

Supplementary Information

Research progresses of VOCs emission investigation via surface and satellite observations in China

Table S1. The latest studies on the observation of VOCs in major cities in China

Observation Type	City	Observation region	Date	Number of species	Instrument
Online	Beijing ¹	Urban	2018.1-12	99	GC-MS/FID
Online	Tianjin ²	Urban	2018.11.1-2019.3.15	54	GC-FID/PID
Online	Nanjing ³	Urban	2016.1-12	56	GC-FID
Online	Shanghai ⁴	Urban	2017.12.5-2018.1.15	113	GC-MS/FID
Offline	Hangzhou ⁵	Urban	2018	107	GC-MS
Online	Chengdu ⁶	Urban	2018.6,2019.1	90	GC-MS/FID
Online	Xi'an ⁷	Urban	2019.6.20-7.20	106	GC-MS/FID
Offline	Wuhan ⁸	Urban	2016.7-2017.6	101	GC-MS/FID
Online	Guangzhou ⁹	Urban	2020.8.17-9.7	55	GC-FID
Online	Hong Kong ¹⁰	Roadside (urban)	2013.1-2014.12	30	GC-PID

1. C. Li, Y. Liu, B. Cheng, Y. Zhang, X. Liu, Y. Qu, J. An, L. Kong, Y. Zhang, C. Zhang, Q. Tan and M. Feng, A comprehensive investigation on volatile organic compounds (VOCs) in 2018 in Beijing, China: Characteristics, sources and behaviours in response to O₃ formation, *Sci Total Environ*, 2022, **806**, 150247.
2. Y. Gu, B. Liu, Y. Li, Y. Zhang, X. Bi, J. Wu, C. Song, Q. Dai, Y. Han, G. Ren and Y. Feng, Multi-scale volatile organic compound (VOC) source apportionment in Tianjin, China, using a receptor model coupled with 1-hr resolution data, *Environ Pollut*, 2020, **265**, 115023.
3. Q. Zhao, J. Bi, Q. Liu, Z. Ling, G. Shen, F. Chen, Y. Qiao, C. Li and Z. Ma, Sources of volatile organic compounds and policy implications for regional ozone pollution control in an urban location of Nanjing, East China, *Atmospheric Chemistry and Physics*, 2020, **20**, 3905-3919.
4. Y. Liu, H. Wang, S. Jing, Y. Peng, Y. Gao, R. Yan, Q. Wang, S. Lou, T. Cheng and C. Huang, Strong regional transport of volatile organic compounds (VOCs) during wintertime in Shanghai megacity of China, *Atmospheric Environment*, 2021, **244**, 117940.
5. L. Han, L. Chen, K. Li, Z. Bao, Y. Zhao, X. Zhang, M. Azzi and K. Cen, Source Apportionment of Volatile Organic Compounds (VOCs) during Ozone Polluted Days in Hangzhou, China, *Atmosphere*, 2019, **10**, 780.
6. C. Xiong, N. Wang, L. Zhou, F. Yang, Y. Qiu, J. Chen, L. Han and J. Li, Component characteristics and source apportionment of volatile organic compounds during summer and winter in downtown Chengdu, southwest China, *Atmospheric Environment*, 2021, **258**.
7. M. Song, X. Li, S. Yang, X. Yu, S. Zhou, Y. Yang, S. Chen, H. Dong, K. Liao, Q. Chen, K. Lu, N. Zhang, J. Cao, L. Zeng and Y. Zhang, Spatiotemporal variation, sources, and secondary transformation potential of volatile organic compounds in Xi'an, China, *Atmospheric Chemistry and Physics*, 2021, **21**, 4939-4958.
8. L. Shen, Z. Wang, H. Cheng, S. Liang, P. Xiang, K. Hu, T. Yin and J. Yu, A Spatial-Temporal Resolved Validation of Source Apportionment by Measurements of Ambient VOCs in Central China, *Int J Environ Res Public Health*, 2020, **17**.
9. W. Yang, Q. Yu, C. Pei, C. Liao, J. Liu, J. Zhang, Y. Zhang, X. Qiu, T. Zhang, Y. Zhang and X. Wang, Characteristics of Volatile Organic Compounds in the Pearl River Delta Region, China: Chemical Reactivity, Source, and Emission Regions, *Atmosphere*, 2021, **13**.
10. Z. Li, K.-F. Ho and S. H. L. Yim, Source apportionment of hourly-resolved ambient volatile organic compounds: Influence of temporal resolution, *Science of The Total Environment*, 2020, **725**, 138243.