Paola Cappellaro

List of Publications by Year
in descending order

110 papers	9,104 citations	87723 38 h-index	39575 94 g-index
114 all docs	114 docs citations	114 times ranked	6352 citing authors

#	Article	IF	Citations
1	Quantum sensing. Reviews of Modern Physics, 2017, 89, .	16.4	1,911
2	Nanoscale magnetic sensing with an individual electronic spin in diamond. Nature, 2008, 455, 644-647.	13.7	1,554
3	High-sensitivity diamond magnetometer with nanoscale resolution. Nature Physics, 2008, 4, 810-816.	6.5	1,409
4	Strong magnetic coupling between an electronic spin qubit and a mechanical resonator. Physical Review B, 2009, 79, .	1.1	329
5	Coherence of nitrogen-vacancy electronic spin ensembles in diamond. Physical Review B, 2010, 82, .	1.1	238
6	Magnetic field imaging with nitrogen-vacancy ensembles. New Journal of Physics, 2011, 13, 045021.	1.2	228
7	Exploring Localization in Nuclear Spin Chains. Physical Review Letters, 2018, 120, 070501.	2.9	186
8	Suppression of spin-bath dynamics for improved coherence of multi-spin-qubit systems. Nature Communications, 2012, 3, 858.	5.8	177
9	Stable three-axis nuclear-spin gyroscope in diamond. Physical Review A, 2012, 86, .	1.0	107
10	NMR technique for determining the depth of shallow nitrogen-vacancy centers in diamond. Physical Review B, 2016, 93, .	1.1	107
11	Enhanced solid-state multispin metrology using dynamical decoupling. Physical Review B, 2012, 86, .	1.1	98
12	Fourier magnetic imaging with nanoscale resolution and compressed sensing speed-up using electronic spins in diamond. Nature Nanotechnology, 2015, 10, 859-864.	15.6	96
13	Coherence and Control of Quantum Registers Based on Electronic Spin in a Nuclear Spin Bath. Physical Review Letters, 2009, 102, 210502.	2.9	92
14	Simulations of Information Transport in Spin Chains. Physical Review Letters, 2007, 99, 250506.	2.9	83
15	Imaging mesoscopic nuclear spin noise with a diamond magnetometer. Journal of Chemical Physics, 2010, 133, 124105.	1.2	82
16	Coherent feedback control of a single qubit in diamond. Nature, 2016, 532, 77-80.	13.7	79
17	Environment-Assisted Precision Measurement. Physical Review Letters, 2011, 106, 140502.	2.9	75
18	Entanglement Assisted Metrology. Physical Review Letters, 2005, 94, 020502.	2.9	73

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19	Dressed-State Resonant Coupling between Bright and Dark Spins in Diamond. Physical Review Letters, 2013, 110, 157601.	2.9	70
20	Floquet prethermalization in dipolar spin chains. Nature Physics, 2021, 17, 444-447.	6.5	64
21	Dynamics and control of a quasi-one-dimensional spin system. Physical Review A, 2007, 76, .	1.0	60
22	Quantum correlation in disordered spin systems: Applications to magnetic sensing. Physical Review A, 2009, 80, .	1.0	58
23	Time-resolved magnetic sensing with electronic spins in diamond. Nature Communications, 2014, 5, 3141.	5.8	58
24	Atomic-Scale Nuclear Spin Imaging Using Quantum-Assisted Sensors in Diamond. Physical Review X, 2015, 5, .	2.8	57
25	Composite-pulse magnetometry with a solid-state quantum sensor. Nature Communications, 2013, 4, 1419.	5.8	56
26	Coherent-state transfer via highly mixed quantum spin chains. Physical Review A, 2011, 83, .	1.0	53
27	Quantum Metrology with Strongly Interacting Spin Systems. Physical Review X, 2020, 10, .	2.8	52
28	Coherence of an Optically Illuminated Single Nuclear Spin Qubit. Physical Review Letters, 2008, 100, 073001.	2.9	51
29	Hamiltonian identifiability assisted by a single-probe measurement. Physical Review A, 2017, 95, .	1.0	50
30	Optimal Control for One-Qubit Quantum Sensing. Physical Review X, 2018, 8, .	2.8	50
31	Ancilla-Free Quantum Error Correction Codes for Quantum Metrology. Physical Review Letters, 2019, 122, 040502.	2.9	49
32	Quantum Simulation via Filtered Hamiltonian Engineering: Application to Perfect Quantum Transport in Spin Networks. Physical Review Letters, 2013, 110, 220503.	2.9	48
33	Emergent Prethermalization Signatures in Out-of-Time Ordered Correlations. Physical Review Letters, 2019, 123, 090605.	2.9	48
34	Experimental characterization of coherent magnetization transport in a one-dimensional spin system. New Journal of Physics, 2011, 13, 103015.	1.2	46
35	Continuous dynamical decoupling magnetometry. Physical Review A, 2012, 86, .	1.0	46
36	SARS-CoV-2 Quantum Sensor Based on Nitrogen-Vacancy Centers in Diamond. Nano Letters, 2022, 22, 43-49.	4.5	46

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37	Decay of highly correlated spin states in a dipolar-coupled solid: NMR study ofCaF2. Physical Review B, 2006, 74, .	1.1	44
38	Perturbation Independent Decay of the Loschmidt Echo in a Many-Body System. Physical Review Letters, 2020, 124, 030601.	2.9	43
39	Spatial noise filtering through error correction for quantum sensing. Npj Quantum Information, 2018, 4, .	2.8	39
40	Principles of control for decoherence-free subsystems. Journal of Chemical Physics, 2006, 125, 044514.	1.2	38
41	NMR multiple quantum coherences in quasi-one-dimensional spin systems: Comparison with ideal spin-chain dynamics. Physical Review A, 2009, 80, .	1.0	38
42	Measurement of transverse hyperfine interaction by forbidden transitions. Physical Review B, 2015, 92, .	1.1	38
43	Bright nanowire single photon source based on SiV centers in diamond. Optics Express, 2018, 26, 80.	1.7	37
44	Pulse error compensating symmetric magic-echo trains. Journal of Magnetic Resonance, 2003, 161, 132-137.	1.2	35
45	Effective routing design for remote entanglement generation on quantum networks. Npj Quantum Information, 2021, 7, .	2.8	35
46	Experimental test of exchange fluctuation relations in an open quantum system. Physical Review Research, 2020, 2, .	1.3	33
47	Encoding multiple quantum coherences in non-commuting bases. Chemical Physics Letters, 2003, 369, 311-317.	1.2	32
48	Spin-bath narrowing with adaptive parameter estimation. Physical Review A, 2012, 85, .	1.0	32
49	Nanoscale Vector dc Magnetometry via Ancilla-Assisted Frequency Up-Conversion. Physical Review Letters, 2019, 122, 100501.	2.9	30
50	Single Spin Measurement Using Cellular Automata Techniques. Physical Review Letters, 2006, 97, 100501.	2.9	26
51	Hamiltonian Control of Quantum Dynamical Semigroups: Stabilization and Convergence Speed. IEEE Transactions on Automatic Control, 2012, 57, 1931-1944.	3.6	26
52	Quantum Jarzynski Equality in Open Quantum Systems from the One-Time Measurement Scheme. Physical Review Letters, 2020, 125, 060602.	2.9	26
53	Quantum Hamiltonian Identifiability via a Similarity Transformation Approach and Beyond. IEEE Transactions on Automatic Control, 2020, 65, 4632-4647.	3.6	26
54	Quantum interpolation for high-resolution sensing. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2149-2153.	3.3	25

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55	Exact dimension estimation of interacting qubit systems assisted by a single quantum probe. Physical Review A, 2017, 96, .	1.0	25
56	Noise spectroscopy of a quantum-classical environment with a diamond qubit. Physical Review B, 2018, 98, .	1.1	25
57	Photoluminescence Decomposition Analysis: A Technique to Characterize <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mrow><mml:mrow><mml:mi mathvariant="normal">N</mml:mi></mml:mrow></mml:mrow></mml:math> - <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>V</mml:mi></mml:math> Creation in Diamond. Physical Review Applied, 20	1.5	25
58	Decay of spin coherences in one-dimensional spin systems. New Journal of Physics, 2013, 15, 093035.	1.2	24
59	Repetitive readout enhanced by machine learning. Machine Learning: Science and Technology, 2020, 1, 015003.	2.4	24
60	Cross-Sensor Feedback Stabilization of an Emulated Quantum Spin Gyroscope. Physical Review Applied, 2019, 11, .	1.5	22
61	Quantifying precision loss in local quantum thermometry via diagonal discord. Physical Review A, 2018, 98, .	1.0	21
62	Time-optimal control by a quantum actuator. Physical Review A, 2015, 91, .	1.0	20
63	Environment-assisted metrology with spin qubits. Physical Review A, 2012, 85, .	1.0	19
64	Nanoscale Vector AC Magnetometry with a Single Nitrogen-Vacancy Center in Diamond. Nano Letters, 2021, 21, 5143-5150.	4.5	19
65	Measurement of the excited-state transverse hyperfine coupling in NV centers via dynamic nuclear polarization. Physical Review B, 2017, 95, .	1.1	18
66	Identification and Control of Electron-Nuclear Spin Defects in Diamond. Physical Review Letters, 2020, 124, 083602.	2.9	18
67	Coherence protection and decay mechanism in qubit ensembles under concatenated continuous driving. New Journal of Physics, 2020, 22, 123045.	1.2	17
68	Experimental implementation of a logical Bell state encoding. Physical Review A, 2007, 75, .	1.0	16
69	Perfect quantum transport in arbitrary spin networks. Physical Review B, 2013, 87, .	1.1	16
70	Sensing of Arbitrary-Frequency Fields Using a Quantum Mixer. Physical Review X, 2022, 12, .	2.8	16
71	Mixed-state quantum transport in correlated spin networks. Physical Review A, 2012, 85, .	1.0	15
72	Reconstructing the profile of time-varying magnetic fields with quantum sensors. Physical Review A, 2013, 88, .	1.0	15

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73	Time-optimal control with finite bandwidth. Quantum Information Processing, 2018, 17, 1.	1.0	15
74	A synthetic monopole source of Kalb-Ramond field in diamond. Science, 2022, 375, 1017-1020.	6.0	15
75	Initialization and readout of spin chains for quantum information transport. New Journal of Physics, 2012, 14, 083005.	1.2	14
76	Efficient Quantum Error Correction of Dephasing Induced by a Common Fluctuator. Physical Review Letters, 2020, 124, 020504.	2.9	14
77	Comparing many-body localization lengths via nonperturbative construction of local integrals of motion. Physical Review B, 2019, 100, .	1.1	12
78	Observation of the high-order Mollow triplet by quantum mode control with concatenated continuous driving. Physical Review A, 2021, 103, .	1.0	12
79	Compressing measurements in quantum dynamic parameter estimation. Physical Review A, 2013, 88, .	1.0	11
80	Protecting solid-state spins from a strongly coupled environment. New Journal of Physics, 2018, 20, 063011.	1.2	11
81	Nonclassical correlations for quantum metrology in thermal equilibrium. Physical Review A, 2019, 99, .	1.0	11
82	Prethermal quasiconserved observables in Floquet quantum systems. Physical Review B, 2021, 103, .	1.1	11
83	Environment-assisted Quantum-enhanced Sensing with Electronic Spins in Diamond. Physical Review Applied, 2019, 12, .	1.5	10
84	All-Optical Quantum Sensing of Rotational Brownian Motion of Magnetic Molecules. Nano Letters, 2019, 19, 7342-7348.	4.5	10
85	Observation of Symmetry-Protected Selection Rules in Periodically Driven Quantum Systems. Physical Review Letters, 2021, 127, 140604.	2.9	10
86	Development of an Extended Range Bonner Sphere Spectrometer. , 2001, , 1157-1162.		10
87	Bias in Error-Corrected Quantum Sensing. Physical Review Letters, 2022, 128, 140503.	2.9	9
88	Autonomous Dissipative Maxwellâ€™s Demon in a Diamond Spin Qutrit. PRX Quantum, 2022, 3, .	3.5	9
89	Selective Decoupling and Hamiltonian Engineering in Dipolar Spin Networks. Physical Review Letters, 2019, 122, 013205.	2.9	8
90	Telecom photon interface of solid-state quantum nodes. Journal of Physics Communications, 2019, 3, 095016.	0.5	6

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91	High-fidelity Trotter formulas for digital quantum simulation. Physical Review A, 2020, 102, .	1.0	6
92	Improved entanglement detection with subspace witnesses. Physical Review A, 2020, 101, .	1.0	6
93	Subsystem pseudopure states. Physical Review A, 2007, 75, .	1.0	5
94	Feedback schemes for radiation damping suppression in NMR: A control-theoretical perspective. Systems and Control Letters, 2010, 59, 782-786.	1.3	5
95	Control of qubits encoded in decoherence-free subspaces. Laser Physics, 2007, 17, 545-551.	0.6	4
96	Signatures of Incoherence in a Quantum Information Processor. Quantum Information Processing, 2007, 6, 431-444.	1.0	4
97	Algebraic synthesis of time-optimal unitaries in SU(2) with alternating controls. Quantum Information Processing, 2015, 14, 3233-3256.	1.0	4
98	Implementation of State Transfer Hamiltonians in Spin Chains with Magnetic Resonance Techniques. , 2014, , 183-222.		4
99	Experimentally efficient methods for estimating the performance of quantum measurements. Physical Review A, 2013, 88, .	1.0	3
100	Nanoscale magnetic sensing using spin qubits in diamond. , 2009, , .		2
101	Quantum control-enhanced sensing and spectroscopy with NV qubits in diamond. , 2019, , .		2
102	Robustness-optimized quantum error correction. Quantum Science and Technology, 2020, 5, 025008.	2.6	1
103	Error-corrected quantum sensing. , 2019, , .		1
104	Quantum Control of Nuclear Spins. , 2006, , .		0
105	Feedback schemes for radiation damping suppression in NMR: a control-theoretical perspective. , 2009, , .		0
106	Polarizing Nuclear Spins in Silicon Carbide. Physics Magazine, 2015, 8, .	0.1	0
107	QUANTUM CONTROL OF SPINS AND PHOTONS AT NANOSCALES. , 2009, , .		0
108	A bright nanowire single photon source. , 2016, , .		0

#	Article	IF	Citations
109	Optimal control of diamond spin qubits for quantum sensing in noisy environments. , 2019, , .		0
110	Building quantum ion sensors based on solid-state defects in nanodiamond. , 2021, , .		0