

Dasa Gu

Division of Environment and Sustainability, Hong Kong University of Science and Technology
+852-23588789 · dasagu@ust.hk · <http://dasagu.people.ust.hk>

EDUCATION

- Ph.D., Earth and Atmospheric Sciences, Georgia Institute of Technology, 2014
- M.S., Earth and Atmospheric Sciences, Georgia Institute of Technology, 2010
- M.S., Environmental Science, Peking University, 2007
- B.S., Chemistry, Nanjing University, 2004

PROFESIONAL EXPERIENCE

- **Hong Kong University of Science and Technology**
Assistant Professor, Division of Environment and Sustainability 2019/03~present
Associate Director, Environmental Central Facility 2024/05~present
- **University of California, Irvine**
Assistant Project Scientist, Department of Earth System Science 2018/05~2019/02
Postdoctoral Scholar, Department of Earth System Science 2015/09~2017/04
- **Pacific Northwest National Laboratory**
Post Doctorate Research Associate 2014/05~2015/09 & 2017/04~2018/04

PEER-REVIEWED PUBLICATIONS

[Roles: * Corresponding Author, ^ Students under my supervision]

1. Zhang, W.^{^*}, Weber, J., Archibald, A. T.^{*}, Abraham N. K., Booge, D., Yang, M., and **Gu, D.***: Global Atmospheric Composition Effects from Marine Isoprene Emissions, *Environmental Science & Technology*, <https://doi.org/10.1021/acs.est.4c10657>, 2025.
2. Cao, X.[^], **Gu, D.***, Sun, H.[^], Leung, K. F., Mai, Y.[^], Li, X.[^], Chan, W. M.[^], Mak, S. K.[^], Liang, Z.[^], Zhang, W.[^], Zhang, Y., Huang, S., Yuan, B., Shao, M., Yu, J., and Lau, A. K. H.: Intra-urban Comparison of Hazardous VOCs in Hong Kong: Source Apportionment and Integrated Risk Assessment, *Sustainable Cities and Society*, <https://doi.org/10.1016/j.scs.2025.106148>, 2025.
3. Mai, Y.[^], Cheung, V., Louie, P. K. K., Leung, K., Fung, J. C. H., Lau, A. K. H., Blake, D. R., and **Gu, D.***: Characterization and source apportionment of volatile organic compounds in Hong Kong: A 5-year study for three different archetypical sites, *Journal of Environmental Sciences*, <https://doi.org/10.1016/j.jes.2024.03.003>, 2025.
4. Li, X. B., Yuan, B.^{*}, Huangfu, Y., Yang, S., Song, X., Qi, J., He, X., Wang, S., Chen, Y., Yang, Q., Song, Y., Peng, Y., Tang, G., Gao, J., **Gu, D.**, and Shao, M.: Vertical changes in volatile organic compounds (VOCs) and impacts on photochemical ozone formation, *Atmospheric Chemistry and Physics*, 25, 2459–2472, <https://doi.org/10.5194/acp-25-2459-2025>, 2025.
5. Yang, J., Wang, C., Zhang, Y.^{*}, Zhang, S., Peng, X., Qin, X., Bai, J., Xue, L., Wang, G., Cui, S., Tao, W., Du, J., **Gu, D.**, and Su, X.: Unprecedented impacts of meteorological and photolysis rates on ozone pollution in a coastal megacity of northern China, *Atmospheric Pollution Research*, <https://doi.org/10.1016/j.apr.2025.102461>, 2025.

6. Xu, Y., Zheng, P., Feng, X., Sun, H.[^], Sun, M., Hui, L., Chen, Y., Chen, Y., **Gu, D.**, Ning, Z., Yu, J., and Wang, Z.*: Characterizing Sources and Health Risks of Airborne Carbonyl Compounds in a Subtropical Coastal Atmosphere in South China, *Environmental Pollution*, <https://doi.org/10.1016/j.envpol.2025.125776>, 2025.
7. Sui, H., Zhang, H., Zhang, Y.*, Tao, W., Peng, X., Ge, X., Zhang, S., Wang, M., Qin, X., Du, M., Du, J., and **Gu, D.**: Characterization and Sources of Volatile Organic Compounds in a Provincial Capital City of Northern China in 2019-2024: Impact of Public Events, *Atmospheric Environment*, <https://doi.org/10.1016/j.atmosenv.2024.121000>, 2025.
8. Wang, C., Qin, X., Zhang, Y.*, Liu, D., Tao, W., Wang, M., Zhang, S., Yang, J., Du, J., Cui, S., **Gu, D.**, Sun, Y., and Lv, C.: Machine Learning Integrated PMF Model Reveals Influencing Factors of Ozone Pollution in a Coal Chemical Industry City at the Jiangsu-Shandong-Henan-Anhui Boundary, *Atmospheric Environment*, <https://doi.org/10.1016/j.atmosenv.2024.120916>, 2025.
9. Liang, Z.[^], **Gu, D.***, Zhang, M., Yang, N., Zhao, C., Li, R., Wang, Q., Ye, Y., Liu, J., Li, X.[^], Liu, R., Zhang, Y., and Cao, X.[^]: Diurnal carbon monoxide retrieval from FY-4B/GIIRS using a novel machine learning method, *Journal of Remote Sensing*, <https://doi.org/10.34133/remotesensing.0289>, 2024.
10. Sun, H.[^], **Gu, D.***, Xu, Z.[^], Feng, X., Cao, X.[^], Mai, Y.[^], Li, X.[^], Lee, H. W.[^], Leung, K. F., Tse, T. C.[^], Chan, W. M.[^], and Mak, S. K.[^]: Seasonal Variation and Origins of C1–C5 Alkyl Nitrates: A Year-long Study at a Hong Kong Coastal Site, *Atmospheric Environment*, <https://doi.org/10.1016/j.atmosenv.2024.120824>, 2024.
11. Zhang, H., Sui, H., Wang Z., Zhang, S., Du, M., Ge, X., Wang, M., Tao, W., Xu, H., **Gu, D.**, and Zhang, Y.*: Study on Characteristics and Sources of Volatile Organic Compounds in Urban Jinan, China, *China Environmental Science*, 44(9), <https://doi.org/10.19674/j.cnki.issn1000-6923.20240410.007>, 2024.
12. Seco, R.*, Nagalingam, S., Joo, E., **Gu, D.**, and Guenther, A.: The UCI Fluxtron: a versatile dynamic chamber and software system for biosphere–atmosphere exchange research, *Chemosphere*, <https://doi.org/10.1016/j.chemosphere.2024.143061>, 2024.
13. Wong, Y. K., Chan, W. W., **Gu, D.**, Yu, J. Z.*, and Lau, A. K. H.*: Tracking Source Variations of Inhalation Cancer Risks and Ozone Formation Potential in Hong Kong over Two Decades (2000–2020) Using Toxic Air Pollutant Monitoring Data, *Environment & Health*, <https://doi.org/10.1021/envhealth.3c00209>, 2024.
14. Sun, H.[^], **Gu, D.***, Feng, X., Wang, Z., Cao, X.[^], Sun, M., Ning, Z., Zheng, P., Mai, Y.[^], Xu, Z.[^], Chan, W. M.[^], Li, X.[^], Zhang, W.[^], Lee, H. W.[^], Leung, K. F., Yu, J. Z., Lee, E., Louie, P. K. K., and Leung, K.: Cruise observation of ambient volatile organic compounds over Hong Kong coastal water, *Atmospheric Environment*, 120387, <https://doi.org/10.1016/j.atmosenv.2024.120387>, 2024.
15. Li, X.[^], **Gu, D.***, Hohenberger, T., Fung, Y., Fung, J., Lau, A., and Liang, Z.[^]: Dynamic quantification of on-road emissions in Hong Kong: Impact from traffic congestion and fleet composition variation, *Atmospheric Environment*, 313, <https://doi.org/10.1016/j.atmosenv.2023.120059>, 2023.
16. Sun, Y., Mai, Y.[^], Gali, N. K., Brimblecombe, P., Louie, P., Tsang, Y., Ning, Z.*, and **Gu, D.***: The development and application of a novel helicopter-based airborne platform for near-surface monitoring and sampling of atmospheric pollutants, *Atmospheric Environment*, 313, <https://doi.org/10.1016/j.atmosenv.2023.120061>, 2023.

17. Ye, C., Liu, Y.*, Yuan, B.*, Wang, Z., Lin, Y., Hu, W., Chen, W., Li, T., Song, W., Wang, X., Lv, D., **Gu, D.**, and Shao, M.: Low-NO-like Oxidation Pathway Makes a Significant Contribution to Secondary Organic Aerosol in Polluted Urban Air, *Environmental Science & Technology*, <https://doi.org/10.1021/acs.est.3c01055>, 2023.
18. Feng, X., Guo, J. Wang, Z.*, **Gu, D.**, Ho, K.-F., Chen, Y., Liao, K., Cheung, V., Louie, P., Leung, K., Yu, J. Z., Fung, J., and Lau, A.: Investigation of the multi-year trend of surface ozone and ozone-precursor relationship in Hong Kong, *Atmospheric Environment*, <https://doi.org/10.1016/j.atmosenv.2023.120139>, 2023.
19. Wong, Y. K., Chan, W. W., **Gu, D.**, Wong, T. W., Chan, K. J. D., Yu, J. Z.*, and Lau, A. K. H.*: Characterization of toxic air pollutants in Hong Kong, China: Two-decadal trends and health risk assessments, *Atmospheric Environment*, <https://doi.org/10.1016/j.atmosenv.2023.120129>, 2023.
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21. Park, K.*, Rodriguez, B., Thomas, J., **Gu, D.**, Zhang, M., Sarkar, C., Guenther, A., and Kim, S.*: Potential Implications of the Sesquiterpene Presence over the Remote Marine Boundary Layer in the Arctic Region, *Atmosphere*, 14, <https://doi.org/10.3390/atmos14050823>, 2023.
22. Cao, X.^, **Gu, D.***, Li, X.^, Leung, K. F., Sun, H.^, Mai, Y.^, Chan, W. M.^, and Liang, Z.^: Characteristics and source origin analysis of halogenated hydrocarbons in Hong Kong, *Science of the Total Environment*, 862, <https://doi.org/10.1016/j.scitotenv.2022.160504>, 2023.
23. Zhang, W.^, and **Gu, D.***: Geostationary satellite reveals increasing marine isoprene emissions in the center of the equatorial Pacific Ocean, *npj Climate and Atmospheric Science*, 5, <https://doi.org/10.1038/s41612-022-00311-0>, 2022.
24. Han, Z., Zhang, Y.*, Zhang, H., Ge, X., **Gu, D.**, Liu, X., Bai, J., Ma, Z., Tan, Y., Zhu, F., Xia, S., Du, J., Tan, Y., Shu, X., Tang, J., and Sun, Y.: Impacts of Drought and Rehydration Cycles on Isoprene Emissions in Populus nigra Seedlings, *International Journal of Environmental Research and Public Health*, 19, <https://doi.org/10.3390/ijerph192114528>, 2022.
25. Wang, Q., Wang, S., Cheng, Y. Y., Chen, H., Zhang, Z., Li, J., **Gu, D.**, Wang, Z., and Yu, J. Z.*: Chemical evolution of secondary organic aerosol tracers during high-PM2.5 episodes at a suburban site in Hong Kong over 4 months of continuous measurement, *Atmospheric Chemistry and Physics*, 22, <https://doi.org/10.5194/acp-22-11239-2022>, 2022.
26. Zhang, Y., Hu, J., **Gu, D.**, Bo, H., Fu, Y., Wang, Y., and Li, R.*: Simulation of Isoprene Emission with Satellite Microwave Emissivity Difference Vegetation Index as Water Stress Factor in Southeastern China during 2008, *Remote Sensing*, <https://doi.org/10.3390/rs14071740>, 2022.
27. Wang, X., Zhang, Y.*, Tan, Y., Tan, Y., Bai, J., **Gu, D.**, Ma, Z., Du, J., and Han, Z.: Effects of light on the emissions of biogenic isoprene and monoterpenes: A review, *Atmospheric Pollution Research*, 13, <https://doi.org/10.1016/j.apr.2022.101397>, 2022.

28. Jeong, D., Seco, R., Emmons, L., Schwantes, R., Liu, Y., McKinney, K., Martin, S., Keutsch, F., **Gu, D.**, Guenther, A., Vega, O., Tota, J., Souza, R., Springston, S., Watson, T., and Kim, S.*: Reconciling Observed and Predicted Tropical Rainforest OH Concentrations, *Journal of Geophysical Research: Atmospheres*, 127, e2020JD032901, <https://doi.org/10.1029/2020JD032901>, 2022.
29. Zhang, M., Zhao, C.*, Yang, Y., Du, Q., Shen, Y., Lin, S., **Gu, D.**, Su, W., and Liu, C.: Modeling sensitivities of BVOCs to different versions of MEGAN emission schemes in WRF-Chem (v3.6) and its impacts over eastern China, *Geoscientific Model Development*, 14, 6155–6175, <https://doi.org/10.5194/gmd-14-6155-2021>, 2021.
30. Sanchez, D., Seco, R., **Gu, D.**, Guenther, A., Mak, J., Lee, Y., Kim, D., Ahn, J., Blake, D., Herndon, S., Jeong, D., T. Sullivan, J., McGee, T., Park, R., and Kim, S.*: Contributions to OH reactivity from unexplored volatile organic compounds measured by PTR-ToF-MS - A case study in a suburban forest of the Seoul metropolitan area during the Korea-United States Air Quality Study (KORUS-AQ) 2016, *Atmospheric Chemistry and Physics*, 21, <https://doi.org/10.5194/acp-21-6331-2021>, 2021.
31. Kim, S.*, Seco, R., **Gu, D.**, Sanchez, D., Jeong, D., Guenther, A. B., Lee, Y., Mak, J. E., Su, L., Kim, D. B., Lee, Y., Ahn, J.-Y., McGee, T., Sullivan, J., Long, R., Brune, W. H., Thames, A., Wisthaler, A., Müller, M., Mikoviny, T., Weinheimer, A., Yang, M., Woo, J.-H., Kim, S., and Park, H.: The role of a suburban forest in controlling vertical trace gas and OH reactivity distributions – a case study for the Seoul metropolitan area, *Faraday Discussions*, 226, 537–550, <https://doi.org/10.1039/D0FD00081G>, 2021.
32. Li, L.-Y.*, Guenther, A. B., **Gu, D.**, Seco, R., and Nagalingam, S.: Impact of short-term drought stress on volatile organic compounds emissions from *Pinus massoniana*, *China Environmental Science*, 40, <https://doi.org/10.19674/j.cnki.issn1000-6923.2020.0422>, 2020.
33. Jeong, D., Seco, R., **Gu, D.**, Lee, Y., Nault, B. A., Knote, C. J., McGee, T., Sullivan, J. T., Jimenez, J. L., Campuzano-Jost, P., Blake, D. R., Sanchez, D., Guenther, A. B., Tanner, D., Gregory Huey, L., Long, R., Anderson, B. E., Hall, S. R., Ullmann, K., Shin, H.-J., Herndon, S. C., Lee, Y., Kim, D., Ahn, J., and Kim, S.*: Integration of airborne and ground observations of nitryl chloride in the Seoul metropolitan area and the implications on regional oxidation capacity during KORUS-AQ 2016, *Atmospheric Chemistry and Physics*, 19, <https://doi.org/10.5194/acp-19-12779-2019>, 2019.
34. Batista, C. E., Ye, J.*, Ribeiro, I. O., Guimarães, P. C., Medeiros, A. S. S., Barbosa, R. G., Oliveira, R. L., Duvoisin, S., Jardine, K. J., **Gu, D.**, Guenther, A. B., McKinney, K. A., Martins, L. D., Souza, R. A. F.*, and Martin, S. T.*: Intermediate-scale horizontal isoprene concentrations in the near-canopy forest atmosphere and implications for emission heterogeneity, *Proceedings of the National Academy of Sciences*, 116, <https://doi.org/10.1073/pnas.1904154116>, 2019.
35. Li, L.-Y.*, Guenther, A. B., **Gu, D.**, Seco, R., and Nagalingam, S.: Biogenic emission profile of volatile organic compounds from poplar, sweetgum, and pine trees, *China Environmental Science*, 39, <https://doi.org/10.19674/j.cnki.issn1000-6923.2019.0577>, 2019.
36. McKinney, K. A.*, Wang, D., Ye, J., Fouchier, J.-B. D., Guimarães, P. C., Batista, C. E., Souza, R. A. F., Alves, E. G., **Gu, D.**, Guenther, A. B., and Martin, S. T.*: A sampler for atmospheric volatile organic compounds by copter unmanned aerial vehicles, *Atmospheric Measurement Techniques*, 12, <https://doi.org/10.5194/amt-12-3123-2019>, 2019.
37. Li, L.*, Guenther, A.*, Xie, S., **Gu, D.**, Seco, R., Nagalingam, S., and Yan, D.: Evaluation of semi-static enclosure technique for rapid surveys of biogenic volatile organic compounds (BVOCs) emission

measurements, *Atmospheric Environment*, 212, <https://doi.org/10.1016/j.atmosenv.2019.05.029>, 2019.

38. Shrivastava, M.*; Andreae, M. O., Artaxo, P., Barbosa, H. M. J., Berg, L. K., Brito, J., Ching, J., Easter, R. C., Fan, J., Fast, J. D., Feng, Z., Fuentes, J. D., Glasius, M., Goldstein, A. H., Alves, E. G., Gomes, H., **Gu, D.**, Guenther, A., Jathar, S. H., Kim, S., Liu, Y., Lou, S., Martin, S. T., McNeill, V. F., Medeiros, A., de Sá, S. S., Shilling, J. E., Springston, S. R., Souza, R. A. F., Thornton, J. A., Isaacman-VanWertz, G., Yee, L. D., Ynoue, R., Zaveri, R. A., Zelenyuk, A., and Zhao, C.: Urban pollution greatly enhances formation of natural aerosols over the Amazon rainforest, *Nature Communications*, 10, <https://doi.org/10.1038/s41467-019-08909-4>, 2019.

Before 2019

39. Santos, F.*; Longo, K., Guenther, A., Kim, S., **Gu, D.**, Oram, D., Forster, G., Lee, J., Hopkins, J., Brito, J., and Freitas, S.: Biomass burning emission disturbances of isoprene oxidation in a tropical forest, *Atmospheric Chemistry and Physics*, 18, <https://doi.org/10.5194/acp-18-12715-2018>, 2018.
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41. Chen, W. H., Guenther, A. B.*; Wang, X. M.*; Chen, Y. H., **Gu, D.**, Chang, M., Zhou, S. Z., Wu, L. L., and Zhang, Y. Q.: Regional to Global Biogenic Isoprene Emission Responses to Changes in Vegetation From 2000 to 2015, *Journal of Geophysical Research: Atmospheres*, 123, <https://doi.org/10.1002/2017JD027934>, 2018.
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43. Yu, H., Guenther, A.*; **Gu, D.**, Warneke, C., Geron, C., Goldstein, A., Graus, M., Karl, T., Kaser, L., Misztal, P., and Yuan, B.: Airborne measurements of isoprene and monoterpene emissions from southeastern U.S. forests, *Science of the Total Environment*, 595, <https://doi.org/10.1016/j.scitotenv.2017.03.262>, 2017.
44. **Gu, D.**, Wang, Y.*; Yin, R., Zhang, Y., and Smeltzer, C.: Inverse modelling of NO_x emissions over eastern China: Uncertainties due to chemical non-linearity, *Atmospheric Measurement Techniques*, 9, <https://doi.org/10.5194/amt-9-5193-2016>, 2016.
45. Zhao, C.*; Huang, M., Fast, J. D., Berg, L. K., Qian, Y., Guenther, A., **Gu, D.**, Shrivastava, M., Liu, Y., Walters, S., Pfister, G., Jin, J., Shilling, J. E., and Warneke, C.: Sensitivity of biogenic volatile organic compounds to land surface parameterizations and vegetation distributions in California, *Geoscientific Model Development*, 9, <https://doi.org/10.5194/gmd-9-1959-2016>, 2016.
46. Alves, E. G.*; Jardine, K., Tota, J., Jardine, A., Maria Yáñez-Serrano, A., Karl, T., Tavares, J., Nelson, B., **Gu, D.**, Stavrakou, T., Martin, S., Artaxo, P., Manzi, A., and Guenther, A.: Seasonality of isoprenoid

- emissions from a primary rainforest in central Amazonia, *Atmospheric Chemistry and Physics*, 16, <https://doi.org/10.5194/acp-16-3903-2016>, 2016.
47. Gu, D., Wang, Y.*, Smeltzer, C., and Boersma, K. F.: Anthropogenic emissions of NO_x over China: Reconciling the difference of inverse modeling results using GOME-2 and OMI measurements, *Journal of Geophysical Research: Atmospheres*, 119, <https://doi.org/10.1002/2014JD021644>, 2014.
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 50. Liu, Z., Wang, Y.*, Gu, D., Zhao, C., Huey, L. G., Stickel, R., Liao, J., Shao, M., Zhu, T., Zeng, L., Amoroso, A., Costabile, F., Chang, C.-C., and Liu, S.-C.: Summertime photochemistry during CAREBeijing-2007: RO_x budgets and O₃ formation, *Atmospheric Chemistry and Physics*, 12, <https://doi.org/10.5194/acp-12-7737-2012>, 2012.
 51. Shao, M.*, Huang, D., Gu, D., Lu, S., Chang, C., and Wang, J.: Estimate of anthropogenic halocarbon emission based on measured ratio relative to CO in the Pearl River Delta region, China, *Atmospheric Chemistry and Physics*, 11, <https://doi.org/10.5194/acp-11-5011-2011>, 2011.
 52. Gray, B. A., Wang, Y.*, Gu, D., Bandy, A., Mauldin, L., Clarke, A., Alexander, B., and Davis, D. D.: Sources, transport, and sinks of SO₂ over the equatorial Pacific during the Pacific Atmospheric Sulfur Experiment, *Journal of Atmospheric Chemistry*, 68, <https://doi.org/10.1007/s10874-010-9177-7>, 2011.
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 54. Gu, D., Lu, S., and Shao, M.*: Source apportionment of formaldehyde in urban atmosphere using primary and secondary tracers, *ACTA SCIENTIARUM NATURALIUM UNIVERSITATIS PEKINENSIS*, 44(2), 317-322, <https://doi.org/10.13209/j.0479-8023.2008.050>, 2008.
 55. Liu, Y., Zhang, Y., Wei, Y., Han, D., Gu, D., Zeng, L., and Shao, M.*: Measurement of emission factors of carbonaceous aerosols from residential coal combustion. *ACTA SCIENTIAE CIRCUMSTANTIAE*, 29(7), 1409-1416, <https://doi.org/10.13671/j.hjkxxb.2007.09.001>, 2007.

INVITED TALKS

- Observational Study of Volatile Organic Compounds in Hong Kong Ambient Air. Nanjing University, Nanjing, Aug. 2024.
- Distribution characteristics and impacts of volatile organic compounds in Hong Kong atmosphere. China National Environmental Monitoring Centre, online, Jul. 2024.
- Study Characteristics of Volatile Organic Compounds with Multiplatform Measurements in Hong Kong. Symposium on Carbon Monitoring in Space Era, Hong Kong, Oct. 2023.
- Airborne campaigns and HK/Macau VOC samples analysis collected in April and September 2021. Characterization of Photochemical Ozone Formation, Regional and Super-regional Transportation in the Greater Bay Area – The 1st Steering Committee Meeting, Hong Kong, Jan. 2022.

- Regional 3-D measurements and source quantification of volatile organic compounds. The 21st Guangdong-Hong Kong-Macao Greater Bay Area Air Quality Monitoring, Forecasting and Early Warning Technology Exchange Conference, Qingyuan, Jan. 2020.
- Quantification and assessment of air pollutant emissions. School of Earth and Space Sciences, University of Science and Technology of China, Hefei, April 2018.
- Exploring the role of little-known plant volatiles in air pollution. Symposium: Science and Societal Impacts of Air Quality and Climate Issues, AirUCI Institute, Irvine, April 2017.
- Towards understanding of anthropogenic NO_x and biogenic VOC emissions with top-down and bottom-up approaches. Department of Civil and Environmental Engineering, Washington State University, Pullman, Nov. 2014.

SELECTED PRESENTATIONS

- Diurnal Trace Gas Retrieval from Geostationary Satellite Measurements using a Novel Machine Learning Method. American Geophysical Union Annual Meeting, Washington D.C., Dec. 2024.
- Trace Gas Observations from Geostationary Satellites over East Asia and the Pacific Ocean. 2024 Annual Meeting of Atmospheric Environmental Remote Sensing Society, Hong Kong, Dec. 2024.
- Characteristics of Volatile Organic Compounds and Influences on Ozone Formation and Health. The 6th Atmospheric Ozone Pollution Prevention and Control Symposium, Qingdao, Apr. 2024.
- Study Characteristics of Greenhouse Gases with Multiplatform Measurements in Hong Kong Ambient Air. American Geophysical Union Annual Meeting, San Francisco, Dec. 2023.
- Using a helicopter platform to study VOC characteristics during ozone pollution in Hong Kong. The 29th China Atmospheric Environmental Science and Technology Conference, online, Dec. 2023.
- Study Characteristics of Volatile Organic Compounds with Multiplatform Measurements in Hong Kong. The 10th International Conference on Air Benefit and Cost and Attainment Assessment & Symposium on Atmospheric Haze Chemistry, Qingdao, Sep. 2023.
- Development of real-time traffic emissions inventories in Hong Kong using open access datasets. The 20th International Conference of the Global Emissions Initiative project, Brussels, Jun. 2023.
- Study of ambient halocarbons in Hong Kong: temporal variability and implication on source origins. EGU General Assembly 2023, Vienna, Apr. 2023.
- Three-dimensional monitoring and source quantification of volatile organic compounds in Hong Kong. American Geophysical Union Annual Meeting, Chicago, Dec. 2022.
- Characteristics and source origin analysis of halogenated hydrocarbons in Hong Kong. The 28th China Atmospheric Environmental Science and Technology Conference, online, Nov. 2022.
- Characterizing the breakdown of floral volatiles by ozone in a heavily polluted Los Angeles area. American Geophysical Union Annual Meeting, Washington, D.C., Dec. 2018.
- VOC metabolite emissions from the brachypodium/soil/microbe ecosystem. American Geophysical Union Annual Meeting, New Orleans, Dec. 2017.
- Improved tropical forest biogenic VOC emission factors based on GoAmazon2014/5 airborne observations. American Geophysical Union Annual Meeting, San Francisco, Dec. 2015.
- Biogenic VOC emissions estimated from GoAmazon airborne observations and implications for atmospheric chemistry over the tropical forest. GoAmazon2014/5 Science Conference, Harvard University, Boston, May 2015.

- Improved assimilated inversion of NO_x emissions using OMI and GOME-2 measurements over China. American Geophysical Union Annual Meeting, San Francisco, Dec. 2012.
- Modeling HO_x/O₃ chemistry in the tropical marine boundary during the Pacific Atmospheric Sulfur Experiment. American Geophysical Union Annual Meeting, San Francisco, Dec. 2008.

GRANTS AND CONTRACTS

External competitive grants

	Funding Body	Title	Period	Fund (HKD)	Role
1	Young Collaborative Research Grant/RGC (C6001-24Y)	Marine emissions of volatile organic compounds in the Greater Bay Area: interactions with air quality and climate change	2025/04 to 2028/03	\$3,642,750	PC
2	General Research Fund/RGC (16306224)	Observational study of short-lived halocarbons in a coastal suburban environment	2025/01 to 2027/12	\$910,742	PI
3	Environmental Conservation Fund (101-2023)	Study characteristics of volatile organic compounds in Hong Kong's indoor environments	2024/09 to 2026/08	\$498,000	PI
4	Environmental Conservation Fund (13-2022)	Ultra-compact drone-based VOC sampling system for vertical profile measurements	2023/10 to 2025/09	\$494,540	PI
5	Early Career Scheme/RGC (26304921)	Study of ambient halocarbons in Hong Kong: temporal variability and implication on source origins	2022/01 to 2024/12	\$721,303	PI
6	Environmental Conservation Fund (78-2019)	Evaluation of the impacts of volatile organic compounds in ambient air on ozone formation in Hong Kong	2020/05 to 2023/04	\$1,881,340	PI
7	Innovation and Technology Fund (ITS/193/20FP)	Volatile Organic Compounds Gold Standard Laboratory	2021/07 to 2023/06	\$14,999,999	Deputy Project Coordinator
8	Environmental Conservation Fund (11-2022)	Development and demonstration of threshold based smart VOC canister	2023/09 to 2025/08	\$495,000	Co-I

9	Guangdong Department of Science and Technology (2019B121205004)	sampling method for ozone episode monitoring and source identification Guangdong-Hongkong-Macau Joint Laboratory of Collaborative Innovation for Environmental Quality	2019/11 to 2022/11	\$941,290	Co-I
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TEACHING

Courses taught as instructor

Code	Course Title	Level
ENVR 2020	Urban Air Pollution	UG, Common Core
ENVR 2090	Environmental Laboratory	UG, Laboratory
ENVR 5390 (ENVR 6040L) ¹	Satellite Remote Sensing and Informatics	PG
SUST 1000	Sustainability Fundamentals (Introduction to Sustainability) ¹	UG, Common core

Note: 1. Code and title in () are previously used code/title for the same course.

Student supervision

▪ Research postgraduate students

Name	Degree	Program	Thesis Title	Graduate
Wentai ZHANG	PhD	Atmospheric Environmental Science	Study of Marine Isoprene Emissions and Atmospheric Impacts with Satellite Observations and Earth System Modeling	Aug 2024
Wai Ming CHAN	MPhil	Atmospheric Environmental Science	Study of CH ₄ , CO ₂ , and CO in Ambient Air at a Coastal Site in Hong Kong	Aug 2024
Sin Ka MAK	MPhil	Atmospheric Environmental Science	Study of Biogenic Volatile Organic Compounds at a Suburban Coastal Site in Hong Kong	Aug 2024
Xiangyunong CAO	MPhil	Atmospheric Environmental Science	Study on Characteristics and Source Origins of Halogenated Hydrocarbons in Hong Kong	Aug 2023
Hao SUN	MPhil	Atmospheric Environmental Science	Cruise observation of ambient volatile organic compounds over Hong Kong waters	Jan 2023
Yuchen MAI	MPhil	Atmospheric Environmental Science	Characterization and source apportionment of volatile organic compounds in Hong Kong: a 5 years study for three different	Jan 2023

Ho Wun LEE	MPhil	Atmospheric Environmental Science	archetypical sites Temporal and Spatial Variation of Volatile Organic Compounds in Rural Hong Kong and over Hong Kong Waters	Aug 2021
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▪ **Taught postgraduate students**

Name	Degree	Program	Thesis Title	Graduate
Chuanjun HUANG	MSc	Environmental Science and Management	A study of methane emission from landfill in China	May 2024
Run Jing ZHOU	MSc	Environmental Science and Management	Characterization of roadside volatile organic compounds at a suburban area in Hong Kong	May 2023
Hong ZHOU	MSc	Environmental Science and Management	Impacts of environmental factors on BVOC emissions	May 2021
Boyu XU	MSc	Environmental Science and Management	Application of satellite remote sensing in harmful algae blooms	Dec 2020
Mengyuan MA	MSc	Environmental Science and Management	Satellite Remote Sensing Data Analysis on Biogenic Volatile Organic Compounds Emissions under Different External Conditions	Dec 2020
Ho-Man KAM	MSc	Environmental Science and Management	A review of PM2.5 studies in Hong Kong	Jul 2020
Ziyang LIU	MSc	Environmental Science and Management	Review on remote sensing applications for urban planning	Jun 2020
Cheuk Pui LEUNG	MSc	Environmental Science and Management	Review of vehicular volatile organic compounds emission in Hong Kong	Jan 2020

▪ **Undergraduate students**

Name	Program	Thesis Title	Year
Lai LONG	UROP	NMVOC Emission Inventory with high spatial-temporal resolution in Hong Kong	2023
Ching Ying CHAN	UROP	Volatile Organic Compound measurement techniques in the HKUST Supersite	2022
Monique Zoe WAH	UROP	Retrieval of Chlorophyll-a Concentration from GEO- KOMPSAT-2A Satellite Data	2021

Yiyi WANG	UROP	Analysis and Interpretation of BTEXs concentrations and their correlation with ozone	2021
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SERVICE

University service

- Associate Director of Environmental Central Facility, HKUST
(2024~present)
- Chair of AIS Best Research Award Selection Committee, Academy of Interdisciplinary Studies, HKUST
(2024~present)
- Member of Taught Postgraduate Committee, Division of Environment and Sustainability, HKUST
(2024~present)
- Member of Research Postgraduate Committee, Division of Environment and Sustainability, HKUST
(2022~present)
- Member of Asian Future Leaders Scholarship Program, HKUST
(2019~2022)

Professional service

▪ Organizer of international conferences and workshops

Role	Event	Location	Year
Session Convener	American Geophysical Union Annual Meeting 2024 (AGU24)	Washington, D.C.	2024
Organizer	The 3rd China Academic Conference of Graduate Students in Atmospheric Environmental Chemistry	Guangzhou	2024
Secretariat	The 7th International Workshop on Regional Air Quality Management in Rapidly Developing Economic Regions and the 1st Greater Bay Area Climate Forum	Guangzhou	2024
Co-Chair	Young Scientist Workshop on photochemical air pollution in Hong Kong and Greater Bay Area	Hong Kong	2023

▪ Editorship

- Editorial board, Frontiers in Forests and Global Change (2018~)
- Editorial board, PLOS ONE (2019~)
- Editorial board, Frontiers in Earth Science (2022~)
- Editorial board, Journal of Atmospheric Science Research (2024~)

▪ International journal reviewer

- Aerosol and Air Quality Research
- Air Pollution Research
- Atmosphere
- Atmospheric Chemistry and Physics

- Atmospheric Environment
- Atmospheric Research
- Atmospheric and Oceanic Science Letters
- Asia-Pacific Journal of Atmospheric Sciences
- Chemosphere
- Climate
- Communications Earth & Environment
- Earth and Space Science
- Environmental Science & Technology
- Geophysical Research Letters
- Geoscientific Model Development
- Journal of Atmospheric Chemistry
- Journal of Geophysical Research: Atmospheres
- Journal of Metrological Research
- Nature Communications
- Science of the Total Environment
- Water