Mikko MÃ¶ttÃ¶nen

List of Publications by Year
in descending order

151 papers	5,817 citations	81900 39 h-index	82547 72 g-index
153 all docs	153 docs citations	153 times ranked	4061 citing authors

#	Article	IF	Citations
1	Single-shot readout of an electron spin in silicon. Nature, 2010, 467, 687-691.	27.8	623
2	Single-electron current sources: Toward a refined definition of the ampere. Reviews of Modern Physics, 2013, 85, 1421-1472.	45.6	285
3	Observation of Dirac monopoles in a synthetic magnetic field. Nature, 2014, 505, 657-660.	27.8	227
4	Quantum Circuits for General Multiqubit Gates. Physical Review Letters, 2004, 93, 130502.	7.8	216
5	Hybrid single-electron transistor as a source of quantized electric current. Nature Physics, 2008, 4, 120-124.	16.7	193
6	Test of the Jarzynski and Crooks Fluctuation Relations in an Electronic System. Physical Review Letters, 2012, 109, 180601.	7.8	171
7	Environment-Assisted Tunneling as an Origin of the Dynes Density of States. Physical Review Letters, 2010, 105, 026803.	7.8	153
8	Efficient Decomposition of Quantum Gates. Physical Review Letters, 2004, 92, 177902.	7.8	135
9	Heat Transistor: Demonstration of Gate-Controlled Electronic Refrigeration. Physical Review Letters, 2007, 99, 027203.	7.8	135
10	Tying quantum knots. Nature Physics, 2016, 12, 478-483.	16.7	132
11	Transport Spectroscopy of Single Phosphorus Donors in a Silicon Nanoscale Transistor. Nano Letters, 2010, 10, 11-15.	9.1	120
12	Distribution of entropy production in a single-electron box. Nature Physics, 2013, 9, 644-648.	16.7	97
13	Experimental Determination of the Berry Phase in a Superconducting Charge Pump. Physical Review Letters, 2008, 100, 177201.	7.8	96
14	Quantum circuits with uniformly controlled one-qubit gates. Physical Review A, 2005, 71, .	2.5	88
15	Observation of isolated monopoles in a quantum field. Science, 2015, 348, 544-547.	12.6	87
16	Creation of Dirac Monopoles in Spinor Bose-Einstein Condensates. Physical Review Letters, 2009, 103, 030401.	7.8	86
17	Quantum-circuit refrigerator. Nature Communications, 2017, 8, 15189.	12.8	85
18	Electronic Refrigeration at the Quantum Limit. Physical Review Letters, 2009, 102, 200801.	7.8	82

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19	Splitting of a doubly quantized vortex through intertwining in Bose-Einstein condensates. Physical Review A, 2003, 68, .	2.5	79
20	Observation of the single-electron regime in a highly tunable silicon quantum dot. Applied Physics Letters, 2009, 95, .	3.3	77
21	High-fidelity one-qubit operations under random telegraph noise. Physical Review A, 2006, 73, .	2.5	73
22	Detection of Zeptojoule Microwave Pulses Using Electrothermal Feedback in Proximity-Induced Josephson Junctions. Physical Review Letters, 2016, 117, 030802.	7.8	72
23	Stationary vortex clusters in nonrotating Bose-Einstein condensates. Physical Review A, 2005, 71, .	2.5	70
24	An Accurate Single-Electron Pump Based on a Highly Tunable Silicon Quantum Dot. Nano Letters, 2014, 14, 3405-3411.	9.1	69
25	Bolometer operating at the threshold for circuit quantum electrodynamics. Nature, 2020, 586, 47-51.	27.8	68
26	Decoherence in Adiabatic Quantum Evolution: Application to Cooper Pair Pumping. Physical Review Letters, 2010, 105, 030401.	7.8	63
27	Quantum-limited heat conduction over macroscopic distances. Nature Physics, 2016, 12, 460-464.	16.7	63
28	Transformation of quantum states using uniformly controlled rotations. Quantum Information and Computation, 2005, 5, 467-473.	0.3	61
29	Splitting Times of Doubly Quantized Vortices in Dilute Bose-Einstein Condensates. Physical Review Letters, 2006, 97, 110406.	7.8	57
30	Exotic vortex lattices in two-species Bose-Einstein condensates. Physical Review A, 2012, 85, .	2.5	56
31	Non-Abelian Magnetic Monopole in a Bose-Einstein Condensate. Physical Review Letters, 2009, 102, 080403.	7.8	53
32	Stationary states of trapped spin-orbit-coupled Bose-Einstein condensates. Physical Review A, 2012, 86, .	2.5	52
33	Nanoampere pumping of Cooper pairs. Applied Physics Letters, 2007, 90, 082102.	3.3	49
34	Synthetic electromagnetic knot in a three-dimensional skyrmion. Science Advances, 2018, 4, eaao3820.	10.3	47
35	Measurement scheme of the Berry phase in superconducting circuits. Physical Review B, 2006, 73, .	3.2	43
36	Stability and dynamics of vortex clusters in nonrotated Bose-Einstein condensates. Physical Review A, 2006, 74, .	2.5	43

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37	Geometric phase gates with adiabatic control in electron spin resonance. Physical Review A, 2013, 87, .	2.5	43
38	Method to create a vortex in a Bose-Einstein condensate. Physical Review A, 2002, 66, .	2.5	42
39	Maxwell's demon based on a single-electron pump. Physical Review B, 2011, 84, .	3.2	42
40	Dynamically stable multiply quantized vortices in dilute Bose-Einstein condensates. Physical Review A, 2006, 74, .	2.5	40
41	Evidence for universality of tunable-barrier electron pumps. Metrologia, 2019, 56, 044004.	1.2	40
42	Decoherence of adiabatically steered quantum systems. Physical Review B, 2010, 82, .	3.2	38
43	Single-electron shuttle based on a silicon quantum dot. Applied Physics Letters, 2011, 98, 212103.	3.3	37
44	Thermal-Error Regime in High-Accuracy Gigahertz Single-Electron Pumping. Physical Review Applied, 2017, 8, .	3.8	37
45	Nanobolometer with ultralow noise equivalent power. Communications Physics, 2019, 2, .	5.3	36
46	Vortex Pump for Dilute Bose-Einstein Condensates. Physical Review Letters, 2007, 99, 250406.	7.8	35
47	Suppression of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>1</mml:mn><mml:mo>/</mml:mo><mml:msup><mml:mi>f</mml:mi><mml:mi>Î±</mml:mi in one-qubit systems. Physical Review A, 2008, 77, .	2.5	35
48	Exceptional points in tunable superconducting resonators. Physical Review B, 2019, 100, .	3.2	35
49	Size and dynamics of vortex dipoles in dilute Bose-Einstein condensates. Physical Review A, 2011, 83, .	2.5	34
50	Efficient protocol for qubit initialization with a tunable environment. Npj Quantum Information, 2017, 3, .	6.7	32
51	Microwave nanobolometer based on proximity Josephson junctions. Physical Review B, 2014, 90, .	3.2	30
52	Splitting dynamics of giant vortices in dilute Bose-Einstein condensates. Physical Review A, 2010, 81, .	2.5	28
53	Environmentally activated tunneling events in a hybrid single-electron box. Physical Review B, 2010, 82, .	3.2	28
54	Continuous creation of a vortex in a BoseÂEinstein condensate with hyperfine spinFÂ 2. Journal of Physics Condensed Matter, 2002, 14, 13481-13491.	1.8	27

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55	Quantized current of a hybrid single-electron transistor with superconducting leads and a normal-metal island. European Physical Journal: Special Topics, 2009, 172, 311-321.	2.6	27
56	Effects of the rotating-wave and secular approximations on non-Markovianity. Physical Review A, 2013, 88, .	2.5	27
57	Theory of quantum-circuit refrigeration by photon-assisted electron tunneling. Physical Review B, 2017, 96, .	3.2	27
58	Geometric quantum gates with superconducting qubits. Physical Review B, 2011, 83, .	3.2	26
59	Quantum driving and work. Physical Review E, 2014, 89, 052128.	2.1	26
60	Flux-tunable heat sink for quantum electric circuits. Scientific Reports, 2018, 8, 6325.	3.3	26
61	Broadband Lamb shift in an engineered quantum system. Nature Physics, 2019, 15, 533-537.	16.7	26
62	Correlation-Picture Approach to Open-Quantum-System Dynamics. Physical Review X, 2020, 10, .	8.9	26
63	Conservation law of operator current in open quantum systems. Physical Review A, 2012, 85, .	2.5	24
64	Tunable electromagnetic environment for superconducting quantum bits. Scientific Reports, 2013, 3, 1987.	3.3	24
65	Equivalent qubit dynamics under classical and quantum noise. Physical Review A, 2007, 75, .	2.5	23
66	Entanglement-enhanced quantum key distribution. Physical Review A, 2008, 78, .	2.5	23
67	Realisation of a quantum current standard at liquid helium temperature with sub-ppm reproducibility. Metrologia, 2020, 57, 025013.	1.2	23
68	Qubit Measurement by Multichannel Driving. Physical Review Letters, 2019, 122, 080503.	7.8	22
69	Probe and control of the reservoir density of states in single-electron devices. Physical Review B, 2010, 81, .	3.2	21
70	Non-Abelian geometric phases in ground-state Josephson devices. Physical Review B, 2010, 81, .	3.2	21
71	Core sizes and dynamical instabilities of giant vortices in dilute Bose-Einstein condensates. Physical Review A, 2010, 81, .	2.5	21
72	Vortex-splitting and phase-separating instabilities of coreless vortices in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>F</mml:mi><mml:mo>=</mml:mo><mml:mn>1</mml:mn></mml:mrow></mml:math>spinor Bose-Einstein condensates. Physical Review A, 2009, 79, .	2.5	20

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73	Stabilization and Pumping of Giant Vortices in Dilute Boseâ€"Einstein Condensates. Journal of Low Temperature Physics, 2010, 161, 561-573.	1.4	20
74	Ground-state Dirac monopole. Physical Review A, 2011, 84, .	2.5	20
75	Energy-efficient quantum computing. Npj Quantum Information, 2017, 3, .	6.7	20
76	Experimental Realization of a Dirac Monopole through the Decay of an Isolated Monopole. Physical Review X, 2017, 7, .	8.9	20
77	Fluctuations of work in nearly adiabatically driven open quantum systems. Physical Review E, 2015, 91, 022126.	2.1	19
78	Reservoir engineering using quantum optimal control for qubit reset. New Journal of Physics, 2019, 21, 093054.	2.9	19
79	Fast control of dissipation in a superconducting resonator. Applied Physics Letters, 2019, 115, 082601.	3.3	19
80	System-environment correlations in qubit initialization and control. Physical Review Research, 2019, 1, .	3.6	18
81	Superadiabatic theory for Cooper pair pumping under decoherence. Physical Review B, 2011, 84, .	3.2	17
82	Three-dimensional skyrmions in spin-2 Boseâ€"Einstein condensates. New Journal of Physics, 2018, 20, 055011.	2.9	17
83	Stability of coreless vortices in ferromagnetic spinor Bose-Einstein condensates. Physical Review A, 2007, 76, .	2.5	16
84	Adiabatically steered open quantum systems: Master equation and optimal phase. Physical Review A, 2010, 82, .	2.5	16
85	Decay of a Quantum Knot. Physical Review Letters, 2019, 123, 163003.	7.8	15
86	Suppression of the critical current of a balanced superconducting quantum interference device. Applied Physics Letters, 2008, 92, .	3.3	14
87	Electron counting in a silicon single-electron pump. New Journal of Physics, 2015, 17, 103030.	2.9	13
88	Observation of microwave absorption and emission from incoherent electron tunneling through a normal-metalâ€"insulatorâ€"superconductor junction. Scientific Reports, 2018, 8, 3966.	3.3	13
89	A low-noise on-chip coherent microwave source. Nature Electronics, 2021, 4, 885-892.	26.0	13
90	Ground-state geometric quantum computing in superconducting systems. Physical Review A, 2010, 82, .	2.5	12

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91	Single-photon heat conduction in electrical circuits. Physical Review B, 2012, 85, .	3.2	12
92	Decay of an isolated monopole into a Dirac monopole configuration. Physical Review A, 2016, 93, .	2.5	12
93	Three-dimensional splitting dynamics of giant vortices in Bose-Einstein condensates. Physical Review A, 2018, 98, .	2.5	12
94	Controlled creation of a singular spinor vortex by circumventing the Dirac belt trick. Nature Communications, 2019, 10, 4772.	12.8	12
95	Gigahertz Single-Electron Pumping Mediated by Parasitic States. Nano Letters, 2018, 18, 4141-4147.	9.1	11
96	Calibration of cryogenic amplification chains using normal-metalâ€“insulatorâ€“superconductor junctions. Applied Physics Letters, 2019, 114, .	3.3	11
97	Waiting time distributions in a two-level fluctuator coupled to a superconducting charge detector. Physical Review Research, 2019, 1, .	3.6	11
98	Finite-temperature phase transitions in quasi-two-dimensional spin-1 Bose gases. Physical Review A, 2010, 81, .	2.5	10
99	Silicon Metal-oxide-semiconductor Quantum Dots for Single-electron Pumping. Journal of Visualized Experiments, 2015, , e52852.	0.3	10
100	Counterdiabatic vortex pump in spinor Bose-Einstein condensates. Physical Review A, 2017, 95, .	2.5	10
101	Effects of interactions and noise on tunneling of Bose-Einstein condensates through a potential barrier. Physical Review A, 2007, 76, .	2.5	9
102	Capacitively Enhanced Thermal Escape inÂUnderdamped Josephson Junctions. Journal of Low Temperature Physics, 2011, 163, 164-169.	1.4	9
103	Measurement scheme for the Lamb shift in a superconducting circuit with broadband environment. Physical Review A, 2011, 84, .	2.5	9
104	Creation and dynamics of two-dimensional skyrmions in antiferromagnetic spin-1 Bose-Einstein condensates. Physical Review A, 2014, 89, .	2.5	9
105	Flux-tunable phase shifter for microwaves. Scientific Reports, 2017, 7, 14713.	3.3	9
106	Photon-number-dependent effective Lamb shift. Physical Review Research, 2021, 3, .	3.6	9
107	Vortex pump for Bose-Einstein condensates utilizing a time-averaged orbiting potential trap. Physical Review A, 2013, 87, .	2.5	8
108	Predictors of Development of Echocardiographic Left Ventricular Diastolic Dysfunction in the Subjects Aged 40 to 59ÂYears (from the Oulu Project Elucidating Risk of Atherosclerosis Study). American Journal of Cardiology, 2015, 116, 1374-1378.	1.6	8

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109	Lumped-element Josephson parametric amplifier at 650 MHz for nano-calorimeter readout. Superconductor Science and Technology, 2017, 30, 085001.	3.5	8
110	Validity of Born-Markov master equations for single- and two-qubit systems. Physical Review B, 2021, 103, .	3.2	8
111	Microwave response of a metallic superconductor subject to a high-voltage gate electrode. Scientific Reports, 2022, 12, 6822.	3.3	8
112	Towards direct closure of the quantum metrological triangle. , 2008, , .		7
113	Cooper-pair current in the presence of flux noise. Physical Review B, 2012, 85, .	3.2	7
114	Quantum treatment of the Bose-Einstein condensation in nonequilibrium systems. Physical Review B, 2015, 92, .	3.2	7
115	Parity measurement of remote qubits using dispersive coupling and photodetection. Physical Review A, 2015, 92, .	2.5	7
116	Three-waveform bidirectional pumping of single electrons with a silicon quantum dot. Scientific Reports, 2016, 6, 36381.	3.3	7
117	Microwave Admittance of Goldâ€Palladium Nanowires with Proximityâ€Induced Superconductivity. Advanced Electronic Materials, 2017, 3, 1600227.	5.1	7
118	Path to European quantum unicorns. EPJ Quantum Technology, 2021, 8, 5.	6.3	7
119	Highly Controllable Qubit-Bath Coupling Based on a Sequence of Resonators. Journal of Low Temperature Physics, 2013, 173, 152-169.	1.4	6
120	Development of the sinis turnstile for the quantum metrological triangle. , 2010, , .		5
121	Coherent superconducting quantum pump. Physical Review B, 2012, 85, .	3.2	5
122	Quantum knots in Bose-Einstein condensates created by counterdiabatic control. Physical Review A, 2017, 96, .	2.5	5
123	Creation of a Dirac monopole-antimonopole pair in a spin-1 Bose-Einstein condensate. Physical Review A, 2019, 99, .	2.5	5
124	Effects of device geometry and material properties on dielectric losses in superconducting coplanar-waveguide resonators. Journal of Physics Condensed Matter, 2020, 32, 405702.	1.8	5
125	Charge dynamics in quantum-circuit refrigeration: Thermalization and microwave gain. AVS Quantum Science, 2021, 3, .	4.9	5
126	Recent Developments in Quantumâ€Circuit Refrigeration. Annalen Der Physik, 0, , 2100543.	2.4	5

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127	Evolution of an isolated monopole in a spin-1 Bose-Einstein condensate. Physical Review A, 2016, 94, .	2.5	4
128	Broadband tunable phase shifter for microwaves. AIP Advances, 2020, 10, 065128.	1.3	4
129	Single-junction quantum-circuit refrigerator. AIP Advances, 2022, 12, .	1.3	4
130	Many-body Majorana-like zero modes without gauge symmetry breaking. Physical Review Research, 2021, 3, .	3.6	3
131	Assessment of weak-coupling approximations on a driven two-level system under dissipation. New Journal of Physics, 2022, 24, 013005.	2.9	3
132	Phase transitions in dipolar spin-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>1</mml:mn></mml:mrow></mml:math>Bose gases. Physical Review A, 2011, 84, .	2.5	2
133	Tunable single-photon heat conduction in electrical circuits. Physical Review B, 2012, 86, .	3.2	2
134	Collapse and revival of excitations in Bose-Einstein condensates. Physical Review A, 2005, 71, .	2.5	1
135	Dynamical stability of coreless vortex states inF= 1 spinor bose-einstein condensates. Journal of Physics: Conference Series, 2009, 150, 032103.	0.4	1
136	Entanglement generation between unstable optically active qubits without photodetectors. Physical Review A, 2011, 84, .	2.5	1
137	Quantum effect of inductance on geometric Cooper-pair transport. Physical Review B, 2012, 86, .	3.2	1
138	Accelerated stabilization of coherent photon states. New Journal of Physics, 2018, 20, 103047.	2.9	1
139	Reconstruction approach to quantum dynamics of bosonic systems. Physical Review A, 2019, 100, .	2.5	1
140	Charge ambiguity and splitting of monopoles. Physical Review Research, 2022, 4, .	3.6	1
141	Publisher's Note: Entanglement-enhanced quantum key distribution [Phys. Rev. A78, 032314 (2008)]. Physical Review A, 2008, 78, .	2.5	0
142	Vortices, Superfluid Dynamics, and Quantum Turbulence. Journal of Low Temperature Physics, 2010, 161, 417-418.	1.4	0
143	Hybrid single-electron turnstile - Towards a quantum standard of electric current. , 2010, , .		0
144	Radio-frequency transport of single electrons in superconductor-normal-metal tunnel junctions and the quantum metrological triangle. , 2011, , .		0

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145	Independent Control of Dot Occupancy and Reservoir Electron Density in a One-electron Quantum Dot. AIP Conference Proceedings, 2011, , .	0.4	0
146	Effects of electrostatic confinement in a silicon single-electron pump. , 2014, , .		0
147	Measurement and control of single-photon microwave radiation on chip. , 2014, , .		0
148	A silicon single-electron pump with tunable electrostatic confinement. , 2014, , .		0
149	Towards measurement and control of single-photon microwave radiation on chip. , 2015, , .		0
150	Nanoelectronic Devices: Microwave Admittance of Goldâ€Palladium Nanowires with Proximityâ€Induced Superconductivity (Adv. Electron. Mater. 6/2017). Advanced Electronic Materials, 2017, 3, .	5.1	0
151	Persistence of correlations in many-body localized spin chains. Physical Review Research, 2020, 2, .	3.6	0