Raymond Simmonds

List of Publications by Year
in descending order

83 papers	9,793 citations	61945 43 h-index	82499 72 g-index
83 all docs	83 docs citations	83 times ranked	5986 citing authors

#	Article	IF	Citations
1	Sideband cooling of micromechanical motion to the quantum ground state. Nature, 2011, 475, 359-363.	13.7	1,701
2	Circuit cavity electromechanics in the strong-coupling regime. Nature, 2011, 471, 204-208.	13.7	700
3	Bidirectional and efficient conversion between microwave and optical light. Nature Physics, 2014, 10, 321-326.	6.5	648
4	Decoherence in Josephson Qubits from Dielectric Loss. Physical Review Letters, 2005, 95, 210503.	2.9	616
5	Coherent quantum state storage and transfer between two phase qubits via a resonant cavity. Nature, 2007, 449, 438-442.	13.7	559
6	Entangling Mechanical Motion with Microwave Fields. Science, 2013, 342, 710-713.	6.0	524
7	Relating atomic-scale electronic phenomena to wave-like quasiparticle states in superconducting Bi2Sr2CaCu2O8+Î´. Nature, 2003, 422, 592-596.	13.7	425
8	Decoherence in Josephson Phase Qubits from Junction Resonators. Physical Review Letters, 2004, 93, 077003.	2.9	375
9	Coherent state transfer between itinerant microwave fields and a mechanical oscillator. Nature, 2013, 495, 210-214.	13.7	358
10	Simultaneous State Measurement of Coupled Josephson Phase Qubits. Science, 2005, 307, 1299-1302.	6.0	263
11	Observation of â€˜third soundâ€™ in superfluid 3He. Nature, 1998, 396, 554-557.	13.7	219
12	Quantum Nondemolition Measurement of a Nonclassical State of a Massive Object. Physical Review X, 2015, 5, 041037.	2.8	204
13	Sideband cooling beyond the quantum backaction limit with squeezed light. Nature, 2017, 541, 191-195.	13.7	196
14	Observation of Quantum Oscillations between a Josephson Phase Qubit and a Microscopic Resonator Using Fast Readout. Physical Review Letters, 2004, 93, 180401.	2.9	189
15	Practical implementation of dynamic methods for measuring atomic force microscope cantilever spring constants. Nanotechnology, 2006, 17, 2135-2145.	1.3	165
16	Nonreciprocal Microwave Signal Processing with a Field-Programmable Josephson Amplifier. Physical Review Applied, 2017, 7, .	1.5	145
17	Direct observation of deterministic macroscopic entanglement. Science, 2021, 372, 622-625.	6.0	137
18	Autler-Townes Effect in a Superconducting Three-Level System. Physical Review Letters, 2009, 103, 193601.	2.9	135

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19	Demonstration of Efficient Nonreciprocity in a Microwave Optomechanical Circuit. Physical Review X, 2017, 7, .	2.8	106
20	Quantum superposition of a single microwave photon in two different â€™colourâ€™ states. Nature Physics, 2011, 7, 599-603.	6.5	93
21	Arbitrary Control of Entanglement between two Superconducting Resonators. Physical Review Letters, 2010, 105, 050501.	2.9	86
22	Elimination of two level fluctuators in superconducting quantum bits by an epitaxial tunnel barrier. Physical Review B, 2006, 74, .	1.1	85
23	Resolving the vacuum fluctuations of an optomechanical system using an artificial atom. Nature Physics, 2015, 11, 635-639.	6.5	83
24	rf-SQUID-Mediated Coherent Tunable Coupling between a Superconducting Phase Qubit and a Lumped-Element Resonator. Physical Review Letters, 2010, 104, 177004.	2.9	81
25	Mechanically Mediated Microwave Frequency Conversion in the Quantum Regime. Physical Review Letters, 2016, 116, 043601.	2.9	76
26	Bi-state SuperfluidH3eWeak Links and the Stability of JosephsonÏ€States. Physical Review Letters, 1999, 83, 3860-3863.	2.9	72
27	A phononic bandgap shield for high-<i>Q</i> membrane microresonators. Applied Physics Letters, 2014, 104, .	1.5	71
28	Observation of strong radiation pressure forces from squeezed light on a mechanical oscillator. Nature Physics, 2016, 12, 683-687.	6.5	68
29	Discovery of a metastable Ï€-state in a superfluid 3He weak link. Nature, 1998, 392, 687-690.	13.7	66
30	Parametric coupling between macroscopic quantum resonators. New Journal of Physics, 2008, 10, 115001.	1.2	65
31	Conducting atomic force microscopy for nanoscale tunnel barrier characterization. Review of Scientific Instruments, 2004, 75, 2726-2731.	0.6	58
32	dc Supercurrents from Resonant Mixing of Josephson Oscillations in aH3eWeak Link. Physical Review Letters, 1998, 81, 1247-1250.	2.9	57
33	Tunable Resonant and Nonresonant Interactions between a Phase Qubit and<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>L</mml:mi><mml:mi>C</mml:mi></mml:math>Resonator. Physical Review Letters, 2014, 112, 123601.	2.9	57
34	Quantum interference of superfluid 3He. Nature, 2001, 412, 55-58.	13.7	55
35	Overwhelming Thermomechanical Motion with Microwave Radiation Pressure Shot Noise. Physical Review Letters, 2016, 116, 013602.	2.9	55
36	Realization of a single-Cooper-pair Josephson laser. Physical Review B, 2014, 90, .	1.1	54

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37	Optomechanical Raman-ratio thermometry. Physical Review A, 2015, 92, .	1.0	52
38	Observation of the Josephson plasma mode for a superfluid3Heweak link. Physical Review B, 2000, 61, 4196-4199.	1.1	50
39	Low-loss superconducting resonant circuits using vacuum-gap-based microwave components. Applied Physics Letters, 2010, 96, .	1.5	50
40	Decoherence, Autler-Townes effect, and dark states in two-tone driving of a three-level superconducting system. Physical Review B, 2011, 84, .	1.1	48
41	Manipulating particle trajectories with phase-control in surface acoustic wave microfluidics. Biomicrofluidics, 2011, 5, 44107-441079.	1.2	48
42	Improving Broadband Displacement Detection with Quantum Correlations. Physical Review X, 2017, 7, .	2.8	46
43	Capacitive Generation and Detection of Third Sound Resonances in Saturated Superfluid 4He Films. Journal of Low Temperature Physics, 1998, 110, 603-608.	0.6	45
44	Ultrastrong Parametric Coupling between a Superconducting Cavity and a Mechanical Resonator. Physical Review Letters, 2019, 123, 247701.	2.9	43
45	Dynamical Autler-Townes control of a phase qubit. Scientific Reports, 2012, 2, 645.	1.6	42
46	Tunable Coupling to a Mechanical Oscillator Circuit Using a Coherent Feedback Network. Physical Review X, 2013, 3, .	2.8	40
47	Coherent-state storage and retrieval between superconducting cavities using parametric frequency conversion. Applied Physics Letters, 2015, 106, 172603.	1.5	38
48	Introduction of a dc bias into a high-Q superconducting microwave cavity. Applied Physics Letters, 2011, 98, .	1.5	36
49	Tripartite interactions between two phase qubits and a resonant cavity. Nature Physics, 2010, 6, 777-781.	6.5	35
50	Modulated electromechanics: large enhancements of nonlinearities. New Journal of Physics, 2014, 16, 072001.	1.2	31
51	Frequency-Tunable Josephson Junction Resonator for Quantum Computing. IEEE Transactions on Applied Superconductivity, 2007, 17, 166-168.	1.1	30
52	Hybrid quantum systems with trapped charged particles. Physical Review A, 2017, 95, .	1.0	27
53	Josephson Junction Microscope for Low-Frequency Fluctuators. Physical Review Letters, 2007, 99, 137002.	2.9	26
54	Low-leakage superconducting tunnel junctions with a single-crystal Al2O3barrier. Superconductor Science and Technology, 2005, 18, 1396-1399.	1.8	25

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55	Tunable-cavity QED with phase qubits. Physical Review B, 2014, 90, .	1.1	25
56	Entangled-state synthesis for superconducting resonators. Physical Review A, 2012, 85, .	1.0	23
57	Quantum Interference between Two Single Photons of Different Microwave Frequencies. Physical Review Letters, 2012, 108, 163602.	2.9	22
58	New Flow Dissipation Mechanisms in SuperfluidH3e. Physical Review Letters, 2000, 84, 6062-6065.	2.9	19
59	Coherent interactions between phase qubits, cavities, and TLS defects. Quantum Information Processing, 2009, 8, 117-131.	1.0	18
60	Microwave Measurement beyond the Quantum Limit with a Nonreciprocal Amplifier. Physical Review Applied, 2020, 13, .	1.5	15
61	Epitaxial growth of rhenium with sputtering. Thin Solid Films, 2006, 496, 389-394.	0.8	14
62	Observation of the Superfluid Shapiro Effect in aH3eWeak Link. Physical Review Letters, 2001, 87, 035301.	2.9	13
63	Vacuum-Gap Capacitors for Low-Loss Superconducting Resonant Circuits. IEEE Transactions on Applied Superconductivity, 2009, 19, 948-952.	1.1	13
64	Josephson effect and a Ï€-state in superfluid 3He. Nature, 1999, 397, 484-485.	13.7	12
65	Efficient Qubit Measurement with a Nonreciprocal Microwave Amplifier. Physical Review Letters, 2021, 126, 020502.	2.9	12
66	A very low temperature vibration isolation system. European Physical Journal D, 1996, 46, 2737-2738.	0.4	11
67	Remote sensing and control of phase qubits. Applied Physics Letters, 2010, 97, 102507.	1.5	9
68	Quantum interference heats up. Nature, 2012, 492, 358-359.	13.7	8
69	Measurement crosstalk between two phase qubits coupled by a coplanar waveguide. Physical Review B, 2010, 82, .	1.1	7
70	Reconfigurable re-entrant cavity for wireless coupling to an electro-optomechanical device. Review of Scientific Instruments, 2017, 88, 094701.	0.6	7
71	Ballistic effusion of normal liquid3Hethrough nanoscale apertures. Physical Review B, 2002, 65, .	1.1	3
72	Josephson effect and a Ï€-state in superfluid 3He. Nature, 1999, 397, 485-485.	13.7	1

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73	Josephson junction Materials Research Using Phase Qubits. , 2006, , 86-94.		1
74	Quantum Optomechanics with Millimeter Wave Photons. , 2021, , .		1
75	Effect of pre-plating on third sound in superfluid. Physica B: Condensed Matter, 2000, 280, 132-133.	1.3	0
76	Numerical studies of the superfluid Shapiro effect. Physica B: Condensed Matter, 2003, 329-333, 62-63.	1.3	0
77	Quantum information with superconducting quantum bits and cavities. , 2008, , .		0
78	Circuits that process with magic. Nature, 2009, 460, 187-188.	13.7	0
79	Measurement of nanomechanical motion with precision sufficient to detect zero-point motion. , 2010, , .		0
80	Bidirectional and Efficient Conversion Between Microwave and Optical Light. , 2014, , .		0
81	Connecting microwave and optical frequencies with a vibrational degree of freedom. , 2015, , .		0
82	Progress towards quantum state transfer between microwave and optical light using an electro-optomechanical resonator. , 2015, , .		0
83	Quantum Optomechanics with Microwave Photons. , 2012, , .		0