

# 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	Hard Problem and Free Will: An Information-Theoretical Approach. , 2022, , 145-192.		5
2	Quantum Epistemology and Falsification. Entropy, 2022, 24, 434.	2.2	2
3	No Purification Ontology, No Quantum Paradoxes. Foundations of Physics, 2020, 50, 1921-1933.	1.3	11
4	Symmetries of the Dirac quantum walk and emergence of the de Sitter group. Journal of Mathematical Physics, 2020, 61, 082202.	1.1	3
5	Classicality without local discriminability: Decoupling entanglement and complementarity. Physical Review A, 2020, 102, .	2.5	8
6	Classical theories with entanglement. Physical Review A, 2020, 101, .	2.5	13
7	Quantum Information and Foundations. Entropy, 2020, 22, 22.	2.2	1
8	Chirality from quantum walks without a quantum coin. Physical Review A, 2019, 100, .	2.5	3
9	Thirring quantum cellular automaton. Physical Review A, 2018, 97, .	2.5	25
10	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
11	Causality re-established. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170313.	3.4	22
12	Solutions of a Two-Particle Interacting Quantum Walk. Entropy, 2018, 20, 435.	2.2	16
13	Physics Without Physics. International Journal of Theoretical Physics, 2017, 56, 97-128.	1.2	17
14	Quantum Walks, Weyl Equation and the Lorentz Group. Foundations of Physics, 2017, 47, 1065-1076.	1.3	22
15	Quantum cellular automata and free quantum field theory. Frontiers of Physics, 2017, 12, 1.	5.0	19
16	Virtually Abelian quantum walks. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 035301.	2.1	5
17	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
18	Isotropic quantum walks on lattices and the Weyl equation. Physical Review A, 2017, 96, .	2.5	10

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19	Discrete Time Dirac Quantum Walk in 3+1 Dimensions. Entropy, 2016, 18, 228.	2.2	5
20	Quantum cellular automaton theory of light. Annals of Physics, 2016, 368, 177-190.	2.8	29
21	Quantum walks, deformed relativity and Hopf algebra symmetries. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150232.	3.4	9
22	Quantum walks with a one-dimensional coin. Physical Review A, 2016, 93, .	2.5	17
23	Special relativity in a discrete quantum universe. Physical Review A, 2016, 94, .	2.5	19
24	Preface of the special issue quantum foundations: information approach. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150244.	3.4	8
25	Quantum Theory is an Information Theory. Foundations of Physics, 2016, 46, 269-281.	1.3	6
26	Quantum from Principles. Fundamental Theories of Physics, 2016, , 171-221.	0.3	24
27	Quantum field as a quantum cellular automaton: The Dirac free evolution in one dimension. Annals of Physics, 2015, 354, 244-264.	2.8	57
28	Weyl, Dirac and Maxwell Quantum Cellular Automata. Foundations of Physics, 2015, 45, 1203-1221.	1.3	14
29	Doubly special relativity from quantum cellular automata. Europhysics Letters, 2015, 109, 50003.	2.0	20
30	Free Quantum Field Theory from Quantum Cellular Automata. Foundations of Physics, 2015, 45, 1137-1152.	1.3	12
31	Discrete Feynman propagator for the Weyl quantum walk in 2 + 1 dimensions. Europhysics Letters, 2015, 109, 40012.	2.0	11
32	It from Qubit. The Frontiers Collection, 2015, , 25-35.	0.2	3
33	Derivation of the Dirac equation from principles of information processing. Physical Review A, 2014, 90, .	2.5	70
34	How much a quantum measurement is informative?. , 2014, , .		1
35	Quantum reading of unitary optical devices. , 2014, , .		0
36	Fermionic computation is non-local tomographic and violates monogamy of entanglement. Europhysics Letters, 2014, 107, 20009.	2.0	35

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37	Path-integral solution of the one-dimensional Dirac quantum cellular automaton. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 3165-3168.	2.1	12
38	Optimal processing of reversible quantum channels. Physics Letters, Section A: General, Atomic and Solid State Physics, 2014, 378, 1797-1808.	2.1	12
39	The Feynman problem and fermionic entanglement: Fermionic theory versus qubit theory. International Journal of Modern Physics A, 2014, 29, 1430025.	1.5	33
40	Dirac quantum cellular automaton in one dimension: $\langle \text{Zitterbewegung} \rangle$ and scattering from potential. Physical Review A, 2013, 88, .	2.5	25
41	Quantum computations without definite causal structure. Physical Review A, 2013, 88, .	2.5	321
42	Emergence of space-time from topologically homogeneous causal networks. Studies in History and Philosophy of Science Part B - Studies in History and Philosophy of Modern Physics, 2013, 44, 294-299.	1.4	6
43	Universality of computation in real quantum theory. Europhysics Letters, 2013, 104, 20006.	2.0	1
44	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
45	Identification of a reversible quantum gate: assessing the resources. New Journal of Physics, 2013, 15, 103019.	2.9	10
46	Ideal quantum reading of optical memories. Journal of Physics: Conference Series, 2013, 414, 012038.	0.4	0
47	Quantum Theory, Namely the Pure and Reversible Theory of Information. Entropy, 2012, 14, 1877-1893.	2.2	36
48	IDEAL QUANTUM READING OF OPTICAL MEMORIES. International Journal of Quantum Information, 2012, 10, 1241010.	1.1	17
49	Physics as quantum information processing: Quantum fields as quantum automata. , 2012, , .		2
50	Memory cost of quantum protocols. Physical Review A, 2012, 85, .	2.5	5
51	The Dirac quantum automaton: A preview. , 2012, , .		5
52	Experimental implementation of unambiguous quantum reading. Physical Review A, 2012, 85, .	2.5	27
53	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
54	Quantum computation with programmable connections between gates. Physics Letters, Section A: General, Atomic and Solid State Physics, 2012, 376, 2940-2943.	2.1	81

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55	A Quantum-Digital Universe. <i>Advanced Science Letters</i> , 2012, 17, 130-135.	0.2	8
56	Tradeoff between energy and error in the discrimination of quantum-optical devices. <i>Physical Review A</i> , 2011, 84, .	2.5	28
57	Informational derivation of quantum theory. <i>Physical Review A</i> , 2011, 84, .	2.5	382
58	Quantum learning algorithms for quantum measurements. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2011, 375, 3425-3434.	2.1	19
59	Physics as Information Processing. <i>AIP Conference Proceedings</i> , 2011, , .	0.4	9
60	Physics as quantum information processing. , 2011, , .		4
61	No Signaling, Entanglement Breaking, and Localizability in Bipartite Channels. <i>Physical Review Letters</i> , 2011, 106, 010501.	7.8	12
62	Cloning of a quantum measurement. <i>Physical Review A</i> , 2011, 84, .	2.5	5
63	Informational power of quantum measurements. <i>Physical Review A</i> , 2011, 83, .	2.5	40
64	Quantum error correction with degenerate codes for correlated noise. <i>Physical Review A</i> , 2011, 83, .	2.5	14
65	Minimal computational-space implementation of multiround quantum protocols. <i>Physical Review A</i> , 2011, 83, .	2.5	13
66	Extremal quantum protocols. <i>Journal of Mathematical Physics</i> , 2011, 52, .	1.1	15
67	Probabilistic theories with purification. <i>Physical Review A</i> , 2010, 81, .	2.5	308
68	On the "principle of the quantumness," the quantumness of Relativity, and the computational grand-unification. <i>AIP Conference Proceedings</i> , 2010, , .	0.4	8
69	Testing axioms for quantum theory on probabilistic toy-theories. <i>Quantum Information Processing</i> , 2010, 9, 95-141.	2.2	14
70	Information-disturbance tradeoff in estimating a unitary transformation. <i>Physical Review A</i> , 2010, 82, .	2.5	17
71	Optimal quantum learning of a unitary transformation. <i>Physical Review A</i> , 2010, 81, .	2.5	89
72	Barycentric decomposition of quantum measurements in finite dimensions. <i>Journal of Mathematical Physics</i> , 2010, 51, .	1.1	13

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73	Purification of noisy quantum measurements. <i>Physical Review A</i> , 2010, 82, .	2.5	12
74	Optimal covariant quantum networks. , 2009, , .		4
75	Optimal Quantum Tomography. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2009, 15, 1646-1660.	2.9	23
76	Probability-fidelity tradeoffs for targeted quantum operations. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2009, 373, 3011-3015.	2.1	2
77	Adaptive Bayesian and frequentist data processing for quantum tomography. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2009, 373, 1111-1115.	2.1	3
78	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
79	Theoretical framework for quantum networks. <i>Physical Review A</i> , 2009, 80, .	2.5	313
80	Realization schemes for quantum instruments in finite dimensions. <i>Journal of Mathematical Physics</i> , 2009, 50, .	1.1	27
81	Transforming quantum operations: Quantum supermaps. <i>Europhysics Letters</i> , 2008, 83, 30004.	2.0	201
82	Optimal Cloning of Unitary Transformation. <i>Physical Review Letters</i> , 2008, 101, 180504.	7.8	53
83	Memory Effects in Quantum Channel Discrimination. <i>Physical Review Letters</i> , 2008, 101, 180501.	7.8	113
84	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
85	Operational Axioms for Quantum Mechanics. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	21
86	Reexamination of quantum bit commitment: The possible and the impossible. <i>Physical Review A</i> , 2007, 76, .	2.5	73
87	How Continuous Quantum Measurements in Finite Dimensions Are Actually Discrete. <i>Physical Review Letters</i> , 2007, 98, 190403.	7.8	36
88	Operational Axioms for $C^*$ -algebra Representation of Transformations. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	4
89	Economical realization of phase-covariant devices in arbitrary dimensions (Invited). <i>Journal of the Optical Society of America B: Optical Physics</i> , 2007, 24, 363.	2.1	3
90	Superbroadcasting of harmonic oscillators mixed states. <i>Optics and Spectroscopy (English)</i> Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 62 Td	0.6	0

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91	Quantum Erasure of Decoherence. Open Systems and Information Dynamics, 2007, 14, 53-61.	1.2	6
92	Homodyne Tomography and the Reconstruction of Quantum States of Light. , 2007, , 141-158.		5
93	DENSE CODING WITH MULTIPARTITE QUANTUM STATES. International Journal of Quantum Information, 2006, 04, 415-428.	1.1	48
94	Superbroadcasting of conjugate quantum variables. Europhysics Letters, 2006, 75, 195-201.	2.0	6
95	Applications of the group $SU(1, 1)$ for quantum computation and tomography. Laser Physics, 2006, 16, 1572-1581.	1.2	10
96	Superbroadcasting of continuous variable mixed states. New Journal of Physics, 2006, 8, 99-99.	2.9	11
97	How to Derive the Hilbert-Space Formulation of Quantum Mechanics From Purely Operational Axioms. AIP Conference Proceedings, 2006, , .	0.4	9
98	MAXIMUM LIKELIHOOD ESTIMATION FOR A GROUP OF PHYSICAL TRANSFORMATIONS. International Journal of Quantum Information, 2006, 04, 453-472.	1.1	17
99	Quantum Information Becomes Classical When Distributed to Many Users. Physical Review Letters, 2006, 97, 250503.	7.8	39
100	Extremal covariant measurements. Journal of Mathematical Physics, 2006, 47, 092107.	1.1	10
101	Optimal estimation of quantum observables. Journal of Mathematical Physics, 2006, 47, 022102.	1.1	3
102	Quantum Tomography for Imaging. Electronic Notes in Discrete Mathematics, 2005, 20, 133-150.	0.4	1
103	Economical phase-covariant cloning of qudits. Physical Review A, 2005, 71, .	2.5	84
104	Generating qudits with $d=3,4$ encoded on two-photon states. Physical Review A, 2005, 71, .	2.5	28
105	Optimal time reversal of multiphase equatorial states. Physical Review A, 2005, 72, .	2.5	5
106	Optimal phase estimation for qubits in mixed states. Physical Review A, 2005, 72, .	2.5	12
107	Inverting Quantum Decoherence by Classical Feedback from the Environment. Physical Review Letters, 2005, 95, 090501.	7.8	60
108	Efficient Universal Programmable Quantum Measurements. Physical Review Letters, 2005, 94, 090401.	7.8	37

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109	Operational distance and fidelity for quantum channels. Journal of Mathematical Physics, 2005, 46, 062106.	1.1	41
110	Superbroadcasting of Mixed States. Physical Review Letters, 2005, 95, 060503.	7.8	46
111	IMPOSSIBILITY OF PERFECT QUANTUM SEALING OF CLASSICAL INFORMATION. International Journal of Quantum Information, 2005, 03, 435-440.	1.1	10
112	Classical randomness in quantum measurements. Journal of Physics A, 2005, 38, 5979-5991.	1.6	127
113	Clean positive operator valued measures. Journal of Mathematical Physics, 2005, 46, 082109.	1.1	64
114	Minimax quantum-state discrimination. Physical Review A, 2005, 72, .	2.5	39
115	Homodyning as Universal Detection. , 2005, , 494-508.		0
116	Covariant quantum measurements that maximize the likelihood. Physical Review A, 2004, 70, .	2.5	46
117	Efficient Use of Quantum Resources for the Transmission of a Reference Frame. Physical Review Letters, 2004, 93, 180503.	7.8	105
118	Extremal covariant quantum operations and positive operator valued measures. Journal of Mathematical Physics, 2004, 45, 3620-3635.	1.1	20
119	Informationally complete measurements and group representation. Journal of Optics B: Quantum and Semiclassical Optics, 2004, 6, S487-S491.	1.4	83
120	On the realization of Bell observables. Physics Letters, Section A: General, Atomic and Solid State Physics, 2004, 329, 188-192.	2.1	1
121	Extremal covariant positive operator valued measures. Journal of Mathematical Physics, 2004, 45, 4435-4447.	1.1	21
122	Quantum Calibration of Measurement Instrumentation. Physical Review Letters, 2004, 93, 250407.	7.8	77
123	Quantum universal detectors. Europhysics Letters, 2004, 65, 165-171.	2.0	18
124	Optimal realization of the transposition maps. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 314, 374-379.	2.1	22
125	To take a (binary) decision you\$rd better use entanglement. Journal of Optics B: Quantum and Semiclassical Optics, 2002, 4, S277-S280.	1.4	0
126	Universal quantum observables. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 300, 1-6.	2.1	25



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127	Universal quantum estimation. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 268, 151-157.	2.1	30
128	Isotropic phase squeezing and the arrow of time. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 268, 241-246.	2.1	5
129	Probabilistic theories: What is special about Quantum Mechanics?. , 0, , 85-126.		30
130	Information and disturbance in operational probabilistic theories. Quantum - the Open Journal for Quantum Science, 0, 4, 363.	0.0	8