Supporting information

Zheng et al. Differences in key volatile organic compound species in ozone formation between their initial and measured concentrations

This file includes:

1. **Figs S1-S10.**
2. **Tables S1-S2.**
3. **Supplementary References.**

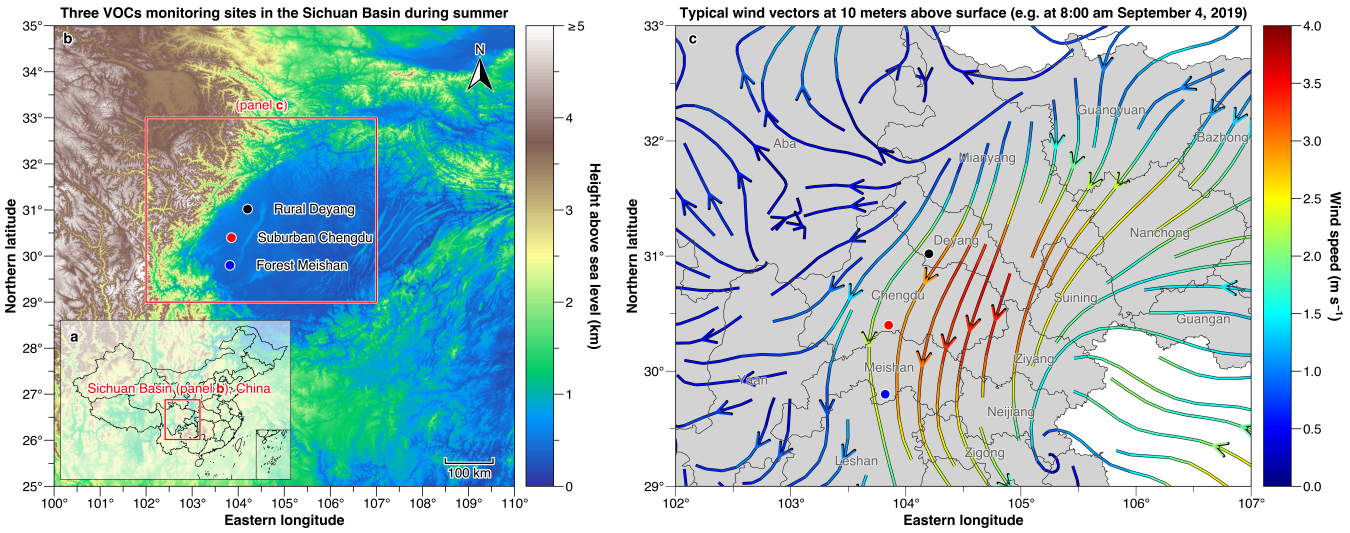

Fig. S1. Three monitoring sites in the Sichuan Basin (b), China (a). The red rectangles in panels (a) and (b) indicated the miniature map of panels (b) and (c), respectively. Wind vectors at local 8:00 am September 4, 2019 as an example were from the European Centre for Medium-Range Weather Forecasts (https://www.ecmwf.int/) (c). The grey polygons indicated cities (c).

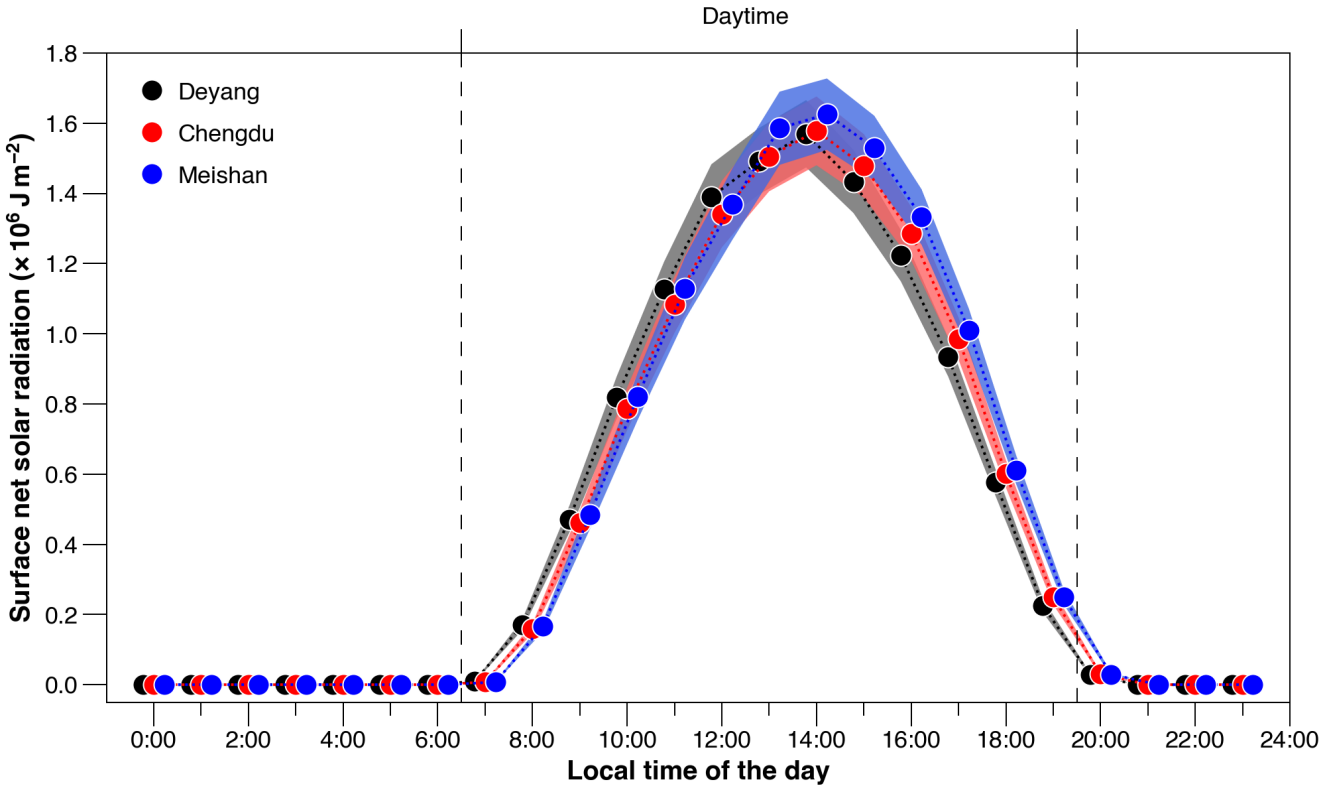

Fig. S2. Diurnal variations of surface net solar radiation at rural Deyang, suburban Chengdu, and forest Meishan from August to September 2019, respectively. Scatters and shaded envelopes were the mean and standard error (SE), respectively. The units were joules per square meter (J m^{-2}). Data were from the European Centre for Medium-Range Weather Forecasts https://www.ecmwf.int/).

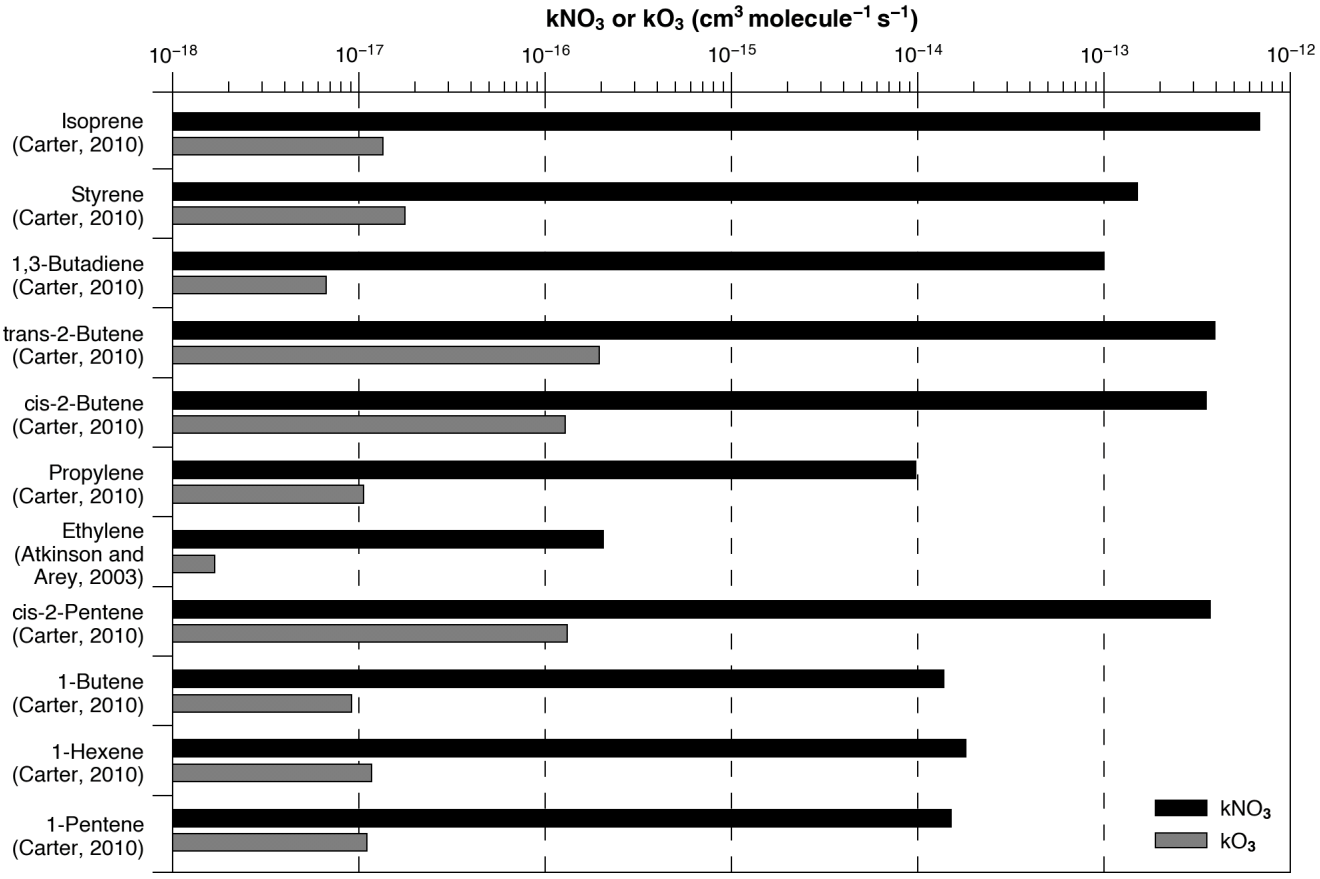

Fig. S3. The reported reaction rate constants of 10 alkenes and styrene with NO_3 radicals and O_3 at 300K (Atkinson and Arey, 2003; Carter, 2010).

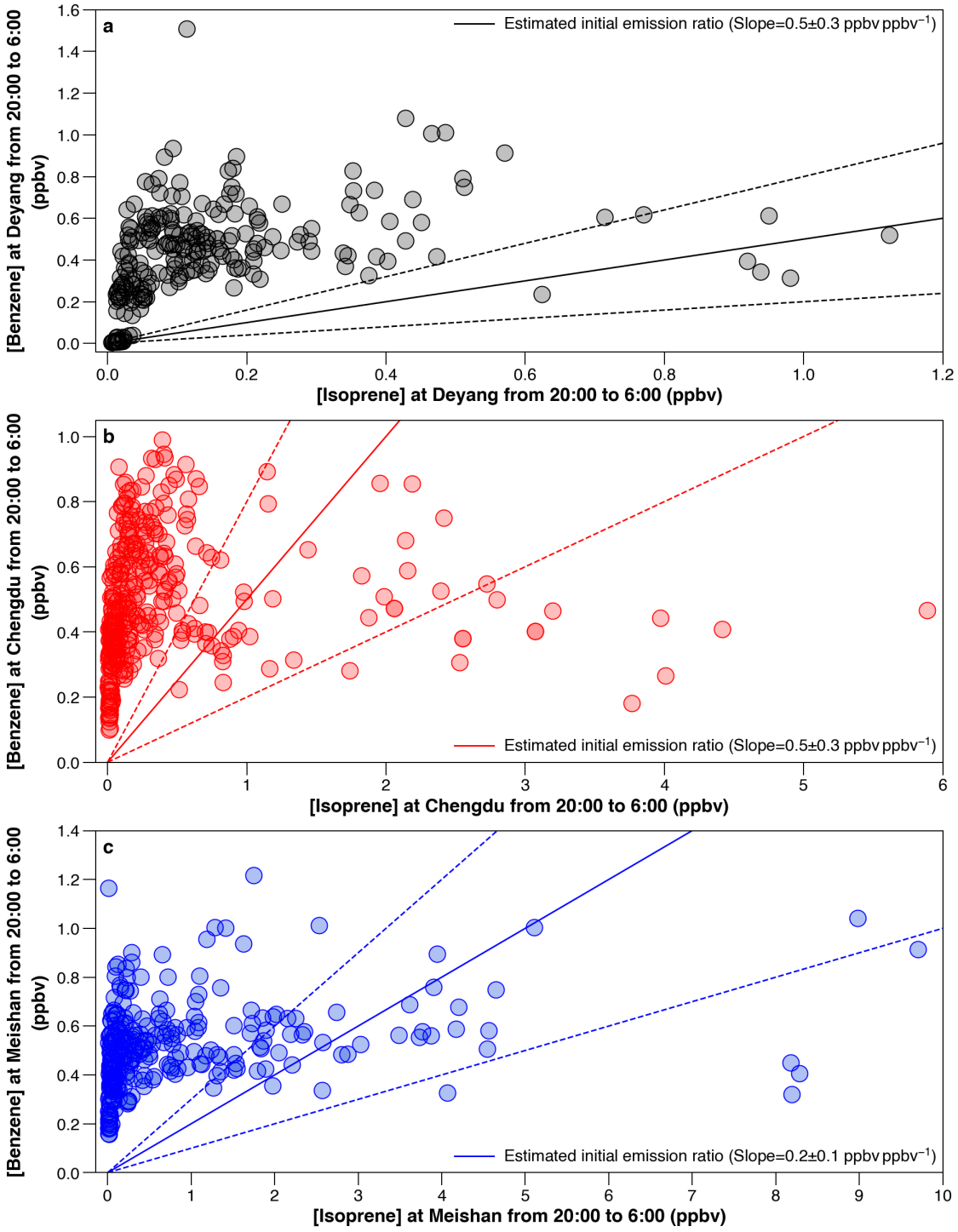

Fig. S4. The correlations between ambient concentrations of benzene and isoprene during nighttime from August to September 2019. The slopes of solid and dotted lines indicated the initial emission ratios of benzene to isoprene and their uncertainties, respectively.

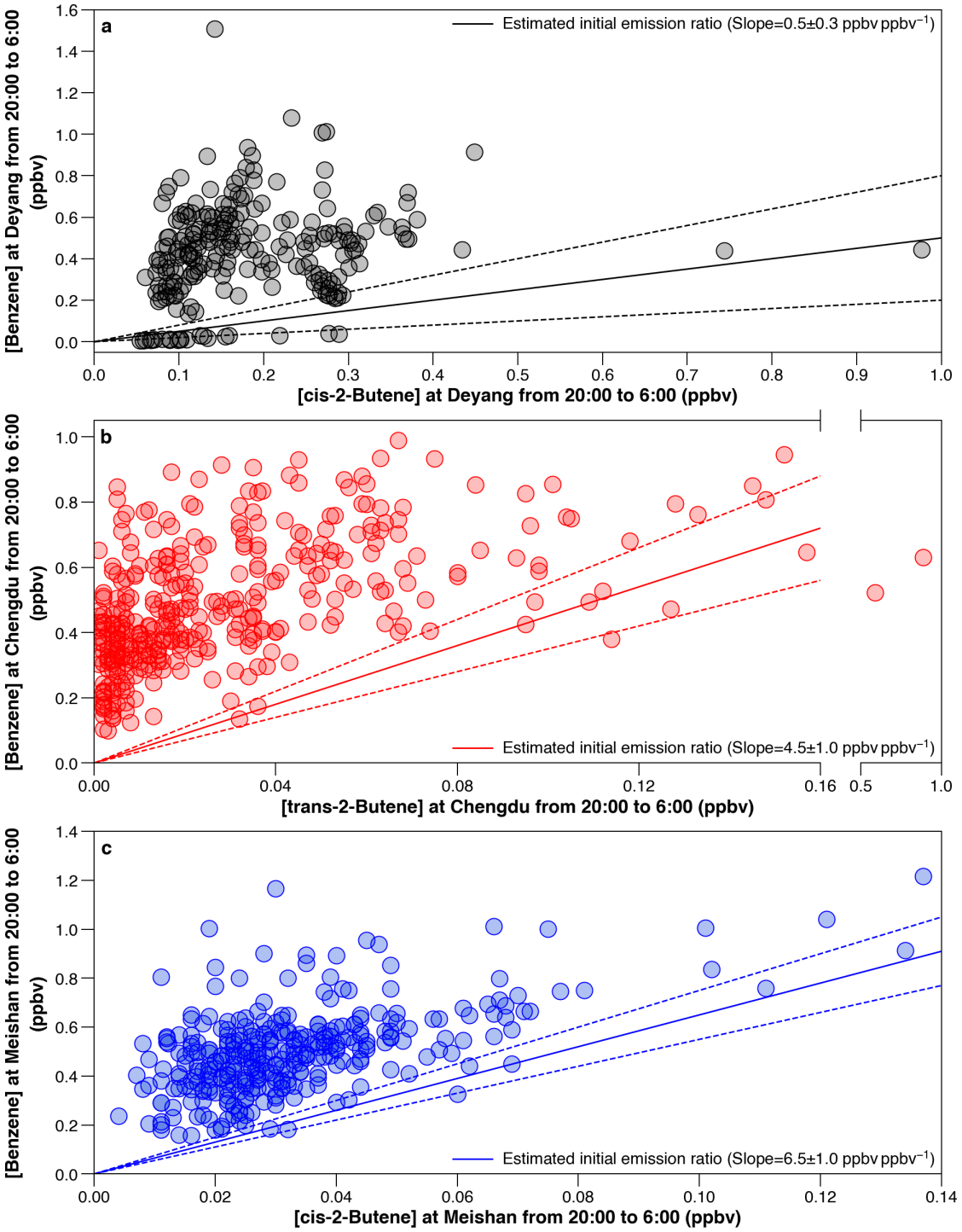

Fig. S5. The correlations between ambient concentrations of benzene and cis-2-butene or trans-2-butene during nighttime from August to September 2019, respectively. The slopes of solid and dotted lines indicated the initial emission ratios and their uncertainties, respectively.

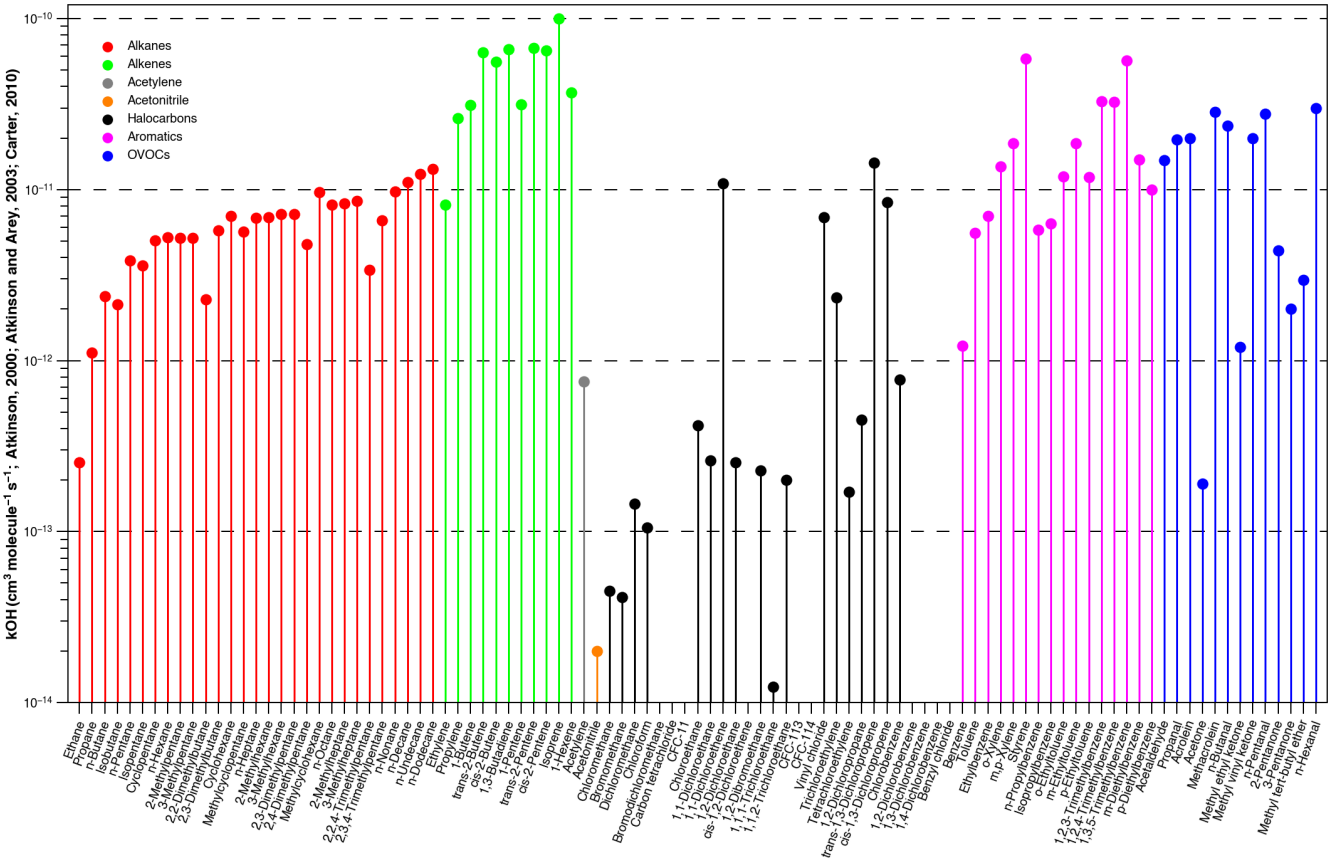

Fig. S6. The reported reaction rate constants of 99 VOCs with OH radicals at 300K. The kOH values for acetonitrile, m-diethylbenzene, p-diethylbenzene were cited (Atkinson, 2000; Atkinson and Arey, 2003), and the other VOCs (Carter, 2010).The kOH value of m,p-xylene was the average kOH value of m-xylene and p-xylene.

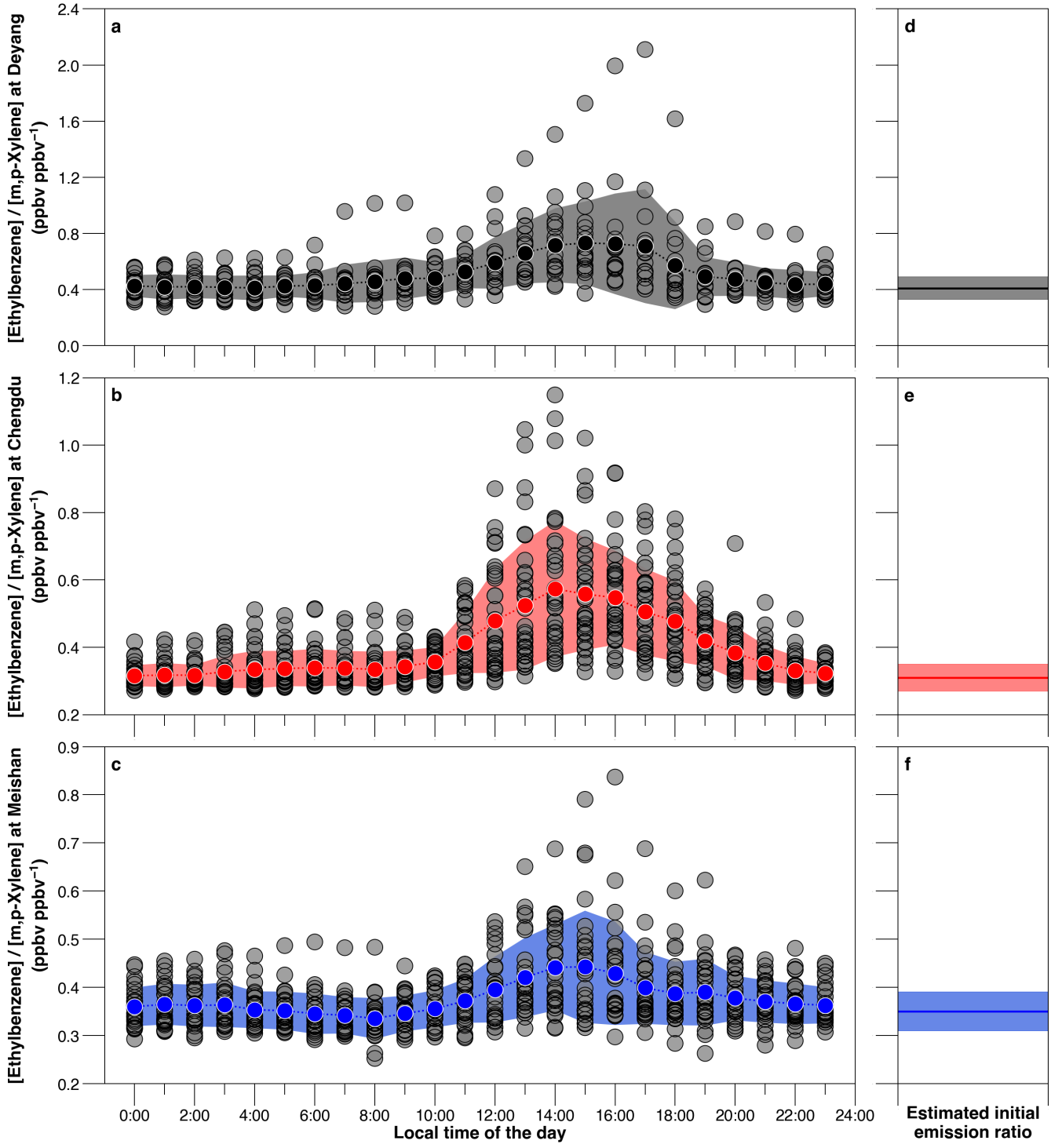

Fig. S7. Diurnal variations of ratios of ambient concentrations of ethylbenzene to m,p-xylene, and estimated initial emission ratios. The black, red, and blue dots (a-c) and lines (d-f) indicated mean values, and shaded envelopes marked SD (a-f).

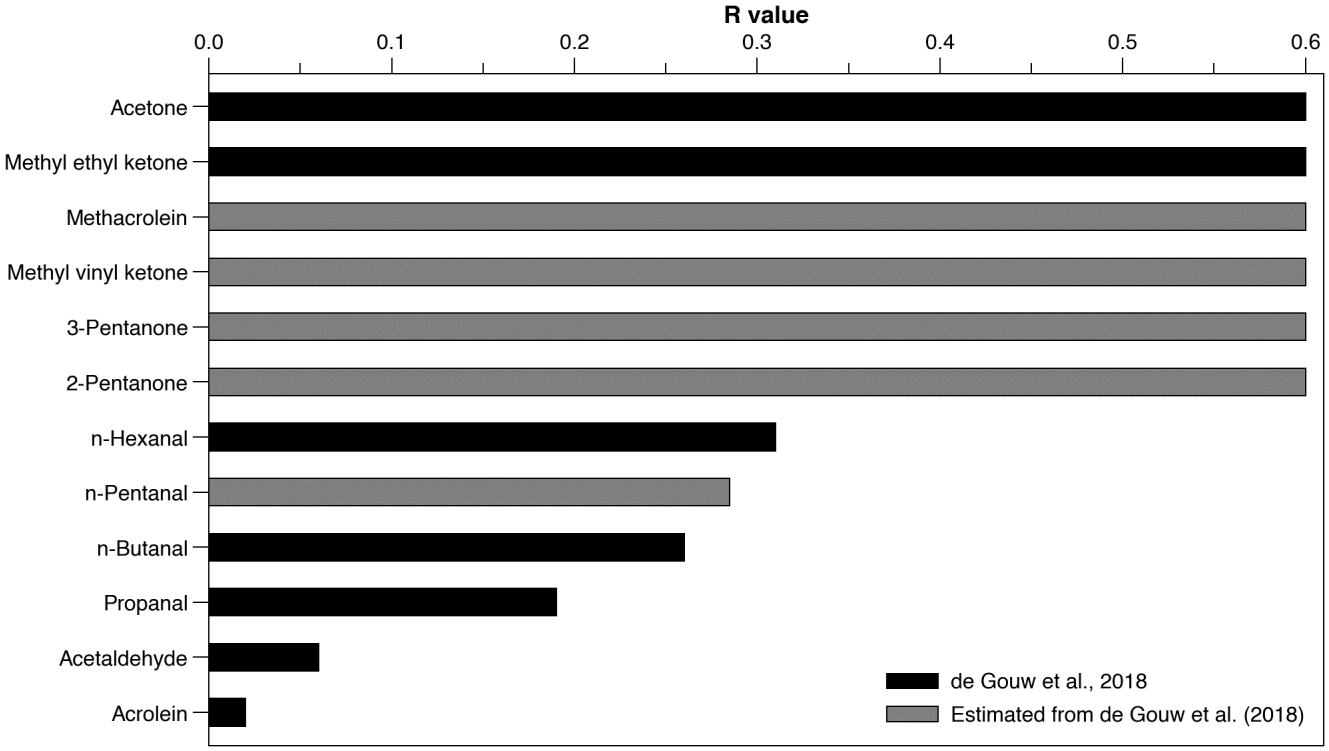

Fig. S8. The reported ratios (R) of J_{OVOC} to $[OH]kOH_{OVOC}$ (de Gouw et al., 2018). The R values were established in the Los Angeles Basin for acetone, methyl ethyl ketone, n-hexanal, n-butanal, propanal, acetaldehyde, and acrolein (de Gouw et al., 2018). According to similar chemical structures, the R values for methyl vinyl ketone and methacrolein referred to that for methyl ethyl ketone, 2-pentanone and 3-pentanone referred to the average R of acetone and methyl ethyl ketone, and n-pentanal referred to the average R of n-butanal and n-hexanal.

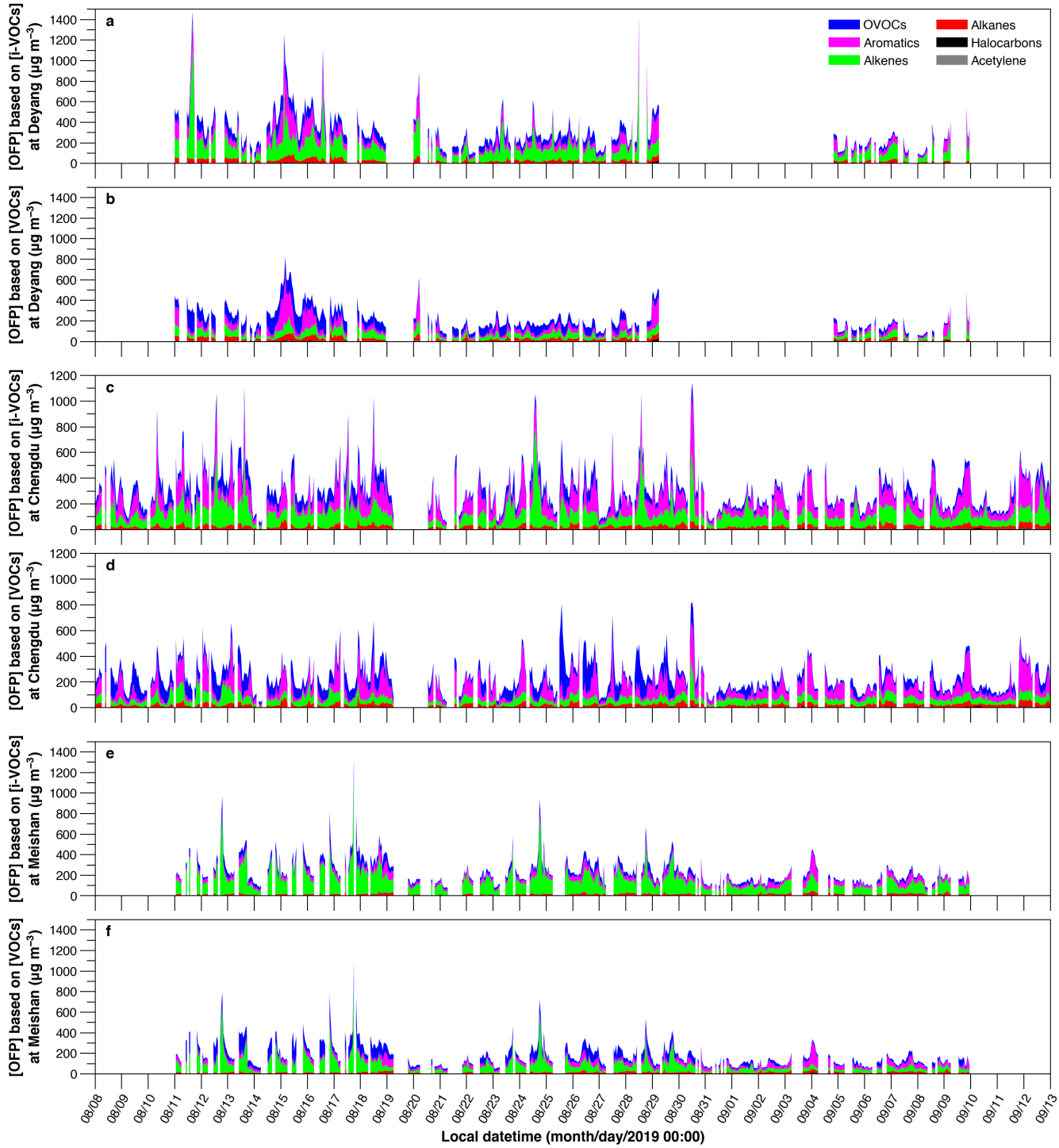

Fig. S9. Hourly OFP values based on ambient (a, c, and e) and initial (b, d, and f) VOCs concentrations at Deyang, Chengdu, and Meishan from August to September 2019, respectively.

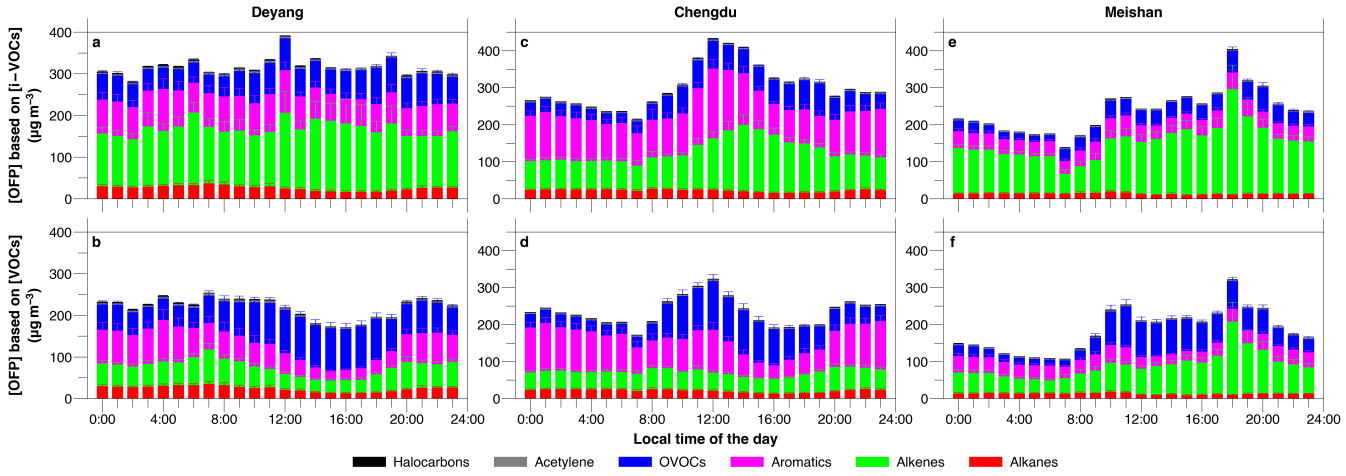

Fig. S10. Diurnal variations of OFP values based on ambient (a, c, and e) and initial (b, d, and f) VOCs concentrations at Deyang, Chengdu, and Meishan from August to September 2019, respectively.

Table S1 The amibient and initial concentrations of VOCs species (Mean ± SD; ppbv) from August to September 2019.

Species	Deyang		Chengdu		Meishan	
	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]
Ethane (Alkane)	4.25 ± 1.80	4.26 ± 1.79	3.03 ± 1.21	3.04 ± 1.21	3.36 ± 1.03	3.37 ± 1.03
Propane	2.70 ± 2.33	2.73 ± 2.33	2.55 ± 2.08	2.58 ± 2.08	1.46 ± 0.70	1.47 ± 0.70
Isobutane	0.79 ± 0.59	0.81 ± 0.59	0.65 ± 0.47	0.66 ± 0.47	0.38 ± 0.14	0.38 ± 0.14
n-Butane	1.24 ± 0.95	1.27 ± 0.95	1.14 ± 0.93	1.18 ± 0.93	0.62 ± 0.30	0.63 ± 0.31
Isopentane	0.91 ± 0.71	0.94 ± 0.72	0.89 ± 0.53	0.94 ± 0.54	0.64 ± 0.43	0.65 ± 0.45
n-Pentane	0.45 ± 0.37	0.46 ± 0.37	0.32 ± 0.19	0.34 ± 0.19	0.37 ± 0.65	0.38 ± 0.69
2,2-Dimethylbutane	0.12 ± 0.48	0.12 ± 0.48	0.03 ± 0.02	0.03 ± 0.02	0.02 ± 0.01	0.02 ± 0.01
2,3-Dimethylbutane	0.07 ± 0.19	0.08 ± 0.19	0.07 ± 0.09	0.08 ± 0.09	0.02 ± 0.01	0.02 ± 0.01
2-Methylpentane	0.20 ± 0.14	0.21 ± 0.14	0.23 ± 0.18	0.24 ± 0.18	0.11 ± 0.07	0.11 ± 0.07
Cyclopentane	0.04 ± 0.04	0.04 ± 0.04	0.07 ± 0.03	0.08 ± 0.04	0.07 ± 0.03	0.07 ± 0.03
3-Methylpentane	0.18 ± 0.15	0.19 ± 0.16	0.17 ± 0.13	0.18 ± 0.13	0.09 ± 0.06	0.10 ± 0.06
n-Hexane	0.26 ± 0.26	0.28 ± 0.28	0.26 ± 0.28	0.28 ± 0.28	0.11 ± 0.09	0.11 ± 0.09
2,4-Dimethylpentane	0.04 ± 0.08	0.04 ± 0.08	0.06 ± 0.07	0.06 ± 0.09	0.01 ± 0.01	0.01 ± 0.01
Methylcyclopentane	0.12 ± 0.13	0.12 ± 0.13	0.08 ± 0.05	0.09 ± 0.06	0.05 ± 0.02	0.05 ± 0.02
2-Methylhexane	0.06 ± 0.04	0.07 ± 0.05	0.06 ± 0.06	0.07 ± 0.06	0.03 ± 0.02	0.03 ± 0.02
2,3-Dimethylpentane	0.02 ± 0.01	0.02 ± 0.01	0.03 ± 0.02	0.03 ± 0.02	0.01 ± 0.01	0.02 ± 0.01
3-Methylhexane	0.06 ± 0.04	0.07 ± 0.05	0.08 ± 0.07	0.09 ± 0.08	0.03 ± 0.03	0.04 ± 0.03
2,2,4-Trimethylpentane	0.04 ± 0.03	0.04 ± 0.03	0.04 ± 0.05	0.04 ± 0.05	0.02 ± 0.01	0.02 ± 0.01
n-Heptane	0.08 ± 0.05	0.08 ± 0.06	0.10 ± 0.10	0.11 ± 0.10	0.04 ± 0.04	0.05 ± 0.04
Methylcyclohexane	0.17 ± 0.20	0.19 ± 0.20	0.10 ± 0.10	0.11 ± 0.11	0.03 ± 0.03	0.03 ± 0.03
2,3,4-Trimethylpentane	0.07 ± 0.24	0.07 ± 0.24	0.02 ± 0.02	0.02 ± 0.02	0.01 ± 0.00	0.01 ± 0.00
2-Methylheptane	0.02 ± 0.02	0.03 ± 0.02	0.02 ± 0.01	0.02 ± 0.01	0.01 ± 0.00	0.01 ± 0.00
3-Methylheptane	0.02 ± 0.01	0.02 ± 0.02	0.02 ± 0.01	0.02 ± 0.01	0.01 ± 0.00	0.01 ± 0.00
Cyclohexane	0.05 ± 0.04	0.06 ± 0.04	0.05 ± 0.11	0.06 ± 0.11	0.02 ± 0.02	0.02 ± 0.02
n-Octane	0.06 ± 0.05	0.07 ± 0.05	0.04 ± 0.03	0.05 ± 0.03	0.02 ± 0.01	0.02 ± 0.02
n-Nonane	0.03 ± 0.03	0.04 ± 0.03	0.03 ± 0.02	0.04 ± 0.02	0.02 ± 0.01	0.02 ± 0.01
n-Decane	0.03 ± 0.02	0.04 ± 0.03	0.02 ± 0.01	0.02 ± 0.01	0.02 ± 0.03	0.02 ± 0.03
n-Undecane	0.05 ± 0.03	0.06 ± 0.05	0.02 ± 0.01	0.02 ± 0.02	0.01 ± 0.01	0.01 ± 0.01
n-Dodecane	0.26 ± 0.36	0.37 ± 0.70	0.02 ± 0.03	0.03 ± 0.05	0.05 ± 0.04	0.06 ± 0.05
Ethylene (Alkene)	2.15 ± 1.64	2.32 ± 1.65	1.60 ± 1.05	1.76 ± 1.04	1.83 ± 1.19	1.91 ± 1.19

Species	Deyang		Chengdu		Meishan	
	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]
Propylene	0.47 ± 0.50	0.62 ± 0.53	0.28 ± 0.23	0.40 ± 0.28	0.32 ± 0.34	0.36 ± 0.35
trans-2-Butene	0.03 ± 0.04	0.52 ± 0.92	0.02 ± 0.05	0.14 ± 0.30	0.01 ± 0.01	0.06 ± 0.09
1-Butene	0.13 ± 0.14	0.22 ± 0.31	0.56 ± 0.69	1.34 ± 2.06	0.13 ± 0.11	0.19 ± 0.21
cis-2-Butene	0.17 ± 0.10	1.21 ± 2.02	0.02 ± 0.03	0.08 ± 0.19	0.03 ± 0.02	0.07 ± 0.05
1,3-Butadiene	0.04 ± 0.03	0.10 ± 0.18	0.03 ± 0.03	0.14 ± 0.46	0.05 ± 0.06	0.08 ± 0.08
1-Pentene	0.03 ± 0.03	0.04 ± 0.03	0.02 ± 0.02	0.04 ± 0.05	0.02 ± 0.03	0.03 ± 0.03
trans-2-Pentene	0.02 ± 0.04	0.19 ± 0.36	0.01 ± 0.02	0.05 ± 0.14	0.00 ± 0.00	0.01 ± 0.02
Isoprene	0.26 ± 0.26	1.19 ± 0.73	0.47 ± 0.62	1.33 ± 0.99	1.48 ± 2.54	3.45 ± 3.33
cis-2-Pentene	0.01 ± 0.02	0.19 ± 0.53	0.01 ± 0.01	0.09 ± 0.31	0.01 ± 0.01	0.04 ± 0.12
1-Hexene	0.03 ± 0.03	0.05 ± 0.05	0.01 ± 0.01	0.03 ± 0.05	0.02 ± 0.03	0.03 ± 0.04
Acetylene	2.54 ± 2.00	2.57 ± 2.02	2.11 ± 1.23	2.13 ± 1.24	1.70 ± 0.70	1.70 ± 0.70
Acetonitrile	0.33 ± 0.17	0.33 ± 0.17	0.41 ± 0.67	0.41 ± 0.67	0.31 ± 0.12	0.31 ± 0.12
CFC-11 (Halocarbon)	1.44 ± 1.24	1.44 ± 1.24	0.23 ± 0.32	0.23 ± 0.32	0.22 ± 0.03	0.22 ± 0.03
CFC-113	0.06 ± 0.01	0.06 ± 0.01	0.08 ± 0.01	0.08 ± 0.01	0.08 ± 0.00	0.08 ± 0.00
CFC-114	0.02 ± 0.01	0.02 ± 0.01	0.01 ± 0.00	0.01 ± 0.00	0.02 ± 0.00	0.02 ± 0.00
Chloromethane	0.40 ± 0.16	0.40 ± 0.16	0.62 ± 0.24	0.63 ± 0.24	0.83 ± 0.72	0.83 ± 0.72
Vinyl chloride	0.04 ± 0.10	0.04 ± 0.12	0.04 ± 0.14	0.04 ± 0.14	0.02 ± 0.06	0.03 ± 0.06
Bromomethane	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00
Chloroethane	0.02 ± 0.02	0.02 ± 0.02	0.02 ± 0.02	0.02 ± 0.02	0.02 ± 0.01	0.02 ± 0.01
1,1-Dichloroethene	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Dichloromethane	1.50 ± 1.66	1.50 ± 1.66	2.80 ± 3.09	2.80 ± 3.09	0.84 ± 0.74	0.84 ± 0.74
1,1-Dichloroethane	0.16 ± 0.66	0.16 ± 0.66	0.03 ± 0.03	0.03 ± 0.03	0.03 ± 0.02	0.03 ± 0.02
Chloroform	0.09 ± 0.05	0.09 ± 0.05	0.10 ± 0.12	0.10 ± 0.12	0.08 ± 0.03	0.08 ± 0.03
1,1,1-Trichloroethane	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Carbon tetrachloride	0.12 ± 0.06	0.12 ± 0.06	0.08 ± 0.01	0.08 ± 0.01	0.11 ± 0.00	0.11 ± 0.00
1,2-Dichloroethane	0.59 ± 0.59	0.59 ± 0.59	0.53 ± 0.45	0.53 ± 0.45	0.60 ± 0.45	0.60 ± 0.45
Trichloroethylene	0.04 ± 0.11	0.04 ± 0.11	0.04 ± 0.04	0.04 ± 0.04	0.01 ± 0.04	0.02 ± 0.04
1,2-Dichloropropane	0.18 ± 0.26	0.18 ± 0.26	0.25 ± 0.24	0.25 ± 0.24	0.12 ± 0.10	0.12 ± 0.10
Bromodichloromethane	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
trans-1,3-Dichloropropene	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.00	0.01 ± 0.00	0.00 ± 0.01	0.00 ± 0.01
cis-1,3-Dichloropropene	0.04 ± 0.18	0.05 ± 0.19	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00

Species	Deyang		Chengdu		Meishan	
	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]
1,1,2-Trichloroethane	0.02 ± 0.01	0.02 ± 0.01	0.02 ± 0.02	0.02 ± 0.02	0.01 ± 0.01	0.01 ± 0.01
Tetrachloroethylene	0.02 ± 0.02	0.02 ± 0.02	0.05 ± 0.04	0.05 ± 0.04	0.01 ± 0.01	0.01 ± 0.01
1,2-Dibromoethane	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Chlorobenzene	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00	0.01 ± 0.00
1,3-Dichlorobenzene	0.09 ± 0.04	0.09 ± 0.04	0.02 ± 0.01	0.02 ± 0.01	0.02 ± 0.00	0.02 ± 0.00
1,4-Dichlorobenzene	0.03 ± 0.03	0.03 ± 0.03	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.00	0.01 ± 0.00
1,2-Dichlorobenzene	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Benzyl chloride	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
cis-1,2-Dichloroethene	0.02 ± 0.07	0.02 ± 0.07	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Benzene (Aromatic)	0.42 ± 0.22	0.43 ± 0.22	0.44 ± 0.20	0.45 ± 0.21	0.47 ± 0.17	0.47 ± 0.17
Toluene	0.73 ± 0.59	0.78 ± 0.60	0.93 ± 0.74	1.00 ± 0.78	0.36 ± 0.25	0.37 ± 0.26
Ethylbenzene	0.26 ± 0.28	0.28 ± 0.28	0.46 ± 0.43	0.50 ± 0.45	0.18 ± 0.12	0.19 ± 0.12
o-Xylene	0.28 ± 0.36	0.31 ± 0.37	0.52 ± 0.52	0.60 ± 0.57	0.20 ± 0.15	0.22 ± 0.15
m,p-Xylene	0.64 ± 0.83	0.77 ± 0.84	1.30 ± 1.30	1.58 ± 1.44	0.48 ± 0.36	0.53 ± 0.37
Styrene	0.18 ± 0.16	0.77 ± 1.72	0.15 ± 0.19	0.44 ± 0.71	0.09 ± 0.05	0.19 ± 0.17
Isopropylbenzene	0.02 ± 0.02	0.02 ± 0.02	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.00	0.01 ± 0.00
n-Propylbenzene	0.02 ± 0.02	0.02 ± 0.02	0.02 ± 0.01	0.02 ± 0.01	0.01 ± 0.01	0.01 ± 0.01
o-Ethyltoluene	0.17 ± 0.68	0.18 ± 0.68	0.02 ± 0.01	0.03 ± 0.01	0.02 ± 0.01	0.02 ± 0.01
m-Ethyltoluene	0.04 ± 0.05	0.05 ± 0.05	0.04 ± 0.03	0.05 ± 0.03	0.02 ± 0.01	0.02 ± 0.02
p-Ethyltoluene	0.10 ± 0.46	0.10 ± 0.46	0.02 ± 0.02	0.03 ± 0.02	0.01 ± 0.01	0.01 ± 0.01
1,3,5-Trimethylbenzene	0.02 ± 0.04	0.07 ± 0.14	0.02 ± 0.01	0.10 ± 0.26	0.02 ± 0.01	0.03 ± 0.03
1,2,4-Trimethylbenzene	0.07 ± 0.07	0.10 ± 0.09	0.06 ± 0.05	0.10 ± 0.08	0.03 ± 0.02	0.04 ± 0.02
1,2,3-Trimethylbenzene	0.02 ± 0.02	0.03 ± 0.03	0.02 ± 0.01	0.04 ± 0.04	0.02 ± 0.01	0.02 ± 0.01
m-Diethylbenzene	0.02 ± 0.07	0.03 ± 0.07	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.00
p-Diethylbenzene	0.02 ± 0.01	0.02 ± 0.01	0.02 ± 0.02	0.02 ± 0.02	0.01 ± 0.01	0.01 ± 0.01
Acetaldehyde (OVOC)	2.49 ± 1.55	2.08 ± 1.10	3.89 ± 4.38	3.31 ± 2.49	1.83 ± 2.08	1.55 ± 1.44
Acrolein	0.13 ± 0.08	0.12 ± 0.08	0.07 ± 0.05	0.07 ± 0.05	0.09 ± 0.12	0.09 ± 0.12
Propanal	0.27 ± 0.18	0.22 ± 0.13	0.13 ± 0.08	0.12 ± 0.06	0.17 ± 0.12	0.15 ± 0.10
n-Butanal	0.17 ± 0.26	0.14 ± 0.25	0.04 ± 0.03	0.03 ± 0.02	0.07 ± 0.04	0.07 ± 0.03
n-Pentanal	0.15 ± 0.23	0.14 ± 0.23	0.06 ± 0.04	0.04 ± 0.03	0.04 ± 0.03	0.04 ± 0.03
n-Hexanal	0.78 ± 0.87	0.83 ± 0.66	0.19 ± 0.20	0.14 ± 0.11	0.18 ± 0.09	0.16 ± 0.08

Species	Deyang		Chengdu		Meishan	
	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]	[VOCs]	[i-VOCs]
Acetone	5.38 ± 3.95	4.84 ± 1.87	3.14 ± 1.25	2.78 ± 1.13	3.05 ± 1.71	2.55 ± 1.39
Methyl vinyl ketone	0.29 ± 0.21	0.17 ± 0.17	0.18 ± 0.20	0.10 ± 0.14	0.37 ± 0.50	0.17 ± 0.26
Methyl ethyl ketone	0.68 ± 0.41	0.62 ± 0.32	0.50 ± 0.28	0.45 ± 0.23	0.44 ± 0.23	0.38 ± 0.19
2-Pentanone	0.12 ± 0.13	0.11 ± 0.09	0.03 ± 0.01	0.02 ± 0.01	0.03 ± 0.02	0.03 ± 0.01
3-Pentanone	0.04 ± 0.04	0.04 ± 0.03	0.02 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01
Methyl tert-butyl ether	0.27 ± 0.27	0.27 ± 0.27	0.09 ± 0.08	0.09 ± 0.08	0.14 ± 0.07	0.15 ± 0.08
Methacrolein	0.13 ± 0.09	0.10 ± 0.08	0.14 ± 0.13	0.08 ± 0.10	0.26 ± 0.29	0.15 ± 0.22

Table S2 The differences (Δ) between initial and ambient concentrations of VOCs species (Mean ± SD; ppbv) from August to September 2019.

Species	Δ[VOCs]		
	Deyang	Chengdu	Meishan
cis-2-Butene (Alkene)	1.04 ± 2.02	0.06 ± 0.18	0.04 ± 0.04
Isoprene	0.93 ± 0.58	0.86 ± 0.59	1.98 ± 1.30
trans-2-Butene	0.49 ± 0.90	0.12 ± 0.30	0.05 ± 0.08
cis-2-Pentene	0.18 ± 0.53	0.08 ± 0.31	0.03 ± 0.12
Ethylene	0.17 ± 0.19	0.16 ± 0.20	0.08 ± 0.10
trans-2-Pentene	0.17 ± 0.33	0.04 ± 0.14	0.01 ± 0.01
Propylene	0.15 ± 0.17	0.13 ± 0.18	0.05 ± 0.05
1-Butene	0.09 ± 0.22	0.78 ± 1.72	0.05 ± 0.14
1,3-Butadiene	0.07 ± 0.18	0.11 ± 0.46	0.03 ± 0.05
1-Hexene	0.02 ± 0.04	0.02 ± 0.05	0.01 ± 0.01
1-Pentene	0.01 ± 0.02	0.02 ± 0.04	0.01 ± 0.01
Styrene (Aromatic)	0.59 ± 1.72	0.30 ± 0.69	0.10 ± 0.16
m,p-Xylene	0.12 ± 0.22	0.28 ± 0.50	0.06 ± 0.12
Toluene	0.05 ± 0.09	0.07 ± 0.12	0.01 ± 0.03
1,3,5-Trimethylbenzene	0.04 ± 0.14	0.08 ± 0.26	0.01 ± 0.03
o-Xylene	0.04 ± 0.07	0.08 ± 0.15	0.02 ± 0.04
1,2,4-Trimethylbenzene	0.03 ± 0.07	0.04 ± 0.08	0.01 ± 0.02
Ethylbenzene	0.02 ± 0.04	0.04 ± 0.07	0.01 ± 0.02
1,2,3-Trimethylbenzene	0.01 ± 0.03	0.02 ± 0.04	0.00 ± 0.01
m-Ethyltoluene	0.01 ± 0.01	0.01 ± 0.02	0.00 ± 0.01
Benzene	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.01
p-Ethyltoluene	0.00 ± 0.00	0.00 ± 0.01	0.00 ± 0.00
o-Ethyltoluene	0.00 ± 0.00	0.00 ± 0.01	0.00 ± 0.00
m-Diethylbenzene	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00
p-Diethylbenzene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
n-Propylbenzene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Isopropylbenzene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
n-Dodecane (Alkane)	0.11 ± 0.40	0.01 ± 0.03	0.00 ± 0.01
Isopentane	0.03 ± 0.06	0.05 ± 0.07	0.01 ± 0.04

Species	Δ[VOCs]		
	Deyang	Chengdu	Meishan
Propane	0.03 ± 0.05	0.03 ± 0.05	0.01 ± 0.02
n-Butane	0.03 ± 0.05	0.03 ± 0.05	0.01 ± 0.02
n-Hexane	0.02 ± 0.03	0.01 ± 0.03	0.00 ± 0.01
n-Pentane	0.02 ± 0.03	0.02 ± 0.03	0.01 ± 0.06
Isobutane	0.02 ± 0.03	0.02 ± 0.02	0.01 ± 0.01
Methylcyclohexane	0.01 ± 0.03	0.01 ± 0.02	0.00 ± 0.00
n-Undecane	0.01 ± 0.03	0.00 ± 0.01	0.00 ± 0.00
Ethane	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.01
2-Methylpentane	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.01
3-Methylpentane	0.01 ± 0.02	0.01 ± 0.02	0.00 ± 0.01
n-Octane	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.00
n-Heptane	0.01 ± 0.01	0.01 ± 0.02	0.00 ± 0.00
Methylcyclopentane	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.00
2-Methylhexane	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.00
3-Methylhexane	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.00
n-Decane	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.00
n-Nonane	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.00
Cyclohexane	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.00
2,3-Dimethylbutane	0.00 ± 0.00	0.00 ± 0.01	0.00 ± 0.00
2-Methylheptane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
3-Methylheptane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
2,3-Dimethylpentane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
2,2,4-Trimethylpentane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
2,3,4-Trimethylpentane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
2,4-Dimethylpentane	0.00 ± 0.00	0.01 ± 0.02	0.00 ± 0.00
2,2-Dimethylbutane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Cyclopentane	0.00 ± 0.00	0.01 ± 0.01	0.00 ± 0.00
n-Hexanal (OVOCs)	0.04 ± 0.57	-0.04 ± 0.17	-0.01 ± 0.05
Methyl tert-butyl ether	0.01 ± 0.02	0.00 ± 0.01	0.00 ± 0.01
Methacrolein	0.00 ± 0.00	-0.03 ± 0.06	-0.02 ± 0.13
3-Pentanone	-0.01 ± 0.03	0.00 ± 0.00	0.00 ± 0.00

Species	Δ[VOCs]		
	Deyang	Chengdu	Meishan
Acrolein	-0.01 ± 0.03	-0.00 ± 0.02	-0.00 ± 0.02
2-Pentanone	-0.01 ± 0.09	-0.00 ± 0.01	-0.00 ± 0.01
n-Pentanal	-0.01 ± 0.06	-0.01 ± 0.03	-0.00 ± 0.02
n-Butanal	-0.03 ± 0.06	-0.01 ± 0.02	-0.01 ± 0.02
Propanal	-0.05 ± 0.11	-0.02 ± 0.05	-0.02 ± 0.06
Methyl ethyl ketone	-0.06 ± 0.22	-0.05 ± 0.17	-0.06 ± 0.14
Methyl vinyl ketone	-0.12 ± 0.19	-0.05 ± 0.14	-0.18 ± 0.44
Acetaldehyde	-0.42 ± 0.91	-0.58 ± 3.49	-0.28 ± 1.44
Acetone	-0.54 ± 3.63	-0.36 ± 0.92	-0.50 ± 1.13
Acetylene	0.02 ± 0.04	0.02 ± 0.03	0.01 ± 0.01
Vinyl chloride (Halocarbon)	0.00 ± 0.02	0.00 ± 0.01	0.00 ± 0.00
cis-1,3-Dichloropropene	0.00 ± 0.04	0.00 ± 0.00	0.00 ± 0.00
Dichloromethane	0.00 ± 0.01	0.00 ± 0.01	0.00 ± 0.00
1,2-Dichloroethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,2-Dichloropropane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
trans-1,3-Dichloropropene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Trichloroethylene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,1-Dichloroethene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Chloromethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,1-Dichloroethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Chloroethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Chloroform	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Chlorobenzene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Tetrachloroethylene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,1,2-Trichloroethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,2-Dibromoethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Bromomethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,1,1-Trichloroethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
CFC-114	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
cis-1,2-Dichloroethene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
CFC-11	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00

Species	Δ[VOCs]		
	Deyang	Chengdu	Meishan
Bromodichloromethane	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,4-Dichlorobenzene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Benzyl chloride	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,2-Dichlorobenzene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
1,3-Dichlorobenzene	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Carbon tetrachloride	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
CFC-113	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00
Acetonitrile	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00

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