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Southern University of Science and Technology
Department of Earth and Space Sciences
Master Candidate in Physics

Educations

MS in Physics, Southern University of Science and Technology, Shenzhen, China. 2022.09 - 2025.06

GPA: 3.56/4.0

Courses: Advanced Geo-Electromagnetism, Computational Geophysics, Geophysical Inverse Problem

Thesis: Electric Resistivity Tomography Guided by Seismic Information and Its Application in Karst Cavities

Advisor: Dikun Yang.

BS in Geophysics, Yangtze University, Wuhan, China. 2018.09 - 2022.06

GPA: 3.73/5.0, Rank: 4/43

Courses: Principles of Seismic Exploration, General Geological Practice

Thesis: Characteristics of MT Signals Based on Remote Reference Station Statistical Analysis Research

Advisor: Xinbing Xie.

Publication

2024 **Underwater ERT method to image Karst cave distribution below the river water.**

Daopu Wang, Dikun Yang, et al., (2024), SEG Global Meeting Abstracts: 139-142. DOI: [10.1190/iceg2023-0321.1](https://doi.org/10.1190/iceg2023-0321.1)

Research Experience

Comprehensive Geophysical Prospecting of Geo-Hazards in the SUSTech Campus. 2024.10 - Present

- Leading teams through the entire process of Electrical Resistivity Tomography (ERT) survey design, data acquisition, data processing, and data interpretation.
- Using the open Python package SimPEG process potential difference data to obtain conductivity cross-section.
- Using the Smart Seismic Sensor IGU-16HR, seismic data from both active and passive sources were successfully collected.
- Extracted dispersion curves from active sources using the Multi-channel Analysis of Surface Waves (MASW) method, including FK and LRT techniques, and from ambient noise using SPAC and F-K methods, then inverted these dispersion curves to obtain Vs structures.

Development of a Cloud-Based Simulation Platform for Direct Current Resistivity Imaging. 2024.10 - Present

- Simulation of electric potential distribution using the finite volume method.
- Designed a user-friendly interface with customizable parameters for professional use.
- Cloud-based deployment and out-of-the-box functions, secure and stable.
- In a short period, generate a high-resolution underground resistivity model and interactively adjust it using prior information.

Experiment of Nearshore Magnetotelluric (MT) Survey Using Inter-station Impedance. 2024.10 - 2024.11

- Design schemes for shallow water MT surveys including underwater cable design, site evaluation.
- Acquisite MT field data both onshore and offshore using Phoenix instrument MTU-5A.
- Processing obtained inter-station time series and estimation of impedance by SSMT2000 and MTeditor.

Underwater ERT Method to Image Karst Cave Distribution Below River Water. 2023.02 - 2023.10

Project from CCCC-FHDI Engineering Co., Ltd.

- As Karst caves were covered by river water with rapid flow, a specialized underwater cable and well-designed ERT measurements were adopted to obtain river bottom potential difference data.
- 2D inversion models incorporating riverbed terrain were obtained, successfully corresponding with existing borehole data.

Imaging Karst Cavities Distribution Using ERT and ANT Method.2022.11 - 2023.02

Project from Shenzhen Municipal Engineering Corp.

- The spatial positions of the cavities were successfully identified by leveraging conductivity and velocity models, respectively.
- By incorporating velocity structures as a new soft constraint, the resolution of the conductivity model was successfully improved.

Cross-hole Electrical Resistivity Tomography (CHERT) for Monitoring DNAPL Contamination.2022.07 - 2022.11

- Employing a monitoring well as a current electrode, in conjunction with ERT data acquisition from surface and well-based electrodes, allows for comprehensive subsurface analysis.
- Mapped the direction and depth of pollutant dispersion by analyzing resistivity anomalies.

Awards and Fellowships

- 2023.10The **Third Prize** in the eighth National College Students "Innovation Cup" Geophysical Knowledge Competition (CNY 1000). [News Report](#)
- 2021.09The **Second Prize** in the seventh National College Students "Innovation Cup" Geophysical Knowledge Competition.
- 2019.12**The National Encouragement Scholarship** (CNY 5000).

Presentations

- 2024.08**Interpreting Cross-river Underwater Electric Resistivity Data for Dam Construction: Lessons Learned from 2D and 3D Inversions.**
Daopu Wang, Dikun Yang, *The International Meeting for Applied Geoscience and Energy (IMAGE2024)*, Aug. 28, 2024, Houston, Texas, USA.
- 2024.06**Development and Application of Joint Nodal Acquisition Stations for Seismic and ERT Data.**
Daopu Wang, Dikun Yang, *The 11th International Conference on Environmental and Engineering Geophysics (11th ICEEG)*, Jun. 30, 2024, Shenzhen, China.
- 2023.10**Underwater ERT Method to Image Karst Cave Distribution Below the River Water.**
Daopu Wang, Haibing Chai, Dikun Yang, *The Seventh International Conference on Engineering Geophysics (7th ICEG)*, Oct. 18, 2023, AI Ain, UAE.
- 2023.08**Electric Resistivity Tomography Inversion Guided by Passive Microtremor Data for Detection of Karst Cavities.**
Daopu Wang, Dikun Yang, Zhentao Yang, *The International Meeting for Applied Geoscience and Energy (IMAGE2023)*, AUG. 27, 2023, Houston, Texas, USA.

Languages & Skills

- Programming:** Python, MATLAB, Jekyll, Linux, etc.
- Software:** SimPEG, SSMT2000, SAC, Adobe (Photoshop, Lightroom), Cartopy, Disba, etc.
- Instruments:** SmartSolo Geophone, Phoenix System MTU-5A, Multi-channel Electrical System GD-20, RTK, etc.
- Languages:** Mandarin (Native), English (IELTS 6.5).
- Geophysical Skills:** ERT (Practical experience of the whole-process ERT survey); MT (Experience in data acquisition and data processing); Surface Wave (Field practice and seismic data processing).

Interests

- Sports:** Swimming, hiking.
- Photography:** [Photography Portfolio](#) featuring landscapes and emotional moments.
- Volunteering:** Conference volunteering (more than 100 hours); maintain individual dedication and zest for life firsthand.