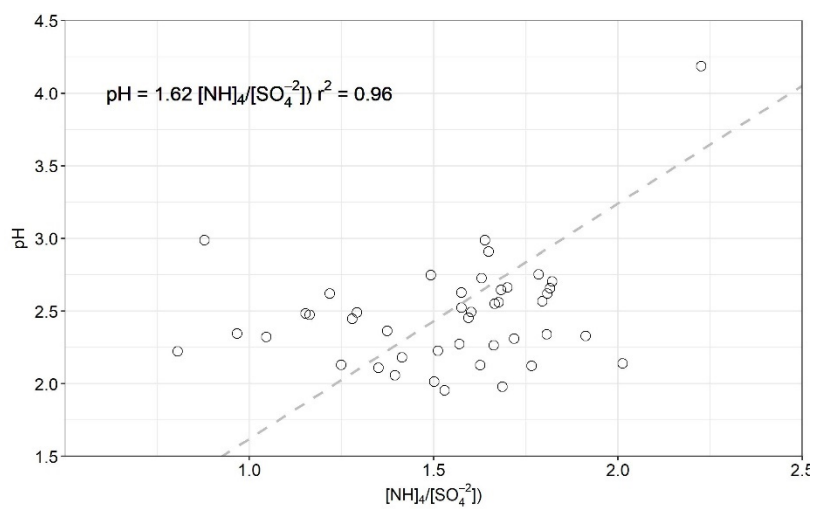


Figure S3. Scatter plot of $[\text{NH}_4^+]/[\text{SO}_4^{2-}]$ ratio and pH for $\text{PM}_{2.5}$ samples collected in CRV.

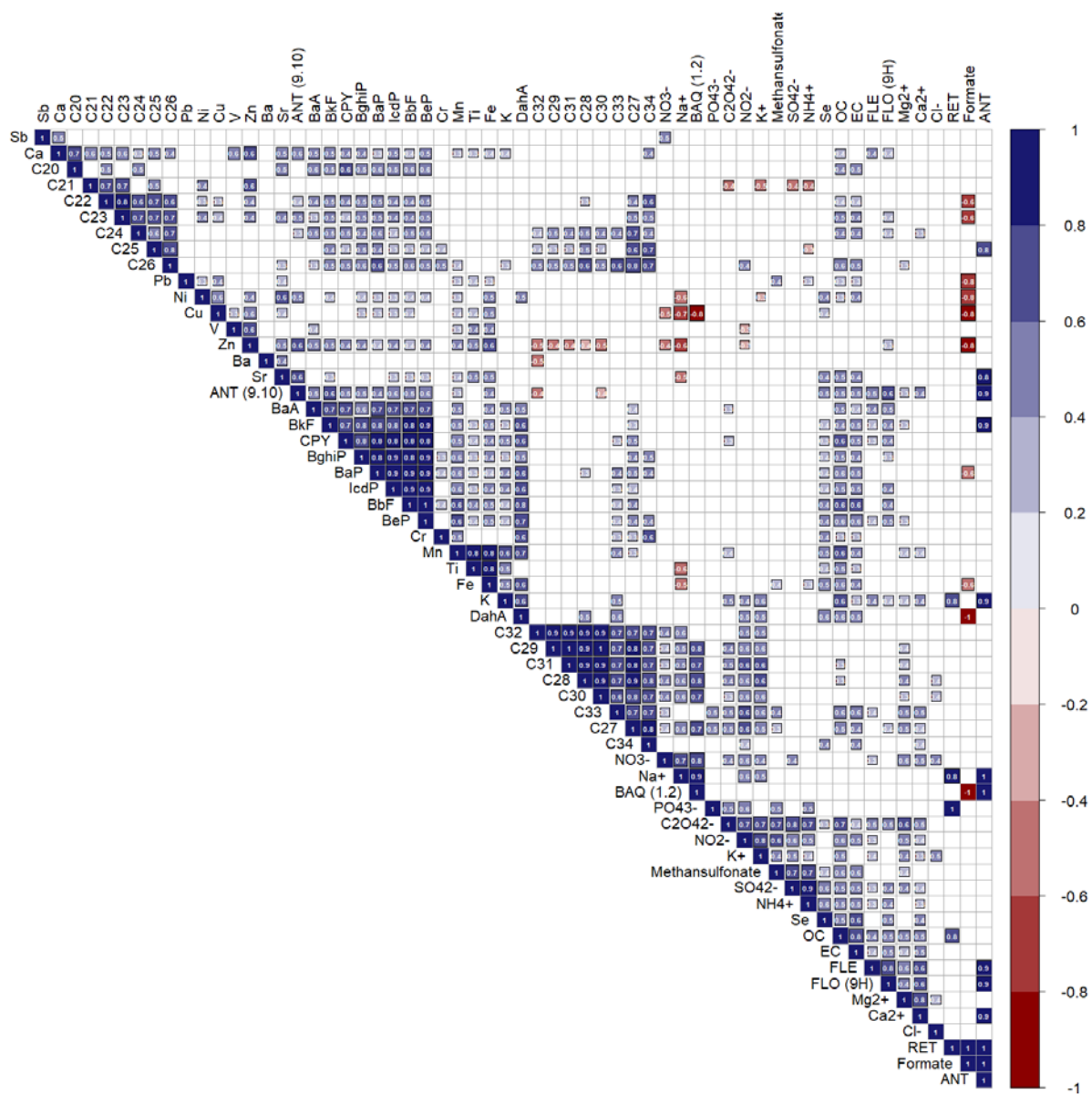


Figure S4. Correlation matrix of chemical compounds. White areas corresponding to correlation with p value > 0.05

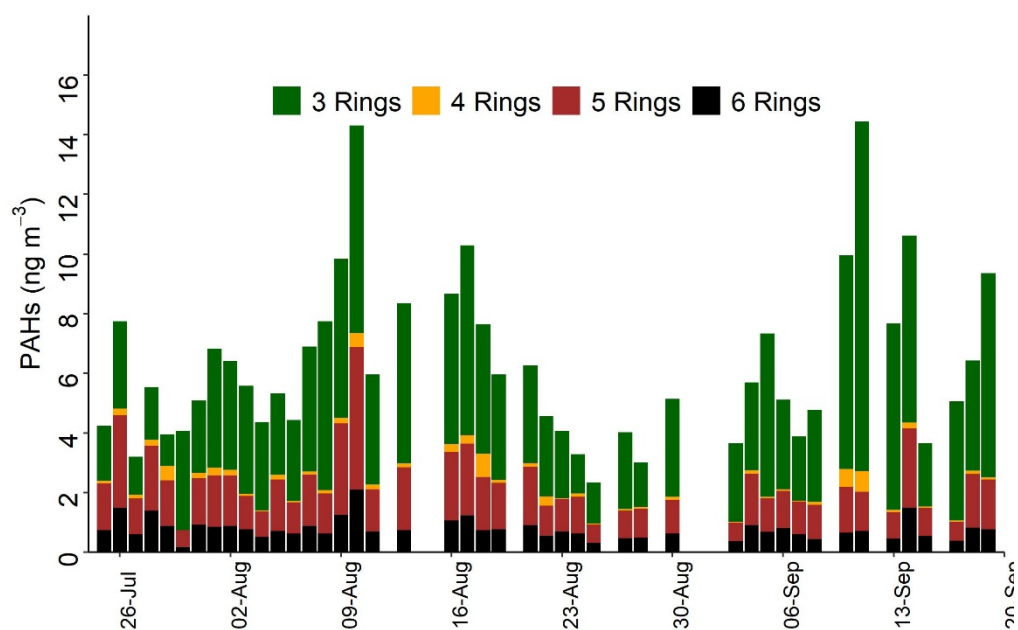


Figure S5. Time series of PAHs in PM_{2.5} samples collected in CRV during 2018.

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Table S2. Mean and one standard deviation concentrations of PAHs measured in the samples of PM_{2.5} collected in CRV region, concentrations reported in ng m⁻³.

PAHs	Abbreviation	Rings	Mean	sd
Fluorene	FLE	3 rings	2.82	1.52
9 10-Anthracenedione	ANT (9,10)	3 rings	0.67	0.33
Benzo(b)fluoranthene	BbF	5 rings	0.44	0.22
9H-Fluorenone	FLO (9H)	3 rings	0.41	0.34
Benzo(ghi)perylene	BghiP	6 rings	0.40	0.17
Cyclopenta(cd)pyrene	CPY	5 rings	0.38	0.21
Indeno(1 2 3-cd)pyrene	IcdP	6 rings	0.38	0.18
Benz(e)pyrene	Be P	5 rings	0.28	0.13
Benz(a)pyrene	BaP	5 rings	0.27	0.14
1,2 Benzantraquinone	BAQ (1,2)	4 rings	0.21	0.15
Phenanthrene	PHEN	3 rings	0.19	0.18
Anthracene	ANT	3 rings	0.08	0.18
Benzo(k)fluoranthene	BkF	5 rings	0.14	0.08
Retene	RET	3 rings	0.14	0.11
Fluoranthene	FLT	4 rings	0.13	0.08
Pyrene	PYR	4 rings	0.12	0.05
Benz(a)anthracene	BaA	4 rings	0.09	0.05
Dibenz(ah)Anthracene	DahA	5 rings	0.06	0.03
2, 2-Binaphthyl	BNT (2.2)	4 rings	0.03	0.05
Chrysene(+Triphenylene)	CHRY	4 rings	0.02	0.03
Benzo(b)naphtho(1 2)thiophene	BNT (2,1)	4 rings	0.01	0.01
BaP TEQ			0.38	0.23
BaP MEQ			0.54	0.29
Σ PAH 3 Rings (LMW)			3.3	2.09
Σ PAH 4 Rings (MMW)			0.12	0.18
Σ PAH 5 Rings (HMW)			1.48	0.77
Σ PAH 6 Rings (HMW)			0.72	0.35
BeP/(BeP+BaP)			0.51	0.04

IcdP/(IcdP+BghiP)	0.48	0.04
BaP/BghiP	0.69	0.13
IcdP/BghiP	0.93	0.14
LMW/(MMW+HMW)	1.43	1.00

80 Table S3. Median concentrations and 1 standard deviation of n-alkanes analyzed in PM_{2.5} samples collected in CRV (ng/m³).

n-Alkane	Mean	sd
C20	0.34	0.17
C21	0.30	0.29
C22	0.51	1.08
C23	1.14	0.83
C24	3.03	1.68
C25	2.96	1.08
C26	3.40	1.30
C27	3.06	1.15
C28	2.68	1.41
C29	6.35	3.41
C30	4.22	3.31
C31	5.87	3.37
C32	2.53	1.58
C33	3.15	2.64
C34	1.10	0.61
Σn-alkanes	40.36	18.82
CPI	1.22	0.18
WAX (%)	12.65	5.21