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Supplement of

Organic composition and source apportionment of fine aerosol at Monterrey, Mexico, based on organic markers

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Table S1. **Concentrations of organic compounds in MMA ($PM_{2.5}$) in ng m^{-3}**

	Spring 2011				Fall 2011				Spring 2012				Fall 2012			
	Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
Triterpanes (hopanes)																
17a,21b-29-hopane	1.12	0.40	0.59	0.32	1.66	0.67	1.21	0.43	0.56	0.19	0.90	0.43	1.04	0.57	0.58	0.24
17a, 21b -hopane	0.89	0.41	0.44	0.20	2.36	1.37	1.84	0.86	0.50	0.11	1.31	0.63	1.49	0.78	0.68	0.31
22S 17a,21b-30-homohopane	0.25	0.16	0.11	0.09	0.78	0.36	0.53	0.14	0.18	0.06	0.31	0.15	0.63	0.33	0.28	0.14
22R 17a,21b-30-homohopane	0.39	0.24	0.11	0.10	0.45	0.40	0.84	0.15	0.15	0.12	0.30	0.13	0.65	0.39	0.30	0.18
22S 17a,21b-30-bishomohopane	0.10	0.10	0.05	0.02	0.35	0.07	0.28	0.04	0.13	0.06	0.15	0.08	0.40	0.19	0.16	0.09
22R 17a,21b-30-bishomohopane	0.06	0.03	0.05	0.02	0.17	0.10	0.19	0.13	0.10	0.03	0.10	0.07	0.30	0.14	0.12	0.08
18a(H) 22,29,30 trisnorneohopane	0.29	0.16	0.11	0.10	0.37	0.29	0.37	0.11	0.12	0.06	0.27	0.13	0.31	0.24	0.14	0.07
17a(H)-22,29,30-trisnorhopane	ND		ND		0.60	0.34	0.53	0.20	0.16	0.07	0.36	0.16	0.37	0.23	0.21	0.09
18a(H)-30-norneohopane	ND		ND		0.33	0.33	0.32	0.21	0.11	0.04	0.26	0.12	0.26	0.12	0.15	0.07
total	**3.10**	**1.49**	**1.47**	**0.86**	**7.08**	**3.95**	**6.11**	**2.29**	**2.00**	**0.74**	**3.95**	**1.91**	**5.45**	**2.98**	**2.63**	**1.27**
Sugars and sterols																
levoglucosan	19.60	15.79	10.56	13.53	23.57	4.15	10.19	7.74	17.74	18.81	11.63	9.87	2.51	3.95	1.49	1.53
cholesterol	0.49	0.37	0.35	0.48	0.50	0.06	0.78	0.03	1.14	0.90	0.67	0.85	0.24	0.02	0.30	0.07
stigmasterol	0.04	0.08	0.05	0.09	0.53	0.63	0.50	0.43	0.27	0.24	0.10	0.09	0.07	0.02	0.13	0.05
total	**20.13**	**16.25**	**10.96**	**14.10**	**24.60**	**4.84**	**11.47**	**8.21**	**19.15**	**19.94**	**12.39**	**10.81**	**2.82**	**3.99**	**1.92**	**1.66**
PAH																
fluoranthene	0.05	0.08	0.01	0.01	0.08	0.02	0.07	0.07	0.03	0.01	0.02	0.01	0.18	0.12	0.19	0.22
acephenanthrylene	0.18	0.00	0.17	0.00	0.07	0.02	0.05	0.01	0.05	0.04	0.02	0.02	0.01	0.01	0.01	0.00
pyrene	0.05	0.08	0.02	0.03	0.07	0.03	0.04	0.03	0.02	0.02	0.00	0.00	0.11	0.06	0.09	0.10
benz(a)anthracene	0.01	0.01	0.03	0.02	1.65	0.30	0.56	0.96	0.02	0.01	0.15	0.30	0.36	0.21	0.37	0.44
chrysene	0.06	0.07	0.02	0.02	1.70	0.44	1.95	0.44	2.07	0.44	1.48	0.52	0.66	0.35	0.72	0.97
benzofluoranthenes	0.18	0.20	0.05	0.02	1.04	0.35	0.54	0.09	0.35	0.15	0.11	0.05	1.37	0.69	0.99	1.13

Table S1 (*continued*)

	Spring 2011				Fall 2011				Spring 2012				Fall 2012			
	Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BaP + BeP	0.06	0.09	0.01	0.01	1.12	0.38	0.70	0.14	0.85	0.39	0.48	0.16	1.31	0.78	0.82	0.70
perylene	0.03	0.02	0.01	0.01	0.08	0.03	0.08	0.03	0.08	0.03	0.43	0.27	0.05	0.02	0.05	0.04
indeno(123cd)pyrene	0.20	0.03	0.17	0.02	0.24	0.10	0.23	0.06	0.11	0.06	0.02	0.02	0.36	0.21	0.23	0.19
benzo(ghi)perylene	0.29	0.04	0.20	0.02	0.41	0.02	0.26	0.17	0.20	0.08	0.04	0.02	0.68	0.30	0.40	0.30
dibenz(ah)anthracene	0.06	0.02	0.04	0.02	0.08	0.04	0.09	0.02	0.03	0.02	0.01	0.01	0.07	0.06	0.05	0.04
coronene	NA		NA		0.34	0.03	0.26	0.02	0.17	0.08	0.09	0.01	0.22	0.11	0.11	0.07
total	1.17	0.64	0.73	0.08	6.87	1.75	4.83	2.05	3.95	1.30	2.85	1.40	5.40	2.92	4.03	4.20
n-Alkanes																
C17	ND		ND		0.79	1.37	0.64	1.10	ND		1.14	1.79	ND		ND	
C18	ND		ND		1.27	2.19	1.26	1.10	ND		0.60	0.85	ND		ND	
C19	ND		ND		0.71	0.68	1.34	0.52	ND		0.58	0.37	0.35	0.26	0.33	0.11
C20	ND		ND		1.18	1.41	1.45	0.63	ND		0.30	0.18	0.14	0.08	0.19	0.08
C21	0.19	0.15	0.50	0.27	0.93	0.64	1.57	0.48	0.09	0.14	0.37	0.14	0.14	0.10	0.18	0.09
C22	0.74	0.16	0.78	0.17	1.65	0.88	2.22	0.65	0.27	0.27	0.62	0.18	0.20	0.10	0.26	0.10
C23	1.40	0.28	1.63	0.24	2.00	0.52	3.01	0.80	1.17	0.47	1.39	0.28	0.52	0.24	0.54	0.19
C24	2.30	0.62	1.92	0.40	3.36	1.98	5.12	4.41	2.63	1.25	2.56	0.45	1.09	0.61	0.94	0.40
C25	2.47	0.74	1.95	0.35	2.35	0.61	3.38	0.53	3.25	1.52	3.77	0.64	1.34	0.57	1.22	0.49
C26	1.54	0.36	1.25	0.27	3.39	0.28	3.90	0.60	2.95	0.93	3.31	1.08	1.89	0.95	1.42	0.72
C27	2.79	1.14	2.28	1.16	3.02	0.42	4.19	0.42	3.23	0.78	3.79	1.19	2.50	1.17	1.94	0.90
C28	2.13	1.40	2.06	1.59	4.01	1.56	4.50	1.87	6.63	1.71	3.52	1.14	3.25	2.23	2.09	0.88
C29	3.22	2.00	2.59	1.27	2.68	1.05	3.23	1.58	3.43	0.40	4.05	0.67	3.15	1.76	2.92	1.58
C30	1.11	0.56	0.89	0.37	2.01	0.87	2.44	1.39	2.76	0.36	3.43	0.79	1.87	0.81	1.43	0.63
C31	1.99	1.33	1.74	1.02	2.42	0.96	2.77	1.82	2.99	0.25	3.64	0.43	2.73	1.52	2.53	1.17
C32	0.41	0.35	0.52	0.29	1.11	0.59	1.55	1.03	1.79	0.11	2.24	0.50	1.31	0.60	1.10	0.60
C33	0.57	0.52	0.57	0.39	0.45	0.77	1.03	1.29	1.29	0.22	1.60	0.45	1.30	0.71	1.16	0.51
total	**20.86**	**9.60**	**18.67**	**7.80**	**33.32**	**16.80**	**43.61**	**20.23**	**32.49**	**8.41**	**36.90**	**11.13**	**21.79**	**11.70**	**18.24**	**8.45**
CPI	**1.5**	**0.3**	**1.7**	**0.5**	**0.9**	**0.1**	**1.0**	**0.3**	**0.9**	**0.1**	**1.2**	**0.1**	**1.3**	**0.1**	**1.5**	**0.2**

Table S1 (*continued*)

	Spring 2011				Fall 2011				Spring 2012				Fall 2012			
	Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
n-Alkanoic acids																
C10	NA		NA		3.39	0.77	8.98	6.31	3.60	1.65	3.66	1.29	0.66	0.35	1.12	0.74
C11	NA		NA		1.53	0.32	4.04	3.11	4.87	7.91	3.64	4.32	5.38	4.37	3.82	4.14
C12	NA		NA		23.44	7.01	31.74	10.25	7.08	2.77	18.00	8.28	3.15	2.21	4.55	2.32
C13	NA		NA		13.29	15.61	3.90	1.58	2.69	1.14	3.44	1.70	1.14	0.60	1.30	0.34
C14	NA		NA		28.26	13.17	25.16	11.95	26.99	17.84	33.27	11.62	11.77	6.34	14.03	3.38
C15	NA		NA		7.76	2.84	6.98	3.09	17.89	9.74	11.68	5.47	6.09	2.33	5.59	1.49
C16	NA		NA		37.79	4.02	34.35	11.16	57.78	4.83	36.68	5.94	40.07	13.38	30.16	9.28
C17	NA		NA		3.62	0.58	4.90	4.17	11.98	9.00	5.02	1.08	2.84	0.93	2.73	0.69
C18	NA		NA		33.90	3.76	31.32	8.51	48.95	7.43	29.51	4.16	23.87	6.27	17.99	4.78
C19	NA		NA		0.10	0.03	0.18	0.17	0.50	0.22	0.40	0.11	0.13	0.09	0.06	0.03
C20	NA		NA		3.59	0.46	4.49	3.32	13.32	6.58	8.23	1.66	2.99	1.39	2.36	1.24
C21	NA		NA		5.47	2.75	5.83	2.84	10.28	2.62	5.71	1.47	3.87	1.22	2.94	1.11
C22	NA		NA		16.98	3.13	19.48	4.33	21.04	5.09	14.18	2.98	11.80	3.24	10.11	3.79
C23	NA		NA		8.85	2.75	9.91	3.45	10.29	2.65	8.31	2.27	4.53	1.20	3.99	1.37
C24	NA		NA		23.78	4.84	32.50	8.91	30.82	6.50	25.03	5.33	15.73	6.63	14.94	4.29
C25	NA		NA		8.44	1.61	9.60	2.35	12.07	3.30	7.08	2.02	4.48	1.64	3.54	1.00
C26	NA		NA		23.58	4.67	33.53	7.89	32.08	16.83	27.34	5.06	13.54	6.11	13.73	4.75
C27	NA		NA		4.81	1.68	6.80	2.32	6.78	1.17	5.64	1.98	2.81	0.61	2.41	0.93
C28	NA		NA		22.21	5.28	27.49	0.85	24.20	6.51	27.92	5.79	16.75	7.31	18.60	8.40
C29	NA		NA		4.33	1.03	5.11	1.61	6.77	1.56	5.57	2.03	2.37	1.20	2.27	0.74
C30	NA		NA		20.33	6.00	26.18	2.01	19.50	4.63	30.51	10.54	15.90	9.73	15.42	6.86
C31	NA		NA		2.22	0.83	2.44	0.58	4.09	1.87	3.48	1.74	1.11	0.57	1.00	0.91
C32	NA		NA		11.56	4.36	17.39	5.53	20.71	12.37	20.93	12.76	6.79	3.91	5.64	2.79
Total					**309**	**87.49**	**352**	**106**	**394**	**134**	**335**	**99.62**	**198**	**81.63**	**178**	**65.34**
CPI					**4.3**	**1.0**	**5.0**	**0.4**	**3.6**	**0.6**	**4.7**	**0.8**	**4.7**	**0.3**	**5.3**	**1.1**

Table S1 (*continued*)

	Spring 2011				Fall 2011				Spring 2012				Fall 2012			
	Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime		Daytime		Nighttime	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
n-Alkenoic acids																
cis-9-octadecenoic acid	NA		NA		3.83	1.83	4.77	3.52	15.38	8.44	8.50	2.72	1.22	1.83	0.94	0.39
trans-9-octadecenoic acid	NA		NA		7.57	2.85	8.81	2.76	12.74	7.51	13.35	4.97	2.11	2.04	2.45	0.87
total					**11.40**	**4.67**	**13.57**	**6.28**	**28.12**	**15.95**	**21.85**	**7.69**	**3.33**	**3.87**	**3.40**	**1.27**
octadecanoic acid/cis-9-octadecenoic acid					**10.6**	**5.9**	**8.2**	**3.6**	**5.0**	**3.4**	**3.8**	**1.3**	**20.3**	**17.1**	**21.0**	**6.7**
Biomass burning tracers																
abietic acid	NA		NA		5.19	2.54	6.20	2.87	13.60	6.60	9.86	2.17	5.17	1.41	3.23	0.92
dehydroabietic acid	NA		NA		2.89	1.82	3.69	0.99	1.94	0.63	4.39	0.74	2.02	1.10	1.95	0.74
7-oxo-dehydroabietic acid	NA		NA		0.28	0.11	0.31	0.15	0.41	0.35	0.25	0.13	0.35	0.16	0.32	0.20
pimaric acid	NA		NA		0.23	0.05	0.35	0.13	0.00	0.00	0.09	0.13	0.15	0.09	0.26	0.23
isopimaric acid	NA		NA		0.08	0.03	0.12	0.05	0.00	0.00	0.03	0.06	0.07	0.03	0.06	0.02
9,10-epoxyoctadecanoic acid	NA		NA		1.25	1.35	1.78	1.54	4.96	2.16	1.19	0.72	1.59	0.85	1.31	0.81
guaiacol	NA		NA		ND		ND		ND		ND		3.04	2.59	4.61	4.42
vanillin	NA		NA		ND		ND		ND		ND		18.58	19.13	9.41	3.18
retene	NA		NA		ND		ND		ND		ND		0.01	0.01	0.01	0.01
total					**9.92**	**5.90**	**12.46**	**5.74**	**21.36**	**9.75**	**15.80**	**3.95**	**30.97**	**25.37**	**21.15**	**10.54**
Secondary biogenic tracers																
pinic acid	NA		NA		0.00	0.00	0.00	0.00	4.61	7.31	1.90	4.25	0.49	0.75	0.30	0.10
cis-pinonic acid	NA		NA		5.13	1.23	2.28	0.62	6.83	2.09	5.53	1.54	2.35	1.30	2.29	1.59
total					5.13	1.23	2.28	0.62	11.44	9.40	7.43	5.79	2.84	2.05	2.59	1.69
Identified OC	**45.27**	**27.98**	**31.83**	**22.83**	**408**	**127**	**447**	**152**	**512**	**200**	**436**	**142**	**270**	**135**	**232**	**94.42**
OC	**9200**	**800**	**7300**	**700**	**8800**	**500**	**5800**	**300**	**6700**	**400**	**4000**	**300**	**10200**	**600**	**7100**	**400**
EC	1300	400	600	300	900	100	700	100	**500**	**100**	**10**	**100**	900	100	700	100
$PM_{2.5}$	21300	3400	27900	3300	19400	2800	14000	1400	**15800**	**2200**	**13700**	**1800**	20100	3000	16000	1800

ND: Not Detected; NA: Not Available.

Table S2. CMB Source contributions of organic compounds in MMA ($PM_{2.5}$) in ng m^{-3}

	Sample			% Mass	Chi-squared	r^2	Gasoline-powered vehicles	Vegetative detritus	Diesel-powered vehicles	Meat-cooking operations	Natural gas combustion	Biomass burning	Fuel oil combustion
spring 2011	1	Weekend	Daytime	75.5	6.72	0.72	2.61±0.69	0.55±0.09	14.75±1.63	11.83±2.15	0.02±0.01	0.36±0.09	*
	2	Weekend	Nighttime	41.3	5.39	0.71	2.66±0.64	0.32±0.05	5.22±0.70	15.39±2.45	*	0.22±0.06	*
	3	Weekday	Nighttime	40.8	4.25	0.76	2.44±0.49	0.44±0.06	3.91±0.56	8.89±1.55	*	0.15±0.04	*
	4	Weekday	Daytime	89.9	3.54	0.81	2.05±0.45	0.21±0.03	4.17±0.63	7.27±1.33	0.00±0.00	0.15±0.04	*
	5	Weekday	Nighttime	82	2.31	0.85	2.13±0.47	0.06±0.01	2.35±0.41	9.10±1.54	*	0.15±0.04	*
	6	Weekend	Daytime	79.9	8.38	0.62	3.29±0.51	0.14±0.02	7.20±0.76	*	*	*	*
	7	Weekend	Nighttime	35.7	6.82	0.67	2.62±0.40	0.22±0.03	4.74±0.57	*	*	*	*
	8	Weekend	Daytime	42.9	8.3	0.59	2.37±0.37	0.15±0.02	3.66±0.48	*	*	*	*
	9	Weekend	Nighttime	34.9	7.3	0.58	2.87±0.43	0.11±0.02	2.74±0.41	*	*	*	*
	10	Weekday	Daytime	104.8	3.05	0.85	2.74±0.56	0.10±0.02	7.69±0.85	7.12±1.36	0.00±0.00	0.16±0.04	*
	11	Weekend	Daytime	93.9	2.97	0.82	1.15±0.80	0.16±0.03	6.56±0.84	6.74±1.31	*	0.13±0.04	*
	12	Weekend	Nighttime	22.8	6.46	0.64	2.03±0.33	0.19±0.03	3.93±0.51	*	*	*	*
fall 2011	13	Weekday	Daytime	160.5	8.43	0.65	3.78±0.86	0.01±0.01	18.60±2.12	2.77±0.71	0.07±0.04	0.16±0.04	4.28±3.41
	14	Weekday	Daytime	95.9	7.26	0.66	2.87±0.61	0.01±0.01	10.47±1.17	3.81±0.64	0.05±0.01	0.14±0.04	*
	15	Weekday	Nighttime	130.7	6.7	0.69	3.48±0.67	0.18±0.03	9.72±1.21	4.22±0.69	0.03±0.01	0.01±0.00	*
	16	Weekday	Nighttime	169.6	7.17	0.66	2.76±0.60	0.01±0.01	12.71±1.43	2.98±0.62	*	0.10±0.03	3.32±1.22
	17	Weekend	Daytime	116.6	6.33	0.74	4.44±0.88	0.38±0.06	11.92±1.49	3.20±0.78	0.04±0.03	0.20±0.06	4.07±3.69
	18	Weekend	Nighttime	174.6	5.49	0.73	0.49±0.24	0.63±0.10	16.86±2.01	4.39±0.82	*	0.11±0.03	3.89±1.18
spring 2012	19	Weekday	Daytime	87.5	7.89	0.63	1.07±0.39	0.38±0.06	2.79±0.39	10.65±1.28	0.02±0.01	0.06±0.02	*
	20	Weekday	Daytime	73.1	7.18	0.67	1.64±0.42	0.46±0.07	2.46±0.35	9.47±1.16	0.01±0.01	0.08±0.02	*
	21	Weekday	Daytime	100.4	7.79	0.65	1.61±0.40	0.44±0.07	2.49±0.36	7.98±1.00	0.01±0.01	0.11±0.03	*
	22	Weekend	Daytime	103.1	5.05	0.75	1.56±0.46	0.32±0.05	5.18±0.69	11.46±1.42	0.01±0.01	0.43±0.11	*
	23	Weekend	Daytime	118.4	6.84	0.66	1.28±0.37	0.40±0.06	1.72±0.28	9.14±1.14	0.01±0.00	0.13±0.03	*

* Source profile not included in the CMB run.

Table S2 (*continued*)

fall 2012	24	Weekend	Daytime	175	6.39	0.74	5.24±1.03	0.69±0.11	18.55±1.96	3.10±0.56	0.05±0.01	0.01±0.00	*
	25	Weekend	Nighttime	128.5	4.94	0.76	2.65	0.46	5.81	2.46	0.04	0.00	*
	26	Weekday	Daytime	145.7	7.5	0.72	9.15	0.34	12.94	3.06	0.15	0.00	*
	27	Weekday	Daytime	166.1	8.56	0.7	11.17	0.38	14.37	3.18	0.12	0.00	*
	28	Weekday	Nighttime	152.9	6.32	0.76	6.93	0.55	8.36	4.58	0.08	0.00	*
	29	Weekend	Nighttime	42.7	8.85	0.69	2.37	0.18	3.38	3.88	0.02	0.02	*
	30	Weekday	Daytime	75.7	7.39	0.73	4.48	0.24	9.56	3.52	0.06	0.01	*
	31	Weekday	Nighttime	68	6.9	0.75	1.91	0.17	4.13	2.86	0.02	0.00	0.22
	32	Weekday	Nighttime	87.9	7.63	0.72	2.10	0.21	4.07	3.07	0.02	0.01	*

* Source profile not included in the CMB run.