

# Jyrki Piilo

## List of Publications by Year in descending order

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112  
papers

7,106  
citations

81743

39  
h-index

56606

83  
g-index

113  
all docs

113  
docs citations

113  
times ranked

2525  
citing authors

#	ARTICLE	IF	CITATIONS
1	Measure for the Degree of Non-Markovian Behavior of Quantum Processes in Open Systems. <i>Physical Review Letters</i> , 2009, 103, 210401.	2.9	1,072
2	Colloquium: Non-Markovian dynamics in open quantum systems. <i>Reviews of Modern Physics</i> , 2016, 88, .	16.4	870
3	Sudden Transition between Classical and Quantum Decoherence. <i>Physical Review Letters</i> , 2010, 104, 200401.	2.9	469
4	Experimental control of the transition from Markovian to non-Markovian dynamics of open quantum systems. <i>Nature Physics</i> , 2011, 7, 931-934.	6.5	442
5	Measure for the non-Markovianity of quantum processes. <i>Physical Review A</i> , 2010, 81, .	1.0	378
6	Non-Markovian Quantum Jumps. <i>Physical Review Letters</i> , 2008, 100, 180402.	2.9	271
7	Sudden death and sudden birth of entanglement in common structured reservoirs. <i>Physical Review A</i> , 2009, 79, .	1.0	213
8	Statistically Validated Networks in Bipartite Complex Systems. <i>PLoS ONE</i> , 2011, 6, e17994.	1.1	179
9	Markovianity and non-Markovianity in quantum and classical systems. <i>New Journal of Physics</i> , 2011, 13, 093004.	1.2	141
10	Optimal state pairs for non-Markovian quantum dynamics. <i>Physical Review A</i> , 2012, 86, .	1.0	137
11	Witness for initial system-environment correlations in open-system dynamics. <i>Europhysics Letters</i> , 2010, 92, 60010.	0.7	133
12	Nonlocal Memory Effects in the Dynamics of Open Quantum Systems. <i>Physical Review Letters</i> , 2012, 108, 210402.	2.9	115
13	Open system dynamics with non-Markovian quantum jumps. <i>Physical Review A</i> , 2009, 79, .	1.0	114
14	Microscopic derivation of the Jaynes-Cummings model with cavity losses. <i>Physical Review A</i> , 2007, 75, .	1.0	109
15	Initial correlations in open-systems dynamics: The Jaynes-Cummings model. <i>Physical Review A</i> , 2010, 82, .	1.0	109
16	Nonlocal memory effects allow perfect teleportation with mixed states. <i>Scientific Reports</i> , 2014, 4, 4620.	1.6	109
17	Pseudomodes as an effective description of memory: Non-Markovian dynamics of two-state systems in structured reservoirs. <i>Physical Review A</i> , 2009, 80, .	1.0	107
18	Quantifying non-Markovianity of continuous-variable Gaussian dynamical maps. <i>Physical Review A</i> , 2011, 84, .	1.0	100

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19	Measuring non-Markovianity of processes with controllable system-environment interaction. Europhysics Letters, 2012, 97, 10002.	0.7	98
20	Identification of clusters of investors from their real trading activity in a financial market. New Journal of Physics, 2012, 14, 013041.	1.2	88
21	Lindblad- and non-Lindblad-type dynamics of a quantum Brownian particle. Physical Review A, 2004, 70, .	1.0	85
22	Photonic realization of nonlocal memory effects and non-Markovian quantum probes. Scientific Reports, 2013, 3, .	1.6	81
23	Divisibility of quantum dynamical maps and collision models. Physical Review A, 2017, 96, .	1.0	70
24	FROZEN DISCORD IN NON-MARKOVIAN DEPHASING CHANNELS. International Journal of Quantum Information, 2011, 09, 981-991.	0.6	69
25	Zeno and Anti-Zeno Effects for Quantum Brownian Motion. Physical Review Letters, 2006, 97, 130402.	2.9	68
26	Phenomenological memory-kernel master equations and time-dependent Markovian processes. Physical Review A, 2010, 81, .	1.0	64
27	Eternal non-Markovianity: from random unitary to Markov chain realisations. Scientific Reports, 2017, 7, 6379.	1.6	64
28	How news affects the trading behaviour of different categories of investors in a financial market. Quantitative Finance, 2015, 15, 213-229.	0.9	58
29	Thermodynamic power of non-Markovianity. Scientific Reports, 2016, 6, 27989.	1.6	58
30	Cavity losses for the dissipative Jaynes-Cummings Hamiltonian beyond rotating wave approximation. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 14527-14536.	0.7	52
31	Stochastic jump processes for non-Markovian quantum dynamics. Europhysics Letters, 2009, 85, 50004.	0.7	51
32	Non-Markovian quantum dynamics: What is it good for?. Europhysics Letters, 2019, 128, 30001.	0.7	48
33	Efficient superdense coding in the presence of non-Markovian noise. Europhysics Letters, 2016, 114, 10005.	0.7	46
34	Non-Markovian quantum dynamics: What does it mean?. Europhysics Letters, 2019, 127, 50001.	0.7	45
35	Simulating quantum Brownian motion with single trapped ions. Physical Review A, 2004, 69, .	1.0	44
36	Community characterization of heterogeneous complex systems. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P01019.	0.9	44

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37	Off-resonant entanglement generation in a lossy cavity. <i>Physical Review A</i> , 2009, 79, .	1.0	43
38	Experimental implementation of fully controlled dephasing dynamics and synthetic spectral densities. <i>Nature Communications</i> , 2018, 9, 3453.	5.8	43
39	Environment-dependent dissipation in quantum Brownian motion. <i>Physical Review A</i> , 2009, 79, .	1.0	40
40	Correlations in quantum states and the local creation of quantum discord. <i>Physical Review A</i> , 2012, 85, .	1.0	40
41	Complex quantum networks as structured environments: engineering and probing. <i>Scientific Reports</i> , 2016, 6, 26861.	1.6	39
42	Reconfigurable optical implementation of quantum complex networks. <i>New Journal of Physics</i> , 2018, 20, 053024.	1.2	39
43	Long-term ecology of investors in a financial market. <i>Palgrave Communications</i> , 2018, 4, .	4.7	35
44	Population trapping due to cavity losses. <i>Physical Review A</i> , 2008, 77, .	1.0	33
45	Novel Analytic Calculation of Electron Gas Properties. <i>Physical Review Letters</i> , 1996, 77, 4237-4240.	2.9	31
46	Misbeliefs and misunderstandings about the non-Markovian dynamics of a damped harmonic oscillator. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2004, 6, S98-S103.	1.4	31
47	Controlling entropic uncertainty bound through memory effects. <i>Europhysics Letters</i> , 2015, 111, 50006.	0.7	30
48	Counterintuitive transitions between crossing energy levels. <i>Physical Review A</i> , 2005, 72, .	1.0	27
49	Driven harmonic oscillator as a quantum simulator for open systems. <i>Physical Review A</i> , 2006, 74, .	1.0	25
50	Entanglement distribution in optical fibers assisted by nonlocal memory effects. <i>Europhysics Letters</i> , 2014, 107, 54006.	0.7	24
51	Entanglement trapping in a nonstationary structured reservoir. <i>Physical Review A</i> , 2012, 86, .	1.0	23
52	Noisy quantum walks of two indistinguishable interacting particles. <i>Physical Review A</i> , 2017, 95, .	1.0	21
53	Interplay between entanglement and entropy in two-qubit systems. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2010, 43, 085505.	0.6	19
54	Local-in-time master equations with memory effects: applicability and interpretation. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2012, 45, 154004.	0.6	17

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55	Time-invariant entanglement and sudden death of nonlocality. <i>Physical Review A</i> , 2016, 94, .	1.0	17
56	Rate Operator Unraveling for Open Quantum System Dynamics. <i>Physical Review Letters</i> , 2020, 124, 190402.	2.9	17
57	Quantum theory of heating of a single trapped ion. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2003, 308, 6-10.	0.9	16
58	Feshbach-Resonant Interactions in $^4\text{He}$ and $^6\text{Li}$ Degenerate Fermi Gases. <i>Physical Review Letters</i> , 2005, 94, 060403.	2.9	15
59	Locality and universality of quantum memory effects. <i>Scientific Reports</i> , 2014, 4, 6327.	1.6	14
60	Patterns of trading profiles at the Nordic Stock Exchange. A correlation-based approach. <i>Chaos, Solitons and Fractals</i> , 2016, 88, 267-278.	2.5	13
61	Experimental realization of high-fidelity teleportation via a non-Markovian open quantum system. <i>Physical Review A</i> , 2020, 102, .	1.0	13
62	Atomic collision dynamics in optical lattices. <i>Physical Review A</i> , 2002, 65, .	1.0	11
63	Non-Markovian weak coupling limit of quantum Brownian motion. <i>European Physical Journal D</i> , 2009, 55, 181-187.	0.6	11
64	Non-Markovian dynamics in two-qubit dephasing channels with an application to superdense coding. <i>Physical Review A</i> , 2016, 93, .	1.0	11
65	Non-Markovian discrete qubit dynamics. <i>Science Bulletin</i> , 2016, 61, 1031-1036.	4.3	11
66	Diffusive Limit of Non-Markovian Quantum Jumps. <i>Physical Review Letters</i> , 2020, 125, 150403.	2.9	11
67	Efficient quantum transport in a multi-site system combining classical noise and quantum baths. <i>New Journal of Physics</i> , 2020, 22, 013028.	1.2	10
68	Interferometric approach to open quantum systems and non-Markovian dynamics. <i>Physical Review A</i> , 2021, 103, .	1.0	10
69	High-frequency trading and networked markets. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	9
70	Generation of entanglement density within a reservoir. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2011, 44, 065505.	0.6	8
71	Discrete dynamics and non-Markovianity. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2016, 49, 125501.	0.6	8
72	Raman photoassociation of Bose-Fermi mixtures and the subsequent prospects for atom-molecule Cooper pairing. <i>Physical Review A</i> , 2004, 69, .	1.0	7

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73	Quantum Brownian motion for periodic coupling to an Ohmic bath. <i>Physical Review A</i> , 2007, 75, .	1.0	7
74	Non-Markovian waiting-time distribution for quantum jumps in open systems. <i>Physical Review A</i> , 2012, 86, .	1.0	7
75	Local probe for connectivity and coupling strength in quantum complex networks. <i>Scientific Reports</i> , 2018, 8, 13010.	1.6	7
76	Photonic dephasing dynamics and the role of initial correlations. <i>Physical Review A</i> , 2020, 101, .	1.0	7
77	Optical shielding of cold collisions in blue-detuned near-resonant optical lattices. <i>Physical Review A</i> , 2002, 66, .	1.0	6
78	Radiative collisional heating at the Doppler limit for laser-cooled magnesium atoms. <i>Physical Review A</i> , 2004, 70, .	1.0	6
79	New directions in degenerate dipolar molecules via collective association. <i>European Physical Journal D</i> , 2004, 31, 273-282.	0.6	6
80	Quantitative Analysis of Gender Stereotypes and Information Aggregation in a National Election. <i>PLoS ONE</i> , 2013, 8, e58910.	1.1	6
81	Cold collisions between atoms in optical lattices. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2001, 34, L231-L237.	0.6	5
82	Connecting two jumplike unravelings for non-Markovian open quantum systems. <i>Physical Review A</i> , 2011, 84, .	1.0	5
83	Detecting non-Markovianity from continuous monitoring. <i>Physical Review A</i> , 2014, 90, .	1.0	5
84	Role of correlations in the thermalization of quantum systems. <i>New Journal of Physics</i> , 2012, 14, 113034.	1.2	4
85	Symmetry in the open-system dynamics of quantum correlations. <i>Scientific Reports</i> , 2017, 7, 8367.	1.6	4
86	Distributing memory effects in an open two-qubit system. <i>Physical Review A</i> , 2020, 102, .	1.0	4
87	Probing the spectral dimension of quantum network geometries. <i>Journal of Physics Complexity</i> , 2021, 2, 015001.	0.9	4
88	Collision rates in near-resonant optical lattices. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2003, 20, 1135.	0.9	3
89	Transient dynamics of linear quantum amplifiers. <i>European Physical Journal D</i> , 2005, 36, 329-338.	0.6	3
90	Remote polarization-entanglement generation by local dephasing and frequency up-conversion. <i>Physical Review A</i> , 2017, 96, .	1.0	3

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91	Covariance and correlation estimators in bipartite complex systems with a double heterogeneity. Journal of Statistical Mechanics: Theory and Experiment, 2019, 2019, 053404.	0.9	3
92	Experimental quantum probing measurements with no knowledge of the system-probe interaction. Physical Review A, 2020, 102, .	1.0	3
93	Open quantum dynamics with singularities: Master equations and degree of non-Markovianity. Physical Review A, 2021, 104, .	1.0	3
94	Cold collisions in dissipative optical lattices. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, R37-R52.	1.4	2
95	Scaling of non-Markovian Monte Carlo wave-function methods. Physical Review E, 2005, 71, 056701.	0.8	2
96	NON-MARKOVIAN DYNAMICS OF CAVITY LOSSES. International Journal of Quantum Information, 2009, 07, 41-47.	0.6	2
97	Identification of Clusters of Investors from Their Real Trading Activity in a Financial Market. SSRN Electronic Journal, 2011, , .	0.4	2
98	Quantum Zeno-type effect and non-Markovianity in a three-level system. Scientific Reports, 2016, 6, 39061.	1.6	2
99	Structure and evolution of a European Parliament via a network and correlation analysis. Physica A: Statistical Mechanics and Its Applications, 2016, 462, 167-185.	1.2	2
100	Non-Markovianity over Ensemble Averages in Quantum Complex Networks. Open Systems and Information Dynamics, 2017, 24, 1740018.	0.5	2
101	Engineering of Hong-Ou-Mandel interference with effective noise. Physical Review A, 2021, 104, .	1.0	2
102	Cold collisions in strong laser fields: partial wave analysis of magnesium collisions. European Physical Journal D, 2006, 40, 211-222.	0.6	1
103	Non-Markovian dynamics and quantum jumps. Optics and Spectroscopy (English Translation of Optika i) Tj ETQq1 1 0.784314 rgBT / 0,2	0.2	1
104	How News Affect the Trading Behavior of Different Categories of Investors in a Financial Market. SSRN Electronic Journal, 0, , .	0.4	1
105	Towards exact analytic calculation of electron gas. European Physical Journal D, 1996, 46, 2641-2642.	0.4	0
106	Quantum Zeno and anti-Zeno effects for the damped harmonic oscillator. Proceedings of SPIE, 2007, , .	0.8	0
107	Monte Carlo simulations of non-Markovian open systems. , 2007, , .		0
108	The 16th Central European Workshop on Quantum Optics. Physica Scripta, 2010, T140, 011001.	1.2	0

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109	Structure and Evolution of a European Parliament via a Network and Correlation Analysis. SSRN Electronic Journal, 2016, , .	0.4	0
110	Quantitative Analysis of Gender Stereotypes and Information Aggregation in a National Election. SSRN Electronic Journal, 0, , .	0.4	0
111	Memory assisted entanglement distribution in optical fibers. , 2014, , .		0
112	Patterns of Trading Profiles at the Nordic Stock Exchange. A Correlation-Based Approach.. SSRN Electronic Journal, 0, , .	0.4	0