

Jixun K. Ding

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Education

- 2018 – 2024 **Stanford University**
PhD in Applied Physics, supervised by Tom Devereaux
Thesis title: *Strongly correlated electrons in a magnetic field: numerical studies of the Hubbard-Hofstadter model*
- 2014 – 2018 **Cornell University**
BA in Physics with a minor in Mathematics, *summa cum laude*

Publications and preprints

- 2024 J. K. Ding, L. Yang, W. O. Wang, Z. Zhu, C. Peng, P. Mai, E. W. Huang, B. Moritz, P. W. Phillips, B. E. Feldman, and T. P. Devereaux, Particle-hole asymmetric ferromagnetism and spin textures in the triangular Hubbard-Hofstadter model, [arXiv:2309.07876](https://arxiv.org/abs/2309.07876), to be published in *Phys. Rev. X*.
- 2023 W. O. Wang, J. K. Ding, E. W. Huang, B. Moritz, and T. P. Devereaux, Quantitative assessment of the universal thermopower in the Hubbard model, *Nat. Commun.* **14**, 7064.
- 2023 W. O. Wang, J. K. Ding, Y. Schattner, E. W. Huang, B. Moritz, and T. P. Devereaux, The Wiedemann-Franz law in doped Mott insulators without quasiparticles, *Science* **382**, 1070-1073.
- 2022 J. K. Ding, W. O. Wang, B. Moritz, Y. Schattner, E. W. Huang, and T. P. Devereaux, Thermodynamics of correlated electrons in a magnetic field, *Commun. Phys.* **5**, 204.
- 2022 W. O. Wang, J. K. Ding, B. Moritz, E. W. Huang, and T. P. Devereaux, Magnon heat transport in a two-dimensional Mott insulator, *Phys. Rev. B* **105**, L161103.
- 2021 E. W. Huang, W. O. Wang, J. K. Ding, T. Liu, F. Liu, X.-X. Huang, B. Moritz, and T. P. Devereaux, Intertwined states at finite temperatures in the Hubbard model, *J. Phys. Soc. Jpn.* **90**, 111010.
- 2021 W. O. Wang, J. K. Ding, B. Moritz, Y. Schattner, E. W. Huang, and T. P. Devereaux, Numerical approaches for calculating the low-field DC Hall coefficient of the doped Hubbard model, *Phys. Rev. Research* **3**, 033033.
- 2020 W. O. Wang, J. K. Ding, B. Moritz, E. W. Huang, and T. P. Devereaux, DC Hall coefficient of the strongly correlated Hubbard model, *npj Quantum Mater.* **5**, 51.

- 2018 R. D. Porter, T. Arias, P. Cueva, J. K. Ding, D. L. Hall, M. Liepe, D. A. Muller, N. Sitaraman, Update on Nb₃Sn Progress at Cornell University, [IPAC 2018](#).
- 2017 J. K. Ding, D. L. Hall, and M. Liepe, Simulations of RF field-induced thermal feedback in niobium and Nb₃Sn cavities, [SRF 2017](#).

Invited Talks

- Feb 2024 University of California, Santa Barbara
- Feb 2024 University of Michigan, Ann Arbor
- Feb 2024 University of Pennsylvania
- Aug 2023 QSQM All-hands Meeting

Contributed Talks

- Mar 2024 Particle-hole asymmetric ferromagnetism and spin textures in the triangular Hubbard-Hofstadter model, APS March Meeting
- Jan 2024 A primer to composite fermions, Stanford Condensed Matter Journal Club
- Quantum Hall ferromagnetism and skyrmions in the Hubbard-Hofstadter model,
- Mar 2023 APS March Meeting
- Nov 2023 Quantum Hall skyrmions – from field theory to experimental detection, Stanford Condensed Matter Journal Club
- Mar 2020 Hall conductivity in the Hubbard model from determinant quantum Monte Carlo, APS March Meeting (Zoom)

Posters

- May 2023 Quantum Hall ferromagnetism in the Hubbard-Hofstadter model, Topological and Correlated Matter GRS+GRC
- Jan 2023 Thermodynamics of correlated electrons in a magnetic field, MagLab Theory Winter School
- Jul 2022 Transport in the Hubbard model: critically examining the cuprates, M²S Conference

Honors and awards

- 2022 M²S Conference Poster Prize
- 2018 Yennie Prize (Cornell University)
- 2018 Frank and Rosa Rhodes Scholarship (Cornell University)

Mentorship and service

- 2023 Short introduction to condensed matter physics for Stanford Physics, Identity, and Equity program
- 2019 – 2021 Mentoring Master and Camping Czar for Stanford Graduate Students in Applied Physics and Physics
- 2016 –2018 Peer advisor for Cornell Society of Physics Students

Other professional activity

- 2023 KITP Conference: Electron Correlations beyond the Quasiparticle Paradigm: Theory and Experiment (attandee)
- 2023 KITP Program: Quantum Materials With and Without Quasiparticles (affiliate)
- 2023 Argonne Training Program on Extreme-Scale Computing (attandee)
- 2022 International Summer School on Computational Quantum Materials (attandee)

Relavant skills

Programing languages C, C++, Python, Julia

Software tools openMP, MPI, slurm, bash, HDF5, CUDA