

Mark Dykman

List of Publications by Year in descending order

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139
papers

5,612
citations

71061

41
h-index

88593

70
g-index

139
all docs

139
docs citations

139
times ranked

2897
citing authors

#	ARTICLE	IF	CITATIONS
1	Ultrasensitive force detection with a nanotube mechanical resonator. <i>Nature Nanotechnology</i> , 2013, 8, 493-496.	15.6	327
2	Large fluctuations and optimal paths in chemical kinetics. <i>Journal of Chemical Physics</i> , 1994, 100, 5735-5750.	1.2	304
3	Quantum Computing with Electrons Floating on Liquid Helium. <i>Science</i> , 1999, 284, 1967-1969.	6.0	303
4	Nanotube mechanical resonators with quality factors of up to 5 million. <i>Nature Nanotechnology</i> , 2014, 9, 1007-1011.	15.6	190
5	Stochastic resonance in perspective. <i>Nuovo Cimento Della Societa Italiana Di Fisica D - Condensed Matter, Atomic, Molecular and Chemical Physics, Biophysics</i> , 1995, 17, 661-683.	0.4	178
6	Thermally activated transitions in a bistable three-dimensional optical trap. <i>Nature</i> , 1999, 402, 785-787.	13.7	167
7	Analogue studies of nonlinear systems. <i>Reports on Progress in Physics</i> , 1998, 61, 889-997.	8.1	158
8	Computational multiqubit tunnelling in programmable quantum annealers. <i>Nature Communications</i> , 2016, 7, 10327.	5.8	157
9	Comment on "Stochastic resonance in bistable systems". <i>Physical Review Letters</i> , 1990, 65, 2606-2609.	1.0	151
10	Optimal paths and the prehistory problem for large fluctuations in noise-driven systems. <i>Physical Review Letters</i> , 1992, 68, 2718-2721.	2.9	128
11	Large fluctuations and fluctuational transitions in systems driven by colored Gaussian noise: A high-frequency noise. <i>Physical Review A</i> , 1990, 42, 2020-2029.	1.0	120
12	Phase Shifts in Stochastic Resonance. <i>Physical Review Letters</i> , 1992, 68, 2985-2988.	2.9	99
13	Qubits with electrons on liquid helium. <i>Physical Review B</i> , 2003, 67, .	1.1	99
14	What can stochastic resonance do?. <i>Nature</i> , 1998, 391, 344-344.	13.7	91
15	Time Oscillations of Escape Rates in Periodically Driven Systems. <i>Physical Review Letters</i> , 1999, 82, 3193-3197.	2.9	91
16	Fluctuations in nonlinear systems near bifurcations corresponding to the appearance of new stable states. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1980, 104, 480-494.	1.2	83
17	Stochastic resonance for periodically modulated noise intensity. <i>Physical Review A</i> , 1992, 46, R1713-R1716.	1.0	80
18	Resonant Directed Diffusion in Nonadiabatically Driven Systems. <i>Physical Review Letters</i> , 1997, 79, 1178-1181.	2.9	78

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19	Proposal for Manipulating and Detecting Spin and Orbital States of Trapped Electrons on Helium Using Cavity Quantum Electrodynamics. <i>Physical Review Letters</i> , 2010, 105, 040503.	2.9	75
20	Corrals and Critical Behavior of the Distribution of Fluctuational Paths. <i>Physical Review Letters</i> , 1996, 77, 5229-5232.	2.9	72
21	Fluctuational phase-flip transitions in parametrically driven oscillators. <i>Physical Review E</i> , 1998, 57, 5202-5212.	0.8	70
22	Supernarrow spectral peaks and high-frequency stochastic resonance in systems with coexisting periodic attractors. <i>Physical Review E</i> , 1994, 49, 1198-1215.	0.8	63
23	Critical exponents in metastable decay via quantum activation. <i>Physical Review E</i> , 2007, 75, 011101.	0.8	60
24	Bragg-Cherenkov Scattering and Nonlinear Conductivity of a Two-Dimensional Wigner Crystal. <i>Physical Review Letters</i> , 1997, 78, 4813-4816.	2.9	57
25	Topological features of large fluctuations to the interior of a limit cycle. <i>Physical Review E</i> , 1997, 55, 2369-2391.	0.8	57
26	Fluctuations, Escape, and Nucleation in Driven Systems: Logarithmic Susceptibility. <i>Physical Review Letters</i> , 1997, 79, 3113-3116.	2.9	57
27	Statistical distribution and stochastic resonance in a periodically driven chemical system. <i>Journal of Chemical Physics</i> , 1995, 103, 966-972.	1.2	55
28	Classical theory of nonlinear oscillators interacting with a medium. <i>Physica Status Solidi (B): Basic Research</i> , 1971, 48, 497-512.	0.7	54
29	Spectral density of fluctuations of a double-well Duffing oscillator driven by white noise. <i>Physical Review A</i> , 1988, 37, 1303-1313.	1.0	53
30	Activated escape of periodically driven systems. <i>Chaos</i> , 2001, 11, 587-594.	1.0	53
31	Paths of Fluctuation Induced Switching. <i>Physical Review Letters</i> , 2008, 100, 130602.	2.9	52
32	Probability distributions and escape rates for systems driven by quasimonochromatic noise. <i>Physical Review E</i> , 1993, 47, 3996-4009.	0.8	51
33	Dynamics of Activated Escape and Its Observation in a Semiconductor Laser. <i>Physical Review Letters</i> , 2000, 85, 78-81.	2.9	50
34	Nonconventional stochastic resonance. <i>Journal of Statistical Physics</i> , 1993, 70, 479-499.	0.5	48
35	Symmetry breaking in a mechanical resonator made from a carbon nanotube. <i>Nature Communications</i> , 2013, 4, 2843.	5.8	47
36	Quasimonochromatic noise: New features of fluctuations in noise-driven nonlinear systems. <i>Physical Review Letters</i> , 1991, 67, 933-936.	2.9	46

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37	Spectral distribution of nonlinear oscillators with nonlinear friction due to a medium. <i>Physica Status Solidi (B): Basic Research</i> , 1975, 68, 111-123.	0.7	45
38	Linear response theory in stochastic resonance. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 180, 332-336.	0.9	44
39	Magnetoresistance in 2D electrons on liquid helium: Many-electron versus single-electron kinetics. <i>Physical Review Letters</i> , 1993, 70, 3975-3978.	2.9	43
40	Noise-induced narrowing of peaks in the power spectra of underdamped nonlinear oscillators. <i>Physical Review A</i> , 1990, 42, 7041-7049.	1.0	42
41	Quantum heating of a parametrically modulated oscillator: Spectral signatures. <i>Physical Review A</i> , 2011, 83, .	1.0	42
42	Stochastic resonance: Linear response and giant nonlinearity. <i>Journal of Statistical Physics</i> , 1993, 70, 463-478.	0.5	40
43	Predicting extinction rates in stochastic epidemic models. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2009, 2009, P01005.	0.9	40
44	Interplay of Driving and Frequency Noise in the Spectra of Vibrational Systems. <i>Physical Review Letters</i> , 2014, 113, 255502.	2.9	38
45	Quantum interference in the classically forbidden region: A parametric oscillator. <i>Physical Review A</i> , 2007, 76, .	1.0	37
46	Fluctuation-induced transitions between periodic attractors: Observation of supernarrow spectral peaks near a kinetic phase transition. <i>Physical Review Letters</i> , 1990, 65, 48-51.	2.9	35
47	Optimal control of large fluctuations. <i>Physical Review E</i> , 1997, 55, 2516-2521.	0.8	34
48	Anomalous Decay of Nanomechanical Modes Going Through Nonlinear Resonance. <i>Scientific Reports</i> , 2017, 7, 18091.	1.6	34
49	Noise-induced linearisation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1994, 193, 61-66.	0.9	33
50	Strong many-particle localization and quantum computing with perpetually coupled qubits. <i>Physical Review A</i> , 2005, 71, .	1.0	33
51	Cyclotron resonance of a two-dimensional Wigner crystal. <i>Journal of Physics C: Solid State Physics</i> , 1982, 15, 7397-7316.	1.5	32
52	Quantum Computing Using Electrons Floating on Liquid Helium. <i>Fortschritte Der Physik</i> , 2000, 48, 1095-1108.	1.5	32
53	Spectrum of an Oscillator with Jumping Frequency and the Interference of Partial Susceptibilities. <i>Physical Review Letters</i> , 2010, 105, 230601.	2.9	31
54	Dissipative corrections to escape probabilities of thermal-nonequilibrium systems. <i>Physical Review E</i> , 1993, 47, 2448-2461.	0.8	30

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55	Time-translation-symmetry breaking in a driven oscillator: From the quantum coherent to the incoherent regime. <i>Physical Review A</i> , 2017, 96, .	1.0	30
56	Preparing quasienergy states on demand: A parametric oscillator. <i>Physical Review A</i> , 2017, 95, .	1.0	30
57	Multiphoton antiresonance. <i>Physical Review B</i> , 2005, 71, .	1.1	29
58	Interaction-induced time-symmetry breaking in driven quantum oscillators. <i>Physical Review B</i> , 2018, 98, .	1.1	29
59	Noise-enhanced optical heterodyning in an all-optical bistable system. <i>Applied Physics Letters</i> , 1995, 67, 308-310.	1.5	28
60	Diffusion-Induced Bistability of Driven Nanomechanical Resonators. <i>Physical Review Letters</i> , 2011, 106, 227202.	2.9	28
61	Nonlinear damping and dephasing in nanomechanical systems. <i>Physical Review B</i> , 2016, 94, .	1.1	28
62	Correlated anomalous phase diffusion of coupled phononic modes in a sideband-driven resonator. <i>Nature Communications</i> , 2016, 7, 12694.	5.8	28
63	Spectral distribution of a nonlinear oscillator performing Brownian motion in a double-well potential. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1985, 133, 53-73.	1.2	27
64	Many-electron transport in strongly correlated nondegenerate two-dimensional electron systems. <i>Physical Review B</i> , 1997, 55, 16249-16271.	1.1	27
65	Resonant symmetry lifting in a parametrically modulated oscillator. <i>Physical Review E</i> , 2006, 74, 061118.	0.8	26
66	Resonant Correlation-Induced Optical Bistability in an Electron System on Liquid Helium. <i>Physical Review Letters</i> , 2009, 103, 096801.	2.9	25
67	Self-induced resonant optical rotation in crystals KCl:Li. <i>Solid State Communications</i> , 1979, 30, 133-136.	0.9	24
68	Scaling in activated escape of underdamped systems. <i>Physical Review E</i> , 2005, 72, 021102.	0.8	24
69	Relaxation of a qubit measured by a driven Duffing oscillator. <i>Physical Review A</i> , 2010, 81, .	1.0	24
70	Ideal mean-field transition in a modulated cold atom system. <i>Physical Review E</i> , 2010, 82, 031134.	0.8	24
71	Diffusion-induced dephasing in nanomechanical resonators. <i>Physical Review B</i> , 2011, 83, .	1.1	24
72	Driven nonlinear nanomechanical resonators as digital signal detectors. <i>Scientific Reports</i> , 2018, 8, 11284.	1.6	24

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73	Time correlation functions and spectral distributions of the duffing oscillator in a random force field. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1980, 104, 495-508.	1.2	23
74	Giant nonlinearity in the low-frequency response of a fluctuating bistable system. <i>Physical Review E</i> , 1993, 47, 1629-1632.	0.8	22
75	Magnetoconductivity of two-dimensional electrons on liquid helium: Experiments in the fluid phase. <i>Physical Review B</i> , 1997, 55, 16280-16292.	1.1	22
76	Critical Exponent Crossovers in Escape near a Bifurcation Point. <i>Physical Review Letters</i> , 2004, 92, 080602.	2.9	22
77	Activated Escape of Periodically Modulated Systems. <i>Physical Review Letters</i> , 2005, 94, 070602.	2.9	22
78	Strong negative nonlinear friction from induced two-phonon processes in vibrational systems. <i>Nature Communications</i> , 2018, 9, 3241.	5.8	22
79	Internal forces in nondegenerate two-dimensional electron systems. <i>Physical Review B</i> , 1997, 55, 16272-16279.	1.1	21
80	Noise-enhanced heterodyning in bistable systems. <i>Physical Review E</i> , 1994, 49, 1935-1942.	0.8	20
81	Poisson-noise-induced escape from a metastable state. <i>Physical Review E</i> , 2010, 81, 051124.	0.8	20
82	Switching-path distribution in multidimensional systems. <i>Physical Review E</i> , 2008, 78, 051109.	0.8	19
83	Switching Exponent Scaling near Bifurcation Points for Non-Gaussian Noise. <i>Physical Review Letters</i> , 2010, 104, 140601.	2.9	19
84	Critical fluctuations and the rates of interstate switching near the excitation threshold of a quantum parametric oscillator. <i>Physical Review E</i> , 2015, 92, 022105.	0.8	19
85	Nucleation in periodically driven electrochemical systems. <i>Journal of Chemical Physics</i> , 1999, 110, 11488-11504.	1.2	18
86	Quantum state preparation for coupled period tripling oscillators. <i>Physical Review Research</i> , 2019, 1, .	1.3	18
87	Theory of Cyclotron Resonance of Two-Dimensional Electrons Interacting With Surface and Volume Phonons. <i>Physica Status Solidi (B): Basic Research</i> , 1978, 88, 463-475.	0.7	17
88	Detecting and characterizing frequency fluctuations of vibrational modes. <i>Physical Review B</i> , 2011, 84, .	1.1	17
89	Resonantly Induced Friction and Frequency Combs in Driven Nanomechanical Systems. <i>Physical Review Letters</i> , 2019, 122, 254301.	2.9	17
90	Spectral Evidence of Squeezing of a Weakly Damped Driven Nanomechanical Mode. <i>Physical Review X</i> , 2020, 10, .	2.8	17

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91	Fluctuational transitions between stable states of a nonlinear oscillator driven by random resonant force. <i>Physical Review A</i> , 1990, 41, 3090-3102.	1.0	15
92	Zero-frequency spectral peaks of underdamped nonlinear oscillators with asymmetric potentials. <i>Physical Review A</i> , 1991, 43, 1701-1708.	1.0	14
93	Symmetry Breaking of Fluctuation Dynamics by Noise Color. <i>Physical Review Letters</i> , 2000, 84, 5470-5473.	2.9	14
94	Spectral effects of dispersive mode coupling in driven mesoscopic systems. <i>Physical Review B</i> , 2015, 92, .	1.1	14
95	Magnetotransport in the two-dimensional electron fluid and solid on liquid helium. <i>Physica B: Condensed Matter</i> , 1998, 249-251, 628-635.	1.3	13
96	Tunneling decay in a magnetic field. <i>Physical Review A</i> , 2002, 65, .	1.0	13
97	Singular response of bistable systems driven by telegraph noise. <i>Physical Review E</i> , 2012, 85, 031106.	0.8	12
98	Large Fluctuations in a Periodically Driven Dynamical System. <i>International Journal of Bifurcation and Chaos in Applied Sciences and Engineering</i> , 1998, 08, 747-754.	0.7	11
99	Noise-induced switching and extinction in systems with delay. <i>Physical Review E</i> , 2015, 91, 012139.	0.8	11
100	Ripplonic Lamb Shift for Electrons on Liquid Helium. <i>Physical Review Letters</i> , 2017, 119, 256802.	2.9	11
101	Pathways of activated escape in periodically modulated systems. <i>Physical Review E</i> , 2006, 73, 061109.	0.8	10
102	Quantum fluctuations in modulated nonlinear oscillators. <i>New Journal of Physics</i> , 2014, 16, 015011.	1.2	10
103	Nonlocal random walk over Floquet states of a dissipative nonlinear oscillator. <i>Physical Review E</i> , 2019, 100, 052148.	0.8	9
104	Large rare fluctuations in systems with delayed dissipation. <i>Physical Review E</i> , 2012, 86, 031145.	0.8	8
105	Quantum critical temperature of a modulated oscillator. <i>Physical Review A</i> , 2013, 87, .	1.0	8
106	Tunneling Transverse to a Magnetic Field and Its Occurrence in Correlated 2D Electron Systems. <i>Physical Review Letters</i> , 2000, 84, 2227-2230.	2.9	7
107	Enhancement of Tunneling from a Correlated 2D Electron System by a Many-Electron MÃ¶ssbauer-Type Recoil in a Magnetic Field. <i>Physical Review Letters</i> , 2001, 86, 2408-2411.	2.9	7
108	Many-particle confinement by constructed disorder and quantum computing. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005, 7, S363-S370.	1.4	7

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109	Noise-induced switching from a symmetry-protected shallow metastable state. <i>Scientific Reports</i> , 2020, 10, 10413.	1.6	7
110	Amplification and spectral evidence of squeezing in the response of a strongly driven nanoresonator to a probe field. <i>Physical Review A</i> , 2021, 103, .	1.0	7
111	Suppressing Frequency Fluctuations of Self-Sustained Vibrations in Underdamped Nonlinear Resonators. <i>Physical Review Applied</i> , 2021, 15, .	1.5	7
112	Resonant nonlinear response of a nanomechanical system with broken symmetry. <i>Physical Review B</i> , 2021, 104, .	1.1	7
113	Magnetotransport of 2D electrons on liquid helium in the fluid and solid phases. <i>European Physical Journal D</i> , 1996, 46, 3056-3062.	0.4	6
114	Low-frequency conductivity of a nondegenerate two-dimensional electron liquid in strong magnetic fields. <i>Physical Review B</i> , 2003, 67, .	1.1	6
115	Vibration multistability and quantum switching for dispersive coupling. <i>Physical Review B</i> , 2014, 89, .	1.1	6
116	Strong vibration nonlinearity in semiconductor-based nanomechanical systems. <i>Physical Review B</i> , 2017, 95, .	1.1	6
117	Bistability and hysteresis of intersubband absorption in strongly interacting electrons on liquid helium. <i>Physical Review B</i> , 2012, 85, .	1.1	5
118	Singular probability distribution of shot-noise driven systems. <i>Physical Review E</i> , 2013, 87, 012119.	0.8	5
119	Coherent multiple-period states of periodically modulated qubits. <i>Physical Review A</i> , 2019, 100, .	1.0	5
120	Self-Diffusion in a Spatially Modulated System of Electrons on Helium. <i>Journal of Low Temperature Physics</i> , 2019, 195, 266-288.	0.6	5
121	Mobility of a spatially modulated electron liquid on the helium surface. <i>Physical Review B</i> , 2020, 101, .	1.1	5
122	Exponential peak and scaling of work fluctuations in modulated systems. <i>Physical Review E</i> , 2008, 77, 021123.	0.8	4
123	Single-electron magnetoconductivity of a nondegenerate two-dimensional electron system in a quantizing magnetic field. <i>Physical Review B</i> , 2001, 63, .	1.1	2
124	Universality in Escape from a Modulated Potential Well. <i>AIP Conference Proceedings</i> , 2003, , .	0.3	2
125	Quantum Computing Using Electrons Floating on Liquid Helium. , 2005, , 325-338.		2
126	Quantum measurements of coupled systems. <i>Physical Review A</i> , 2009, 80, .	1.0	2

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127	Many-Electron System on Helium and Color Center Spectroscopy. Physical Review Letters, 2021, 127, 016801.	2.9	2
128	Many-electron magnetoconductivity of 2D electrons on liquid helium. European Physical Journal D, 1996, 46, 329-330.	0.4	1
129	Nonlinear dynamics of large fluctuations, and how they can be controlled. AIP Conference Proceedings, 2000, , .	0.3	1
130	Many-particle localization by constructed disorder and quantum computing. AIP Conference Proceedings, 2005, , .	0.3	1
131	Quantum Computing Using Electrons Floating on Liquid Helium. , 2000, 48, 1095.		1
132	A phase transition in a system driven by coloured noise. AIP Conference Proceedings, 2000, , .	0.3	0
133	Activated escape of driven systems. AIP Conference Proceedings, 2000, , .	0.3	0
134	CONTROLLING ACTIVATED PROCESSES. Fluctuation and Noise Letters, 2001, 01, C1-C6.	1.0	0
135	Multiphoton Antiresonance And Quantum Activation In Driven Systems. AIP Conference Proceedings, 2005, , .	0.3	0
136	Theoretical Study of Spontaneous Symmetry Breaking in Parametrically Driven Magneto-Optical Trap. , 2007, , .		0
137	Moshe Citterman, Phase Transitions: Modern Applications. Journal of Statistical Physics, 2014, 156, 1025-1026.	0.5	0
138	Quantum Dynamics of a Domain Wall in the Presence of Dephasing. Semiconductors, 2018, 52, 539-542.	0.2	0
139	CONTROLLING ACTIVATED PROCESSES. , 2022, , 27-32.		0