

Yuwen Fan (Wendy)

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EDUCATION

- Ph.D. in Hong Kong University of Science and Technology (4.3 / 4.3)** **2022-2025**
Doctor of philosophy in Atmospheric Environmental Science
Main Courses: Remote Sensing (expected)
- M.Phil in Hong Kong University of Science and Technology (4.15 / 4.3)** **2020-2022**
Master of philosophy in Atmospheric Environmental Science
Main Courses: Atmospheric Dynamics, Environmental Data Analysis
- B.Sc. in Hong Kong University of Science and Technology (3.62 / 4.3 First Class)** **2016-2020**
Bachelor in Computer Science (Double major)
Main Courses: Machine Learning, Java Programming, Software Engineering, Database
Bachelor in Environmental Management and Technology (Double major)
Main Courses: Ecology, GIS, Environmental Technology, Environmental Science

PUBLICATIONS

- Fan, Y.***, Yang Z., Lo, M.-H., Hur, J. & Im, E.-S.* (2024). Applying double-cropping and interactive irrigation in the North China Plain using WRF4.5. *Geoscientific Model Development*. <https://doi.org/10.5194/gmd-17-6929-2024>
- Fan, Y.**, Im, E.-S.*, Lan, C.-W., & Lo, M.-H.* (2023). An increase in precipitation driven by irrigation over the North China Plain based on RegCM and WRF simulations. *Journal of Hydrometeorology*. <https://doi.org/10.1175/JHM-D-22-0131.1>
- Fan, Y.¹**, Liao, P.-S.¹, Im, E.-S.*, & Lo, M.-H. (2022). Regional disparities in the exposure to heat-related mortality risk under 1.5 °C and 2 °C global warming. *Environmental Research Letters*, 17(5), 054009. <https://doi.org/10.1088/1748-9326/ac5adf>
- Fan, Y.**, & Im, E.-S.* (2022). A Comparative Assessment of Changes in Heat-Related Mortality Risk Under the RCP2.6 and RCP8.5 Scenarios Based on the CORDEX-CORE Ensembles. *Asia-Pacific Journal of Atmospheric Sciences*. <https://doi.org/10.1007/s13143-022-00304-2>

(* means corresponding authors, ¹ means the co-first author)

OTHER MANUSCRIPTS

- Fan, Y.*** & Im, E.-S.* Will Vegetation Dynamics Result in Deviations in Irrigation Impact? *To be submitted to Geophysical Research Letters*.
- Fan, Y.***, Yang Z., Lo, M.-H., Hur, J. & Im, E.-S.* Deciphering the Capricious Precipitation Response: Irrigation Impact in the North China Plain. *To be submitted to Journal of Climate*.

RESEARCH

Assess the **heat-related mortality risk** under global warming

(Related work has been published in ERL and APJAS)

- Calculating two indices, Excessive Mortality Risk (EMR) and Environmental Health Factor (EHF), to estimate the heat-related mortality.
- Understand the role of mitigation strategies in reducing heat-related mortality by comparing the indices under different future climate scenarios (i.e., 1.5°C & 2°C, RCP2.6 & RCP8.5)
- Identify the regional hotspots in terms of exposure of (the elderly) population to heat-related mortality risk, and explain the regional discrepancies.
- Estimate the uncertainty that could be arised from adopting different equations during the calculation.

Improve the **irrigated crop simulation** and quantify irrigation **impact** in the North Chain Plain

(Related work has been published in JHM and GMD, and will be submitted to JC and GRL)

- Quantify the irrigation impact on climate using the default WRF-NoahMP and RegCM-CLM model. Compare the consistency of two distinct model to improve the robustness of the results.
- Improve the irrigated-crop simulation by implementing double-cropping and interactive irrigation.
- Validate the improved model's improving performance in simulating local climate, crop growth and irrigation amount.
- Re-analyze the irrigation impact using the improved model, identifying the potential deviations that could be made using the non-improved model.

EXPERIENCES & AWARDS

2024 D.C.	Poster presentation in AGU
2024 Michigan	Visiting scholar in Michigan State University for six months
2024 Hong Kong	HKUST Redbird Award
2023 Colorado	Oral presentation in AMS
2022 Singapore	Oral presentation in AOGS
2022 Hong Kong	HKUST Redbird Recruitment Award
2020 Hong Kong	University's Scholarship for students with top 10% academic performance
2019 Denmark	Undergraduate exchange in Technical University of Denmark
2019 Spring	RICS (Royal Institution of Chartered Surveyors) Scholarship
2018 Korea	Summer exchange in Korea University
2017 Dalian	Neusoft internship, duty in holding weekly teleconference with Amazon

TECHNICAL SKILLS

Programming:	Python, Fortran, NCL, Matlab, C/C++, Java
Languages:	Proficient in English (including academic presenting), native in Chinese
Knowledge :	A+ in all major courses (e.g., Atmospheric Dynamic, Environment Data Analysis)
AI Background:	SVM, FNN, CNN, RNN, LSTM

TEACHING EXPERIENCES

- [TA in PG course] **Global Warming and Air Pollution Meteorology** in Fall 2024
- [TA in PG course] **Atmospheric Dynamics**: TA for 4 times during 2021-2024
- [TA in UG course] **Environmental Geographical Information System** in Spring 2023
- [TA in UG&PG course] **Climate Change Impacts and Extreme Weather Events** in Spring 2021