

Yi-Ting Tu (涂懿庭)

Email: yttu@umd.edu Website: yitingtu.com Pronouns: he/him

EDUCATION

University of Maryland, College Park, MD, USA Aug. 2021 – Present

Ph.D. candidate in Physics

- Advisor: Sankar Das Sarma

National Tsing Hua University, Hsinchu, Taiwan Sep. 2015 – Jun. 2020

Bachelor of Science

- Double Major: Physics and Mathematics
- Graduated with Honor in Physics

RESEARCH EXPERIENCE

Condensed Matter Theory Center, University of Maryland Apr. 2022 – Present

Advisor: Sankar Das Sarma

Condensed Matter Theory Group, National Tsing Hua University Jul. 2020 – Aug. 2021

Advisor: Po-Yao Chang

Quantum Optics Group, National Tsing Hua University Feb. 2018 – Jun. 2020

Advisor: Ray-Kuang Lee

AWARDS & SCHOLARSHIPS

Academic Achievement Award, seven semesters (top 5% in class) 2016 – 2019

2019 NTHU College of Science Elite Student Award Spring 2019

Undergraduate Research Scholarship, Ministry of Science and Technology, Taiwan Fall 2018

The Zhu Shun Yi He Qin Scholarship Spring 2018

SCIENTIFIC ACTIVITIES

[1] APS March Meeting, Minneapolis, MN, USA Mar. 2024
“Localization spectrum of a bath-coupled generalized Aubry-André model in the presence of interactions” (Oral)

[2] APS March Meeting, Las Vegas, NV, USA Mar. 2023
“Avalanche stability transition in interacting quasiperiodic systems” (Oral)

[3] APS March Meeting, online Mar. 2022
“Non-Abelian fracton order from gauging a mixture of subsystem and global symmetries” (Oral)

[4] The NCTS international summer school and workshop on emergent quantum many-body phenomena, online Jul. 2021
“Non-Abelian fracton order from gauging a mixture of subsystem and global symmetries” (Oral)

[5] APS March Meeting, online Mar. 2021
“Gauge Theories and Stabilizer Codes: From Abelian to non-Abelian models” (Oral)

- [6] Young Researchers Forum on Quantum Information Science, Hsinchu, Taiwan Aug. 2019
“Positive Partial Transpose Criterion in Symplectic geometry” (Oral)
- [7] Annual Meeting of the Physical Society, Hsinchu, Taiwan Jan. 2019
“Positive Partial Transpose Criterion in Symplectic geometry” (Oral)
- [8] Asian Quantum Information Science Conference, Nagoya, Japan Sep. 2018
“Positive Partial Transpose Criterion in Symplectic geometry” (Poster)

PUBLICATIONS & PREPRINTS

- [1] Yi-Ting Tu and Sankar Das Sarma, “Negative intercept of the apparent zero-temperature extrapolated linear-in- T metallic resistivity,” arXiv: 2407.01664 (2024).
- [2] Yi-Ting Tu, David M. Long, and Sankar Das Sarma, “Interacting quasiperiodic spin chains in the prethermal regime,” *Phys. Rev. B* **109**, 214309 (2024).
- [3] Sankar Das Sarma and Yi-Ting Tu, “Role of many phonon modes on the high-temperature linear-in- T electronic resistivity,” *Phys. Rev. B* **109**, 235118 (2024).
- [4] Yi-Ting Tu, Seth M. Davis, and Sankar Das Sarma, “Energetic comparison of exciton gas versus electron-hole plasma in a bilayer two-dimensional electron-hole system,” *Phys. Rev. B* **109**, 165307 (2024).
- [5] Yi-Ting Tu and Sankar Das Sarma, “Wiedemann-Franz law in graphene in the presence of a weak magnetic field,” *Phys. Rev. B* **108**, 245415 (2023).
- [6] Yi-Ting Tu, DinhDuy Vu, and Sankar Das Sarma, “Localization spectrum of a bath-coupled generalized Aubry-André model in the presence of interactions,” *Phys. Rev. B* **108**, 064313 (2023).
- [7] Yi-Ting Tu and Sankar Das Sarma, “Wiedemann-Franz law in graphene,” *Phys. Rev. B* **107**, 085401 (2023).
- [8] Yi-Ting Tu, DinhDuy Vu, and Sankar Das Sarma, “Avalanche stability transition in interacting quasiperiodic systems,” *Phys. Rev. B* **107**, 014203 (2023).
- [9] Yi-Ting Tu, Iksu Jang, Po-Yao Chang, and Yu-Chin Tzeng, “General properties of fidelity in non-Hermitian quantum systems with PT symmetry,” *Quantum* **7**, 960 (2023).
- [10] Yi-Ting Tu, Yu-Chin Tzeng, and Po-Yao Chang, “Rényi entropies and negative central charges in non-Hermitian quantum systems,” *SciPost Phys.* **12**, 194 (2022).
- [11] Yi-Ting Tu and Po-Yao Chang, “Non-Abelian fracton order from gauging a mixture of subsystem and global symmetries,” *Phys. Rev. Research* **3**, 043084 (2021).

TEACHING EXPERIENCE

Teaching Assistant of Graduate Course in

- Condensed Matter Physics(II) Feb. 2021 – Jun. 2021
- Special Topic: Quantum Information Sep. 2020 – Jan. 2021

Teaching Assistant of Undergraduate Course in

- Experimental Physics II: Electricity and Magnetism Aug. 2021 – May 2022
- Linear Algebra (College of EECS) Sep. 2019 – Jan. 2020
- Quantum Physics Sep. 2018 – Jun. 2019

PROGRAMMING LANGUAGES & SOFTWARE

- Mathematica (Advanced)
- \LaTeX (Advanced)
- Julia (Intermediate)
- C (Intermediate)
- Python (Intermediate)
- MATLAB (Basic)