Thomas Schuster

Curriculum vitae

Contact Information

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Education

University of California, Berkeley — Berkeley, CA
Ph.D. Candidate, Physics — *Aug. 2016—expected Dec. 2022*
Advisor: Norman Y. Yao

- National Science Foundation Graduate Research Fellowship (2016–2021)
- Theory Fellowship, UC Berkeley Physics Department (2016–2017)

University of California, Berkeley — Berkeley, CA
Bachelors of Science, Engineering Physics — *Aug. 2011—May 2015*

- Minor in Mathematics

Experience

Google Quantum AI — Venice, CA
Research Internship — *June 2021—Oct. 2021*

Boston University — Boston, MA
Visiting Researcher, Physics Department — *Aug. 2015—July 2016*

Preprints

*: co-first authors.

[1] **Thomas Schuster***, Nathanan Tantivasadakarn*, Ashvin Vishwanath, Norman Y. Yao, *A holographic view of topological stabilizer codes.* Forthcoming (2022).

[2] **Thomas Schuster**, Norman Y. Yao, *Operator growth in open quantum systems.* arxiv:2208.12272 (2022).

[3] **Thomas Schuster**, Murphy Niu, Jordan Cotler, Thomas O'Brien, Jarrod R. McClean, Masoud Mohseni, *Learning quantum systems via out-of-time-order correlators.* arxiv:2208.02254 (2022).

[4] Jordan Cotler, **Thomas Schuster**, Masoud Mohseni, *Information-theoretic hardness of out-of-time-order correlators.* arxiv:2208.02256 (2022).

Publications

[5] **Thomas Schuster***, Bryce Kobrin*, Ping Gao, Iris Cong, Emil Khabiboulline, Norbert Linke, Chris Monroe, Mikhail D. Lukin, Beni Yoshida, Norman Y. Yao, *Many-body quantum teleportation via operator spreading in the traversable wormhole protocol.* Physical Review X, **12** 031013 (2022).

[6] Machiel S. Blok*, Vinay V. Ramasesh*, **Thomas Schuster**, Kevin O'Brien, John M. Kreikebaum, Dar Dahlen, Alexis Morvan, Beni Yoshida, Norman Y. Yao, Irfan Siddiqi, *Quantum information scrambling on a superconducting qutrit processor.* Physical Review X, **11.2** 021010 (2021).

[7] **Thomas Schuster**, Felix Flicker, Ming Li, Svetlana Kotochigova, Joel E. Moore, Jun Ye, Norman Y. Yao, *Realizing Hopf insulators in dipolar spin systems.* Physical Review Letters, **127.1** 015301 (2021).

[8] **Thomas Schuster**, Felix Flicker, Ming Li, Svetlana Kotochigova, Joel E. Moore, Jun Ye, Norman Y. Yao, *Floquet engineering ultracold polar molecules to simulate topological insulators.* Physical Review A, **103.6** 063322 (2021).

[9] Jiho Noh*, **Thomas Schuster***, Thomas Iadecola, Sheng Huang, Mohan Wang, Kevin P. Chen, Claudio Chamon, Mikael C. Rechstman, *Braiding photonic topological zero modes.* Nature Physics **16**, 989-993 (2020).

[10] **Thomas Schuster**, Snir Gazit, Joel E. Moore, Norman Y. Yao, *Floquet Hopf insulators.* Physical Review Letters, **123** 266803 (2019).

[11] Kevin Landsman, Caroline Figgatt, **Thomas Schuster**, Norbert M. Linke, Beni Yoshida, Norman Y. Yao, Chris Monroe, *Verified quantum information scrambling.* Nature **567**, 61-65 (2019).

[12] Quntao Zhuang, **Thomas Schuster**, Beni Yoshida, Norman Y. Yao, *Scrambling and complexity in phase space.* Physical Review A, **99** 062334 (2019).

[13] Rupert A. Croft, Peter E. Freeman, **Thomas Schuster**, Chad M. Schafer, *Prediction of galaxy ellipticities and reduction of shape noise in cosmic shear measurements.* Monthly Notices of the Royal Astronomical Society, **469** 4422-4427 (2017).

[14] **Thomas Schuster**, Thomas Iadecola, Claudio Chamon, Roman Jackiw, So-Young Pi, *Dissipationless conductance in a topological coaxial cable.* Physical Review B, **94** 115110 (2016).

[15] Thomas Iadecola, **Thomas Schuster**, Claudio Chamon, *Non-abelian braiding of light.* Physical Review Letters, **117** 073901 (2016).

Invited Talks

[1] *Learning quantum systems via out-of-time-order correlators.* Theory Seminar, **Google Quantum AI**, Venice, CA, 2022.

[2] *Many-body quantum teleportation via operator spreading in the traversable wormhole protocol.* It from Qubit Seminar, **Stanford University**, Palo Alto, CA, 2022.

[3] *Operator size and error propagation: the Loschmidt echo in many-body quantum systems.* Geoflow Collaboration Meeting, **UC Berkeley**, Berkeley, CA, 2021.

[4] *Many-body quantum teleportation via operator spreading in the traversable wormhole protocol.* Quantum/Gravity Seminar, **Brandeis University**, Waltham, MA, 2021.

[5] *Floquet Hopf insulators.* Condensed Matter Seminar, **Technion, Israel Institute of Technology**, Haifa, Israel, 2019.

Contributed Talks

[1] *Operator size and error propagation: the Loschmidt echo in many-body open quantum systems.* Contributed talk. **APS March Meeting**, Chicago, IL, USA, 2022.

[2] *Many-body quantum teleportation via operator spreading in the traversable wormhole protocol.* Contributed poster. **Conference on Quantum Information Processing**, Virtual meeting, 2021.

[3] *Many-body quantum teleportation via operator spreading in the traversable wormhole protocol.* Contributed poster. **Annual Meeting of the APS Division of Atomic, Molecular, Optical Physics**, Virtual meeting, 2021.

[4] *Unitary designs for continuous variable systems.* Contributed talk. **APS March Meeting**, Boston, MA, USA, 2019.

[5] *Distinguishing information scrambling from decoherence in a trapped ion quantum simulator.* Contributed poster. **Annual Meeting of the APS Division of Atomic, Molecular, Optical Physics**, Fort Lauderdale, FL, USA, 2018

[6] *Floquet Hopf insulator in dipolar spin systems.* Contributed talk. **APS March Meeting**, Los Angeles, CA, USA, 2018.