Liangyu WU | Curriculum Vitae

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Education Background

Stanford University **California, U.S.**

Ph.D. Student in Physics 2024-Present

Shanghai Jiao Tong University **Shanghai, China**

Bachelor of Science in Physics, School of Physics and Astronomy 2020-2024

- Overall GPA: 86.1/100 (A-); Physics-related GPA: 90.1/100 (A)
- Coursework: *Quantum Mechanics*, *Electrodynamics*, *Equations of Mathematical Physics*, *Professional Experiment*, *Introduction to Nuclear and Particle Physics*, *Methods of Experimental Nuclear and Particle Physics* (All graded A's)

University of Maryland, College Park **Maryland, U.S.**

Visiting International Student Aug. 2023-Dec. 2023

Research Experience

SLAC National Accelerator Laboratory **California, U.S.**

Particle Physics and Astrophysics Jan. 2025-Present

Research Assistant (Supervisor: **Dr. Julia Gonski** & **Prof. Dong Su**)

– **Research on the ATLAS**

- On-chip machine learning for waveform analysis and data compression in dual readout calorimeters.
- GigaBit Cable Receiver (GBCR) ASIC Testing for the LHC upgrade.

SLAC National Accelerator Laboratory **California, U.S.**

Particle Physics and Astrophysics Sep. 2024-Dec. 2024

Research Assistant (Supervisor: **Prof. Spencer Gessner**)

– **Research on the FACET-II**

- Compton cross sections calculation for laser-based control of beam intensity.
- Update to the TCAV GUI and analysis tools.

University of Maryland, College Park **Maryland, U.S.**

Department of Physics Aug. 2023-Aug. 2024

Undergraduate Research Student (Supervisor: **Prof. Christopher Palmer** & **Prof. Sarah Eno**)

– **Research on the Dual-readout Calorimetry**

- Geant4 simulations of single-particle responses for diverse calorimeters.
- Formula derivation which predicts the dual-readout-corrected energy from scintillator and Cherenkov signals alone.

Shanghai Jiao Tong University **Shanghai, China**

School of Physics and Astronomy Oct. 2021-Feb. 2024

Undergraduate Research Assistant (Supervisor: **Prof. Yue Meng**)

– **R&D for a Novel Radon Detector**

- Designed the Radic detector and determined the radon diffusion coefficient of several materials successfully.

PandaX Collaboration **Shanghai & Sichuan, China**

Undergraduate Research Student Oct. 2021-Feb. 2023

– **Work in Ultra-low background technique R&D group**

- Measured radon emanation rates across diverse materials for the PandaX and JUNO experiments.
- Conducted ultra-low radioactive surface treatments of materials for TPC assembly in PandaX-4T.

– **Work in PMT group**

- Performed PMT high-voltage testing to ensure standard operating currents and assessed parameters.
- Participated in the installation of veto PMTs and high-voltage cables for TPC-bottom PMTs.

Tsung-Dao Lee Institute **Shanghai, China**

Astronomy and Astrophysics Division Mar. 2023-Aug. 2023

Undergraduate Research Student (Supervisor: **Prof. Masahiro Ogihara**)

– **Research on the stability of unevenly spaced planetary systems**

- Conducted N-body simulations to study the planetary system stability.
- Demonstrated that using evenly spaced models can overestimate orbital stability time in natural systems.

Publications

[1] S. Eno, **L. Wu** *et al.*, On the resolution of dual readout calorimeters, **https://arxiv.org/abs/2501.15329**

[2] S.V. Chekanov, S. Eno, S. Magill, C. Palmer, **L. Wu**, Geant4 simulations of sampling and homogeneous hadronic calorimeters with dual readout for future colliders, **NIM A,Volume 1072, 2025, 170200, ISSN 0168-9002.**

[3] **L. Wu**, L. Si *et al.*, Design and Experimental Application of a Radon Diffusion Chamber for Determining Diffusion Coefficients in Membrane Materials, **JINST, 20, no.03, P03031 (2025)**

[4] S. Yang, **L. Wu** *et al.*, The stability of unevenly spaced planetary systems, **ICARUS, Volume 406, December 2023, 115757**

Skills

Technical: C++, Python, CERN ROOT, Geant4, SolidWorks, COMSOL, LaTeX

Hardware: Ultra-low radioactive technology, High-voltage technology, PCB debugging, PMT testing

Language: English (Fluent), Mandarin (Native)

Extra-Curricular Experience

Student Union of School of Physics and Astronomy **Shanghai, China**

Co-President of the Student Union Dec. 2021-Dec. 2022

– **Spearheaded the execution of events and promotions for the Student Union.**

Selected Honors and Awards

2023 Best Report First Prize, TDLI Astro-Division Winter Camp (5 out of 96 participants)

2022 NetClass Education and Research Fund Scholarship: First Prize, Shanghai Jiao Tong University (Top 5%)

2021 and 2022 Academic Excellent Scholarship, Shanghai Jiao Tong University (Top 10%, twice)

2021 Chun Geng Education Scholarship, Shanghai Jiao Tong University, School of Physics and Astronomy (Top 5%)