Lorenza Viola

List of Publications by Year
in descending order

95 papers	7,660 citations	71102 41 h-index	49909 87 g-index
96 all docs	96 docs citations	96 times ranked	3244 citing authors

#	Article	IF	Citations
1	Dynamical Decoupling of Open Quantum Systems. Physical Review Letters, 1999, 82, 2417-2421.	7.8	1,323
2	Dynamical suppression of decoherence in two-state quantum systems. Physical Review A, 1998, 58, 2733-2744.	2.5	1,209
3	Theory of Quantum Error Correction for General Noise. Physical Review Letters, 2000, 84, 2525-2528.	7.8	604
4	Universal Control of Decoupled Quantum Systems. Physical Review Letters, 1999, 83, 4888-4891.	7.8	284
5	A Subsystem-Independent Generalization of Entanglement. Physical Review Letters, 2004, 92, 107902.	7.8	249
6	Robust Dynamical Decoupling of Quantum Systems with Bounded Controls. Physical Review Letters, 2003, 90, 037901.	7.8	199
7	Dynamically Error-Corrected Gates for Universal Quantum Computation. Physical Review Letters, 2009, 102, 080501.	7.8	180
8	Engineering quantum dynamics. Physical Review A, 2001, 65, .	2.5	150
9	Arbitrarily Accurate Dynamical Control in Open Quantum Systems. Physical Review Letters, 2010, 104, 090501.	7.8	144
10	Random Decoupling Schemes for Quantum Dynamical Control and Error Suppression. Physical Review Letters, 2005, 94, 060502.	7.8	134
11	Dynamical Generation of Noiseless Quantum Subsystems. Physical Review Letters, 2000, 85, 3520-3523.	7.8	130
12	Quantum Markovian Subsystems: Invariance, Attractivity, and Control. IEEE Transactions on Automatic Control, 2008, 53, 2048-2063.	5.7	108
13	Generalizations of entanglement based on coherent states and convex sets. Physical Review A, 2003, 68, .	2.5	107
14	Majorana Modes in Time-Reversal Invariant<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>s</mml:mi></mml:math>-Wave Topological Superconductors. Physical Review Letters, 2012, 108, 036803.	7.8	99
15	Nature and measure of entanglement in quantum phase transitions. Physical Review A, 2004, 70, .	2.5	97
16	Implementation of universal control on a decoherence-free qubit. New Journal of Physics, 2002, 4, 5-5.	2.9	93
17	Qubit Noise Spectroscopy for Non-Gaussian Dephasing Environments. Physical Review Letters, 2016, 116, 150503.	7.8	93
18	Analysis and synthesis of attractive quantum Markovian dynamics. Automatica, 2009, 45, 2002-2009.	5.0	86

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19	Dynamical Suppression of1/fNoise Processes in Qubit Systems. Physical Review Letters, 2004, 92, 117905.	7.8	84
20	Dynamical quantum error correction of unitary operations with bounded controls. Physical Review A, 2009, 80, .	2.5	82
21	General Transfer-Function Approach to Noise Filtering in Open-Loop Quantum Control. Physical Review Letters, 2014, 113, 250501.	7.8	75
22	Quantum control via encoded dynamical decoupling. Physical Review A, 2002, 66, .	2.5	72
23	Information-preserving structures: A general framework for quantum zero-error information. Physical Review A, 2010, 82, .	2.5	72
24	Robustness of composite pulses to time-dependent control noise. Physical Review A, 2014, 90, .	2.5	71
25	Multiqubit spectroscopy of Gaussian quantum noise. Physical Review A, 2017, 95, .	2.5	71
26	Characterizing the Structure of Preserved Information in Quantum Processes. Physical Review Letters, 2008, 100, 030501.	7.8	67
27	Quantum chaos, delocalization, and entanglement in disordered Heisenberg models. Physical Review E, 2008, 77, 021106.	2.1	57
28	Convergence Rates for Arbitrary Statistical Moments of Random Quantum Circuits. Physical Review Letters, 2010, 104, 250501.	7.8	57
29	Stabilizing entangled states with quasi-local quantum dynamical semigroups. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 5259-5269.	3.4	54
30	Coherent-state transfer via highly mixed quantum spin chains. Physical Review A, 2011, 83, .	2.5	53
31	Constructing qubits in physical systems. Journal of Physics A, 2001, 34, 7067-7079.	1.6	52
32	Long-time electron spin storage via dynamical suppression of hyperfine-induced decoherence in a quantum dot. Physical Review B, 2008, 77, .	3.2	52
33	Non-Gaussian noise spectroscopy with a superconducting qubit sensor. Nature Communications, 2019, 10, 3715.	12.8	52
34	Designing a practical high-fidelity long-time quantum memory. Nature Communications, 2013, 4, 2045.	12.8	50
35	Dynamical control of electron spin coherence in a quantum dot: A theoretical study. Physical Review B, 2007, 75, .	3.2	49
36	Dynamical control of qubit coherence: Random versus deterministic schemes. Physical Review A, 2005, 72, .	2.5	48

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37	Advances in decoherence control. Journal of Modern Optics, 2004, 51, 2357-2367.	1.3	47
38	Enhanced Convergence and Robust Performance of Randomized Dynamical Decoupling. Physical Review Letters, 2006, 97, 150501.	7.8	47
39	Experimental characterization of coherent magnetization transport in a one-dimensional spin system. New Journal of Physics, 2011, 13, 103015.	2.9	46
40	Automated synthesis of dynamically corrected quantum gates. Physical Review A, 2012, 86, .	2.5	43
41	Generalization of Bloch's theorem for arbitrary boundary conditions: Theory. Physical Review B, 2017, 96, .	3.2	42
42	Two-Qubit Spectroscopy of Spatiotemporally Correlated Quantum Noise in Superconducting Qubits. PRX Quantum, 2020, 1, .	9.2	42
43	Experimental Implementation of a Concatenated Quantum Error-Correcting Code. Physical Review Letters, 2005, 94, 130501.	7.8	41
44	NMR multiple quantum coherences in quasi-one-dimensional spin systems: Comparison with ideal spin-chain dynamics. Physical Review A, 2009, 80, .	2.5	38
45	Limits on preserving quantum coherence using multipulse control. Physical Review A, 2011, 83, .	2.5	38
46	Quantum resources for purification and cooling: fundamental limits and opportunities. Scientific Reports, 2014, 4, 5192.	3.3	38
47	A Generalization of Entanglement to Convex Operational Theories: Entanglement Relative to a Subspace of Observables. International Journal of Theoretical Physics, 2005, 44, 2127-2145.	1.2	34
48	Topology by Dissipation: Majorana Bosons in Metastable Quadratic Markovian Dynamics. Physical Review Letters, 2021, 127, 245701.	7.8	34
49	Exact Solution of Quadratic Fermionic Hamiltonians for Arbitrary Boundary Conditions. Physical Review Letters, 2016, 117, 076804.	7.8	33
50	Towards optimized suppression of dephasing in systems subject to pulse timing constraints. Physical Review A, 2010, 81, .	2.5	32
51	Advantages of randomization in coherent quantum dynamical control. New Journal of Physics, 2008, 10, 083009.	2.9	31
52	Anomalous nonergodic scaling in adiabatic multicritical quantum quenches. Physical Review B, 2009, 80, .	3.2	30
53	Generalized entanglement as a framework for complex quantum systems: purity versus delocalization measures. Journal of Physics A: Mathematical and Theoretical, 2007, 40, 8109-8125.	2.1	29
54	Reducing sequencing complexity in dynamical quantum error suppression by Walsh modulation. Physical Review A, 2011, 84, .	2.5	29

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55	Decoherence-protected storage of exciton qubits through ultrafast multipulse control. Physical Review B, 2008, 78, .	3.2	28
56	Multiband<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>s</mml:mi></mml:math>-wave topological superconductors: Role of dimensionality and magnetic field response. Physical Review B, 2013, 87, .	3.2	27
57	Dynamical decoupling sequences for multi-qubit dephasing suppression and long-time quantum memory. New Journal of Physics, 2016, 18, 073020.	2.9	27
58	Deconstructing effective non-Hermitian dynamics in quadratic bosonic Hamiltonians. New Journal of Physics, 2020, 22, 083004.	2.9	27
59	Dynamical critical scaling and effective thermalization in quantum quenches: Role of the initial state. Physical Review B, 2011, 83, .	3.2	26
60	Hamiltonian Control of Quantum Dynamical Semigroups: Stabilization and Convergence Speed. IEEE Transactions on Automatic Control, 2012, 57, 1931-1944.	5.7	26
61	Majorana flat bands ins-wave gapless topological superconductors. Physical Review B, 2014, 89, .	3.2	26
62	Optimally band-limited spectroscopy of control noise using a qubit sensor. Physical Review A, 2018, 98, .	2.5	26
63	Exploring noiseless subsystems via nuclear magnetic resonance. Physical Review A, 2003, 67, .	2.5	25
64	Generalization of Bloch's theorem for arbitrary boundary conditions: Interfaces and topological surface band structure. Physical Review B, 2018, 98, .	3.2	25
65	Parameters of pseudorandom quantum circuits. Physical Review A, 2008, 78, .	2.5	20
66	Squaring the fermion: The threefold way and the fate of zero modes. Physical Review B, 2020, 102, .	3.2	19
67	Quantum pseudorandomness from cluster-state quantum computation. Physical Review A, 2008, 77, .	2.5	18
68	Quantum information encoding, protection, and correction from trace-norm isometries. Physical Review A, 2010, 81, .	2.5	18
69	Exact solution of corner-modified banded block-Toeplitz eigensystems. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 195204.	2.1	18
70	Simultaneous Spectral Estimation of Dephasing and Amplitude Noise on a Qubit Sensor via Optimally Band-Limited Control. Physical Review Applied, 2020, 14, .	3.8	18
71	Dynamics of decoherence in continuous atom-optical quantum nondemolition measurements. Physical Review A, 1998, 58, 69-76.	2.5	17
72	Single-bit feedback and quantum-dynamical decoupling. Physical Review A, 2006, 74, .	2.5	17

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73	Multipartite entanglement generation and fidelity decay in disordered qubit systems. Physical Review A, 2006, 73, .	2.5	17
74	Extending comb-based spectral estimation to multiaxis quantum noise. Physical Review A, 2019, 100, .	2.5	14
75	Frame-Based Filter-Function Formalism for Quantum Characterization and Control. PRX Quantum, 2021, 2, .	9.2	14
76	Pointer states via engineered dissipation. Physical Review A, 2011, 84, .	2.5	13
77	Alternating Projections Methods for Discrete-Time Stabilization of Quantum States. IEEE Transactions on Automatic Control, 2018, 63, 819-826.	5.7	11
78	Ramsey interferometry in correlated quantum noise environments. Physical Review A, 2018, 98, .	2.5	11
79	Hamiltonian quantum simulation with bounded-strength controls. New Journal of Physics, 2014, 16, 045021.	2.9	10
80	Quantum and classical resources for unitary design of open-system evolutions. Quantum Science and Technology, 2017, 2, 034001.	5.8	10
81	Exact stabilization of entangled states in finite time by dissipative quantum circuits. Physical Review A, 2017, 96, .	2.5	10
82	Suppression of electron spin decoherence in a quantum dot. Journal of Modern Optics, 2007, 54, 2629-2640.	1.3	9
83	Mathematical models of Markovian dephasing. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 385301.	2.1	8
84	Restoring number conservation in quadratic bosonic Hamiltonians with dualities. Europhysics Letters, 2020, 131, 40006.	2.0	8
85	Quantum state preparation by controlled dissipation in finite time: From classical to quantum controllers. , 2012, , .		7
86	Optimal digital dynamical decoupling for general decoherence via Walsh modulation. Quantum Information Processing, 2017, 16, 1.	2.2	7
87	Verification procedures for quantum noiseless subsystems. Physical Review A, 2003, 68, .	2.5	6
88	Uniquely determined pure quantum states need not be unique ground states of quasi-local Hamiltonians. Physical Review A, 2019, 99, .	2.5	5
89	Generic pure quantum states as steady states of quasi-local dissipative dynamics. Journal of Physics A: Mathematical and Theoretical, 2018, 51, 145304.	2.1	3
90	Quantum Information Encoding from Stabilizing Dynamics. , 2019, , .		3

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91	Floquet graphene antidot lattices. Physical Review B, 2021, 104, .	3.2	3
92	GENERALIZED ENTANGLEMENT IN STATIC AND DYNAMIC QUANTUM PHASE TRANSITIONS. , 2008, , .		2
93	On the Role of Hamiltonians for Dissipative Entanglement Engineering* *F.T. acknowledges support by the QUINTET and the QFuture projects of the University of Padova, Italy.. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 220-225.	0.4	0
94	The Size of Exponential Sums on Intervals of the Real Line. Constructive Approximation, 2012, 35, 123-136.	3.0	0
95	The whole from the parts: Markovian stabilizing dynamics and ground-state cooling under locality constraints. , 2019, , .		0