

# Giacomo Mauro D'Ariano

## List of Publications by Year in descending order

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130  
papers

4,257  
citations

159585

30  
h-index

138484

58  
g-index

131  
all docs

131  
docs citations

131  
times ranked

1601  
citing authors

#	ARTICLE	IF	CITATIONS
1	Informational derivation of quantum theory. Physical Review A, 2011, 84, .	2.5	382
2	Quantum computations without definite causal structure. Physical Review A, 2013, 88, .	2.5	321
3	Theoretical framework for quantum networks. Physical Review A, 2009, 80, .	2.5	313
4	Probabilistic theories with purification. Physical Review A, 2010, 81, .	2.5	308
5	Transforming quantum operations: Quantum supermaps. Europhysics Letters, 2008, 83, 30004.	2.0	201
6	Classical randomness in quantum measurements. Journal of Physics A, 2005, 38, 5979-5991.	1.6	127
7	Memory Effects in Quantum Channel Discrimination. Physical Review Letters, 2008, 101, 180501.	7.8	113
8	Efficient Use of Quantum Resources for the Transmission of a Reference Frame. Physical Review Letters, 2004, 93, 180503.	7.8	105
9	Optimal quantum learning of a unitary transformation. Physical Review A, 2010, 81, .	2.5	89
10	Economical phase-covariant cloning of qudits. Physical Review A, 2005, 71, .	2.5	84
11	Informationally complete measurements and group representation. Journal of Optics B: Quantum and Semiclassical Optics, 2004, 6, S487-S491.	1.4	83
12	Quantum computation with programmable connections between gates. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 2940-2943.	2.1	81
13	Quantum Calibration of Measurement Instrumentation. Physical Review Letters, 2004, 93, 250407.	7.8	77
14	Reexamination of quantum bit commitment: The possible and the impossible. Physical Review A, 2007, 76, .	2.5	73
15	Derivation of the Dirac equation from principles of information processing. Physical Review A, 2014, 90, .	2.5	70
16	Clean positive operator valued measures. Journal of Mathematical Physics, 2005, 46, 082109.	1.1	64
17	Inverting Quantum Decoherence by Classical Feedback from the Environment. Physical Review Letters, 2005, 95, 090501.	7.8	60
18	Quantum field as a quantum cellular automaton: The Dirac free evolution in one dimension. Annals of Physics, 2015, 354, 244-264.	2.8	57

#	ARTICLE	IF	CITATIONS
19	Optimal Cloning of Unitary Transformation. Physical Review Letters, 2008, 101, 180504.	7.8	53
20	DENSE CODING WITH MULTIPARTITE QUANTUM STATES. International Journal of Quantum Information, 2006, 04, 415-428.	1.1	48
21	Covariant quantum measurements that maximize the likelihood. Physical Review A, 2004, 70, .	2.5	46
22	Superbroadcasting of Mixed States. Physical Review Letters, 2005, 95, 060503.	7.8	46
23	Operational distance and fidelity for quantum channels. Journal of Mathematical Physics, 2005, 46, 062106.	1.1	41
24	Informational power of quantum measurements. Physical Review A, 2011, 83, .	2.5	40
25	Minimax quantum-state discrimination. Physical Review A, 2005, 72, .	2.5	39
26	Quantum Information Becomes Classical When Distributed to Many Users. Physical Review Letters, 2006, 97, 250503.	7.8	39
27	Efficient Universal Programmable Quantum Measurements. Physical Review Letters, 2005, 94, 090401.	7.8	37
28	How Continuous Quantum Measurements in Finite Dimensions Are Actually Discrete. Physical Review Letters, 2007, 98, 190403.	7.8	36
29	Quantum Theory, Namely the Pure and Reversible Theory of Information. Entropy, 2012, 14, 1877-1893.	2.2	36
30	Fermionic computation is non-local tomographic and violates monogamy of entanglement. Europhysics Letters, 2014, 107, 20009.	2.0	35
31	The Feynman problem and fermionic entanglement: Fermionic theory versus qubit theory. International Journal of Modern Physics A, 2014, 29, 1430025.	1.5	33
32	Universal quantum estimation. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 268, 151-157.	2.1	30
33	Probabilistic theories: What is special about Quantum Mechanics?. , 0, , 85-126.		30
34	Quantum cellular automaton theory of light. Annals of Physics, 2016, 368, 177-190.	2.8	29
35	Generating qudits with $d=3,4$ encoded on two-photon states. Physical Review A, 2005, 71, .	2.5	28
36	Tradeoff between energy and error in the discrimination of quantum-optical devices. Physical Review A, 2011, 84, .	2.5	28

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37	Realization schemes for quantum instruments in finite dimensions. Journal of Mathematical Physics, 2009, 50, .	1.1	27
38	Experimental implementation of unambiguous quantum reading. Physical Review A, 2012, 85, .	2.5	27
39	Universal quantum observables. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 300, 1-6.	2.1	25
40	Dirac quantum cellular automaton in one dimension: $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \rangle \langle \text{mml:mi mathvariant="italic"} \rangle \text{Zitterbewegung} \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ and scattering from potential. Physical Review A, 2013, 88, .	2.5	25
41	Thirring quantum cellular automaton. Physical Review A, 2018, 97, .	2.5	25
42	Quantum from Principles. Fundamental Theories of Physics, 2016, , 171-221.	0.3	24
43	Optimal Quantum Tomography. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 1646-1660.	2.9	23
44	Optimal realization of the transposition maps. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 314, 374-379.	2.1	22
45	Quantum Walks, Weyl Equation and the Lorentz Group. Foundations of Physics, 2017, 47, 1065-1076.	1.3	22
46	Causality re-established. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170313.	3.4	22
47	Extremal covariant positive operator valued measures. Journal of Mathematical Physics, 2004, 45, 4435-4447.	1.1	21
48	Operational Axioms for Quantum Mechanics. AIP Conference Proceedings, 2007, , .	0.4	21
49	A short impossibility proof of quantum bit commitment. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 1076-1087.	2.1	21
50	Extremal covariant quantum operations and positive operator valued measures. Journal of Mathematical Physics, 2004, 45, 3620-3635.	1.1	20
51	Doubly special relativity from quantum cellular automata. Europhysics Letters, 2015, 109, 50003.	2.0	20
52	Quantum learning algorithms for quantum measurements. Physics Letters, Section A: General, Atomic and Solid State Physics, 2011, 375, 3425-3434.	2.1	19
53	Special relativity in a discrete quantum universe. Physical Review A, 2016, 94, .	2.5	19
54	Quantum cellular automata and free quantum field theory. Frontiers of Physics, 2017, 12, 1.	5.0	19

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55	Quantum universal detectors. <i>Europhysics Letters</i> , 2004, 65, 165-171.	2.0	18
56	MAXIMUM LIKELIHOOD ESTIMATION FOR A GROUP OF PHYSICAL TRANSFORMATIONS. <i>International Journal of Quantum Information</i> , 2006, 04, 453-472.	1.1	17
57	Information-disturbance tradeoff in estimating a unitary transformation. <i>Physical Review A</i> , 2010, 82, .	2.5	17
58	IDEAL QUANTUM READING OF OPTICAL MEMORIES. <i>International Journal of Quantum Information</i> , 2012, 10, 1241010.	1.1	17
59	Quantum walks with a one-dimensional coin. <i>Physical Review A</i> , 2016, 93, .	2.5	17
60	Physics Without Physics. <i>International Journal of Theoretical Physics</i> , 2017, 56, 97-128.	1.2	17
61	Solutions of a Two-Particle Interacting Quantum Walk. <i>Entropy</i> , 2018, 20, 435.	2.2	16
62	Extremal quantum protocols. <i>Journal of Mathematical Physics</i> , 2011, 52, .	1.1	15
63	Testing axioms for quantum theory on probabilistic toy-theories. <i>Quantum Information Processing</i> , 2010, 9, 95-141.	2.2	14
64	Quantum error correction with degenerate codes for correlated noise. <i>Physical Review A</i> , 2011, 83, .	2.5	14
65	Weyl, Dirac and Maxwell Quantum Cellular Automata. <i>Foundations of Physics</i> , 2015, 45, 1203-1221.	1.3	14
66	Barycentric decomposition of quantum measurements in finite dimensions. <i>Journal of Mathematical Physics</i> , 2010, 51, .	1.1	13
67	Minimal computational-space implementation of multiround quantum protocols. <i>Physical Review A</i> , 2011, 83, .	2.5	13
68	Classical theories with entanglement. <i>Physical Review A</i> , 2020, 101, .	2.5	13
69	Optimal phase estimation for qubits in mixed states. <i>Physical Review A</i> , 2005, 72, .	2.5	12
70	Purification of noisy quantum measurements. <i>Physical Review A</i> , 2010, 82, .	2.5	12
71	No Signaling, Entanglement Breaking, and Localizability in Bipartite Channels. <i>Physical Review Letters</i> , 2011, 106, 010501.	7.8	12
72	Path-integral solution of the one-dimensional Dirac quantum cellular automaton. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2014, 378, 3165-3168.	2.1	12

#	ARTICLE	IF	CITATIONS
73	Optimal processing of reversible quantum channels. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 1797-1808.	2.1	12
74	Free Quantum Field Theory from Quantum Cellular Automata. Foundations of Physics, 2015, 45, 1137-1152.	1.3	12
75	Superbroadcasting of continuous variable mixed states. New Journal of Physics, 2006, 8, 99-99.	2.9	11
76	Discrete Feynman propagator for the Weyl quantum walk in 2 + 1 dimensions. Europhysics Letters, 2015, 109, 40012.	2.0	11
77	No Purification Ontology, No Quantum Paradoxes. Foundations of Physics, 2020, 50, 1921-1933.	1.3	11
78	IMPOSSIBILITY OF PERFECT QUANTUM SEALING OF CLASSICAL INFORMATION. International Journal of Quantum Information, 2005, 03, 435-440.	1.1	10
79	Applications of the group SU(1, 1) for quantum computation and tomography. Laser Physics, 2006, 16, 1572-1581.	1.2	10
80	Extremal covariant measurements. Journal of Mathematical Physics, 2006, 47, 092107.	1.1	10
81	Identification of a reversible quantum gate: assessing the resources. New Journal of Physics, 2013, 15, 103019.	2.9	10
82	Isotropic quantum walks on lattices and the Weyl equation. Physical Review A, 2017, 96, .	2.5	10
83	How to Derive the Hilbert-Space Formulation of Quantum Mechanics From Purely Operational Axioms. AIP Conference Proceedings, 2006, , .	0.4	9
84	Physics as Information Processing. AIP Conference Proceedings, 2011, , .	0.4	9
85	Quantum walks, deformed relativity and Hopf algebra symmetries. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150232.	3.4	9
86	On the "principle of the quantumness," the quantumness of Relativity, and the computational grand-unification. AIP Conference Proceedings, 2010, , .	0.4	8
87	Preface of the special issue quantum foundations: information approach. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150244.	3.4	8
88	Classicality without local discriminability: Decoupling entanglement and complementarity. Physical Review A, 2020, 102, .	2.5	8
89	A Quantum-Digital Universe. Advanced Science Letters, 2012, 17, 130-135.	0.2	8
90	Information and disturbance in operational probabilistic theories. Quantum - the Open Journal for Quantum Science, 0, 4, 363.	0.0	8

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91	Superbroadcasting of conjugate quantum variables. <i>Europhysics Letters</i> , 2006, 75, 195-201.	2.0	6
92	Quantum Erasure of Decoherence. <i>Open Systems and Information Dynamics</i> , 2007, 14, 53-61.	1.2	6
93	Emergence of space-time from topologically homogeneous causal networks. <i>Studies in History and Philosophy of Science Part B - Studies in History and Philosophy of Modern Physics</i> , 2013, 44, 294-299.	1.4	6
94	Quantum Theory is an Information Theory. <i>Foundations of Physics</i> , 2016, 46, 269-281.	1.3	6
95	Isotropic phase squeezing and the arrow of time. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2000, 268, 241-246.	2.1	5
96	Optimal time reversal of multiphase equatorial states. <i>Physical Review A</i> , 2005, 72, .	2.5	5
97	Quantum no-stretching: A geometrical interpretation of the no-cloning theorem. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2009, 373, 2416-2419.	2.1	5
98	Cloning of a quantum measurement. <i>Physical Review A</i> , 2011, 84, .	2.5	5
99	Memory cost of quantum protocols. <i>Physical Review A</i> , 2012, 85, .	2.5	5
100	The Dirac quantum automaton: A preview. , 2012, , .		5
101	Discrete Time Dirac Quantum Walk in 3+1 Dimensions. <i>Entropy</i> , 2016, 18, 228.	2.2	5
102	Virtually Abelian quantum walks. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2017, 50, 035301.	2.1	5
103	Homodyne Tomography and the Reconstruction of Quantum States of Light. , 2007, , 141-158.		5
104	Hard Problem and Free Will: An Information-Theoretical Approach. , 2022, , 145-192.		5
105	No-signalling, dynamical independence and the local observability principle. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2007, 40, 8137-8145.	2.1	4
106	Operational Axioms for $C^*$ -algebra Representation of Transformations. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	4
107	Optimal covariant quantum networks. , 2009, , .		4
108	Physics as quantum information processing. , 2011, , .		4

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109	The solution of the sixth Hilbert problem: the ultimate Galilean revolution. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170224.	3.4	4
110	Optimal estimation of quantum observables. Journal of Mathematical Physics, 2006, 47, 022102.	1.1	3
111	Economical realization of phase-covariant devices in arbitrary dimensions (Invited). Journal of the Optical Society of America B: Optical Physics, 2007, 24, 363.	2.1	3
112	Adaptive Bayesian and frequentist data processing for quantum tomography. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 1111-1115.	2.1	3
113	Path-sum solution of the Weyl quantum walk in 3 + 1 dimensions. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160394.	3.4	3
114	Chirality from quantum walks without a quantum coin. Physical Review A, 2019, 100, .	2.5	3
115	Symmetries of the Dirac quantum walk and emergence of the de Sitter group. Journal of Mathematical Physics, 2020, 61, 082202.	1.1	3
116	It from Qubit. The Frontiers Collection, 2015, , 25-35.	0.2	3
117	Probability-fidelity tradeoffs for targeted quantum operations. Physics Letters, Section A: General, Atomic and Solid State Physics, 2009, 373, 3011-3015.	2.1	2
118	Physics as quantum information processing: Quantum fields as quantum automata. , 2012, , .		2
119	Spooky action-at-a-distance in general probabilistic theories. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 2926-2930.	2.1	2
120	Quantum Epistemology and Falsification. Entropy, 2022, 24, 434.	2.2	2
121	On the realization of Bell observables. Physics Letters, Section A: General, Atomic and Solid State Physics, 2004, 329, 188-192.	2.1	1
122	Quantum Tomography for Imaging. Electronic Notes in Discrete Mathematics, 2005, 20, 133-150.	0.4	1
123	Universality of computation in real quantum theory. Europhysics Letters, 2013, 104, 20006.	2.0	1
124	How much a quantum measurement is informative?. , 2014, , .		1
125	Quantum Information and Foundations. Entropy, 2020, 22, 22.	2.2	1
126	To take a (binary) decision you\$quot\$d better use entanglement. Journal of Optics B: Quantum and Semiclassical Optics, 2002, 4, S277-S280.	1.4	0



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127	Superbroadcasting of harmonic oscillators mixed states. Optics and Spectroscopy (English) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T 5	0.6	10
128	Ideal quantum reading of optical memories. Journal of Physics: Conference Series, 2013, 414, 012038.	0.4	0
129	Quantum reading of unitary optical devices. , 2014, , .		0
130	Homodyning as Universal Detection. , 2005, , 494-508.		0