

CURRICULUM VITAE

Chia-Min Chung

Status: Assistant professor

Department of physics
National Sun Yat-sen University
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Research interests

Quantum transport in nanowires
Topological states/qubits
Strongly correlated systems: High- T_c superconductors, frustrated spins
Numerical methods: Tensor network states, quantum Monte Carlo

Academic Employment

Aug, 2021 - present Assistant Professor, National Sun Yat-sen University, Taiwan
Feb, 2020 - July, 2021 Postdoctoral Researcher, University of Copenhagen, Denmark
Sep, 2017 - Dec, 2019 Postdoctoral Researcher, University of Munich, Germany
Dec, 2014 - Sep, 2017 Postdoctoral Researcher, University of California, Irvine, USA

Education

Aug, 2008 - Dec, 2014 PhD in Physics
National Tsing Hua University, Taiwan
Thesis: Quantum Monte Carlo Study of Two Component Bosons and Entanglement
Advisor: Chen, Pochung
Aug, 2005 - Aug, 2007 M.S. in Physics
National Cheng Kung University, Taiwan
Advisor: Lu, Yan-Ten
Aug, 2001 - Aug, 2005 B.S. in Physics
Chung Yuan Christian University, Taiwan

Awards

2020 INTERACTIONS Fellowship by the European Union

List of Publications

1. Matrix product state simulations of quantum quenches and transport in Coulomb blockaded superconducting devices
[Chia-Min Chung](#), Matteo M. Wauters, and Michele Burrello, **Phys. Rev. B** 106, 094308 (2022)
2. Z_N lattice gauge theory in a ladder geometry
Jens Nyhegn, [Chia-Min Chung](#), Michele Burrello, **Phys. Rev. Research** 3, 013133 (2021)
3. Plaquette versus ordinary d -wave pairing in the t' -Hubbard model on a width-4 cylinder
[Chia-Min Chung](#), Mingpu Qin, Shiwei Zhang, Ulrich Schollwöck, and Steven R. White, **Phys. Rev. B** 102, 041106(R) (2020)
4. Absence of superconductivity in the pure two-dimensional Hubbard model
Mingpu Qin, [Chia-Min Chung](#)[†], Hao Shi, Ettore Vitali, Claudius Hubig, Ulrich Schollwöck, Steven R. White, Shiwei Zhang, **Phys. Rev. X** 10, 031016 (2020) († **Co-First author**) (**Citation: 136**)
5. Spin–lattice coupling and the emergence of the trimerized phase in the S=1 Kagome antiferromagnet Na₂Ti₃Cl₈
Arpita Paul, [Chia-Min Chung](#), Turan Birol, Hitesh J. Changlani, **Phys. Rev. Letter** 124, 167203 (2020)
6. Entanglement Renyi negativity across a finite temperature transition: a Monte Carlo study
Kai-Hsin Wu, Tsung-Cheng Lu, [Chia-Min Chung](#), Ying-Jer Kao, Tarun Grover, **Phys. Rev. Letter** 125, 140603 (2020)
7. Minimally entangled typical thermal states with auxiliary matrix-product-state bases
[Chia-Min Chung](#), Ulrich Schollwöck, arXiv:1910.03329
8. Resonating quantum three-coloring wavefunctions for the kagome quantum antiferromagnet
Hitesh J. Changlani, Sumiran Pujari, [Chia-Min Chung](#), Bryan K. Clark, **Phys. Rev. B** 99, 104433 (2019)
9. Stripe order in the underdoped region of the two-dimensional Hubbard model
Bo-Xiao Zheng, [Chia-Min Chung](#)[†], Philippe Corboz, Georg Ehlers, Ming-Pu Qin, Reinhard M. Noack, Hao Shi, Steven R. White, Shiwei Zhang, Garnet Kin-Lic Chan, **Science** 358, 1155 (2017) († **Co-First author**) (**Citation: 404**)
10. Solutions of the Two-Dimensional Hubbard Model: Benchmarks and Results from a Wide Range of Numerical Algorithms
J. P. F. LeBlanc, Andrey E. Antipov, Federico Becca, Ireneusz W. Bulik, Garnet Kin-Lic Chan, [Chia-Min Chung](#), Youjin Deng, Michel Ferrero, Thomas M. Henderson, Carlos A. Jiménez-Hoyos, E. Kozik, Xuan-Wen Liu, Andrew J. Millis, N. V. Prokof'ev, Mingpu Qin, Gustavo E. Scuseria, Hao Shi, B. V. Svistunov, Luca F. Tocchio, I. S. Tupitsyn, Steven R. White, Shiwei Zhang, Bo-Xiao Zheng, Zhenyue Zhu, and Emanuel Gull (Simons Collaboration on the Many-Electron Problem), **Phys. Rev. X** 5, 041041 (2015) (**Citation: 494**)
11. Entanglement negativity via replica trick: a Quantum Monte Carlo approach
[Chia-Min Chung](#), Vincenzo Alba, Lars Bonnes, Pochung Chen, and Andreas M. Lauchli, **Phys. Rev. B** 90, 064401 (2014)
12. Entanglement Spectroscopy using Quantum Monte Carlo
[Chia-Min Chung](#), Lars Bonnes, Pochung Chen, Andreas M. Läuchli, **Phys. Rev. B** 89, 195147 (2014)
13. Quantum and thermal transitions out of the pair-supersolid phase of two-species bosons on a square lattice
[Chia-Min Chung](#), Shiang Fang, and Pochung Chen, **Phys. Rev. B** 85, 214513 (2012)
14. Quantum criticality from in situ density imaging
Shiang Fang, [Chia-Min Chung](#), Ping Nang Ma, Pochung Chen, and Daw-Wei Wang, **Phys. Rev. A** 83, 031605(R) (2011)