

# Christopher Jarzynski

## List of Publications by Year in descending order

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104  
papers

12,656  
citations

71004

43  
h-index

37326

100  
g-index

121  
all docs

121  
docs citations

121  
times ranked

7031  
citing authors

#	ARTICLE	IF	CITATIONS
1	Shortcuts to Thermodynamic Computing: The Cost of Fast and Faithful Information Processing. Journal of Statistical Physics, 2022, 187, 17.	0.5	11
2	Quantum Coherences and Classical Inhomogeneities as Equivalent Thermodynamics Resources. Entropy, 2022, 24, 474.	1.1	3
3	Machine learning the thermodynamic arrow of time. Nature Physics, 2021, 17, 105-113.	6.5	55
4	Power-law behavior of transcription factor dynamics at the single-molecule level implies a continuum affinity model. Nucleic Acids Research, 2021, 49, 6605-6620.	6.5	70
5	Energy diffusion and absorption in chaotic systems with rapid periodic driving. Physical Review Research, 2021, 3, .	1.3	15
6	Semiclassical fast-forward shortcuts to adiabaticity. Physical Review Research, 2021, 3, .	1.3	10
7	Understanding cytoskeletal avalanches using mechanical stability analysis. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	14
8	Energy diffusion and prethermalization in chaotic billiards under rapid periodic driving. Physical Review E, 2021, 104, 064210.	0.8	2
9	Fluctuation relations and strong inequalities for thermally isolated systems. Physica A: Statistical Mechanics and Its Applications, 2020, 552, 122077.	1.2	7
10	Recovery of Equilibrium Free Energy from Nonequilibrium Thermodynamics with Mechanosensitive Ion Channels in <i>E. coli</i> . Physical Review Letters, 2020, 124, 228101.	2.9	6
11	Gibbs free energy change of a discrete chemical reaction event. Journal of Chemical Physics, 2020, 152, 084116.	1.2	6
12	Stochastic thermodynamics of self-oscillations: the electron shuttle. New Journal of Physics, 2019, 21, 073009.	1.2	23
13	Processivity, Velocity, and Universal Characteristics of Nucleic Acid Unwinding by Helicases. Biophysical Journal, 2019, 117, 867-879.	0.2	6
14	A Programmable Mechanical Maxwell's Demon. Entropy, 2019, 21, 65.	1.1	8
15	Quantifying dissipation in actomyosin networks. Interface Focus, 2019, 9, 20180078.	1.5	21
16	Optimal Probabilistic Work Extraction beyond the Free Energy Difference with a Single-Electron Device. Physical Review Letters, 2019, 122, 150604.	2.9	34
17	Verification of the quantum nonequilibrium work relation in the presence of decoherence. New Journal of Physics, 2018, 20, 013008.	1.2	50
18	Similarities and differences between non-equilibrium steady states and time-periodic driving in diffusive systems. New Journal of Physics, 2018, 20, 093015.	1.2	20

#	ARTICLE	IF	CITATIONS
19	Experimental realization of Feynman's ratchet. <i>New Journal of Physics</i> , 2018, 20, 103032.	1.2	21
20	Equilibrium free energies from non-equilibrium trajectories with relaxation fluctuation spectroscopy. <i>Nature Physics</i> , 2018, 14, 842-847.	6.5	13
21	Nonconservative Forces via Quantum Reservoir Engineering. <i>Physical Review Letters</i> , 2018, 120, 230404.	2.9	12
22	Experimental realization of Feynman's ratchet with an optically trapped microsphere. , 2018, , .		1
23	Stochastic and Macroscopic Thermodynamics of Strongly Coupled Systems. <i>Physical Review X</i> , 2017, 7, .	2.8	102
24	Fast forward to the classical adiabatic invariant. <i>Physical Review E</i> , 2017, 95, 032122.	0.8	42
25	Heat dissipation and fluctuations in a driven quantum dot. <i>Physica Status Solidi (B): Basic Research</i> , 2017, 254, 1600546.	0.7	17
26	Shortcuts to adiabaticity using flow fields. <i>New Journal of Physics</i> , 2017, 19, 125009.	1.2	50
27	Classical and Quantum Shortcuts to Adiabaticity in a Tilted Piston. <i>Journal of Physical Chemistry B</i> , 2017, 121, 3403-3411.	1.2	19
28	Low-dimensional manifold of actin polymerization dynamics. <i>New Journal of Physics</i> , 2017, 19, 125012.	1.2	8
29	Conditional reversibility in nonequilibrium stochastic systems. <i>Physical Review E</i> , 2016, 93, 022101.	0.8	7
30	Mimicking Nonequilibrium Steady States with Time-Periodic Driving. <i>Physical Review X</i> , 2016, 6, .	2.8	43
31	Number of trials required to estimate a free-energy difference, using fluctuation relations. <i>Physical Review E</i> , 2016, 93, 052144.	0.8	26
32	Nonperturbative embedding for highly nonlocal Hamiltonians. <i>Physical Review A</i> , 2016, 94, .	1.0	5
33	Analysis of slow transitions between nonequilibrium steady states. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2016, 2016, 063204.	0.9	51
34	Universal energy diffusion in a quivering billiard. <i>Physical Review E</i> , 2015, 92, 042911.	0.8	5
35	Apparent topologically forbidden interchange of energy surfaces under slow variation of a Hamiltonian. <i>Physical Review E</i> , 2015, 91, 052913.	0.8	7
36	Quantum-Classical Correspondence Principle for Work Distributions. <i>Physical Review X</i> , 2015, 5, .	2.8	74

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37	Diverse phenomena, common themes. <i>Nature Physics</i> , 2015, 11, 105-107.	6.5	35
38	Second laws for an information driven current through a spin valve. <i>Physical Review E</i> , 2014, 90, 062107.	0.8	32
39	Classical and Quantum Shortcuts to Adiabaticity for Scale-Invariant Driving. <i>Physical Review X</i> , 2014, 4, .	2.8	195
40	Engineering Maxwell's demon. <i>Physics Today</i> , 2014, 67, 60-61.	0.3	52
41	Maxwell's Refrigerator: An Exactly Solvable Model. <i>Physical Review Letters</i> , 2013, 111, 030602.	2.9	106
42	Fluctuation Relations in Small Systems: Exact Results from the Deterministic Approach. , 2013, , 83-114.		1
43	Information Processing and the Second Law of Thermodynamics: An Inclusive, Hamiltonian Approach. <i>Physical Review X</i> , 2013, 3, .	2.8	134
44	Nonequilibrium fluctuation theorems from equilibrium fluctuations. <i>New Journal of Physics</i> , 2013, 15, 125029.	1.2	7
45	Generating shortcuts to adiabaticity in quantum and classical dynamics. <i>Physical Review A</i> , 2013, 88, .	1.0	118
46	Microcanonical work and fluctuation relations for an open system: An exactly solvable model. <i>Physical Review E</i> , 2013, 88, 042136.	0.8	9
47	Recent Progress in Fluctuation Theorems and Free Energy Recovery. , 2013, , 155-179.		3
48	Information Thermodynamics: Maxwell's Demon in Nonequilibrium Dynamics. , 2013, , 181-211.		18
49	Replica exchange with nonequilibrium switches: Enhancing equilibrium sampling by increasing replica overlap. <i>Journal of Chemical Physics</i> , 2012, 136, 194101.	1.2	14
50	Hybrid models of molecular machines and the no-pumping theorem. <i>Journal of Chemical Physics</i> , 2012, 137, 234104.	1.2	6
51	Validity of nonequilibrium work relations for the rapidly expanding quantum piston. <i>Physical Review E</i> , 2012, 85, 031102.	0.8	37
52	Work and information processing in a solvable model of Maxwell's demon. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 11641-11645.	3.3	227
53	Out of equilibrium. <i>Nature Physics</i> , 2011, 7, 591-592.	6.5	8
54	Escorted free energy simulations. <i>Journal of Chemical Physics</i> , 2011, 134, 054107.	1.2	24

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55	Equalities and Inequalities: Irreversibility and the Second Law of Thermodynamics at the Nanoscale. Annual Review of Condensed Matter Physics, 2011, 2, 329-351.	5.2	790
56	A proof by graphical construction of the no-pumping theorem of stochastic pumps. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P10006.	0.9	23
57	Modeling Maxwell's demon with a microcanonical Szilard engine. Physical Review E, 2011, 83, 061120.	0.8	51
58	Good Practices in Free-Energy Calculations. Journal of Physical Chemistry B, 2010, 114, 10235-10253.	1.2	509
59	Nonequilibrium thermodynamics at the microscale: Work relations and the second law. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 4406-4417.	1.2	20
60	Replica exchange with nonequilibrium switches. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 12224-12229.	3.3	54
61	Exact Formula for Currents in Strongly Pumped Diffusive Systems. Journal of Statistical Physics, 2009, 136, 917-925.	0.5	33
62	Illustrative example of the relationship between dissipation and relative entropy. Physical Review E, 2009, 79, 021106.	0.8	40
63	Dissipation and lag in irreversible processes. Europhysics Letters, 2009, 87, 60005.	0.7	124
64	Nonequilibrium work relations: foundations and applications. European Physical Journal B, 2008, 64, 331-340.	0.6	156
65	The thermodynamics of writing a random polymer. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 9451-9452.	3.3	24
66	Comment on "Failure of the Work-Hamiltonian Connection for Free-Energy Calculations". Physical Review Letters, 2008, 101, 098901; author reply 098902.	2.9	31
67	Binless Estimation of the Potential of Mean Force. Journal of Physical Chemistry B, 2008, 112, 12722-12729.	1.2	11
68	Directed Flow in Nonadiabatic Stochastic Pumps. Physical Review Letters, 2008, 101, 140602.	2.9	105
69	Escorted Free Energy Simulations: Improving Convergence by Reducing Dissipation. Physical Review Letters, 2008, 100, 190601.	2.9	83
70	Fluctuation relations and coarse-graining. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P09012-P09012.	0.9	64
71	Comparison of work fluctuation relations. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P11002-P11002.	0.9	56
72	Work distribution for the adiabatic compression of a dilute and interacting classical gas. Physical Review E, 2007, 75, 021116.	0.8	62

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73	Comparison of far-from-equilibrium work relations. <i>Comptes Rendus Physique</i> , 2007, 8, 495-506.	0.3	155
74	Path-integral analysis of fluctuation theorems for general Langevin processes. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2006, 2006, P08001-P08001.	0.9	156
75	Rare events and the convergence of exponentially averaged work values. <i>Physical Review E</i> , 2006, 73, 046105.	0.8	272
76	Work Fluctuation Theorems and Single-Molecule Biophysics. <i>Progress of Theoretical Physics Supplement</i> , 2006, 165, 1-17.	0.2	20
77	Verification of the Crooks fluctuation theorem and recovery of RNA folding free energies. <i>Nature</i> , 2005, 437, 231-234.	13.7	891
78	Lag inequality for birth-death processes with time-dependent rates. <i>Journal of Physics A</i> , 2005, 38, L227-L233.	1.6	2
79	Unbiased estimators for spatial distribution functions of classical fluids. <i>Journal of Chemical Physics</i> , 2005, 122, 014114.	1.2	9
80	Dynamical generalization of nonequilibrium work relation. <i>Physical Review E</i> , 2005, 71, 025102.	0.8	22
81	Classical and Quantum Fluctuation Theorems for Heat Exchange. <i>Physical Review Letters</i> , 2004, 92, 230602.	2.9	258
82	Experimental test of Hatano and Sasa's nonequilibrium steady-state equality. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 15038-15041.	3.3	210
83	Nonequilibrium work theorem for a system strongly coupled to a thermal environment. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2004, 2004, P09005.	0.9	175
84	Quantum Chaotic Environments, the Butterfly Effect, and Decoherence. <i>Physical Review Letters</i> , 2002, 89, 170405.	2.9	103
85	Targeted free energy perturbation. <i>Physical Review E</i> , 2002, 65, 046122.	0.8	77
86	A "fast growth" method of computing free energy differences. <i>Journal of Chemical Physics</i> , 2001, 114, 5974-5981.	1.2	156
87	How does a system respond when driven away from thermal equilibrium?. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2001, 98, 3636-3638.	3.3	47
88	Hamiltonian Derivation of a Detailed Fluctuation Theorem. <i>Journal of Statistical Physics</i> , 2000, 98, 77-102.	0.5	262
89	Feynman's ratchet and pawl: An exactly solvable model. <i>Physical Review E</i> , 1999, 59, 6448-6459.	0.8	77
90	Microscopic Analysis of Clausius-Duhem Processes. <i>Journal of Statistical Physics</i> , 1999, 96, 415-427.	0.5	92

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91	Computing probabilities of very rare events for Langevin processes: a new method based on importance sampling. Nuclear Physics A, 1998, 641, 335-354.	0.6	18
92	Berry's conjecture and information theory. Physical Review E, 1997, 56, 2254-2256.	0.8	16
93	Equilibrium free-energy differences from nonequilibrium measurements: A master-equation approach. Physical Review E, 1997, 56, 5018-5035.	0.8	1,073
94	Nonequilibrium Equality for Free Energy Differences. Physical Review Letters, 1997, 78, 2690-2693.	2.9	4,087
95	Effect of dynamical correlations in a slowly pumped Knudsen gas. Nuclear Physics A, 1996, 599, 486-504.	0.6	5
96	Numerical convergence in solving the Vlasov equation. Physical Review C, 1996, 53, 1028-1031.	1.1	9
97	Geometric Phases and Anholonomy for a Class of Chaotic Classical Systems. Physical Review Letters, 1995, 74, 1732-1735.	2.9	19
98	Thermalization of a Brownian Particle via Coupling to Low-Dimensional Chaos. Physical Review Letters, 1995, 74, 2937-2940.	2.9	54
99	Geometric Phase Effects for Wave-Packet Revivals. Physical Review Letters, 1995, 74, 1264-1267.	2.9	14
100	Evidence for the possible synthesis of element 110 produced by the $^{59}\text{Co}+^{209}\text{Bi}$ reaction. Physical Review C, 1995, 51, R2293-R2297.	1.1	60
101	A universal asymptotic velocity distribution for independent particles in a time-dependent irregular container. Nuclear Physics A, 1993, 552, 1-9.	0.6	25
102	Energy diffusion in a chaotic adiabatic billiard gas. Physical Review E, 1993, 48, 4340-4350.	0.8	52
103	Multiple-time-scale approach to ergodic adiabatic systems: Another look. Physical Review Letters, 1993, 71, 839-842.	2.9	33
104	Diffusion equation for energy in ergodic adiabatic ensembles. Physical Review A, 1992, 46, 7498-7509.	1.0	28