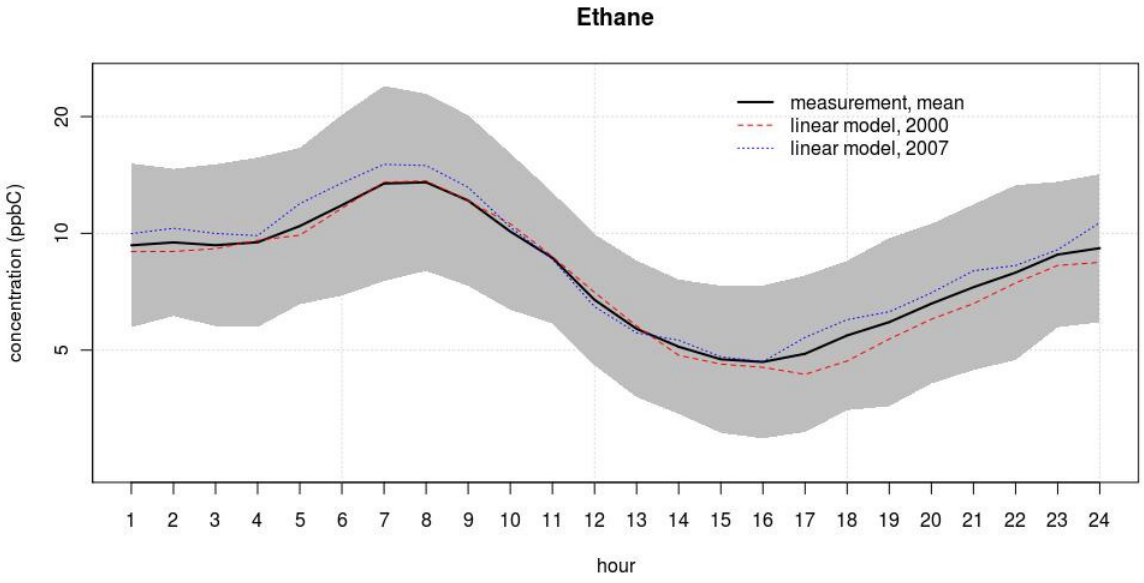
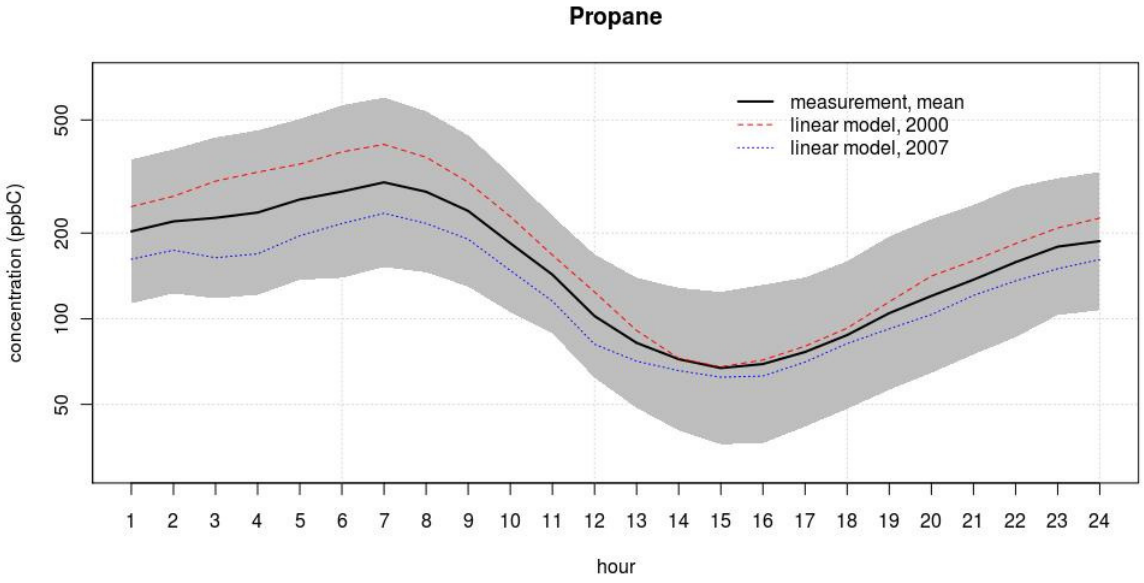
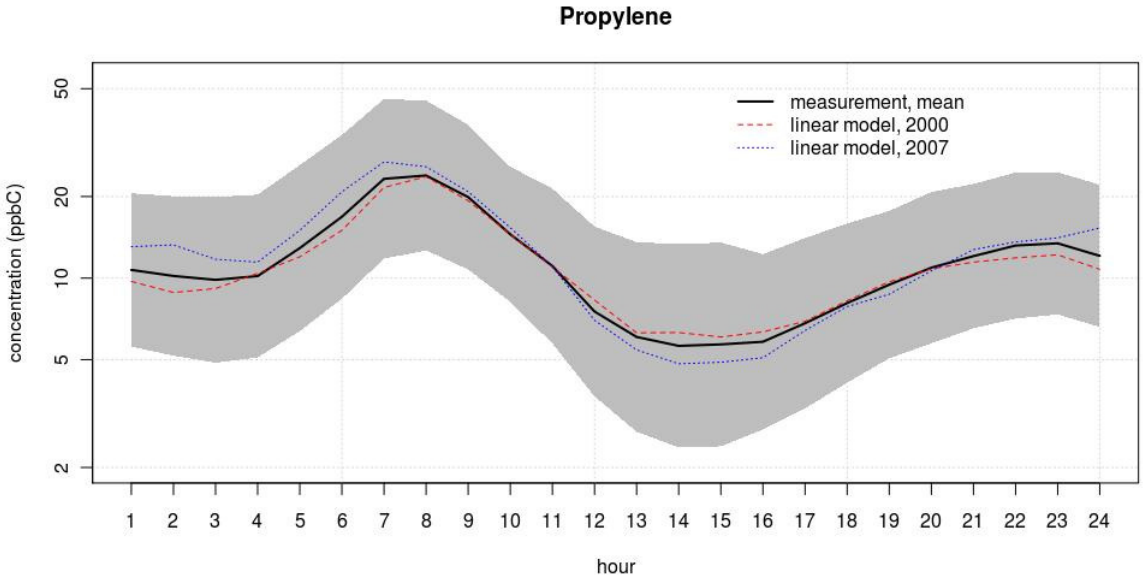
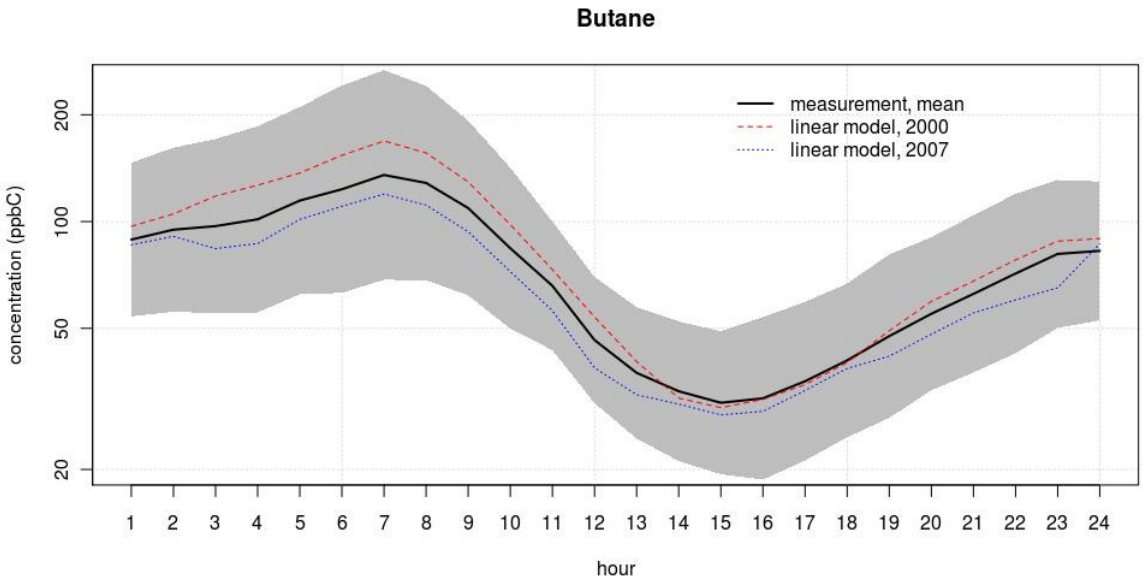
Supplementary Information

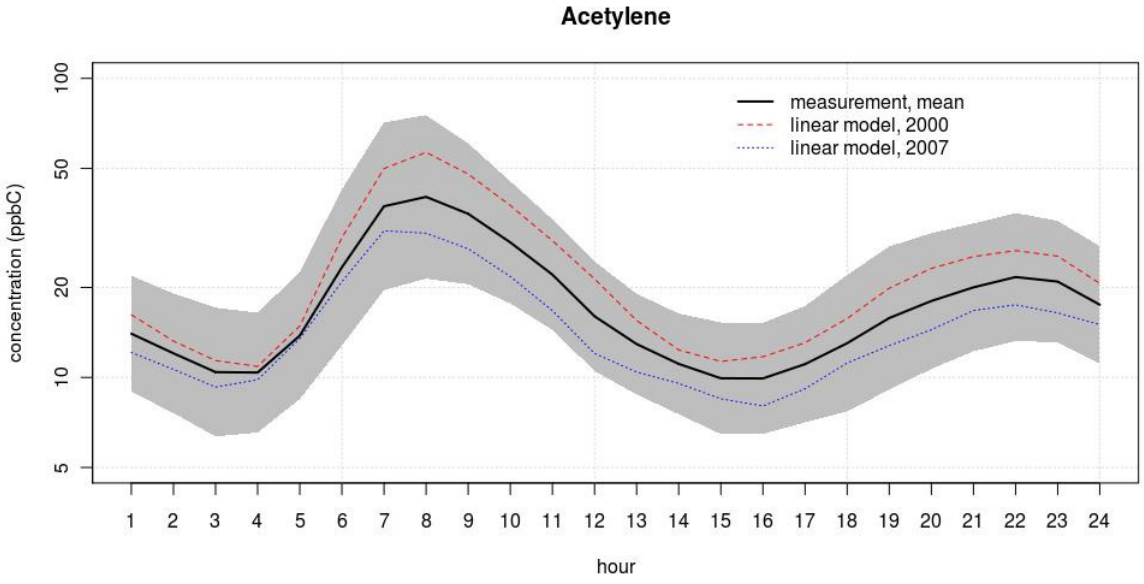
1. **Diurnal variation of ethane, propane, propylene, butane, acetylene, pentane, hexane, heptane, benzene, octane, toluene, nonane, o-xylene, and Σ_{13}VOC. Shown are the measured log-transformed averages with their standard deviations (solid line with grey shadow), as well as the modelled values for mid 2000 and mid 2007 (dotted lines).**

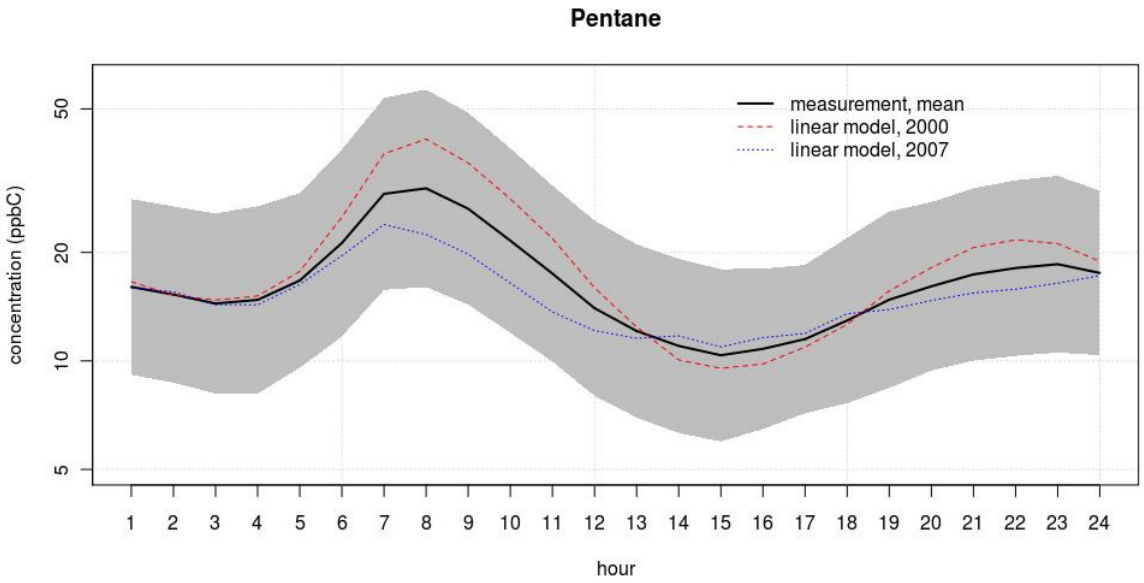


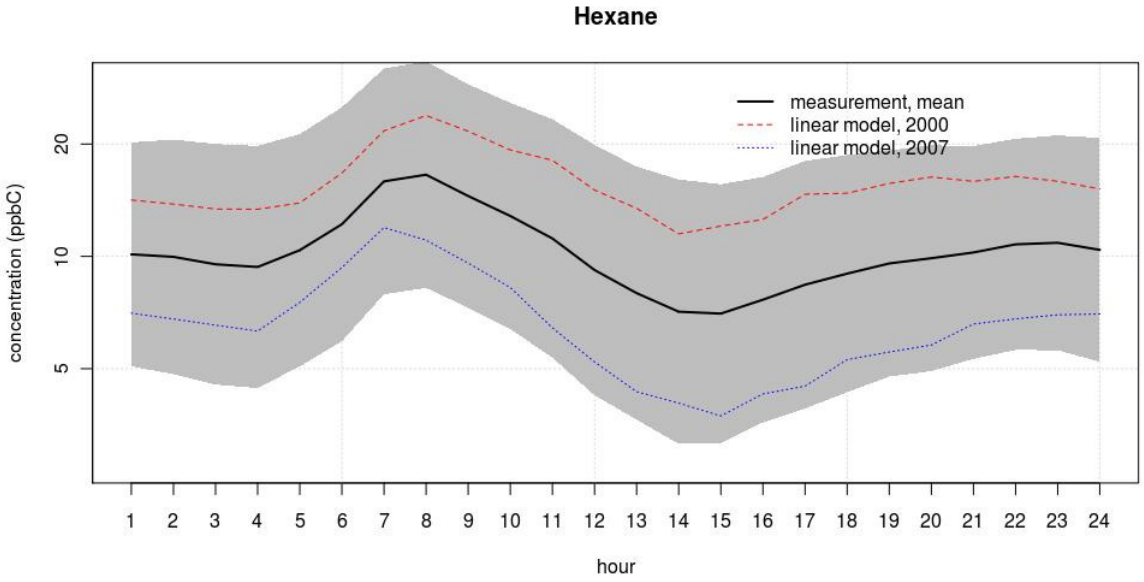


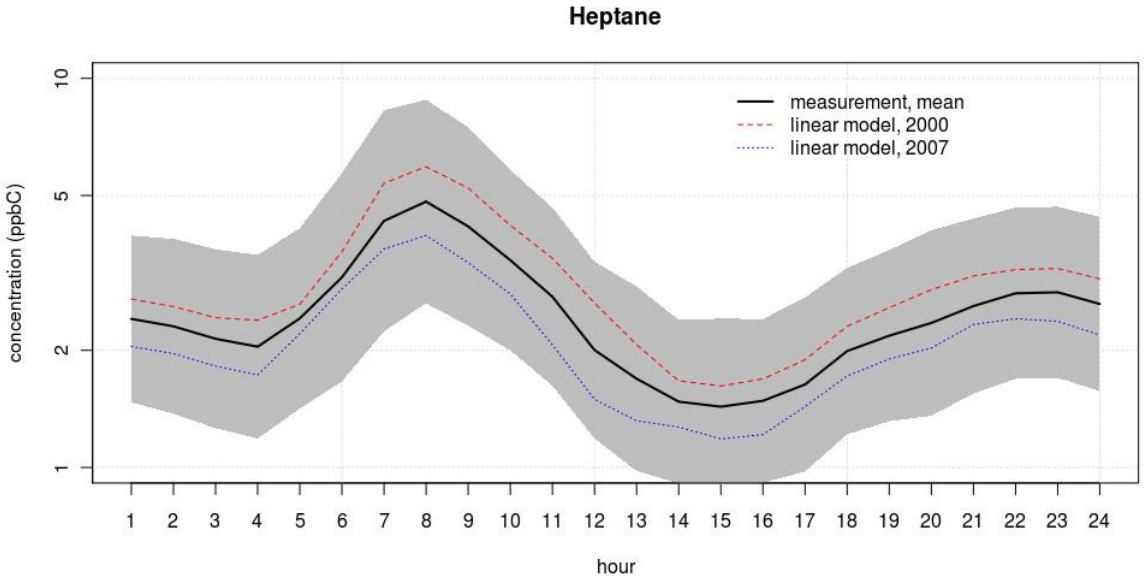

Propylene
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
2
5
10
20
50
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour

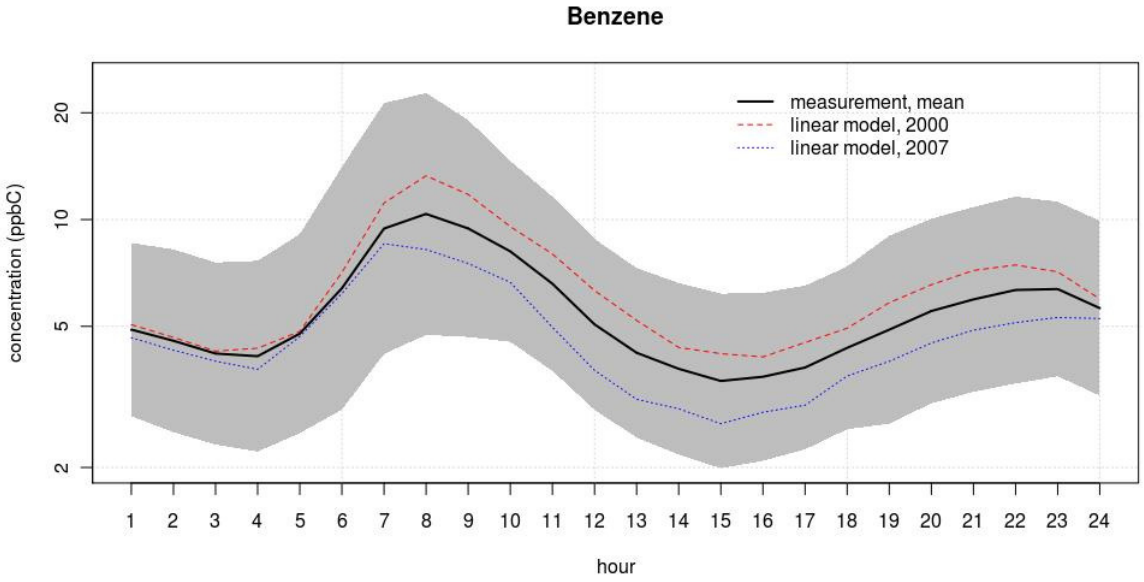

Butane
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
20
50
100
200
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour

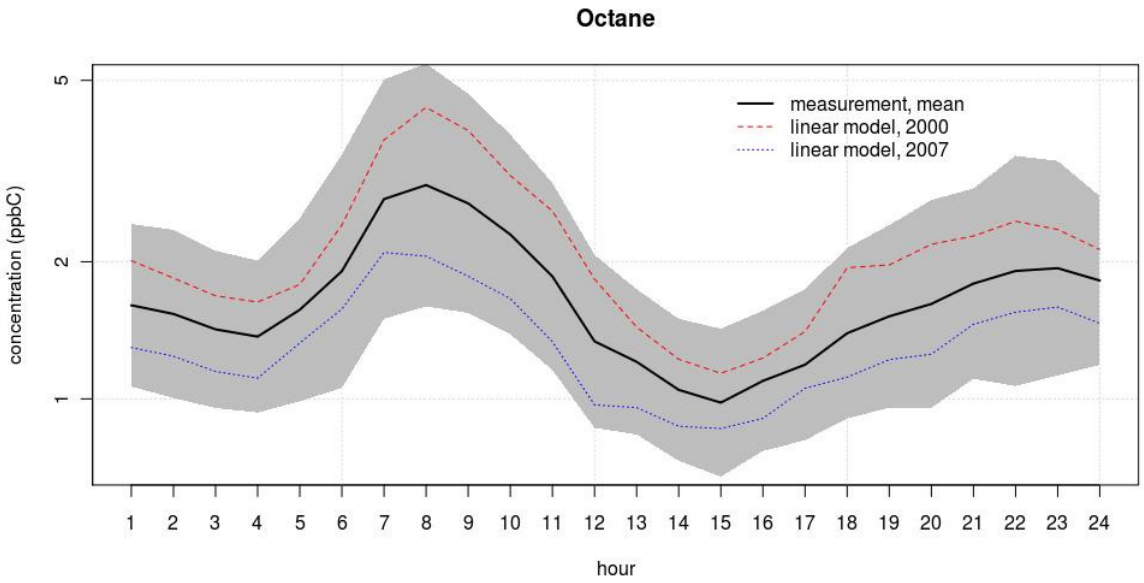

Acetylene
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
5
10
20
50
100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour

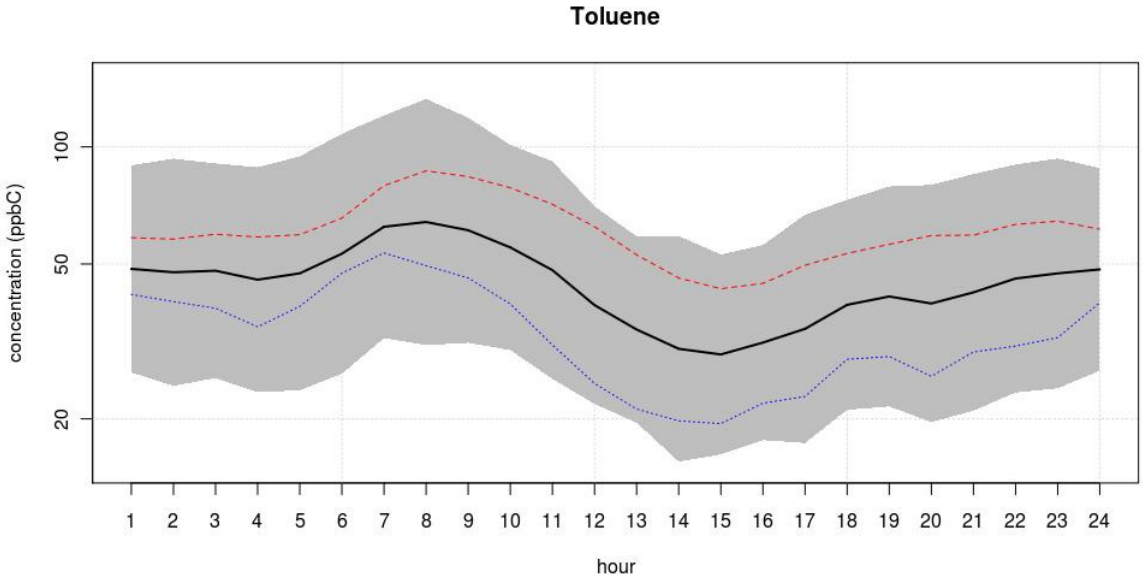

Pentane
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
5
10
20
50
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour

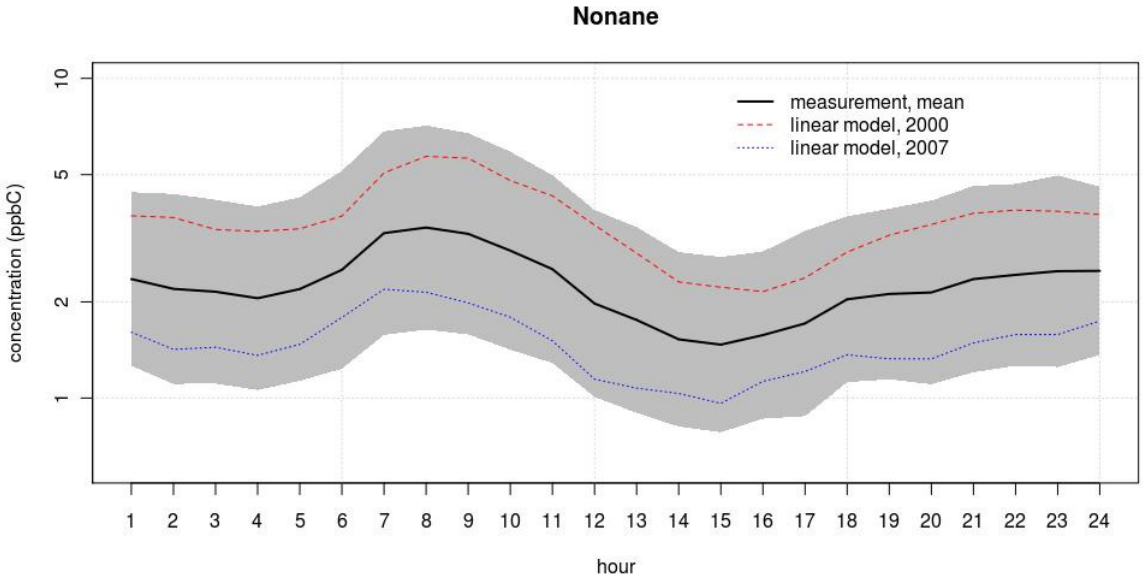

Hexane
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
5
10
20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour

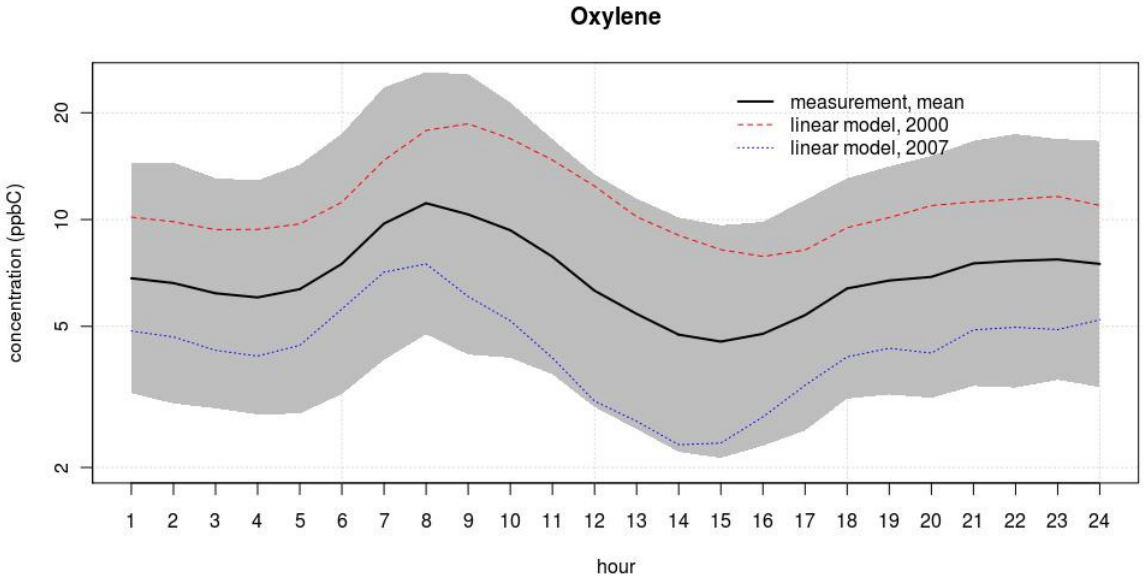

Heptane
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
1
2
5
10
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour

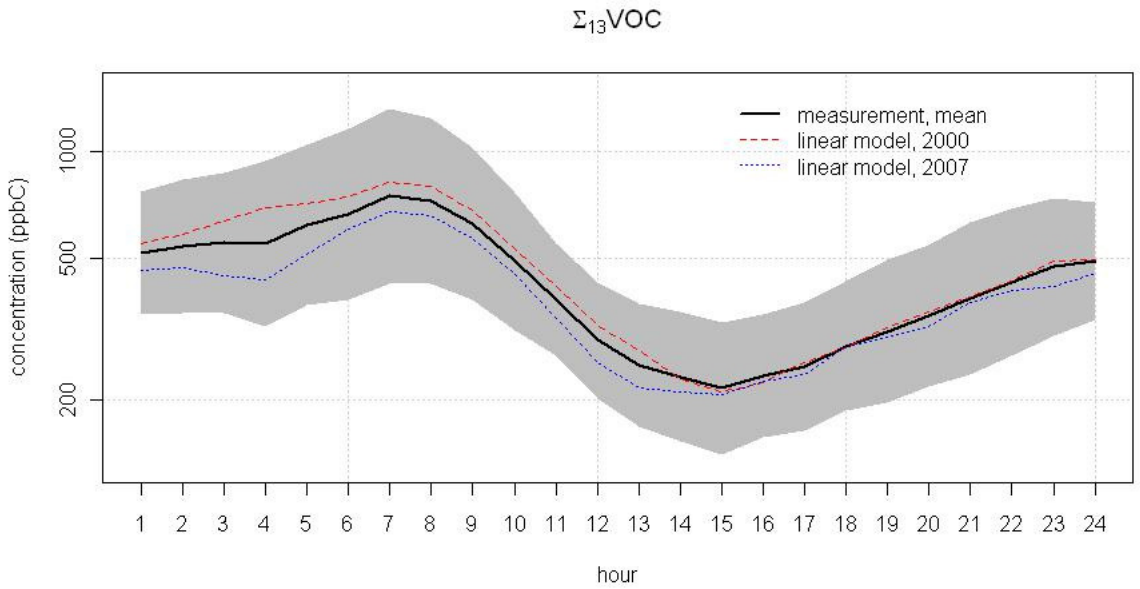

Benzene
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
2
5
10
20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour


Octane
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
1
2
5
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour


Toluene
concentration (ppbC)
20
50
100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour


Nonane
concentration (ppbC)
1
2
5
10
measurement, mean
linear model, 2000
linear model, 2007
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour


Oxylene
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
2
5
10
20
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour


Σ_{13}VOC
measurement, mean
linear model, 2000
linear model, 2007
concentration (ppbC)
200
500
1000
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
hour

2. Source profiles used for CMB analysis. Contributions of individual VOCs to the profile are in ppbC% and normalized to 100% contribution of all 13 species.

SOURCE-CATEGORY	LPG	EXHAUST				HOTSOAK	SOLVENT		FOOD
SPECIES \ SOURCE	LPG	EXHTI	EXHTN	EXHTG1	EXHTG2	HOTS	VINPA	VARNISH	FOODR
Ethane	0.0115	0.0331	0.0172	0.0291	0.0335	0.0039	0	0	0.07
Propane	0.7924	0.0976	0.1648	0.3386	0.3142	0.0133	0.0013	0	0.3654
Propylene	0.005	0.0547	0.0438	0.1576	0.1497	0.0054	0	0	0.0472
Butane	0.1909	0.0872	0.1198	0.0638	0.0798	0.13	0.0097	0.0031	0.2453
Acetylene	0	0.2247	0.1603	0.1337	0.1504	0.0158	0	0	0.0888
Pentane	0.0002	0.0755	0.0804	0.0423	0.0398	0.4115	0.0032	0.0043	0.0165
Hexane	0	0.0592	0.0644	0.0494	0.0496	0.1497	0.153	0.0064	0.016
Heptane	0	0.0252	0.0244	0.0199	0.0266	0.034	0.0071	0.0006	0.0056
Benzene	0	0.0682	0.0588	0.0201	0.0191	0.0677	0.0137	0.002	0.0543
Octane	0	0.0165	0.0125	0.0022	0.0021	0.0125	0.0015	0.0006	0.0041
Toluene	0	0.1893	0.1986	0.1242	0.1146	0.1157	0.7735	0.9584	0.0661
Nonane	0	0.016	0.0092	0.0024	0.0038	0.0072	0.0011	0.0021	0.002
Oxylene	0	0.0527	0.0458	0.0166	0.0168	0.0333	0.0357	0.0225	0.0186

LPG, EXHTI, EXHTN, HOTS, VINPA, FOODR: Profiles for liquefied petroleum gas, vehicle exhaust (two different tunnels in Mexico City), hot-soak, vinylic paint, emissions from food cooking. Mugica, V., Watson, J., Vega, E., Reyes, E., Ruiz, M. E. and Chow, J.: Receptor Model Source Apportionment of Nonmethane Hydrocarbons in Mexico City, The Scientific World, 2, 844-860, 2002.

VARNISH: Profile for varnish application. Vega, E., Mugica, V., Carmona, R. and Valencia, E.: Hydrocarbon source apportionment in Mexico City using the chemical mass balance receptor model. Atmos. Environ., 34, 4121-4129, 2000.

EXHTG1, EXHTG2: Profiles for vehicle exhaust (two different tunnels in Guanajuato, Mexico, measured in 2008). Instituto Nacional de Ecología, personal communication.