

Jens Koch

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/4812202/publications.pdf>

Version: 2024-02-01

67
papers

10,150
citations

76326

40
h-index

106344

65
g-index

68
all docs

68
docs citations

68
times ranked

5509
citing authors

#	ARTICLE	IF	CITATIONS
1	Robust Quantum Optimal Control with Trajectory Optimization. <i>Physical Review Applied</i> , 2022, 17, .	3.8	18
2	Universal Fast-Flux Control of a Coherent, Low-Frequency Qubit. <i>Physical Review X</i> , 2021, 11, .	8.9	58
3	Positive- and negative-frequency noise from an ensemble of two-level fluctuators. <i>Physical Review Research</i> , 2021, 3, .	3.6	17
4	Protecting a bosonic qubit with autonomous quantum error correction. <i>Nature</i> , 2021, 590, 243-248.	27.8	68
5	Engineering Dynamical Sweet Spots to Protect Qubits from $1/f$ Noise. <i>Physical Review Applied</i> , 2021, 15, .	3.8	35
6	Experimental Realization of a Protected Superconducting Circuit Derived from the $\hat{\sigma}_x$ Qubit. <i>PRX Quantum</i> , 2021, 2, .	9.2	77
7	Variational tight-binding method for simulating large superconducting circuits. <i>Physical Review Research</i> , 2021, 3, .	3.6	2
8	Moving beyond the Transmon: Noise-Protected Superconducting Quantum Circuits. <i>PRX Quantum</i> , 2021, 2, .	9.2	43
9	Quantum control of an oscillator using a stimulated Josephson nonlinearity. <i>Nature Physics</i> , 2020, 16, 211-217.	16.7	32
10	Floquet-Engineered Enhancement of Coherence Times in a Driven Fluxonium Qubit. <i>Physical Review Applied</i> , 2020, 14, .	3.8	21
11	Universal gates for protected superconducting qubits using optimal control. <i>Physical Review A</i> , 2020, 101, .	2.5	30
12	Control and coherence time enhancement of the 0π qubit. <i>New Journal of Physics</i> , 2019, 21, 043002.	2.9	26
13	Circuit quantization in the presence of time-dependent external flux. <i>Physical Review B</i> , 2019, 99, .	3.2	36
14	Gradient-based optimal control of open quantum systems using quantum trajectories and automatic differentiation. <i>Physical Review A</i> , 2019, 99, .	2.5	53
15	Spectrum and coherence properties of the current-mirror qubit. <i>Physical Review B</i> , 2019, 100, .	3.2	15
16	Realization of a $\hat{\sigma}_x$ System with Metastable States of a Capacitively Shunted Fluxonium. <i>Physical Review Letters</i> , 2018, 120, 150504.	7.8	74
17	Coherence properties of the 0π qubit. <i>New Journal of Physics</i> , 2018, 20, 043053.	2.9	64
18	Adaptive rotating-wave approximation for driven open quantum systems. <i>Physical Review A</i> , 2018, 98, .	2.5	4

#	ARTICLE	IF	CITATIONS
19	Universal stabilization of single-qubit states using a tunable coupler. <i>Physical Review A</i> , 2018, 97, .	2.5	8
20	Observation of a Dissipative Phase Transition in a One-Dimensional Circuit QED Lattice. <i>Physical Review X</i> , 2017, 7, .	8.9	258
21	Universal Stabilization of a Parametrically Coupled Qubit. <i>Physical Review Letters</i> , 2017, 119, 150502.	7.8	87
22	Speedup for quantum optimal control from automatic differentiation based on graphics processing units. <i>Physical Review A</i> , 2017, 95, .	2.5	84
23	Random access quantum information processors using multimode circuit quantum electrodynamics. <i>Nature Communications</i> , 2017, 8, 1904.	12.8	91
24	Mapping repulsive to attractive interaction in drivenâ€“dissipative quantum systems. <i>New Journal of Physics</i> , 2017, 19, 115010.	2.9	5
25	Nematic quantum liquid crystals of bosons in frustrated lattices. <i>Physical Review B</i> , 2016, 93, .	3.2	7
26	Resummation for Nonequilibrium Perturbation Theory and Application to Open Quantum Lattices. <i>Physical Review X</i> , 2016, 6, .	8.9	27
27	Imaging Photon Lattice States by Scanning Defect Microscopy. <i>Physical Review X</i> , 2016, 6, .	8.9	13
28	Understanding degenerate ground states of a protected quantum circuit in the presence of disorder. <i>Physical Review B</i> , 2014, 90, .	3.2	39
29	Perturbative approach to Markovian open quantum systems. <i>Scientific Reports</i> , 2014, 4, 4887.	3.3	76
30	Fifty years of Jaynesâ€“Cummings physics. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2013, 46, 220201.	1.5	25
31	Circuit QED lattices: Towards quantum simulation with superconducting circuits. <i>Annalen Der Physik</i> , 2013, 525, 395-412.	2.4	253
32	Dispersive regime of the Jaynesâ€“Cummings and Rabi lattice. <i>New Journal of Physics</i> , 2013, 15, 115002.	2.9	32
33	Symmetries and Collective Excitations in Large Superconducting Circuits. <i>Physical Review X</i> , 2013, 3, .	8.9	18
34	Circuit QED with fluxonium qubits: Theory of the dispersive regime. <i>Physical Review B</i> , 2013, 87, .	3.2	78
35	Asymptotic expressions for charge-matrix elements of the fluxonium circuit. <i>Physical Review B</i> , 2013, 87, .	3.2	11
36	Low-disorder microwave cavity lattices for quantum simulation with photons. <i>Physical Review A</i> , 2012, 86, .	2.5	168

#	ARTICLE	IF	CITATIONS
37	Evidence for coherent quantum phase slips across a Josephson junction array. <i>Physical Review B</i> , 2012, 85, .	3.2	103
38	On-chip quantum simulation with superconducting circuits. <i>Nature Physics</i> , 2012, 8, 292-299.	16.7	829
39	Minimizing Random Disorder in a Kagome Lattice of Superconducting Resonators. , 2012, , .		0
40	Effective equilibrium theory of nonequilibrium quantum transport. <i>Annals of Physics</i> , 2011, 326, 2963-2999.	2.8	24
41	Synthetic gauge fields and homodyne transmission in Jaynesâ€“Cummings lattices. <i>New Journal of Physics</i> , 2011, 13, 095008.	2.9	94
42	Quasiparticle Relaxation of Superconducting Qubits in the Presence of Flux. <i>Physical Review Letters</i> , 2011, 106, 077002.	7.8	119
43	Time-reversal-symmetry breaking in circuit-QED-based photon lattices. <i>Physical Review A</i> , 2010, 82, .	2.5	310
44	Charging Effects in the Inductively Shunted Josephson Junction. <i>Physical Review Letters</i> , 2009, 103, 217004.	7.8	75
45	Randomized Benchmarking and Process Tomography for Gate Errors in a Solid-State Qubit. <i>Physical Review Letters</i> , 2009, 102, 090502.	7.8	179
46	Proposal for generating and detecting multi-qubit GHZ states in circuit QED. <i>New Journal of Physics</i> , 2009, 11, 073040.	2.9	61
47	Life after charge noise: recent results with transmon qubits. <i>Quantum Information Processing</i> , 2009, 8, 105-115.	2.2	81
48	Nonlinear response of the vacuum Rabi resonance. <i>Nature Physics</i> , 2009, 5, 105-109.	16.7	226
49	Fluxonium: Single Cooper-Pair Circuit Free of Charge Offsets. <i>Science</i> , 2009, 326, 113-116.	12.6	483
50	Superfluidâ€“Mott-insulator transition of light in the Jaynes-Cummings lattice. <i>Physical Review A</i> , 2009, 80, .	2.5	147
51	Suppressing charge noise decoherence in superconducting charge qubits. <i>Physical Review B</i> , 2008, 77, .	3.2	415
52	Novel Quantum Transport Effects in Single-Molecule Transistors. <i>Advances in Solid State Physics</i> , 2008, , 99-109.	0.8	0
53	Controlling the Spontaneous Emission of a Superconducting Transmon Qubit. <i>Physical Review Letters</i> , 2008, 101, 080502.	7.8	336
54	Theory of vibrational absorption sidebands in the Coulomb-blockade regime of single-molecule transistors. <i>Physical Review B</i> , 2008, 77, .	3.2	38

#	ARTICLE	IF	CITATIONS
55	Discontinuous Current-Phase Relations in Small One-Dimensional Josephson Junction Arrays. Physical Review Letters, 2008, 101, 097007.	7.8	8
56	Nonequilibrium charge-Kondo transport through negative-U molecules. Physical Review B, 2007, 75, .	3.2	40
57	Charge-insensitive qubit design derived from the Cooper pair box. Physical Review A, 2007, 76, .	2.5	2,184
58	Coupling superconducting qubits via a cavity bus. Nature, 2007, 449, 443-447.	27.8	1,109
59	Theory of the Franck-Condon blockade regime. Physical Review B, 2006, 74, .	3.2	221
60	Fractional Shot Noise in the Kondo Regime. Physical Review Letters, 2006, 97, 086601.	7.8	109
61	Pair Tunneling through Single Molecules. Physical Review Letters, 2006, 96, 056803.	7.8	92
62	Current-induced nonequilibrium vibrations in single-molecule devices. Physical Review B, 2006, 73, .	3.2	119
63	Effects of charge-dependent vibrational frequencies and anharmonicities in transport through molecules. Physical Review B, 2005, 72, .	3.2	48
64	Full Counting Statistics of Strongly Non-Ohmic Transport through Single Molecules. Physical Review Letters, 2005, 95, 056801.	7.8	62
65	Franck-Condon Blockade and Giant Fano Factors in Transport through Single Molecules. Physical Review Letters, 2005, 94, 206804.	7.8	457
66	Thermopower of single-molecule devices. Physical Review B, 2004, 70, .	3.2	201
67	Scqubits: a Python package for superconducting qubits. Quantum - the Open Journal for Quantum Science, 0, 5, 583.	0.0	25