Xin Zhang

Department of Atmospheric Physics
Nanjing University of Information Science & Technology (NUIST)
Nanjing, Jiangsu, 210044, China

(+86) 15895938361 | xinzhang1215@gmail.com | December 15th, 1995 |
dreambooker.site | zxdawn

EDUCATION

Nanjing University of Information Science & Technology (NUIST) 2017 - present

M.S. & Ph.D. in Atmospheric Physics & Environment Advisor: Yan Yin

- Dissertation: "The Impacts of Convective Transport and Lightning on the Vertical Distribution of Trace Gases"

Royal Netherlands Meteorological Institute (KNMI) 2021 - 2022

Joint Ph.D. in Satellite Observations Advisor: Ronald van der A

- Field of study: "Emission Estimates from Satellite Data"

Nanjing University of Information Science & Technology (NUIST) 2013 - 2017

B.S. in Environmental Science Advisor: Yan Yin

- Dissertation: "The Impacts of Deep Convection on the Vertical Distribution of Ozone"

RESEARCH EXPERIENCE

NUIST 2017 - present

Graduate Researcher

- Developing the OMI lightning NO_x retrieval algorithm based on a high-resolution chemical model (WRF-Chem).
- Diagnosing the upper tropospheric O_3 and NO_x budgets through a combination of field campaigns, satellite data, and models.
- Analyzing the relationship between lightning activity and cloud top height using geostationary satellite observations (GOES-16 ABI & GLM).

KNMI 2021 - 2022

Intern

- Estimating the lifetime and emissions of lightning NO_2 using satellite observations (TROPOMI, VIIRS) and ground lightning datasets.

NUIST 2016 - 2017

Undergraduate Researcher

- Evaluating the effects of deep convection on O_3 profiles using satellite observations (MLS, FY-2).

HONORS & AWARDS

2021 **Open Science Award**, EO Dashboard Hackathon *ESA, JAXA, NASA*

2021 **National Scholarship for Studying Abroad**, China Scholarship Council *CSC, China*

2020 **Certificate**, the International AI Training Program for Chinese Universities *NCEPU, China*

2018 **Scholarship of the Postgraduate Research & Practice Innovation Program**, Grant no. KYCX20_0922 *Jiangsu, China*

2017 **Merit-based Scholarship**, University *NUIST, China*

PRESENTATIONS

2022 Spaceborne observations of lightning NO_2 in the Arctic, *CTR Wilson Meeting for Atmospheric Electricity*, online, Nov 2022. (oral)

2022 Processing EO satellite data with Pytroll, *Lunch Talk*, KNMI, De Bilt, the Netherlands, July 2022. (invited oral)

2022 Arctic lightning and anthropogenic NO_x emissions estimated from TROPOMI observations, *EGU General Assembly 2022*, Vienna, Austria, May 2022. (oral)

2021 Python for meteorology, *Atmospheric Physics & Environment Workshop*, NUIST, Nanjing, China, October 2021. (invited oral)

2021 Influence of convection on the upper-tropospheric O_3 and NO_x budget in southeastern China, *Aerosols, Clouds, Precipitation and Climate (ACPC) Workshop*, online, May 2021. (oral)

2020 Estimates of lightning NO_x production based on high-resolution OMI NO_2 retrievals over the continental United States, *100th American Meteorological Society Annual Meeting*, Boston, MA., USA, January 2020. (oral)

2019 Estimates of lightning NO_x production based on high-resolution OMI NO_2 retrievals over the continental United States, *EGU General Assembly 2019*, Vienna, Austria, April 2019. (poster)

Extracurricular Activity

Pytroll (Python framework for processing earth observation satellite data) GitHub

Maintainer 2018 – present

- Contributed several data readers (FY-4A, TROPOMI, ENTLN, etc.).
- Applied Pytroll to a hacking competition (EO Dashboard) and won the open science award.

HPC (School of Atmospheric Physics, NUIST) NUIST

Administrator 2017 – 2021

- Installed and fixed libraries/models for teachers and students.
- Set up a website for teaching and collecting user applications automatically (`https://hpc-nuist-ap.github.io/`).

SKILLS

Journal Reviewer	Environmental Research Letters, Remote Sensing
Programming	Python, Fortran, MATLAB, C, LaTeX
Models	WRF-Chem, CMAQ, HYSPLIT
Writing	Personal blog for academic notes and poetry
Front-end	Hugo, HTML5
Languages	Chinese, English

PUBLICATIONS

2022 **Zhang, X.**, van der A, R., Ding, J., Eskes, H., van Geffen, J., Yin, Y., Anema, J., Vagasky, C., Lapierre, J.L., Kuang, X. (2022). *Spaceborne observations of lightning NO_2 in the Arctic*, Environmental Science & Technology. in review.

2022 **Zhang, X.**, Yin, Y., van der A, R., Eskes, H., van Geffen, J., Li, Y., Kuang, X., Lapierre, J.L., Chen, K., Zhen, Z., Hu, J. (2022). *Influence of convection on the upper-tropospheric O_3 and NO_x budget in southeastern China*. Atmospheric Chemistry and Physics, 22(9), 5925-5942, doi: 10.5194/acp-22-5925-2022.

2021 **Zhang, X.**, Yin, Y., Kukulies, J., Li, Y., Kuang, X., He, C., Lapierre, J.L., Jiang, D., Chen, J. (2022). *Revisiting Lightning Activity and Parameterization Using Geostationary Satellite Observations*. Remote Sensing, 13(19), 3866, doi: 10.3390/rs13193866.

2021 Zhen, Z., Yin, Y., Chen, K., Zhen, X., **Zhang, X.**, Jiang, H., Wang, H., Kuang, X., Cui, Y., Dai, M., He, C. (2021). *Concentration and atmospheric transport of PM2. 5-bound polycyclic aromatic hydrocarbons at Mount Tai, China*. Science of The Total Environment, 786, 147513, doi: 10.1016/j.scitotenv.2021.147513.

2020 **Zhang, X.**, Yin, Y., van der A, R., Lapierre, J.L., Chen, Q., Kuang, X., Yan, S., Chen, J., He, C., Shi, R. (2020). *Estimates of lightning NO_x production based on high-resolution OMI NO_2 retrievals over the continental US*. Atmospheric Measurement Techniques, 13(4), 1709-1734, doi: 10.5194/amt-13-1709-2020.

2020 Cui, Y., Yin, Y., Chen, K., **Zhang, X.**, Kuang, X., Jiang, H., Wang, H., Zhen, Z., He, C. (2020). *Characteristics and sources of WSI in North China Plain: A simultaneous measurement at the summit and foot of Mount Tai*. Journal of Environmental Sciences, 92, 264-267, doi: 10.5194/amt-13-1709-2020.

2019 Zhen, Z., Yin, Y., Chen, K., **Zhang, X.**, Kuang, X., Jiang, H., Wang, H., Cui, Y., He, C., Ezekiel, A.O. (2019). *Phthalate esters in atmospheric PM2.5 at Mount Tai, north China plain: Concentrations and sources in the background and urban area*. Atmospheric Environment, 213, 505-514., doi: 10.1016/j.jes.2020.02.017.

2016 **Zhang, X.**, Wang, Z., Wang, S., Fang, H., Zhang, F., Wang, D.G. (2017). *Impacts of dissolved organic matter on aqueous behavior of nano/micron-titanium nitride and their induced enzymatic/non-enzymatic antioxidant activities in Scenedesmus obliquus*. Journal of Environmental Science and Health, Part A, 52(1), 23-29, doi: 10.1080/10934529.2016.1221219.