

# Markus Heyl

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/5806103/publications.pdf>

Version: 2024-02-01

64  
papers

4,160  
citations

159585

30  
h-index

123424

61  
g-index

64  
all docs

64  
docs citations

64  
times ranked

2438  
citing authors

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 1  | Quantum Fisher information measurement and verification of the quantum Cram r  Rao bound in a solid-state qubit. Npj Quantum Information, 2022, 8, .                 | 6.7 | 17        |
| 2  | Spatiotemporal heterogeneity of entanglement in many-body localized systems. Physical Review B, 2022, 105, .   | 3.2 | 1         |
| 3  | Variational classical networks for dynamics in interacting quantum matter. Physical Review B, 2021, 103, .   | 3.2 | 11        |
| 4  | Non-Hermitian Kibble-Zurek Mechanism with Tunable Complexity in Single-Photon Interferometry. PRX Quantum, 2021, 2, .  | 9.2 | 22        |
| 5  | Unitary Long-Time Evolution with Quantum Renormalization Groups and Artificial Neural Networks. Physical Review Letters, 2021, 127, 050601.                          | 7.8 | 6         |
| 6  | Quantum entanglement recognition. Physical Review Research, 2021, 3, .   | 3.6 | 4         |
| 7  | Local measures of dynamical quantum phase transitions. Physical Review B, 2021, 104, .   | 3.2 | 18        |
| 8  | Unconventional critical exponents at dynamical quantum phase transitions in a random Ising chain. Physical Review B, 2021, 104, .                                    | 3.2 | 12        |
| 9  | Quantum chaos and ensemble inequivalence of quantum long-range Ising chains. Physical Review B, 2021, 104, .   | 3.2 | 7         |
| 10 | Reinforcement Learning for Digital Quantum Simulation. Physical Review Letters, 2021, 127, 110502.   | 7.8 | 21        |
| 11 | Signatures of Quantum Phase Transitions after Quenches in Quantum Chaotic One-Dimensional Systems. Physical Review X, 2021, 11, .                                    | 8.9 | 13        |
| 12 | Subdiffusive dynamics and critical quantum correlations in a disorder-free localized Kitaev honeycomb model out of equilibrium. Physical Review Research, 2021, 3, . | 3.6 | 12        |
| 13 | Finite-temperature critical behavior of long-range quantum Ising models. SciPost Physics, 2021, 11, .  | 4.9 | 9         |
| 14 | Real-time dynamics of one-dimensional and two-dimensional bosonic quantum matter deep in the many-body localized phase. Physical Review B, 2021, 104, .              | 3.2 | 2         |
| 15 | Fate of algebraic many-body localization under driving. Physical Review B, 2021, 104, .  | 3.2 | 2         |
| 16 | Quantum Chaos and Universal Trotterisation Performance Behaviours in Digital Quantum Simulation. , 2021, , .   |     | 1         |
| 17 | Real-time dynamics of string breaking in quantum spin chains. Physical Review B, 2020, 102, .  | 3.2 | 33        |
| 18 | Quantum Many-Body Dynamics in Two Dimensions with Artificial Neural Networks. Physical Review Letters, 2020, 125, 100503.  | 7.8 | 84        |

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 19 | Geometrical quench and dynamical quantum phase transition in the $\mathbb{Z}_2$ Ising spin chain on a lattice. Physical Review B, 2020, 101, .   | 3.2  | 13        |
| 20 | Discrete truncated Wigner approach to dynamical phase transitions in Ising models after a quantum quench. Physical Review B, 2020, 102, .  | 16.6 | 46        |
| 21 | Measuring a dynamical topological order parameter in quantum walks. Light: Science and Applications, 2020, 9, 7.   | 3.6  | 36        |
| 22 | Homogeneous Floquet time crystal protected by gauge invariance. Physical Review Research, 2020, 2, .   | 3.2  | 39        |
| 23 | Efficiently solving the dynamics of many-body localized systems at strong disorder. Physical Review B, 2019, 99, .   | 2.5  | 14        |
| 24 | Measuring complex-partition-function zeros of Ising models in quantum simulators. Physical Review A, 2019, 100, .  | 2.9  | 15        |
| 25 | Describing many-body localized systems in thermal environments. New Journal of Physics, 2019, 21, 063026.  | 6.7  | 69        |
| 26 | Digital quantum simulation, Trotter errors, and quantum chaos of the kicked top. Npj Quantum Information, 2019, 5, .   | 7.8  | 43        |
| 27 | Dynamical Quantum Phase Transitions in U(1) Quantum Link Models. Physical Review Letters, 2019, 122, 250401.   | 12.8 | 40        |
| 28 | The Kibble-Zurek mechanism at exceptional points. Nature Communications, 2019, 10, 2254.   | 3.2  | 20        |
| 29 | Dynamical quantum phase transitions in collapse and revival oscillations of a quenched superfluid. Physical Review B, 2019, 99, .  | 2.0  | 47        |
| 30 | Dynamical quantum phase transitions: A brief survey. Europhysics Letters, 2019, 125, 26001.  | 10.3 | 75        |
| 31 | Quantum localization bounds Trotter errors in digital quantum simulation. Science Advances, 2019, 5, eaau8342.   | 3.2  | 3         |
| 32 | Accessing eigenstate spin-glass order from reduced density matrices. Physical Review B, 2019, 99, .  | 20.1 | 411       |
| 33 | Dynamical quantum phase transitions: a review. Reports on Progress in Physics, 2018, 81, 054001.   | 7.8  | 133       |
| 34 | Many-Body Localization Dynamics from Gauge Invariance. Physical Review Letters, 2018, 120, 030601.   | 7.8  | 179       |
| 35 | Dynamical Quantum Phase Transitions in Spin Chains with Long-Range Interactions: Merging Different Concepts of Nonequilibrium Criticality. Physical Review Letters, 2018, 120, 130601. | 2.9  | 14        |
| 36 | Sharp entanglement thresholds in the logarithmic negativity of disjoint blocks in the transverse-field Ising chain. New Journal of Physics, 2018, 20, 083032.                          |      |           |

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 37 | Measuring the Single-Particle Density Matrix for Fermions and Hard-Core Bosons in an Optical Lattice. <i>Physical Review Letters</i> , 2018, 121, 260401.                        | 7.8  | 20        |
| 38 | Constructing effective free energies for dynamical quantum phase transitions in the transverse-field Ising chain. <i>Physical Review B</i> , 2018, 97, .                         | 3.2  | 18        |
| 39 | Detecting Equilibrium and Dynamical Quantum Phase Transitions in Ising Chains via Out-of-Time-Ordered Correlators. <i>Physical Review Letters</i> , 2018, 121, 016801.           | 7.8  | 108       |
| 40 | Quantum dynamics in transverse-field Ising models from classical networks. <i>SciPost Physics</i> , 2018, 4, .   | 4.9  | 45        |
| 41 | Quenching a quantum critical state by the order parameter: Dynamical quantum phase transitions and quantum speed limits. <i>Physical Review B</i> , 2017, 95, .                  | 3.2  | 44        |
| 42 | Characterizing Time Irreversibility in Disordered Fermionic Systems by the Effect of Local Perturbations. <i>Physical Review Letters</i> , 2017, 119, 016802.                    | 7.8  | 15        |
| 43 | Dynamical quantum phase transitions in systems with continuous symmetry breaking. <i>Physical Review B</i> , 2017, 96, .   | 3.2  | 44        |
| 44 | U(1) Wilson lattice gauge theories in digital quantum simulators. <i>New Journal of Physics</i> , 2017, 19, 103020.  | 2.9  | 103       |
| 45 | Robustness of digital quantum simulators against Trotter errors. , 2017, , .   |      | 0         |
| 46 | Spin transport in a Lindblad-driven isotropic quantum Heisenberg spin-chain. , 2017, , .   |      | 0         |
| 47 | Prethermalization and thermalization of a quenched interacting Luttinger liquid. <i>Physical Review A</i> , 2016, 94, .  | 2.5  | 22        |
| 48 | Heating and many-body resonances in a periodically driven two-band system. <i>Physical Review B</i> , 2016, 93, .  | 3.2  | 80        |
| 49 | Robustness of Many-Body Localization in the Presence of Dissipation. <i>Physical Review Letters</i> , 2016, 116, 237203.   | 7.8  | 115       |
| 50 | Dynamical topological order parameters far from equilibrium. <i>Physical Review B</i> , 2016, 93, .  | 3.2  | 174       |
| 51 | Real-time dynamics of lattice gauge theories with a few-qubit quantum computer. <i>Nature</i> , 2016, 534, 516-519.  | 27.8 | 512       |
| 52 | Measuring multipartite entanglement through dynamic susceptibilities. <i>Nature Physics</i> , 2016, 12, 778-782.   | 16.7 | 210       |
| 53 | Nonequilibrium dynamical renormalization group: Dynamical crossover from weak to infinite randomness in the transverse-field Ising chain. <i>Physical Review B</i> , 2015, 92, . | 3.2  | 6         |
| 54 | Many-body localization and quantum ergodicity in disordered long-range Ising models. <i>Physical Review B</i> , 2015, 92, .  | 3.2  | 56        |

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 55 | Stretched exponential decay of Majorana edge modes in many-body localized Kitaev chains under dissipation. Physical Review B, 2015, 92, .        | 3.2 | 43        |
| 56 | Scaling and Universality at Dynamical Quantum Phase Transitions. Physical Review Letters, 2015, 115, 140602.                                     | 7.8 | 163       |
| 57 | Probing entanglement in adiabatic quantum optimization with trapped ions. Frontiers in Physics, 2015, 3, .                                       | 2.1 | 24        |
| 58 | Dynamics of Symmetry Breaking during Quantum Real-Time Evolution in a Minimal Model System. Physical Review Letters, 2014, 113, 180601.          | 7.8 | 3         |
| 59 | Dynamical Quantum Phase Transitions in Systems with Broken-Symmetry Phases. Physical Review Letters, 2014, 113, 205701.                          | 7.8 | 155       |
| 60 | Dynamical Quantum Phase Transitions in the Transverse-Field Ising Model. Physical Review Letters, 2013, 110, 135704.                             | 7.8 | 611       |
| 61 | Crooks Relation in Optical Spectra: Universality in Work Distributions for Weak Local Quenches. Physical Review Letters, 2012, 108, 190601.      | 7.8 | 53        |
| 62 | Real-time energy dynamics in spin- $\frac{1}{2}$ chains. Physical Review B, 2011, 84, .  | 1.8 | 7         |
| 63 | Interaction quench dynamics in the Kondo model in the presence of a local magnetic field. Journal of Physics Condensed Matter, 2010, 22, 345604. | 1.8 | 3         |
| 64 | Exact results for nonlinear ac transport through a resonant level model. Journal of Physics Condensed Matter, 2010, 22, 275604.                  | 1.8 | 3         |