Yankun Liu

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Education

The Hong Kong University of Science and Technology (Guangzhou)   Guangdong, China

MPhil in Earth, Ocean and Atmospheric Sciences   2023 - 2025 (expected)

- Advisor: Prof. Qing Li
- Co-advisor: Prof. Zhen Liu
- Research area: wave-turbulence interaction, Langmuir turbulence

Sichuan University   Sichuan, China

B.E. in Engineering Mechanics   2018 - 2022

Bachelor of Law   2020 - 2022

Interests

turbulent flows, wave-turbulence interaction, atmosphere-ocean dynamics, cloud dynamics

Research

Wave-Turbulence Interactions by Direct Numerical Simulation   2023.11 - Present

- Examine the interaction between surface gravity waves and wind-driven shear currents by two-phase direct numerical simulation
- Analyze the wave-phase-related effects and the generation and evolution mechanism of Langmuir turbulence
- Quantify the air-sea exchange of mass and momentum

Temperature-Moisture Impact on Arctic Cloud Formation   2022.11 - 2023.07

- Construct an semi-ideal case of mixed-phase clouds during the campaign of Physical Feedbacks of Arctic Boundary Layer, Sea Ice, Cloud and Aerosol
- Use large-eddy simulation to study the effects of surface and moisture forcing on the structure and maintenance of mixed-phase clouds

Hemodynamic Study Based on Oxygen Transport in the Portal Vein   2021.10 - 2022.06

- Extract the structure of multiple human portal veins from CT images
- Adopt a mathematical model of blood and oxygen transport in portal vein
- Report the characteristics of hemodynamic parameters and oxygen distribution

Awards & Honors

- **Postgraduate Scholarship**, The Hong Kong University of Science and Technology (Guangzhou)   2023.09
- **Excellent Graduated Student Leader**, School of Architecture and Environment 2021.09
- **Comprehensive Scholarship**, Sichuan University   2021.09
- **Academic scholarship**, Law School   2021.06
- **Excellent Student Leader**, School of Architecture and Environment 2020.09
- **Third Prize of Mathematics competition of Chinese College Students**, Chinese Mathematical Society   2019.11
- **Second Scholarship**, Sichuan University   2019.09

Skills

Languages: Mandarin, English

Programming: Python, C/C++, Fortran

Technical: Linux, MATLAB, LaTeX, HTML

Academic Experience

Member: European Geosciences Union, American Physical Society

Research Assistant: Eastern Institute for Advanced Study (Advisor: Prof. Shengqi Zhang)

2022.09 - 2023.07