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Tianshu Chen

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Education

Shandong University	Ph.D. in Atmospheric Sciences Advisor: Prof. Likun Xue Co-advisor: Prof. Joost de Gouw	2015–2022	Qingdao, China

Employment

Postdoctoral Fellow (Supervisor: Prof. Tao Wang)	Department of Civil and Environmental Engineering, Hong Kong Polytechnic University	Dec. 2022– Present

Professional Experience

Visiting Scholar (Supervisor: Prof. Joost de Gouw)	Cooperative Institute for Research in Environmental Sciences, University of Colorado Boulder	Sep. 2019– Sep. 2020

List of Peer-Reviewed Publications [Google Schloar]

Publications = 45; citations = 1308; H-index = 21

In Preparation & Submitted

[#]*Co-First Authors*

10. **Chen, T.**, Xue, L., and Tao, W: Can we reach consensus on the dominant HONO formation pathway in China from a perspective of filed measurement, to be submitted soon.
9. Zou, Z.[#], **Chen, T.[#]**, Chen, Q., Sun, W., Han, S., Ren, Z., Li, X., Song, W., Ge, A., Wang, Q., Tian, X., Pei, C., Wang, X., Zhang, Y., and Tao, W.: Missing sinks of atmospheric OH and HO_2 radicals in a subtropical rural site and implications for secondary pollutants, to be submitted soon.
8. Liu, Y., **Chen, T.**, Li, Q., and Xue, L.: Variation of Biogenic VOC Contribution to Ozone Formation as Anthropogenic Precursor Emissions Reduction: A Study Based on Two Years of Online Observation and Future Scenario Predictions, to be submitted soon.
7. Li, H., Lv, X., **Chen, T.**, Huo, Y., Yao, D., Lu, H., Zhou, B., Xue, L., and Guo, H.: Hydroxyl dicarboxylic acids at a mountainous site in Hong Kong: formation mechanisms and implications for particle growth, to be submitted soon.

Published (First Author Only)

[#]*Co-First Authors*

6. **Chen, T.**, Wang, T., Xue, L., and Guy, B.: Heatwave exacerbates air pollution in China through intertwined climate–energy–environment interactions, *Science Bulletin*, https://doi.org/10.1016/j.scib.2024.05.018, 2024b. (IF=18.8)
5. **Chen, T.**, Gilman, J., Kim, S.-W., Lefer, B., Washenfelder, R., Young, C. J., Rappenglueck, B., Stevens, P. S., Veres, P. R., Xue, L., and de Gouw, J.: Modeling the Impacts of Volatile Chemical Product Emissions on Atmospheric Photochemistry and Ozone Formation in Los Angeles, *Journal of Geophysical Research: Atmospheres*, 129, e2024JD040743, https://doi.org/10.1029/2024JD040743,

2024a. (Since being published online in June 2024, it has had over 690 full-text views.)

4. **Chen, T.**, Huang, L., Zhang, X., Gao, R., Li, H., Fan, K., Ma, D., Ma, Z., Xue, L., and Wang, W.: Effects of coal chemical industry on atmospheric volatile organic compounds emission and ozone formation in a northwestern Chinese city, *Science of The Total Environment*, 839, 156149, https://doi.org/10.1016/j.scitotenv.2022.156149, 2022b. (Cited by 10)

3. **Chen, T.**, Zheng, P., Zhang, Y., Dong, C., Han, G., Li, H., Yang, X., Liu, Y., Sun, J., Li, H., Zhang, X., Li, Y., Wang, W., and Xue, L.: Characteristics and formation mechanisms of atmospheric carbonyls in an oilfield region of northern China, *Atmospheric Environment*, 274, 118958, https://doi.org/10.1016/j.atmosenv.2022.118958, 2022a. (Cited by 19)

2. Sun, L.[#], **Chen, T.**[#], Jiang, Y., Zhou, Y., Sheng, L., Lin, J., Li, J., Dong, C., Wang, C., Wang, X., Zhang, Q., Wang, W., and Xue, L.: Ship emission of nitrous acid (HONO) and its impacts on the marine atmospheric oxidation chemistry, *Science of The Total Environment*, 735, 139355, https://doi.org/10.1016/j.scitotenv.2020.139355, 2020b. (Cited by 27)

1. **Chen, T.**, Xue, L., Zheng, P., Zhang, Y., Liu, Y., Sun, J., Han, G., Li, H., Zhang, X., Li, Y., Li, H., Dong, C., Xu, F., Zhang, Q., and Wang, W.: Volatile organic compounds and ozone air pollution in an oil production region in northern China, *Atmospheric Chemistry and Physics*, 20, 7069–7086, https://doi.org/10.5194/acp-20-7069-2020, 2020a. (Cited by 68)

Peer Review Activities

Paper Reviewer: Atmospheric Chemistry and Physics, ACS ES&T Air, Journal of Geophysical Research: Atmospheres, Science of the Total Environment, Journal of Environmental Sciences, Journal of Hazardous Materials, Atmospheric Research, Atmospheric Environment, Air Quality, Atmosphere & Health, Heliyon.

Conference Presentations

7. **Chen, T.**, et al. Heatwave exacerbates air pollution in China through intertwined climate-energy-environment interactions. The 29th Atmospheric Environmental Science and Technology Conference. Online, 12 December 2023 (oral).

6. **Chen, T.** et al. Characteristics of atmospheric VOCs pollution in a typical coal chemical city and its effect on winter ozone. The 27th Atmospheric Environmental Science and Technology Conference. Online, 30 November 2021 (oral).

5. Gouw, de J., & **Chen, T.** Quantifying the contribution from volatile chemical product emissions to ozone formation in Los Angeles, California. AGU Fall Meeting. Online, 16 December 2020 (oral).

4. **Chen, T.** et al. VOC emissions and photochemical pollution in an open oil field in Northern China. AGU Fall Meeting. Online, 11 December 2020 (poster).

3. **Chen, T.** et al. Photochemical air pollution in the Yellow River Delta region: impacts from the oil industry and biomass burning. AGU Fall Meeting. San Francisco, US, 9−13 December 2019 (poster).

2. **Chen, T.** et al. Vertical distribution of non-methane hydrocarbons and halogenated hydrocarbons in Northeast China in the summer of 2018. The 11th National Conference on Environmental Chemistry. Tianjin, China, 17 August 2019 (oral).

1. **Chen, T.** et al. Airborne measurement of air pollution in Northeast China in summer 2018. The 24th Atmospheric Environmental Science and Technology Conference. Qingdao, China, 3 November 2018 (oral).

Ph.D. Thesis

Chen, T. Impacts of volatile organic compound emissions from energy extraction and utilization processes on atmospheric photochemistry.

Technical Skills

Programming languages and skills: R, Python, Matlab, Machine Learning.

Modeling experience: Chemical box model (observation-based and emission-based), GEOS-Chem.

Field campaign experience: Conducted extensive experiments across various environments, including urban settings (Jinan), aerial surveys (Northeastern China), high mountain station (Mt. Tai), oceanic areas via ship-based cruises (East China Sea), island environments (Bohai Sea), and oilfield (Shengli Oilfield).

Software Asset

FOQAT: An R package to process and analyze air quality and field observation data. (Listed on CRAN with over 17,000 downloads as of August 2024, from users across universities, research institutions, and environmental protection departments.)

Github: https://github.com/tianshu129/foqat with DOI: 10.5281/zenodo.8394215

Professional Association

Member of the Ozone Pollution Control Professional Committee of the Chinese Society of Environmental Sciences, 2024–Present

Awards and Honors

- Science and Technology Award (2nd class) for research "Development of explicit atmospheric chemical box model and its applications in secondary air pollution control", Ministry of Ecology and Environment of China, 2022
- China Scholarship Council (CSC) Scholarship, China Scholarship Council, 2019
- Excellent Report Award, The 24th Atmospheric Environmental Science and Technology Conference, 2018