

# Kavan Modi

## List of Publications by Year in descending order

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95  
papers

6,039  
citations

109137

35  
h-index

74018

75  
g-index

98  
all docs

98  
docs citations

98  
times ranked

2297  
citing authors

#	ARTICLE	IF	CITATIONS
1	The classical-quantum boundary for correlations: Discord and related measures. <i>Reviews of Modern Physics</i> , 2012, 84, 1655-1707.	16.4	1,273
2	Unified View of Quantum and Classical Correlations. <i>Physical Review Letters</i> , 2010, 104, 080501.	2.9	689
3	Operational interpretations of quantum discord. <i>Physical Review A</i> , 2011, 83, .	1.0	306
4	Enhancing the Charging Power of Quantum Batteries. <i>Physical Review Letters</i> , 2017, 118, 150601.	2.9	237
5	Quantacell: powerful charging of quantum batteries. <i>New Journal of Physics</i> , 2015, 17, 075015.	1.2	235
6	Non-Markovian quantum processes: Complete framework and efficient characterization. <i>Physical Review A</i> , 2018, 97, .	1.0	202
7	Observing the operational significance of discord's consumption. <i>Nature Physics</i> , 2012, 8, 671-675.	6.5	201
8	Completely positive maps and classical correlations. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2008, 41, 205301.	0.7	178
9	Operational Markov Condition for Quantum Processes. <i>Physical Review Letters</i> , 2018, 120, 040405.	2.9	157
10	Quantum Discord Bounds the Amount of Distributed Entanglement. <i>Physical Review Letters</i> , 2012, 109, 070501.	2.9	156
11	Spin-chain model of a many-body quantum battery. <i>Physical Review A</i> , 2018, 97, .	1.0	136
12	Tightening Quantum Speed Limits for Almost All States. <i>Physical Review Letters</i> , 2018, 120, 060409.	2.9	98
13	Nonequilibrium Quantum Landauer Principle. <i>Physical Review Letters</i> , 2015, 114, 060602.	2.9	94
14	Quantum thermodynamics of general quantum processes. <i>Physical Review E</i> , 2015, 91, 032119.	0.8	81
15	Operational approach to open dynamics and quantifying initial correlations. <i>Scientific Reports</i> , 2012, 2, 581.	1.6	79
16	Quantum Correlations in Mixed-State Metrology. <i>Physical Review X</i> , 2011, 1, .	2.8	78
17	Completely Positive Divisibility Does Not Mean Markovianity. <i>Physical Review Letters</i> , 2019, 123, 040401.	2.9	76
18	Experimental demonstration of information to energy conversion in a quantum system at the Landauer limit. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20150813.	1.0	75

#	ARTICLE	IF	CITATIONS
19	Dynamical role of system-environment correlations in non-Markovian dynamics. <i>Physical Review A</i> , 2012, 86, .	1.0	66
20	An Introduction to Operational Quantum Dynamics. <i>Open Systems and Information Dynamics</i> , 2017, 24, 1740016.	0.5	64
21	Quantum Stochastic Processes and Quantum non-Markovian Phenomena. <i>PRX Quantum</i> , 2021, 2, .	3.5	63
22	Characterizing Quantum Dynamics with Initial System-Environment Correlations. <i>Physical Review Letters</i> , 2015, 114, 090402.	2.9	58
23	Tight, robust, and feasible quantum speed limits for open dynamics. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 3, 168.	0.0	57
24	Linear assignment maps for correlated system-environment states. <i>Physical Review A</i> , 2010, 81, .	1.0	54
25	Vanishing quantum discord is not necessary for completely positive maps. <i>Physical Review A</i> , 2013, 87, .	1.0	54
26	Detecting multipartite classical states and their resemblances. <i>Physical Review A</i> , 2011, 83, .	1.0	53
27	Demonstration of non-Markovian process characterisation and control on a quantum processor. <i>Nature Communications</i> , 2020, 11, 6301.	5.8	53
28	Masking Quantum Information is Impossible. <i>Physical Review Letters</i> , 2018, 120, 230501.	2.9	52
29	Work and quantum phase transitions: Quantum latency. <i>Physical Review E</i> , 2014, 89, 062103.	0.8	51
30	Structure of quantum stochastic processes with finite Markov order. <i>Physical Review A</i> , 2019, 99, .	1.0	45
31	Quantum Markov Order. <i>Physical Review Letters</i> , 2019, 122, 140401.	2.9	44
32	Criteria for measures of quantum correlations. <i>Quantum Information and Computation</i> , 2012, 12, 721-742.	0.1	42
33	QUANTUM LOCKING OF CLASSICAL CORRELATIONS AND QUANTUM DISCORD OF CLASSICAL-QUANTUM STATES. <i>International Journal of Quantum Information</i> , 2011, 09, 1643-1651.	0.6	40
34	Role of preparation in quantum process tomography. <i>Physical Review A</i> , 2010, 81, .	1.0	39
35	Measuring the heat exchange of a quantum process. <i>Physical Review E</i> , 2014, 90, 020101.	0.8	39
36	Kolmogorov extension theorem for (quantum) causal modelling and general probabilistic theories. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 4, 255.	0.0	38

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37	How state preparation can affect a quantum experiment: Quantum process tomography for open systems. <i>Physical Review A</i> , 2007, 76, .	1.0	37
38	Unification of witnessing initial system-environment correlations and witnessing non-Markovianity. <i>Europhysics Letters</i> , 2012, 99, 20010.	0.7	33
39	Tomographically reconstructed master equations for any open quantum dynamics. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 2, 76.	0.0	33
40	Preparation of States in Open Quantum Mechanics. <i>Open Systems and Information Dynamics</i> , 2011, 18, 253-260.	0.5	32
41	Universal Bound on Energy Cost of Bit Reset in Finite Time. <i>Physical Review Letters</i> , 2021, 127, 190602.	2.9	32
42	Coherent measurements in quantum metrology. <i>New Journal of Physics</i> , 2015, 17, 023057.	1.2	31
43	Tensor-network-based machine learning of non-Markovian quantum processes. <i>Physical Review A</i> , 2020, 102, .	1.0	30
44	A Pedagogical Overview of Quantum Discord. <i>Open Systems and Information Dynamics</i> , 2014, 21, 1440006.	0.5	29
45	Positivity in the presence of initial system-environment correlation. <i>Physical Review A</i> , 2012, 86, .	1.0	28
46	Entanglement, non-Markovianity, and causal non-separability. <i>New Journal of Physics</i> , 2018, 20, 033033.	1.2	28
47	Power of one qumode for quantum computation. <i>Physical Review A</i> , 2016, 93, .	1.0	26
48	Reconstructing non-Markovian quantum dynamics with limited control. <i>Physical Review A</i> , 2018, 98, .	1.0	23
49	Almost Markovian processes from closed dynamics. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 3, 136.	0.0	23
50	Non-Markovian Quantum Process Tomography. <i>PRX Quantum</i> , 2022, 3, .	3.5	22
51	A test of the equivalence principle(s) for quantum superpositions. <i>Classical and Quantum Gravity</i> , 2016, 33, 19LT01.	1.5	20
52	Quantum plug nâ€™™ play: modular computation in the quantum regime. <i>New Journal of Physics</i> , 2018, 20, 013004.	1.2	19
53	Non-Markovian quantum control as coherent stochastic trajectories. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2018, 51, 414014.	0.7	18
54	General anesthesia reduces complexity and temporal asymmetry of the informational structures derived from neural recordings in <i>Drosophila</i> . <i>Physical Review Research</i> , 2020, 2, .	1.3	17

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55	Role of correlations in the two-body-marginal problem. <i>Physical Review A</i> , 2014, 90, .	1.0	16
56	Genuine multipartite entanglement in time. <i>SciPost Physics</i> , 2021, 10, .	1.5	15
57	Unification of quantum and classical correlations and quantumness measures. <i>AIP Conference Proceedings</i> , 2011, , .	0.3	14
58	Quantum work statistics and resource theories: Bridging the gap through Rényi divergences. <i>Physical Review E</i> , 2019, 99, 050101.	0.8	14
59	Resource speed limits: maximal rate of resource variation. <i>New Journal of Physics</i> , 2022, 24, 065001.	1.2	14
60	Entropy bounds for quantum processes with initial correlations. <i>Physical Review A</i> , 2015, 92, .	1.0	13
61	Power of one bit of quantum information in quantum metrology. <i>Physical Review A</i> , 2016, 93, .	1.0	12
62	Probabilistic and approximate masking of quantum information. <i>Physical Review A</i> , 2020, 102, .	1.0	12
63	Resource theories of multi-time processes: A window into quantum non-Markovianity. <i>Quantum - the Open Journal for Quantum Science</i> , 0, 5, 435.	0.0	11
64	Excessive distribution of quantum entanglement. <i>Physical Review A</i> , 2016, 93, .	1.0	10
65	Divisible quantum dynamics satisfies temporal Tsirelson's bound. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2017, 50, 055302.	0.7	10
66	Energy-efficient quantum frequency estimation. <i>New Journal of Physics</i> , 2018, 20, 063009.	1.2	10
67	Bounding generalized relative entropies: Nonasymptotic quantum speed limits. <i>Physical Review E</i> , 2021, 103, 032105.	0.8	10
68	Markovianization with approximate unitary designs. <i>Communications Physics</i> , 2021, 4, .	2.0	10
69	Algorithm for solving unconstrained unitary quantum brachistochrone problems. <i>Physical Review A</i> , 2019, 100, .	1.0	9
70	Randomized Benchmarking for Non-Markovian Noise. <i>PRX Quantum</i> , 2021, 2, .	3.5	9
71	Quantum non-Markovianity elusive to interventions. <i>Physical Review A</i> , 2021, 104, .	1.0	8
72	Quantum Zeno and anti-Zeno effects in an unstable system with two bound states. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2007, 368, 215-221.	0.9	7

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73	Classical to quantum in large-number limit. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 4810-4820.	1.6	7
74	Correlations, operations and the second law of thermodynamics. International Journal of Quantum Information, 2016, 14, 1640033.	0.6	7
75	Noisy frequency estimation with noisy probes. New Journal of Physics, 2018, 20, 083008.	1.2	7
76	Non-Markovian memory strength bounds quantum process recoverability. Npj Quantum Information, 2021, 7, .	2.8	7
77	Signatures of Quantum Chaos in an Out-of-Time-Order Tensor. Physical Review Letters, 2022, 128, 150601.	2.9	7
78	Witnessing the quantumness of a single system: From anticommutators to interference and discord. Physical Review A, 2013, 87, .	1.0	6
79	Supraclassical measurement using single-atom control of an atomic ensemble. Physical Review A, 2016, 93, .	1.0	6
80	Delayed-choice causal order and nonclassical correlations. Physical Review Research, 2021, 3, .	1.3	6
81	Fluctuation theorem for nonunitary dynamics. AVS Quantum Science, 2021, 3, 045001.	1.8	6
82	COHERENT AND INCOHERENT CONTENTS OF CORRELATIONS. International Journal of Modern Physics B, 2013, 27, 1345027.	1.0	5
83	Equilibration on average in quantum processes with finite temporal resolution. Physical Review E, 2020, 102, 032144.	0.8	5
84	Inverse linear versus exponential scaling of work penalty in finite-time bit reset. Physical Review E, 2022, 105, 044147.	0.8	5
85	Emergence of a fluctuation relation for heat in nonequilibrium Landauer processes. Physical Review E, 2018, 97, 052111.	0.8	4
86	Monogamy of temporal correlations: Witnessing non-Markovianity beyond data processing. Physical Review Research, 2020, 2, .	1.3	3
87	How long does it take to implement a projective measurement?. European Journal of Physics, 2022, 43, 035404.	0.3	3
88	Relation between nonlocality and contextuality for a biphoton. Physical Review A, 2013, 87, .	1.0	2
89	Using a biased qubit to probe complex systems. Physical Review A, 2016, 94, .	1.0	2
90	Experimental verification of quantum discord in continuous-variable states and operational significance of discord consumption. , 2014, , .		1

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91	George Sudarshan and Quantum Dynamics. Open Systems and Information Dynamics, 2019, 26, 1950013.	0.5	1
92	How Does Interference Fall?. Quantum Science and Technology, 2017, , 421-451.	1.5	1
93	Harness quantum noise to unlock quantum computing. New Scientist, 2013, 220, 30-31.	0.0	0
94	Discord as a consumable resource. , 2013, , .		0
95	Discord as a quantum resource for bi-partite communication. , 2014, , .		0