Sebastian Deffner

List of Publications by Year
in descending order

Version: 2024-02-01

87 papers	4,555 citations	101535 36 h-index	110368 64 g-index
91 all docs	91 docs citations	91 times ranked	1782 citing authors

#	Article	IF	Citations
1	Single-Ion Heat Engine at Maximum Power. Physical Review Letters, 2012, 109, 203006.	7.8	362
2	Quantum Speed Limit for Non-Markovian Dynamics. Physical Review Letters, 2013, 111, 010402.	7.8	351
3	Quantum speed limits: from Heisenbergâ€™s uncertainty principle to optimal quantum control. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 453001.	2.1	334
4	Classical and Quantum Shortcuts to Adiabaticity for Scale-Invariant Driving. Physical Review X, 2014, 4, .	8.9	195
5	Generalized Clausius Inequality for Nonequilibrium Quantum Processes. Physical Review Letters, 2010, 105, 170402.	7.8	183
6	Nonequilibrium Entropy Production for Open Quantum Systems. Physical Review Letters, 2011, 107, 140404.	7.8	172
7	Trade-Off Between Speed and Cost in Shortcuts to Adiabaticity. Physical Review Letters, 2017, 118, 100601.	7.8	163
8	Energyâ€“time uncertainty relation for driven quantum systems. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 335302.	2.1	142
9	Information Processing and the Second Law of Thermodynamics: An Inclusive, Hamiltonian Approach. Physical Review X, 2013, 3, .	8.9	134
10	Nonequilibrium work distribution of a quantum harmonic oscillator. Physical Review E, 2008, 77, 021128.	2.1	130
11	Employing Trapped Cold Ions to Verify the Quantum Jarzynski Equality. Physical Review Letters, 2008, 101, 070403.	7.8	128
12	Thermodynamic universality of quantum Carnot engines. Physical Review E, 2015, 92, 042126.	2.1	102
13	Environment-Assisted Speed-up of the Field Evolution in Cavity Quantum Electrodynamics. Physical Review Letters, 2015, 114, 233602.	7.8	94
14	Quantum work and the thermodynamic cost of quantum measurements. Physical Review E, 2016, 94, 010103.	2.1	81
15	Quantum thermodynamic devices: From theoretical proposals to experimental reality. AVS Quantum Science, 2022, 4, .	4.9	73
16	Holevo's bound from a general quantum fluctuation theorem. Physical Review A, 2012, 86, .	2.5	69
17	Efficiency of Harmonic Quantum Otto Engines at Maximal Power. Entropy, 2018, 20, 875.	2.2	69
18	Optimal driving of isothermal processes close to equilibrium. Journal of Chemical Physics, 2014, 140, 244119.	3.0	66

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19	Quantum work statistics of linear and nonlinear parametric oscillators. Chemical Physics, 2010, 375, 200-208.	1.9	61
20	Optimal control of a qubit in an optical cavity. Journal of Physics B: Atomic, Molecular and Optical Physics, 2014, 47, 145502.	1.5	61
21	Controlling the speed and trajectory of evolution with counterdiabatic driving. Nature Physics, 2021, 17, 135-142.	16.7	61
22	Geometric quantum speed limits: a case for Wigner phase space. New Journal of Physics, 2017, 19, 103018.	2.9	59
23	Orthogonality Catastrophe as a Consequence of the Quantum Speed Limit. Physical Review Letters, 2020, 124, 110601.	7.8	59
24	Non-hermitian quantum thermodynamics. Scientific Reports, 2016, 6, 23408.	3.3	58
25	Thermodynamic control â€”An old paradigm with new applications. Europhysics Letters, 2020, 131, 20001.	2.0	51
26	Precision thermometry and the quantum speed limit. Quantum Science and Technology, 2018, 3, 025002.	5.8	50
27	Jarzynski Equality in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi mathvariant="script">P</mml:mi><mml:mi mathvariant="script">T</mml:mi></mml:math>-Symmetric Quantum Mechanics. Physical Review Letters, 2015, 114, 150601.	7.8	49
28	Shortcuts to adiabaticity from linear response theory. Physical Review E, 2015, 92, 042148.	2.1	46
29	Endoreversible Otto Engines at Maximal Power. Journal of Non-Equilibrium Thermodynamics, 2020, 45, 305-310.	4.2	45
30	Information-driven current in a quantum Maxwell demon. Physical Review E, 2013, 88, 062128.	2.1	42
31	Thermodynamic length for far-from-equilibrium quantum systems. Physical Review E, 2013, 87, 022143.	2.1	42
32	Fast forward to the classical adiabatic invariant. Physical Review E, 2017, 95, 032122.	2.1	42
33	Bosons outperform fermions: The thermodynamic advantage of symmetry. Physical Review E, 2020, 101, 012110.	2.1	42
34	Quantum speed limits and the maximal rate of information production. Physical Review Research, 2020, 2, .	3.6	42
35	Shortcuts to adiabaticity: suppression of pair production in driven Dirac dynamics. New Journal of Physics, 2016, 18, 012001.	2.9	39
36	Quantum fluctuation theorem for error diagnostics in quantum annealers. Scientific Reports, 2018, 8, 17191.	3.3	36

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37	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi mathvariant="script">PT</mml:mi></mml:math>-symmetric slowing down of decoherence. Physical Review A, 2016, 94, .	2.5	32
38	Quantum entropy production in phase space. Europhysics Letters, 2013, 103, 30001.	2.0	31
39	Interference of identical particles and the quantum work distribution. Physical Review E, 2014, 90, 062121.	2.1	31
40	Information Scrambling versus Decoherenceâ€"Two Competing Sinks for Entropy. PRX Quantum, 2021, 2, .	9.2	31
41	Kibble-Zurek scaling of the irreversible entropy production. Physical Review E, 2017, 96, 052125.	2.1	27
42	Demonstration of entanglement assisted invariance on IBM's quantum experience. Heliyon, 2017, 3, e00444.	3.2	26
43	Non-Thermal Quantum Engine in Transmon Qubits. Entropy, 2019, 21, 545.	2.2	25
44	Minimal dissipation in processes far from equilibrium. Physical Review E, 2018, 98, .	2.1	24
45	Boosting engine performance with Boseâ€"Einstein condensation. New Journal of Physics, 2022, 24, 025001.	2.9	24
46	Energetic cost of Hamiltonian quantum gates. Europhysics Letters, 2021, 134, 40002.	2.0	23
47	Jarzynski Equality for Driven Quantum Field Theories. Physical Review X, 2018, 8, .	8.9	22
48	Kibble-Zurek scaling in quantum speed limits for shortcuts to adiabaticity. Physical Review Research, 2020, 2, .	3.6	22
49	Eavesdropping on the Decohering Environment: Quantum Darwinism, Amplification, and the Origin of Objective Classical Reality. Physical Review Letters, 2022, 128, 010401.	7.8	21
50	Quantum fluctuation theorems in the strong damping limit. Europhysics Letters, 2011, 94, 30001.	2.0	20
51	Foundations of statistical mechanics from symmetries of entanglement. New Journal of Physics, 2016, 18, 063013.	2.9	19
52	Quantum scrambling and the growth of mutual information. Quantum Science and Technology, 2020, 5, 035005.	5.8	19
53	From quantum speed limits to energy-efficient quantum gates. New Journal of Physics, 2022, 24, 055002.	2.9	19
54	Quantum Otto engines at relativistic energies. New Journal of Physics, 2021, 23, 105001.	2.9	17

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55	Diverging Quantum Speed Limits: A Herald of Classicality. PRX Quantum, 2021, 2, .	9.2	15
56	Thermodynamics of Statistical Anyons. PRX Quantum, 2021, 2, .	9.2	14
57	Quantum work statistics of charged Dirac particles in time-dependent fields. Physical Review E, 2015, 92, 032137.	2.1	13
58	Quantum Heat Engines with Singular Interactions. Symmetry, 2021, 13, 978.	2.2	13
59	Shortcuts in Stochastic Systems and Control of Biophysical Processes. Physical Review X, 2022, 12, .	8.9	12
60	Quantum work distribution for a driven diatomic molecule. Chemical Physics, 2015, 446, 18-23.	1.9	11
61	Repeatability of measurements: Non-Hermitian observables and quantum Coriolis force. Physical Review A, 2016, 94, .	2.5	11
62	Stochastic thermodynamics of relativistic Brownian motion. New Journal of Physics, 2020, 22, 073054.	2.9	11
63	Ergotropy from quantum and classical correlations. Journal of Physics A: Mathematical and Theoretical, 2022, 55, 025301.	2.1	11
64	Redundantly Amplified Information Suppresses Quantum Correlations in Many-Body Systems. Physical Review Letters, 2022, 129, .	7.8	11
65	Quantum Zeno effect in correlated qubits. Physical Review A, 2018, 98, .	2.5	10
66	Time-Rescaling of Dirac Dynamics: Shortcuts to Adiabaticity in Ion Traps and Weyl Semimetals. Entropy, 2021, 23, 81.	2.2	10
67	Quantum and Classical Ergotropy from Relative Entropies. Entropy, 2021, 23, 1107.	2.2	9
68	Quantum to classical transition in an information ratchet. Physical Review E, 2019, 99, 042129.	2.1	8
69	Disorder-assisted graph coloring on quantum annealers. Physical Review A, 2019, 100, .	2.5	8
70	Jarzynski Equality for Conditional Stochastic Work. Journal of Statistical Physics, 2021, 183, 1.	1.2	7
71	Negative entropy production rates in Drude-Sommerfeld metals. Physical Review E, 2021, 103, 012109.	2.1	7
72	From spooky foundations. Nature Physics, 2015, 11, 383-384.	16.7	6

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73	Thermodynamics of quantum information. , 0, , 3-1-3-36.		6
74	Three phases of quantum annealing: Fast, slow, and very slow. Physical Review A, 2022, 105, .	2.5	6
75	Assessing the performance of quantum annealing with nonlinear driving. Physical Review A, 2022, 105, .	2.5	5
76	Fluctuation theorem for irreversible entropy production in electrical conduction. Physical Review E, 2022, 105, L012105.	2.1	4
77	Kibbleâ€“Zurek Scaling from Linear Response Theory. Entropy, 2022, 24, 666.	2.2	4
78	Environment-Assisted Shortcuts to Adiabaticity. Entropy, 2021, 23, 1479.	2.2	3
79	Quantum stochastic thermodynamic on harmonic networks. New Journal of Physics, 2016, 18, 011001.	2.9	2
80	Quantum speed-limited depletion of physical resources. , 0, 5, 55.		2
81	Quantum refrigerators â€“ the quantum thermodynamics of cooling Bose gases. , 0, 3, 20.		2
82	Equilibration in Quantum Systems. Physics Magazine, 2019, 12, .	0.1	1
83	Quantum Euler Relation for Local Measurements. Entropy, 2021, 23, 889.	2.2	1
84	Exorcizing Maxwellâ€™s Demon. Physics Magazine, 2015, 8, .	0.1	0
85	The principles of modern thermodynamics. , 0, , .		0
86	Thermodynamics of quantum systems. , 0, , .		0
87	An introduction to using counterdiabatic driving to eliminate genetic lag in changing environments. , 2020, , .		0