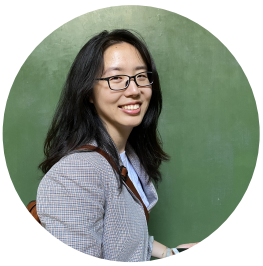

Zhuyun Ye

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Profession

Assistant Professor | ***Atmospheric Modelling*** — Mar. 2022 – present
Atmospheric Environment Section, Department of Environmental Science, Aarhus University — Roskilde, Denmark

Education

PhD | ***Chemistry*** — Aug. 2011 – Aug. 2018
State University of New York (SUNY) College of Envornmental Science and Forestry — Syracuse, NY, USA

Master | ***Computer Science*** — Sep. 2020 – present
Georgia Institute of Technology — Atlanta, GA, USA

Bachelor | ***Environmental Engineering*** — Aug. 2007 – Jun. 2011
Tsinghua University — Beijing, China

Research Interests

- Research and development of regional atmospheric chemical transport modelling systems and applications on air pollution studies.
- Understanding the physical and chemical processes in the atmosphere and their impacts.
- Interactions research studies of climate, air pollution, and human activities.

Current Research Projects

EU CAMEO, AU partner PI — Jan. 2023 – Dec. 2025
Data assimilation with satellite observations for SO_2, CO, O_3, and $HCHO$

EU CAMS2_40, participant — Nov. 2021 – Oct. 2025
Operational European air quality modeling

EU CAMS2_72DK, participant — Jan. 2023 – Dec. 2024
Usage and communication of the CAMS data

Nordic Council of Ministers (NMR) Nitrogen and Nature, participant — Jan. 2022 – Dec. 2024
Improving nitrogen deposition modeling in Nordic countries

EU Exhaustion Horizon 2020, participant — Jun. 2019 – May. 2023
European heat waves and air quality under future scenarios

NMR WHO Advisory, participant — Jun. 2022 – Jun. 2023
Air quality and health impacts in the Nordic countries

iClimate Halogen, PI — Jun. 2022 – Dec. 2022
Develop a halogen network model to study atmospheric halogen chemistry

Work Experience

Assistant Professor March 2022 – Present

Department of Environmental Science, Aarhus University Roskilde, Denmark

- Data assimilation in regional air quality model using satellite data.
- Past and future air pollution under different emission scenarios.
- Grant applications and project management
- Teaching activities
- Participating in advisory project.

Postdoctoral Researcher Fellow April 2019 – February 2022

Department of Environmental Science, Aarhus University Roskilde, Denmark

- Implemented 3D-var data assimilation scheme to the CAMS50 operational version of the DEHM model to improve the DEHM simulations on six primary air pollutants ($O_3, NO_2, SO_2, CO, PM_{2.5}$, and PM_{10})
- Evaluated near-past and future climate downscaling experiments using the Weather Research and Forecasting (WRF) model and investigated the magnitude and intensity of European heat waves and heat stress indices
- Participated in the maintenance of CAMS50 operations and prepare of the CAMS50 quarterly reports and the EXHAUSTION reports
- Wrote peer-reviewed journal articles

Ph.D. Student, Research Assistant, Teaching Assistant August 2011 – May 2018

SUNY College of Environmental Sciences and Forestry Syracuse, NY, USA

- Developed a Kinetic PreProcessor (KPP) chemical box model with state-of-the-art mercury (Hg) and halogen chemical mechanism and evaluated in different environments
- Modified algorithms in Models-3 Community Multiscale Air Quality (CMAQ) modeling system with the updated Hg chemical mechanism to improve simulations of atmospheric Hg
- Analyzed observational data and model output to investigate the role of emissions vs meteorology in observed and simulated Hg deposition
- Managed the progress of NYSERDA project and the XSEDE project, and prepared all the progress reports
- Wrote and published four first-author papers and coauthored three papers in high impact journals
- Taught *General Chemistry Lecture* I and II and *General Chemistry Lab* I and II

Research Assistant November 2008 – May 2011

Tsinghua University Beijing, China

- Developed a comprehensive emission inventory of primary air pollutants in Beijing and estimated air quality improvements under different emission control policies using CMAQ
- Wrote report for Chinese Research Academy of Environmental Sciences

Teaching Activities and Experience

Effects of Pollutants on Climate and Health in the Arctic Spring 2023

Aarhus University Nuuk, Greenland

- Introduce the physical and chemcial properties of major groups of atmospheric aerosols in the Arctic.
- Describe the impact of aerosols on climate and health.
- Hands on exercises in modelling atmospheric aerosols in the Arctic

Python programming Course January 2024

Department of Environmental Science, Aarhus University Roskilde, DK

- Introduce the setup and basics of python language
- Exercises on python programming in atmospheric science

General Chemistry I and II (2 semesters Teaching Assistant) 2017 – 2018

State University of New York College of Environmental Science and Forestry Syracuse, NY, USA

- Taught and Communicated complex chemistry concepts to undergraduates
- Graded quizs, exams, and homeworks
- Designed and led workshops

General Chemistry Laboratory I and II (6 semesters Teaching Assistant) 2011 – 2016

State University of New York College of Environmental Science and Forestry Syracuse, NY, USA

- Lectured on lab experiments and conducted lab demos
- Supervised chemistry laboratories
- Graded exams and lab reports