

Stanford



David Long

Postdoctoral Scholar, Physics

 Curriculum Vitae available Online

Bio

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Boston University (2023)
- PhD, Boston University , Physics (2023)
- Masters, The University of Sydney , Physics (2023)
- Bachelor of Science (Honours), The University of Sydney , Physics and Mathematics (2017)

STANFORD ADVISORS

- Vedika Khemani, Postdoctoral Faculty Sponsor

LINKS

- Google Scholar: <https://scholar.google.com/citations?user=Y6oFbLQAAAAJ>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

David is a theoretical condensed matter physicist with an expertise in systems far from equilibrium. His research focuses on the dynamics of quantum systems, including many-body dynamics, the process of thermalization in nearly-localized systems, and on robust topological effects in driven systems.

Publications

PUBLICATIONS

- **Anomalies of Global Symmetries on the Lattice** *PHYSICAL REVIEW X*
Tu, Y., Long, D. M., Else, D.
2026; 16 (11)
- **Strong-driving toolkit for topological Floquet energy pumps with superconducting circuits** *PHYSICAL REVIEW A*
Ritter, M., Long, D. M., Yue, Q., Amouzegar, M., Chandran, A., Kollar, A. J.
2025; 112 (4)
- **Probing Hilbert space fragmentation using controlled dephasing** *PHYSICAL REVIEW B*
Vuina, D., Schafer, R., Long, D. M., Chandran, A.
2025; 112 (13)
- **Topological phases of many-body localized systems: Beyond eigenstate order** *PHYSICAL REVIEW B*
Long, D. M., Else, D.
2025; 112 (13)

- **Autonomous Stabilization of Floquet States Using Static Dissipation** *PHYSICAL REVIEW X*
Ritter, M., Long, D. M., Yue, Q., Chandran, A., Kollar, A. J.
2025; 15 (3)
- **Absence of disordered Thouless pumps at finite frequency** *PHYSICAL REVIEW B*
Vuina, D., Long, D. M., Crowley, P. J. D., Chandran, A.
2024; 110 (17)
- **Interacting quasiperiodic spin chains in the prethermal regime** *PHYSICAL REVIEW B*
Tu, Y., Long, D. M., Sarma, S.
2024; 109 (21)
- **Edge theories for anyon condensation phase transitions** *PHYSICAL REVIEW B*
Long, D. M., Doherty, A. C.
2024; 109 (7)
- **Beyond Fermi's golden rule with the statistical Jacobi approximation** *SCIPOST PHYSICS*
Long, D. M., Hahn, D., Bukov, M., Chandran, A.
2023; 15 (6)
- **Phenomenology of the Prethermal Many-Body Localized Regime** *PHYSICAL REVIEW LETTERS*
Long, D. M., Crowley, P. J. D., Khemani, V., Chandran, A.
2023; 131 (10): 106301
- **Integrability and quench dynamics in the spin-1 central spin XX model** *SCIPOST PHYSICS*
Tang, L., Long, D. M., Polkovnikov, A., Chandran, A., Claeys, P. W.
2023; 15 (1)
- **Coupled layer construction for synthetic Hall effects in driven systems** *PHYSICAL REVIEW B*
Long, D. M., Crowley, P. J. D., Chandran, A.
2022; 106 (14)
- **Boosting the Quantum State of a Cavity with Floquet Driving.** *Physical review letters*
Long, D. M., Crowley, P. J., Kollár, A. J., Chandran, A.
2022; 128 (18): 183602
- **Many-body localization with quasiperiodic driving** *PHYSICAL REVIEW B*
Long, D. M., Crowley, P. J. D., Chandran, A.
2022; 105 (14)
- **Nonadiabatic Topological Energy Pumps with Quasiperiodic Driving.** *Physical review letters*
Long, D. M., Crowley, P. J., Chandran, A.
2021; 126 (10): 106805
- **Comparing Experiments to the Fault-Tolerance Threshold.** *Physical review letters*
Kueng, R., Long, D. M., Doherty, A. C., Flammia, S. T.
2016; 117 (17): 170502
- **Unitarisation of EFT amplitudes for dark matter searches at the LHC** *JOURNAL OF HIGH ENERGY PHYSICS*
Bell, N. F., Busoni, G., Kobakhidze, A., Long, D. M., Schmidt, M. A.
2016