

Florian Marquardt

List of Publications by Year in descending order

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144
papers

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31949

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14736

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147
all docs

147
docs citations

147
times ranked

7843
citing authors

#	ARTICLE	IF	CITATIONS
1	Phase space crystal vibrations: Chiral edge states with preserved time-reversal symmetry. Physical Review B, 2022, 105, .	1.1	4
2	TMM-Fast, a transfer matrix computation package for multilayer thin-film optimization: tutorial. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2022, 39, 1007.	0.8	23
3	Observing polarization patterns in the collective motion of nanomechanical arrays. Nature Communications, 2022, 13, 2478.	5.8	9
4	Topological phonon transport in an optomechanical system. Nature Communications, 2022, 13, .	5.8	25
5	Renormalized Mutual Information for Artificial Scientific Discovery. Physical Review Letters, 2021, 126, 200601.	2.9	4
6	Rapid Exploration of Topological Band Structures Using Deep Learning. Physical Review X, 2021, 11, .	2.8	12
7	Arbitrary optical wave evolution with Fourier transforms and phase masks. Optics Express, 2021, 29, 38441.	1.7	16
8	Optical signatures of the coupled spin-mechanics of a levitated magnetic microparticle. Journal of the Optical Society of America B: Optical Physics, 2021, 38, 3858.	0.9	6
9	Tunneling in the Brillouin zone: Theory of backscattering in valley Hall edge channels. Physical Review B, 2021, 104, .	1.1	4
10	Many-Body Dephasing in a Trapped-Ion Quantum Simulator. Physical Review Letters, 2020, 125, 120605.	2.9	23
11	Nonlinear dynamics of weakly dissipative optomechanical systems. New Journal of Physics, 2020, 22, 013049.	1.2	21
12	Quench dynamics in one-dimensional optomechanical arrays. Physical Review A, 2020, 101, .	1.0	7
13	Oscillating bound states for a giant atom. Physical Review Research, 2020, 2, .	1.3	83
14	Kinetics of many-body reservoir engineering. Physical Review Research, 2020, 2, .	1.3	2
15	Dynamically generated synthetic electric fields for photons. Physical Review A, 2019, 100, .	1.0	4
16	Perturbation theory of optical resonances of deformed dielectric spheres. Physical Review A, 2019, 100, .	1.0	5
17	Snowflake phononic topological insulator at the nanoscale. Physical Review B, 2018, 97, .	1.1	108
18	Cavity optomagnonics with magnetic textures: Coupling a magnetic vortex to light. Physical Review B, 2018, 98, .	1.1	79

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19	Reinforcement Learning with Neural Networks for Quantum Feedback. <i>Physical Review X</i> , 2018, 8, .	2.8	137
20	Quantum nondemolition measurement of mechanical motion quanta. <i>Nature Communications</i> , 2018, 9, 3621.	5.8	18
21	Quantum theory of continuum optomechanics. <i>New Journal of Physics</i> , 2018, 20, 045005.	1.2	22
22	Generalized non-reciprocity in an optomechanical circuit via synthetic magnetism and reservoir engineering. <i>Nature Physics</i> , 2017, 13, 465-471.	6.5	360
23	Anderson localization of composite excitations in disordered optomechanical arrays. <i>New Journal of Physics</i> , 2017, 19, 013006.	1.2	17
24	Pseudomagnetic fields for sound at the nanoscale. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, E3390-E3395.	3.3	102
25	Many-Particle Dephasing after a Quench. <i>Physical Review Letters</i> , 2017, 118, 130601.	2.9	16
26	From Kardar-Parisi-Zhang scaling to explosive desynchronization in arrays of limit-cycle oscillators. <i>Physical Review E</i> , 2017, 96, 012220.	0.8	15
27	Quantum-coherent phase oscillations in synchronization. <i>Physical Review A</i> , 2017, 95, .	1.0	42
28	Cavity optomechanics in a levitated helium drop. <i>Physical Review A</i> , 2017, 96, .	1.0	35
29	L lines, C points and Chern numbers: understanding band structure topology using polarization fields. <i>New Journal of Physics</i> , 2017, 19, 115013.	1.2	29
30	Classical dynamical gauge fields in optomechanics. <i>New Journal of Physics</i> , 2016, 18, 113029.	1.2	30
31	Coupled spin-light dynamics in cavity optomagnonics. <i>Physical Review A</i> , 2016, 94, .	1.0	142
32	Quantum Nondemolition Measurement of a Quantum Squeezed State Beyond the 3ÂdB Limit. <i>Physical Review Letters</i> , 2016, 117, 100801.	2.9	94
33	Topological phase transitions and chiral inelastic transport induced by the squeezing of light. <i>Nature Communications</i> , 2016, 7, 10779.	5.8	92
34	Noise-induced transitions in optomechanical synchronization. <i>New Journal of Physics</i> , 2016, 18, 013043.	1.2	68
35	Topological Quantum Fluctuations and Traveling Wave Amplifiers. <i>Physical Review X</i> , 2016, 6, .	2.8	81
36	Entanglement rate for Gaussian continuous variable beams. <i>New Journal of Physics</i> , 2016, 18, 063022.	1.2	17

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37	Pattern phase diagram for two-dimensional arrays of coupled limit-cycle oscillators. <i>Physical Review E</i> , 2015, 92, 012902.	0.8	30
38	Nonlinear Radiation Pressure Dynamics in an Optomechanical Crystal. <i>Physical Review Letters</i> , 2015, 115, 233601.	2.9	60
39	Intracavity Squeezing Can Enhance Quantum-Limited Optomechanical Position Detection through Deamplification. <i>Physical Review Letters</i> , 2015, 115, 243603.	2.9	98
40	Quantum simulation of expanding space-time with tunnel-coupled condensates. <i>New Journal of Physics</i> , 2015, 17, 125007.	1.2	12
41	Optomechanical Dirac physics. <i>New Journal of Physics</i> , 2015, 17, 023025.	1.2	35
42	Magnon dark modes and gradient memory. <i>Nature Communications</i> , 2015, 6, 8914.	5.8	293
43	Topological Phases of Sound and Light. <i>Physical Review X</i> , 2015, 5, .	2.8	244
44	Optomechanical creation of magnetic fields for photons on a lattice. <i>Optica</i> , 2015, 2, 635.	4.8	131
45	Quantum squeezing of motion in a mechanical resonator. <i>Science</i> , 2015, 349, 952-955.	6.0	504
46	Position-Squared Coupling in a Tunable Photonic Crystal Optomechanical Cavity. <i>Physical Review X</i> , 2015, 5, .	2.8	72
47	Cavity optomechanics. <i>Reviews of Modern Physics</i> , 2014, 86, 1391-1452.	16.4	4,064
48	Synchronizing a single-electron shuttle to an external drive. <i>New Journal of Physics</i> , 2014, 16, 043009.	1.2	6
49	Basic Theory of Cavity Optomechanics. , 2014, , 5-23.		6
50	Focus on optomechanics. <i>New Journal of Physics</i> , 2014, 16, 085006.	1.2	18
51	Laser Theory for Optomechanics: Limit Cycles in the Quantum Regime. <i>Physical Review X</i> , 2014, 4, .	2.8	51
52	Decoherence in a double-dot Aharonov-Bohm interferometer: Numerical renormalization group study. <i>Physical Review B</i> , 2014, 90, .	1.1	1
53	Dissipative optomechanical squeezing of light. <i>New Journal of Physics</i> , 2014, 16, 063058.	1.2	64
54	Single-site-resolved measurement of the current statistics in optical lattices. <i>Physical Review A</i> , 2014, 89, .	1.0	22

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55	“Snowflake Crystal” Traps Light and Sound. Physics Magazine, 2014, 7, .	0.1	0
56	Photonic Cavity Synchronization of Nanomechanical Oscillators. Physical Review Letters, 2013, 111, 213902.	2.9	156
57	Observing the Nonequilibrium Dynamics of the Quantum Transverse-Field Ising Chain in Circuit QED. Physical Review Letters, 2013, 110, 030601.	2.9	52
58	Full photon statistics of a light beam transmitted through an optomechanical system. Physical Review A, 2013, 87, .	1.0	72
59	Gain-tunable optomechanical cooling in a laser cavity. Physical Review A, 2013, 87, .	1.0	14
60	Optomechanically Induced Transparency in the Nonlinear Quantum Regime. Physical Review Letters, 2013, 111, 133601.	2.9	182
61	Dynamics of levitated nanospheres: towards the strong coupling regime. New Journal of Physics, 2013, 15, 015001.	1.2	45
62	The quantum transverse-field Ising chain in circuit quantum electrodynamics: effects of disorder on the nonequilibrium dynamics. New Journal of Physics, 2013, 15, 035013.	1.2	10
63	The effect of Landau-Zener dynamics on phonon lasing. New Journal of Physics, 2013, 15, 123022.	1.2	28
64	Arbitrarily large steady-state bosonic squeezing via dissipation. Physical Review A, 2013, 88, .	1.0	193
65	Quantum Many-Body Dynamics in Optomechanical Arrays. Physical Review Letters, 2013, 111, 073603.	2.9	246
66	Collective dynamics in optomechanical arrays. , 2013, , .		0
67	Creation and dynamics of remote spin-entangled pairs in the expansion of strongly correlated fermions in an optical lattice. New Journal of Physics, 2013, 15, 053043.	1.2	21
68	Localized Phase Structures Growing Out of Quantum Fluctuations in a Quench of Tunnel-coupled Atomic Condensates. Physical Review Letters, 2012, 109, 085304.	2.9	14
69	Optomechanical cooling of levitated spheres with doubly resonant fields. Physical Review A, 2012, 85, .	1.0	40
70	Stroboscopic observation of quantum many-body dynamics. Physical Review A, 2012, 85, .	1.0	11
71	Thermalization of interacting fermions and delocalization in Fock space. Physical Review E, 2012, 85, 060101.	0.8	67
72	Optomechanical circuits for nanomechanical continuous variable quantum state processing. New Journal of Physics, 2012, 14, 125005.	1.2	130

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73	Quantum Signatures of the Optomechanical Instability. Physical Review Letters, 2012, 109, 253601.	2.9	103
74	Observation of spontaneous Brillouin cooling. Nature Physics, 2012, 8, 203-207.	6.5	193
75	Enhanced Quantum Nonlinearities in a Two-Mode Optomechanical System. Physical Review Letters, 2012, 109, 063601.	2.9	245
76	Observation of Brillouin Cooling. , 2012, , .		0
77	Experimental Observation of Spontaneous Brillouin Cooling. Optics and Photonics News, 2012, 23, 43.	0.4	0
78	Dynamics of coupled multimode and hybrid optomechanical systems. Comptes Rendus Physique, 2011, 12, 837-847.	0.3	17
79	The gentle cooling touch of light. Nature, 2011, 478, 47-48.	13.7	4
80	Collective Dynamics in Optomechanical Arrays. Physical Review Letters, 2011, 107, 043603.	2.9	309
81	Quantum-mechanical theory of optomechanical Brillouin cooling. Physical Review A, 2011, 84, .	1.0	21
82	Superradiant Phase Transitions and the Standard Description of Circuit QED. Physical Review Letters, 2011, 107, 113602.	2.9	148
83	Coupled multimode optomechanics in the microwave regime. Europhysics Letters, 2011, 93, 18003.	0.7	26
84	Optomechanics with multiple optical and vibrational modes. , 2010, , .		0
85	Single-atom cavity QED and optomechanics. Physical Review A, 2010, 81, .	1.0	101
86	Introduction to quantum noise, measurement, and amplification. Reviews of Modern Physics, 2010, 82, 1155-1208.	16.4	1,291
87	Nonequilibrium Quantum Dynamics in Optomechanical Systems. , 2010, , .		0
88	Entanglement of mechanical oscillators coupled to a nonequilibrium environment. Physical Review A, 2010, 82, .	1.0	85
89	Photon shuttle: Landau-Zener-Stückelberg dynamics in an optomechanical system. Physical Review A, 2010, 81, .	1.0	63
90	Optimal control of circuit quantum electrodynamics in one and two dimensions. Physical Review B, 2010, 81, .	1.1	25

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91	Electron-plasmon scattering in chiral one-dimensional systems with nonlinear dispersion. Physical Review B, 2010, 82, .	1.1	8
92	Resonant quantum gates in circuit quantum electrodynamics. Physical Review B, 2010, 82, .	1.1	45
93	ac conductance through an interacting quantum dot. Physical Review B, 2010, 81, .	1.1	8
94	Quantum Measurement of Phonon Shot Noise. Physical Review Letters, 2010, 104, 213603.	2.9	89
95	Examples of Quantum Dynamics in Optomechanical Systems. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2010, , 167-179.	0.2	0
96	Dimensional crossover of the dephasing time in disordered mesoscopic rings. Physical Review B, 2009, 80, .	1.1	10
97	Strong Coupling of a Mechanical Oscillator and a Single Atom. Physical Review Letters, 2009, 103, 063005.	2.9	192
98	Measurement-based synthesis of multiqubit entangled states in superconducting cavity QED. Physical Review A, 2009, 79, .	1.0	38
99	Quantum nondemolition photon detection in circuit QED and the quantum Zeno effect. Physical Review A, 2009, 79, .	1.0	60
100	Dephasing rate formula in the many-body context. Physical Review B, 2009, 80, .	1.1	3
101	Universal Dephasing in a Chiral 1D Interacting Fermion System. Physical Review Letters, 2009, 102, 046806.	2.9	13
102	Cavity grid for scalable quantum computation with superconducting circuits. Europhysics Letters, 2009, 85, 50007.	0.7	75
103	Recent progress in open quantum systems: Non-Gaussian noise and decoherence in fermionic systems. Physica Status Solidi (B): Basic Research, 2009, 246, 1018-1023.	0.7	11
104	Strong dispersive coupling of a high-finesse cavity to a micromechanical membrane. Nature, 2008, 452, 72-75.	13.7	1,195
105	Push towards the quantum limit. Nature Physics, 2008, 4, 513-514.	6.5	12
106	The optomechanical instability in the quantum regime. New Journal of Physics, 2008, 10, 095013.	1.2	150
107	Dispersive optomechanics: a membrane inside a cavity. New Journal of Physics, 2008, 10, 095008.	1.2	331
108	Dephasing by electron-electron interactions in a ballistic Mach-Zehnder interferometer. New Journal of Physics, 2008, 10, 115018.	1.2	17

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109	Back-action evasion and squeezing of a mechanical resonator using a cavity detector. <i>New Journal of Physics</i> , 2008, 10, 095010.	1.2	261
110	Quantum theory of optomechanical cooling. <i>Journal of Modern Optics</i> , 2008, 55, 3329-3338.	0.6	53
111	Mesoscopic spin-boson models of trapped ions. <i>Physical Review A</i> , 2008, 78, .	1.0	99
112	Measuring the size of a quantum superposition of many-body states. <i>Physical Review A</i> , 2008, 78, .	1.0	71
113	Decoherence by quantum telegraph noise: A numerical evaluation. <i>Physical Review B</i> , 2008, 78, .	1.1	63
114	Optomechanical effects in a dispersively coupled high finesse cavity and micromechanical membrane. , 2008, , .		0
115	Decoherence of Fermions Subject to a Quantum Bath. , 2008, , 169-181.		1
116	Self-Induced Oscillations in an Optomechanical System Driven by Bolometric Backaction. <i>Physical Review Letters</i> , 2008, 101, 133903.	2.9	184
117	Coherence oscillations in dephasing by non-Gaussian shot noise. <i>New Journal of Physics</i> , 2007, 9, 112-112.	1.2	49
118	Self-consistent calculation of the electron distribution near a quantum point contact in the integer quantum Hall effect. <i>Physical Review B</i> , 2007, 75, .	1.1	29
119	Efficient on-chip source of microwave photon pairs in superconducting circuit QED. <i>Physical Review B</i> , 2007, 76, .	1.1	34
120	Quantum Theory of Cavity-Assisted Sideband Cooling of Mechanical Motion. <i>Physical Review Letters</i> , 2007, 99, 093902.	2.9	957
121	Controlled dephasing of electrons by non-gaussian shot noise. <i>Nature Physics</i> , 2007, 3, 534-537.	6.5	86
122	Decoherence in weak localization. II. Bethe-Salpeter calculation of the cooperon. <i>Physical Review B</i> , 2007, 76, .	1.1	20
123	Decoherence in weak localization. I. Pauli principle in influence functional. <i>Physical Review B</i> , 2007, 76, .	1.1	23
124	Dynamical Multistability Induced by Radiation Pressure in High-Finesse Micromechanical Optical Cavities. <i>Physical Review Letters</i> , 2006, 96, 103901.	2.9	323
125	Correlation-Induced Resonances in Transport through Coupled Quantum Dots. <i>Physical Review Letters</i> , 2006, 96, 146801.	2.9	87
126	Equations of motion approach to decoherence and current noise in ballistic interferometers coupled to a quantum bath. <i>Physical Review B</i> , 2006, 74, .	1.1	14

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127	Fermionic Mach-Zehnder interferometer subject to a quantum bath. Europhysics Letters, 2005, 72, 788-794.	0.7	26
128	Many-fermion generalization of the Caldeira-Leggett model. Physical Review A, 2005, 72, .	1.0	9
129	Spin relaxation in a quantum dot due to Nyquist noise. Physical Review B, 2005, 71, .	1.1	21
130	Influence of Dephasing on Shot Noise in an Electronic Mach-Zehnder Interferometer. Physical Review Letters, 2004, 92, 056805.	2.9	53
131	Perturbative corrections to the Gutzwiller mean-field solution of the Mott-Hubbard model. Physical Review A, 2004, 70, .	1.0	39
132	Relaxation and Dephasing in a Many-Fermion Generalization of the Caldeira-Leggett Model. Physical Review Letters, 2004, 93, 130404.	2.9	11
133	Effects of dephasing on shot noise in an electronic Mach-Zehnder interferometer. Physical Review B, 2004, 70, .	1.1	47
134	Electron-nuclei spin relaxation through phonon-assisted hyperfine interaction in a quantum dot. Physical Review B, 2004, 70, .	1.1	25
135	Dephasing in sequential tunneling through a double-dot interferometer. Physical Review B, 2003, 68, .	1.1	38
136	Non-Markoffian effects of a simple nonlinear bath. Physical Review E, 2002, 66, 041111.	0.8	21
137	Aharonov-Bohm ring with fluctuating flux. Physical Review B, 2002, 65, .	1.1	29
138	Separation quality of a geometric ratchet. Physical Review E, 2002, 65, 041927.	0.8	30
139	Visibility of the Aharonov-Bohm Effect in a Ring Coupled to a Fluctuating Magnetic Flux. Journal of Low Temperature Physics, 2002, 126, 1325-1337.	0.6	0
140	Superposition of two mesoscopically distinct quantum states: Coupling a Cooper-pair box to a large superconducting island. Physical Review B, 2001, 63, .	1.1	71
141	Optomechanics. Physics Magazine, 0, 2, .	0.1	681
142	Machine learning and quantum devices. SciPost Physics Lecture Notes, 0, , .	0.0	12
143	Deep Learning of Quantum Many-Body Dynamics via Random Driving. Quantum - the Open Journal for Quantum Science, 0, 6, 714.	0.0	6
144	Deep Reinforcement Learning for Quantum State Preparation with Weak Nonlinear Measurements. Quantum - the Open Journal for Quantum Science, 0, 6, 747.	0.0	20