Aashish A Clerk

List of Publications by Year
in descending order

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133 papers	12,505 citations	30070 54 h-index	24258 110 g-index
136 all docs	136 docs citations	136 times ranked	6042 citing authors

#	Article	IF	Citations
1	Introduction to quantum noise, measurement, and amplification. Reviews of Modern Physics, 2010, 82, 1155-1208.	45.6	1,291
2	Quantum Theory of Cavity-Assisted Sideband Cooling of Mechanical Motion. Physical Review Letters, 2007, 99, 093902.	7.8	957
3	Quantum squeezing of motion in a mechanical resonator. Science, 2015, 349, 952-955.	12.6	504
4	Cooling a nanomechanical resonator with quantum back-action. Nature, 2006, 443, 193-196.	27.8	501
5	Preparation and detection of a mechanical resonator near the ground state of motion. Nature, 2010, 463, 72-75.	27.8	456
6	Stabilized entanglement of massive mechanical oscillators. Nature, 2018, 556, 478-482.	27.8	388
7	Using Interference for High Fidelity Quantum State Transfer in Optomechanics. Physical Review Letters, 2012, 108, 153603.	7.8	376
8	Generalized non-reciprocity in an optomechanical circuit via synthetic magnetism and reservoir engineering. Nature Physics, 2017, 13, 465-471.	16.7	360
9	Reservoir-Engineered Entanglement in Optomechanical Systems. Physical Review Letters, 2013, 110, 253601.	7.8	346
10	Dispersive optomechanics: a membrane inside a cavity. New Journal of Physics, 2008, 10, 095008.	2.9	331
11	Nonreciprocal Photon Transmission and Amplification via Reservoir Engineering. Physical Review X, 2015, 5, .	8.9	280
12	Back-action evasion and squeezing of a mechanical resonator using a cavity detector. New Journal of Physics, 2008, 10, 095010.	2.9	261
13	Hybrid quantum systems with circuit quantum electrodynamics. Nature Physics, 2020, 16, 257-267.	16.7	236
14	Back-action-evading measurements of nanomechanical motion. Nature Physics, 2010, 6, 213-217.	16.7	197
15	Speeding up Adiabatic Quantum State Transfer by Using Dressed States. Physical Review Letters, 2016, 116, 230503.	7.8	196
16	Accelerated quantum control using superadiabatic dynamics in a solid-state lambda system. Nature Physics, 2017, 13, 330-334.	16.7	194
17	Arbitrarily large steady-state bosonic squeezing via dissipation. Physical Review A, 2013, 88, .	2.5	193
18	Fundamental limits and non-reciprocal approaches in non-Hermitian quantum sensing. Nature Communications, 2018, 9, 4320.	12.8	191

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19	Quantum Noise Interference and Backaction Cooling in Cavity Nanomechanics. Physical Review Letters, 2009, 102, 207209.	7.8	184
20	Two-mode squeezed states in cavity optomechanics via engineering of a single reservoir. Physical Review A, 2014, 89, .	2.5	175
21	Fano Resonances as a Probe of Phase Coherence in Quantum Dots. Physical Review Letters, 2001, 86, 4636-4639.	7.8	168
22	Nonreciprocal control and cooling of phonon modes in an optomechanical system. Nature, 2019, 568, 65-69.	27.8	125
23	Nonlinear Interaction Effects in a Strongly Driven Optomechanical Cavity. Physical Review Letters, 2013, 111, 053602.	7.8	124
24	Enhanced nonlinear interactions in quantum optomechanics via mechanical amplification. Nature Communications, 2016, 7, 11338.	12.8	124
25	Mechanically detecting and avoiding the quantum fluctuations of a microwave field. Science, 2014, 344, 1262-1265.	12.6	123
26	Quantum-limited measurement and information in mesoscopic detectors. Physical Review B, 2003, 67, .	3.2	115
27	Broadband parametric amplification with impedance engineering: Beyond the gain-bandwidth product. Applied Physics Letters, 2015, 107, .	3.3	115
28	Phase-Dependent Chiral Transport and Effective Non-Hermitian Dynamics in a Bosonic Kitaev-Majorana Chain. Physical Review X, 2018, 8, .	8.9	109
29	Quantum Signatures of the Optomechanical Instability. Physical Review Letters, 2012, 109, 253601.	7.8	103
30	Two-mode back-action-evading measurements in cavity optomechanics. Physical Review A, 2013, 87, .	2.5	97
31	Enhancing Cavity Quantum Electrodynamics via Antisqueezing: Synthetic Ultrastrong Coupling. Physical Review Letters, 2018, 120, 093602.	7.8	97
32	Loss ofÏ€-junction behavior in an interacting impurity Josephson junction. Physical Review B, 2000, 61, 9109-9112.	3.2	95
33	Antibunching and unconventional photon blockade with Gaussian squeezed states. Physical Review A, 2014, 90, .	2.5	95
34	Quantum nanoelectromechanics with electrons, quasi-particles and Cooper pairs: effective bath descriptions and strong feedback effects. New Journal of Physics, 2005, 7, 238-238.	2.9	94
35	Quantum-Limited Amplification via Reservoir Engineering. Physical Review Letters, 2014, 112, 133904.	7.8	94
36	Quantum Nondemolition Measurement of a Quantum Squeezed State Beyond the 3ÂdB Limit. Physical Review Letters, 2016, 117, 100801.	7.8	94

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37	Topological phase transitions and chiral inelastic transport induced by the squeezing of light. Nature Communications, 2016, 7, 10779.	12.8	92
38	Andreev scattering and the Kondo effect. Physical Review B, 2000, 61, 3555-3562.	3.2	91
39	Bipartite and tripartite output entanglement in three-mode optomechanical systems. Physical Review A, 2015, 91, .	2.5	91
40	Quantum-limited position detection and amplification: A linear response perspective. Physical Review B, 2004, 70, .	3.2	90
41	Quantum Measurement of Phonon Shot Noise. Physical Review Letters, 2010, 104, 213603.	7.8	89
42	Using dark modes for high-fidelity optomechanical quantum state transfer. New Journal of Physics, 2012, 14, 105010.	2.9	89
43	Quantum Backaction Evading Measurement of Collective Mechanical Modes. Physical Review Letters, 2016, 117, 140401.	7.8	88
44	Quantum heat engine based on photon-assisted Cooper pair tunneling. Physical Review B, 2016, 93, .	3.2	82
45	Topological Quantum Fluctuations and Traveling Wave Amplifiers. Physical Review X, 2016, 6, .	8.9	81
46	Resonant Cooper-Pair Tunneling: Quantum Noise and Measurement Characteristics. Physical Review Letters, 2002, 89, 176804.	7.8	80
47	Energy levels of few-electron quantum dots imaged and characterized by atomic force microscopy. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 9496-9501.	7.1	75
48	Exponentially-enhanced quantum sensing with non-Hermitian lattice dynamics. Nature Communications, 2020, 11, 5382.	12.8	75
49	Theory of nonequilibrium transport in the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mtext>SU</mml:mtext><mml:mrow><mml:mo>(</mml:mo><mml:mi>N</mml:mi><mml:mo>)</mml:mo></mml:mrow></mml:mrow></mml:math> regime. Physical Review B, 2009, 80, .	3.2	72
50	Strong Electromechanical Coupling of an Atomic Force Microscope Cantilever to a Quantum Dot. Physical Review Letters, 2010, 104, 017203.	7.8	72
51	Using a qubit to measure photon-number statistics of a driven thermal oscillator. Physical Review A, 2007, 75, .	2.5	69
52	Observation and Interpretation of Motional Sideband Asymmetry in a Quantum Electromechanical Device. Physical Review X, 2014, 4, .	8.9	68
53	Dissipative optomechanical squeezing of light. New Journal of Physics, 2014, 16, 063058.	2.9	64
54	Qubits as Spectrometers of Quantum Noise. , 2003, , 175-203.		55

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55	Electron-phonon mediated heat flow in disordered graphene. Physical Review B, 2012, 86, .	3.2	54
56	Measurement of the Electronic Thermal Conductance Channels and Heat Capacity of Graphene at Low Temperature. Physical Review X, 2013, 3, .	8.9	54
57	Laser Theory for Optomechanics: Limit Cycles in the Quantum Regime. Physical Review X, 2014, 4, .	8.9	51
58	Quantum interference and phonon-mediated back-action in lateral quantum-dot circuits. Nature Physics, 2012, 8, 522-527.	16.7	50
59	Non-Hermitian dynamics without dissipation in quantum systems. Physical Review A, 2019, 99, .	2.5	49
60	Ground-State Cooling and High-Fidelity Quantum Transduction via Parametrically Driven Bad-Cavity Optomechanics. Physical Review Letters, 2020, 124, 103602.	7.8	49
61	Optomechanics with two-phonon driving. New Journal of Physics, 2016, 18, 093014.	2.9	45
62	Nonreciprocal quantum interactions and devices via autonomous feedforward. Physical Review A, 2017, 95, .	2.5	45
63	Shot noise of a tunnel junction displacement detector. Physical Review B, 2004, 70, .	3.2	43
64	Initialization of Single Spin Dressed States using Shortcuts to Adiabaticity. Physical Review Letters, 2019, 122, 090502.	7.8	42
65	Quantum-limited amplification with a nonlinear cavity detector. Physical Review A, 2011, 83, .	2.5	39
66	Heisenberg-Limited Qubit Read-Out with Two-Mode Squeezed Light. Physical Review Letters, 2015, 115, 093604.	7.8	39
67	Nanomechanical pumpâ€“probe measurements of insulating electronic states in a carbon nanotube. Nature Nanotechnology, 2019, 14, 161-167.	31.5	39
68	Effects of Fermi Liquid Interactions on the Shot Noise of an<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>SU</mml:mi><mml:mo stretchy="false">(</mml:mo><mml:mi>N</mml:mi><mml:mo) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 217 Td (stretchy="false">)	7.8	37</mml:m
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69	Driven-Dissipative Quantum Kerr Resonators: New Exact Solutions, Photon Blockade and Quantum Bistability. Physical Review X, 2020, 10, .	8.9	37
70	Full counting statistics of energy fluctuations in a driven quantum resonator. Physical Review A, 2011, 84, .	2.5	36
71	Photon propagation in a one-dimensional optomechanical lattice. Physical Review A, 2014, 89, .	2.5	36
72	Quantum Kibble-Zurek physics in the presence of spatially correlated dissipation. Physical Review B, 2015, 92, .	3.2	36

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73	Nonequilibrium stationary states of quantum non-Hermitian lattice models. Physical Review B, 2022, 105, .	3.2	36
74	Negative Full Counting Statistics Arise from Interference Effects. Physical Review Letters, 2016, 116, 013603.	7.8	35
75	Laser-like instabilities in quantum nano-electromechanical systems. Physical Review B, 2006, 74, .	3.2	32
76	Photon-assisted tunnelling with nonclassical light. Nature Communications, 2014, 5, 5562.	12.8	31
77	Fock-state stabilization and emission in superconducting circuits using dc-biased Josephson junctions. Physical Review A, 2016, 93, .	2.5	31
78	Stroboscopic Qubit Measurement with Squeezed Illumination. Physical Review Letters, 2018, 120, 040505.	7.8	30
79	Spectral functions and negative density of states of a driven-dissipative nonlinear quantum resonator. New Journal of Physics, 2019, 21, 043040.	2.9	25
80	Noise and measurement efficiency of a partially coherent mesoscopic detector. Physical Review B, 2004, 69, .	3.2	24
81	Quantum backaction and noise interference in asymmetric two-cavity optomechanical systems. Physical Review A, 2016, 93, .	2.5	24
82	Dissipative stabilization of entangled cat states using a driven Bose-Hubbard dimer. Quantum - the Open Journal for Quantum Science, 0, 2, 58.	0.0	24
83	Inelastic Backaction due to Quantum Point Contact Charge Fluctuations. Physical Review Letters, 2010, 104, 186803.	7.8	23
84	Real photons from vacuum fluctuations in optomechanics: The role of polariton interactions. Physical Review A, 2015, 91, .	2.5	23
85	High-fidelity bosonic quantum state transfer using imperfect transducers and interference. Npj Quantum Information, 2019, 5, .	6.7	23
86	Excited-State Spectroscopy on an Individual Quantum Dot Using Atomic Force Microscopy. Nano Letters, 2012, 12, 709-713.	9.1	21
87	Shortcuts to adiabaticity in the presence of a continuum: Applications to itinerant quantum state transfer. Physical Review A, 2017, 96, .	2.5	21
88	Reservoir engineering of bosonic lattices using chiral symmetry and localized dissipation. Physical Review A, 2018, 98, .	2.5	21
89	High-Efficiency Measurement of an Artificial Atom Embedded in a Parametric Amplifier. Physical Review X, 2019, 9, .	8.9	21
90	Exact Solutions of Interacting Dissipative Systems via Weak Symmetries. Physical Review Letters, 2022, 128, 033602.	7.8	21

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91	Weak Qubit Measurement with a Nonlinear Cavity: Beyond Perturbation Theory. Physical Review Letters, 2012, 109, 123602.	7.8	20
92	Quantitative Tomography for Continuous Variable Quantum Systems. Physical Review Letters, 2018, 120, 090501.	7.8	18
93	Heisenberg-Limited Spin Squeezing via Bosonic Parametric Driving. Physical Review Letters, 2020, 125, 203601.	7.8	18
94	Andreev conductance of chaotic and integrable quantum dots. Physical Review B, 2000, 62, 10226-10237.	3.2	17
95	Scattering Approach to Backaction in Coherent Nanoelectromechanical Systems. Physical Review Letters, 2010, 105, 217206.	7.8	17
96	Positive- and negative-frequency noise from an ensemble of two-level fluctuators. Physical Review Research, 2021, 3, .	3.6	17
97	Dynamical Mean-Field Theory for Markovian Open Quantum Many-Body Systems. Physical Review X, 2021, 11, .	8.9	17
98	Entropy and time. American Journal of Physics, 1999, 67, 1068-1073.	0.7	15
99	Backaction Noise in Strongly Interacting Systems: The dc SQUID and the Interacting Quantum Point Contact. Physical Review Letters, 2006, 96, 056801.	7.8	15
100	Entanglement dynamics in a dispersively coupled qubit-oscillator system. Physical Review A, 2008, 78, .	2.5	15
101	Mechanical entanglement via detuned parametric amplification. New Journal of Physics, 2014, 16, 063043.	2.9	15
102	Enhanced qubit readout using locally generated squeezing and inbuilt Purcell-decay suppression. New Journal of Physics, 2017, 19, 023044.	2.9	15
103	Interaction-Induced Restoration of Phase Coherence. Physical Review Letters, 2001, 87, .	7.8	14
104	Detuned mechanical parametric amplification as a quantum non-demolition measurement. New Journal of Physics, 2014, 16, 043023.	2.9	14
105	Analytic Design of Accelerated Adiabatic Gates in Realistic Qubits: General Theory and Applications to Superconducting Circuits. PRX Quantum, 2021, 2, .	9.2	13
106	Engineering fast high-fidelity quantum operations with constrained interactions. Npj Quantum Information, 2021, 7, .	6.7	12
107	Reservoir-Engineered Spin Squeezing: Macroscopic Even-Odd Effects and Hybrid-Systems Implementations. Physical Review X, 2022, 12, .	8.9	12
108	Distinguishing between Quantum and Classical Markovian Dephasing Dissipation. Physical Review Letters, 2022, 128, 070402.	7.8	12

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109	Mechanically probing coherent tunneling in a double quantum dot. Physical Review B, 2011, 84, .	3.2	11
110	Spectral characterization of non-Gaussian quantum noise: Keldysh approach and application to photon shot noise. Physical Review Research, 2020, 2, .	3.6	11
111	Unconditional Fock state generation using arbitrarily weak photonic nonlinearities. Science Advances, 2021, 7, eabj1916.	10.3	11
112	Accelerated adiabatic quantum gates: Optimizing speed versus robustness. Physical Review A, 2019, 100, .	2.5	10
113	Full counting statistics and conditional evolution in a nanoelectromechanical system. Physical Review B, 2008, 78, .	3.2	9
114	High Q electromechanics with InAs nanowire quantum dots. Applied Physics Letters, 2011, 99, .	3.3	9
115	Intrinsic and induced quantum quenches for enhancing qubit-based quantum noise spectroscopy. Nature Communications, 2021, 12, 6528.	12.8	9
116	Introduction to quantum non-reciprocal interactions: from non-Hermitian Hamiltonians to quantum master equations and quantum feedforward schemes. SciPost Physics Lecture Notes, 0, , .	0.0	9
117	Stabilizing two-qubit entanglement by mimicking a squeezed environment. Physical Review Research, 2022, 4, .	3.6	9
118	Shelving-style QND phonon-number detection in quantum optomechanics. New Journal of Physics, 2017, 19, 033014.	2.9	8
119	Intrinsic mechanisms for drive-dependent Purcell decay in superconducting quantum circuits. Physical Review Research, 2021, 3, .	3.6	8
120	Stabilizing volume-law entangled states of fermions and qubits using local dissipation. Physical Review B, 2022, 105, .	3.2	8
121	Noise and measurement backaction in superconducting circuits: qubits as spectrometers of quantum noise. , 2003, 5115, 356.		7
122	Low-Loss Ferrite Circulator as a Tunable Chiral Quantum System. Physical Review Applied, 2021, 16, .	3.8	7
123	Nonlocality and the Rotating Wave Approximation. Foundations of Physics, 1998, 28, 639-651.	1.3	6
124	Basic Theory of Cavity Optomechanics. , 2014, , 5-23.		6
125	Facing Heisenberg at the nanoscale. Nature Nanotechnology, 2009, 4, 796-798.	31.5	5
126	Simple approach to characterizing band topology in bosonic pairing Hamiltonians. Physical Review B, 2021, 103, .	3.2	4

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127	To see a SAW. Nature Physics, 2012, 8, 256-257.	16.7	3
128	Macroscale entanglement and measurement. Science, 2021, 372, 570-571.	12.6	3
129	Resonant Cooper-Pair Tunneling: Counting Statistics and Frequency-Dependent Current Noise. , 2003, , 325-337.		3
130	Seeing the â€œQuantumâ€•in Quantum Zero-Point Fluctuations. Physics Magazine, 2012, 5, .	0.1	2
131	Large gain quantum-limited qubit measurement using a two-mode nonlinear cavity. New Journal of Physics, 2014, 16, 113032.	2.9	1
132	Nondispersing Wave Packets in Lattice Floquet Systems. Physical Review Letters, 2021, 126, 100601.	7.8	1
133	The Physics of a Dissipative Optomechanical Coupling. , 2010, , .		0