Xicheng Wang

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Education

Tsinghua University, Zhili College *Sep. 2022 – Jun. 2026 (expected)*
B.S. in Fundamental Science of Mathematics & Physics Beijing, China
GPA: 4.0/4.0 · **GRE Physics:** 990/990

Cornell University *Aug. 2024 – Dec. 2024*
Exchange student in Physics (College of Arts & Sciences) Ithaca, NY
GPA: 4.0/4.3

Publications & Preprints

Xicheng Wang and Erich J. Mueller, *Engineering Resonating Kagome Dimer Coverings in Rydberg Atom Arrays*, arXiv:2506.21255 (accepted), 2025.

Research Experience

Quantum Phases and Phase Transitions under Non-onsite Generalized Symmetries *May.2025 - Present*
Supervised by Prof. Yi-Zhuang You and Dr.Da-Chuan Lu University of California, San Diego

- Developed a framework to extract (possibly non-semisimple) algebraic structures from local MPO fusion data; clarified how non-semisimplicity modifies local identities.
- Studied the IR consequences of *intrinsically non-onsite* symmetries; numerically found a trivial-to-SSB transition described by a compact-boson CFT (contrasting the onsite Ising case).

Preparing Topologically ordered Quantum States in Rydberg Atom Platforms *Aug.2024 - Oct.2025*
Supervised by Prof. Erich Mueller Cornell University

- Designed an experimentally friendly sequential quantum-circuit protocol to prepare the Rokhsar–Kivelson state with improved scaling and robustness relative to quasi-adiabatic approaches.
- Analyzed inhomogeneous quasi-adiabatic sweeps vs. uniform sweeps; derived excitation-density scaling in 1D SSB/SPT chains and identified when inhomogeneity yields a clear advantage.

Selected Honors & Awards

- Chi-Sun Yeh Scholarship, Fellowship of the Tsinghua Xuetang Talents Program — 2022-2025
- National Scholarship, Ministry of Education of China — 2024
- Spark Research Talents Fellowship, Tsinghua University — 2025
- Chia-Hsien Teng Scholarship, Tsinghua University — 2025

Skills

- **Programming:** Python, Julia, C/C++, Mathematica, LaTeX
- **Methods:** ED, DMRG/TEBD/VUMPS; tensor-network toolchains (TeNPy, ITensor); Monte Carlo
- **Languages:** Chinese (native), English (fluent)