

Markus Heyl

List of Publications by Year in descending order

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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	Dynamical Quantum Phase Transitions in the Transverse-Field Ising Model. <i>Physical Review Letters</i> , 2013, 110, 135704.	7.8	611
2	Real-time dynamics of lattice gauge theories with a few-qubit quantum computer. <i>Nature</i> , 2016, 534, 516-519.	27.8	512
3	Dynamical quantum phase transitions: a review. <i>Reports on Progress in Physics</i> , 2018, 81, 054001.	20.1	411
4	Measuring multipartite entanglement through dynamic susceptibilities. <i>Nature Physics</i> , 2016, 12, 778-782.	16.7	210
5	Dynamical Quantum Phase Transitions in Spin Chains with Long-Range Interactions: Merging Different Concepts of Nonequilibrium Criticality. <i>Physical Review Letters</i> , 2018, 120, 130601.	7.8	179
6	Dynamical topological order parameters far from equilibrium. <i>Physical Review B</i> , 2016, 93, .	3.2	174
7	Scaling and Universality at Dynamical Quantum Phase Transitions. <i>Physical Review Letters</i> , 2015, 115, 140602.	7.8	163
8	Dynamical Quantum Phase Transitions in Systems with Broken-Symmetry Phases. <i>Physical Review Letters</i> , 2014, 113, 205701.	7.8	155
9	Many-Body Localization Dynamics from Gauge Invariance. <i>Physical Review Letters</i> , 2018, 120, 030601.	7.8	133
10	Robustness of Many-Body Localization in the Presence of Dissipation. <i>Physical Review Letters</i> , 2016, 116, 237203.	7.8	115
11	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
12	U(1) Wilson lattice gauge theories in digital quantum simulators. <i>New Journal of Physics</i> , 2017, 19, 103020.	2.9	103
13	Quantum Many-Body Dynamics in Two Dimensions with Artificial Neural Networks. <i>Physical Review Letters</i> , 2020, 125, 100503.	7.8	84
14	Heating and many-body resonances in a periodically driven two-band system. <i>Physical Review B</i> , 2016, 93, .	3.2	80
15	Quantum localization bounds Trotter errors in digital quantum simulation. <i>Science Advances</i> , 2019, 5, eaau8342.	10.3	75
16	Digital quantum simulation, Trotter errors, and quantum chaos of the kicked top. <i>Npj Quantum Information</i> , 2019, 5, .	6.7	69
17	Many-body localization and quantum ergodicity in disordered long-range Ising models. <i>Physical Review B</i> , 2015, 92, .	3.2	56
18	Crooks Relation in Optical Spectra: Universality in Work Distributions for Weak Local Quenches. <i>Physical Review Letters</i> , 2012, 108, 190601.	7.8	53

#	ARTICLE	IF	CITATIONS
19	Real-time energy dynamics in spin- $\frac{1}{2}$ chains. Physical Review B, 2011, 84, .	3.2	47
20	Dynamical quantum phase transitions: A brief survey. Europhysics Letters, 2019, 125, 26001.	2.0	47
21	Measuring a dynamical topological order parameter in quantum walks. Light: Science and Applications, 2020, 9, 7.	16.6	46
22	Quantum dynamics in transverse-field Ising models from classical networks. SciPost Physics, 2018, 4, .	4.9	45
23	Quenching a quantum critical state by the order parameter: Dynamical quantum phase transitions and quantum speed limits. Physical Review B, 2017, 95, .	3.2	44
24	Dynamical quantum phase transitions in systems with continuous symmetry breaking. Physical Review B, 2017, 96, .	3.2	44
25	Stretched exponential decay of Majorana edge modes in many-body localized Kitaev chains under dissipation. Physical Review B, 2015, 92, .	3.2	43
26	Dynamical Quantum Phase Transitions in U(1) Quantum Link Models. Physical Review Letters, 2019, 122, 250401.	7.8	43
27	The Kibble-Zurek mechanism at exceptional points. Nature Communications, 2019, 10, 2254.	12.8	40
28	Efficiently solving the dynamics of many-body localized systems at strong disorder. Physical Review B, 2019, 99, .	3.2	39
29	Homogeneous Floquet time crystal protected by gauge invariance. Physical Review Research, 2020, 2, .	3.6	36
30	Real-time dynamics of string breaking in quantum spin chains. Physical Review B, 2020, 102, .	3.2	33
31	Probing entanglement in adiabatic quantum optimization with trapped ions. Frontiers in Physics, 2015, 3, .	2.1	24
32	Prethermalization and thermalization of a quenched interacting Luttinger liquid. Physical Review A, 2016, 94, .	2.5	22
33	Non-Hermitian Kibble-Zurek Mechanism with Tunable Complexity in Single-Photon Interferometry. PRX Quantum, 2021, 2, .	9.2	22
34	Reinforcement Learning for Digital Quantum Simulation. Physical Review Letters, 2021, 127, 110502.	7.8	21
35	Measuring the Single-Particle Density Matrix for Fermions and Hard-Core Bosons in an Optical Lattice. Physical Review Letters, 2018, 121, 260401.	7.8	20
36	Dynamical quantum phase transitions in collapse and revival oscillations of a quenched superfluid. Physical Review B, 2019, 99, .	3.2	20

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37	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
38	Local measures of dynamical quantum phase transitions. <i>Physical Review B</i> , 2021, 104, .	3.2	18
39	Quantum Fisher information measurement and verification of the quantum Cram�r� Rao bound in a solid-state qubit. <i>Npj Quantum Information</i> , 2022, 8, .	6.7	17
40	Characterizing Time Irreversibility in Disordered Fermionic Systems by the Effect of Local Perturbations. <i>Physical Review Letters</i> , 2017, 119, 016802.	7.8	15
41	Describing many-body localized systems in thermal environments. <i>New Journal of Physics</i> , 2019, 21, 063026.	2.9	15
42	Sharp entanglement thresholds in the logarithmic negativity of disjoint blocks in the transverse-field Ising chain. <i>New Journal of Physics</i> , 2018, 20, 083032.	2.9	14
43	Measuring complex-partition-function zeros of Ising models in quantum simulators. <i>Physical Review A</i> , 2019, 100, .	2.5	14
44	Discrete truncated Wigner approach to dynamical phase transitions in Ising models after a quantum quench. <i>Physical Review B</i> , 2020, 102, .	3.2	13
45	Signatures of Quantum Phase Transitions after Quenches in Quantum Chaotic One-Dimensional Systems. <i>Physical Review X</i> , 2021, 11, .	8.9	13
46	Unconventional critical exponents at dynamical quantum phase transitions in a random Ising chain. <i>Physical Review B</i> , 2021, 104, .	3.2	12
47	Subdiffusive dynamics and critical quantum correlations in a disorder-free localized Kitaev honeycomb model out of equilibrium. <i>Physical Review Research</i> , 2021, 3, .	3.6	12
48	Variational classical networks for dynamics in interacting quantum matter. <i>Physical Review B</i> , 2021, 103, .	3.2	11
49	Finite-temperature critical behavior of long-range quantum Ising models. <i>SciPost Physics</i> , 2021, 11, .	4.9	9
50	Interaction quench dynamics in the Kondo model in the presence of a local magnetic field. <i>Journal of Physics Condensed Matter</i> , 2010, 22, 345604.	1.8	7
51	Geometrical quench and dynamical quantum phase transition in the $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \hat{I}_{\pm} \langle \text{mml:mi} \rangle \langle \text{mml:mo} \rangle \hat{\sim} \langle \text{mml:mo} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mn} \rangle$ lattice. <i>Physical Review B</i> , 2020, 101, .		
52	Quantum chaos and ensemble inequivalence of quantum long-range Ising chains. <i>Physical Review B</i> , 2021, 104, .	3.2	7
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	Unitary Long-Time Evolution with Quantum Renormalization Groups and Artificial Neural Networks. <i>Physical Review Letters</i> , 2021, 127, 050601.	7.8	6

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55	Quantum entanglement recognition. <i>Physical Review Research</i> , 2021, 3, .	3.6	4
56	Exact results for nonlinear ac transport through a resonant level model. <i>Journal of Physics Condensed Matter</i> , 2010, 22, 275604.	1.8	3
57	Dynamics of Symmetry Breaking during Quantum Real-Time Evolution in a Minimal Model System. <i>Physical Review Letters</i> , 2014, 113, 180601.	7.8	3
58	Accessing eigenstate spin-glass order from reduced density matrices. <i>Physical Review B</i> , 2019, 99, .	3.2	3
59	Real-time dynamics of one-dimensional and two-dimensional bosonic quantum matter deep in the many-body localized phase. <i>Physical Review B</i> , 2021, 104, .	3.2	2
60	Fate of algebraic many-body localization under driving. <i>Physical Review B</i> , 2021, 104, .	3.2	2
61	Quantum Chaos and Universal Trotterisation Performance Behaviours in Digital Quantum Simulation. , 2021, , .		1
62	Spatiotemporal heterogeneity of entanglement in many-body localized systems. <i>Physical Review B</i> , 2022, 105, .	3.2	1
63	Robustness of digital quantum simulators against Trotter errors. , 2017, , .		0
64	Spin transport in a Lindblad-driven isotropic quantum Heisenberg spin-chain. , 2017, , .		0