## Yankun Liu

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

China

MPhil in Earth, Ocean and Atmospheric Sciences

2023 - 2025 (expected)

Advisor: Prof. Qing LiCo-advisor: Prof. Zhen Liu

• Research area: wave-turbulence interaction, Langmuir turbulence

# Sichuan UniversitySichuan, ChinaB.E. in Engineering Mechanics2018 - 2022Bachelor of Law2020 - 2022

**INTERESTS** 

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

#### RESEARCH

#### Wave-Turbulence Interactions by Direct Numerical Simulation

2023.11 - Present

- Examine the interactions 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 a 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 temperature and moisture forcing on the structure and development 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 hemodynamic features and spatial distribution of oxygen

## 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

Member: European Geosciences Union, American Physical Society

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

2022.10 - 2023.07