

Paola Cappellaro

List of Publications by Year in descending order

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Version: 2024-02-01

110
papers

9,104
citations

87888

38
h-index

39675

94
g-index

114
all docs

114
docs citations

114
times ranked

6352
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|--|------|-----------|
| 1 | A synthetic monopole source of Kalb-Ramond field in diamond. <i>Science</i> , 2022, 375, 1017-1020. | 12.6 | 15 |
| 2 | Bias in Error-Corrected Quantum Sensing. <i>Physical Review Letters</i> , 2022, 128, 140503. | 7.8 | 9 |
| 3 | SARS-CoV-2 Quantum Sensor Based on Nitrogen-Vacancy Centers in Diamond. <i>Nano Letters</i> , 2022, 22, 43-49. | 9.1 | 46 |
| 4 | Autonomous Dissipative Maxwell's Demon in a Diamond Spin Qutrit. <i>PRX Quantum</i> , 2022, 3, . | 9.2 | 9 |
| 5 | Sensing of Arbitrary-Frequency Fields Using a Quantum Mixer. <i>Physical Review X</i> , 2022, 12, . | 8.9 | 16 |
| 6 | Effective routing design for remote entanglement generation on quantum networks. <i>Npj Quantum Information</i> , 2021, 7, . | 6.7 | 35 |
| 7 | Observation of the high-order Mollow triplet by quantum mode control with concatenated continuous driving. <i>Physical Review A</i> , 2021, 103, . | 2.5 | 12 |
| 8 | Prethermal quasiconserved observables in Floquet quantum systems. <i>Physical Review B</i> , 2021, 103, . | 3.2 | 11 |
| 9 | Nanoscale Vector AC Magnetometry with a Single Nitrogen-Vacancy Center in Diamond. <i>Nano Letters</i> , 2021, 21, 5143-5150. | 9.1 | 19 |
| 10 | Observation of Symmetry-Protected Selection Rules in Periodically Driven Quantum Systems. <i>Physical Review Letters</i> , 2021, 127, 140604. | 7.8 | 10 |
| 11 | Floquet prethermalization in dipolar spin chains. <i>Nature Physics</i> , 2021, 17, 444-447. | 16.7 | 64 |
| 12 | Building quantum ion sensors based on solid-state defects in nanodiamond. , 2021, , . | | 0 |
| 13 | High-fidelity Trotter formulas for digital quantum simulation. <i>Physical Review A</i> , 2020, 102, . | 2.5 | 6 |
| 14 | Quantum Jarzynski Equality in Open Quantum Systems from the One-Time Measurement Scheme. <i>Physical Review Letters</i> , 2020, 125, 060602. | 7.8 | 26 |
| 15 | Identification and Control of Electron-Nuclear Spin Defects in Diamond. <i>Physical Review Letters</i> , 2020, 124, 083602. | 7.8 | 18 |
| 16 | Robustness-optimized quantum error correction. <i>Quantum Science and Technology</i> , 2020, 5, 025008. | 5.8 | 1 |
| 17 | Repetitive readout enhanced by machine learning. <i>Machine Learning: Science and Technology</i> , 2020, 1, 015003. | 5.0 | 24 |
| 18 | Perturbation Independent Decay of the Loschmidt Echo in a Many-Body System. <i>Physical Review Letters</i> , 2020, 124, 030601. | 7.8 | 43 |

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|----|---|-----|-----------|
| 19 | Improved entanglement detection with subspace witnesses. Physical Review A, 2020, 101, . | 2.5 | 6 |
| 20 | Quantum Hamiltonian Identifiability via a Similarity Transformation Approach and Beyond. IEEE Transactions on Automatic Control, 2020, 65, 4632-4647. | 5.7 | 26 |
| 21 | Coherence protection and decay mechanism in qubit ensembles under concatenated continuous driving. New Journal of Physics, 2020, 22, 123045. | 2.9 | 17 |
| 22 | Efficient Quantum Error Correction of Dephasing Induced by a Common Fluctuator. Physical Review Letters, 2020, 124, 020504. | 7.8 | 14 |
| 23 | Experimental test of exchange fluctuation relations in an open quantum system. Physical Review Research, 2020, 2, . | 3.6 | 33 |
| 24 | Quantum Metrology with Strongly Interacting Spin Systems. Physical Review X, 2020, 10, . | 8.9 | 52 |
| 25 | Telecom photon interface of solid-state quantum nodes. Journal of Physics Communications, 2019, 3, 095016. | 1.2 | 6 |
| 26 | Environment-assisted Quantum-enhanced Sensing with Electronic Spins in Diamond. Physical Review Applied, 2019, 12, . | 3.8 | 10 |
| 27 | Emergent Prethermalization Signatures in Out-of-Time Ordered Correlations. Physical Review Letters, 2019, 123, 090605. | 7.8 | 48 |
| 28 | All-Optical Quantum Sensing of Rotational Brownian Motion of Magnetic Molecules. Nano Letters, 2019, 19, 7342-7348. | 9.1 | 10 |
| 29 | Photoluminescence Decomposition Analysis: A Technique to Characterize N V Creation in Diamond. Physical Review Applied, 20 | 3.8 | 25 |
| 30 | Ancilla-Free Quantum Error Correction Codes for Quantum Metrology. Physical Review Letters, 2019, 122, 040502. | 7.8 | 49 |
| 31 | Nonclassical correlations for quantum metrology in thermal equilibrium. Physical Review A, 2019, 99, . | 2.5 | 11 |
| 32 | Cross-Sensor Feedback Stabilization of an Emulated Quantum Spin Gyroscope. Physical Review Applied, 2019, 11, . | 3.8 | 22 |
| 33 | Nanoscale Vector dc Magnetometry via Ancilla-Assisted Frequency Up-Conversion. Physical Review Letters, 2019, 122, 100501. | 7.8 | 30 |
| 34 | Comparing many-body localization lengths via nonperturbative construction of local integrals of motion. Physical Review B, 2019, 100, . | 3.2 | 12 |
| 35 | Selective Decoupling and Hamiltonian Engineering in Dipolar Spin Networks. Physical Review Letters, 2019, 122, 013205. | 7.8 | 8 |
| 36 | Error-corrected quantum sensing. , 2019, . , . | | 1 |

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|----|---|------|-----------|
| 37 | Quantum control-enhanced sensing and spectroscopy with NV qubits in diamond. , 2019, , . | | 2 |
| 38 | Optimal control of diamond spin qubits for quantum sensing in noisy environments. , 2019, , . | | 0 |
| 39 | Exploring Localization in Nuclear Spin Chains. Physical Review Letters, 2018, 120, 070501. | 7.8 | 186 |
| 40 | Protecting solid-state spins from a strongly coupled environment. New Journal of Physics, 2018, 20, 063011. | 2.9 | 11 |
| 41 | Noise spectroscopy of a quantum-classical environment with a diamond qubit. Physical Review B, 2018, 98, . | 3.2 | 25 |
| 42 | Spatial noise filtering through error correction for quantum sensing. Npj Quantum Information, 2018, 4, . | 6.7 | 39 |
| 43 | Time-optimal control with finite bandwidth. Quantum Information Processing, 2018, 17, 1. | 2.2 | 15 |
| 44 | Bright nanowire single photon source based on SiV centers in diamond. Optics Express, 2018, 26, 80. | 3.4 | 37 |
| 45 | Quantifying precision loss in local quantum thermometry via diagonal discord. Physical Review A, 2018, 98, . | 2.5 | 21 |
| 46 | Optimal Control for One-Qubit Quantum Sensing. Physical Review X, 2018, 8, . | 8.9 | 50 |
| 47 | Quantum interpolation for high-resolution sensing. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2149-2153. | 7.1 | 25 |
| 48 | Hamiltonian identifiability assisted by a single-probe measurement. Physical Review A, 2017, 95, . | 2.5 | 50 |
| 49 | Quantum sensing. Reviews of Modern Physics, 2017, 89, . | 45.6 | 1,911 |
| 50 | Measurement of the excited-state transverse hyperfine coupling in NV centers via dynamic nuclear polarization. Physical Review B, 2017, 95, . | 3.2 | 18 |
| 51 | Exact dimension estimation of interacting qubit systems assisted by a single quantum probe. Physical Review A, 2017, 96, . | 2.5 | 25 |
| 52 | Coherent feedback control of a single qubit in diamond. Nature, 2016, 532, 77-80. | 27.8 | 79 |
| 53 | NMR technique for determining the depth of shallow nitrogen-vacancy centers in diamond. Physical Review B, 2016, 93, . | 3.2 | 107 |
| 54 | A bright nanowire single photon source. , 2016, , . | | 0 |

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|----|---|------|-----------|
| 55 | Atomic-Scale Nuclear Spin Imaging Using Quantum-Assisted Sensors in Diamond. <i>Physical Review X</i> , 2015, 5, . | 8.9 | 57 |
| 56 | Polarizing Nuclear Spins in Silicon Carbide. <i>Physics Magazine</i> , 2015, 8, . | 0.1 | 0 |
| 57 | Algebraic synthesis of time-optimal unitaries in SU(2) with alternating controls. <i>Quantum Information Processing</i> , 2015, 14, 3233-3256. | 2.2 | 4 |
| 58 | Time-optimal control by a quantum actuator. <i>Physical Review A</i> , 2015, 91, . | 2.5 | 20 |
| 59 | Measurement of transverse hyperfine interaction by forbidden transitions. <i>Physical Review B</i> , 2015, 92, . | 3.2 | 38 |
| 60 | Fourier magnetic imaging with nanoscale resolution and compressed sensing speed-up using electronic spins in diamond. <i>Nature Nanotechnology</i> , 2015, 10, 859-864. | 31.5 | 96 |
| 61 | Time-resolved magnetic sensing with electronic spins in diamond. <i>Nature Communications</i> , 2014, 5, 3141. | 12.8 | 58 |
| 62 | Implementation of State Transfer Hamiltonians in Spin Chains with Magnetic Resonance Techniques. , 2014, , 183-222. | | 4 |
| 63 | Experimentally efficient methods for estimating the performance of quantum measurements. <i>Physical Review A</i> , 2013, 88, . | 2.5 | 3 |
| 64 | Reconstructing the profile of time-varying magnetic fields with quantum sensors. <i>Physical Review A</i> , 2013, 88, . | 2.5 | 15 |
| 65 | Perfect quantum transport in arbitrary spin networks. <i>Physical Review B</i> , 2013, 87, . | 3.2 | 16 |
| 66 | Composite-pulse magnetometry with a solid-state quantum sensor. <i>Nature Communications</i> , 2013, 4, 1419. | 12.8 | 56 |
| 67 | Quantum Simulation via Filtered Hamiltonian Engineering: Application to Perfect Quantum Transport in Spin Networks. <i>Physical Review Letters</i> , 2013, 110, 220503. | 7.8 | 48 |
| 68 | Dressed-State Resonant Coupling between Bright and Dark Spins in Diamond. <i>Physical Review Letters</i> , 2013, 110, 157601. | 7.8 | 70 |
| 69 | Compressing measurements in quantum dynamic parameter estimation. <i>Physical Review A</i> , 2013, 88, . | 2.5 | 11 |
| 70 | Decay of spin coherences in one-dimensional spin systems. <i>New Journal of Physics</i> , 2013, 15, 093035. | 2.9 | 24 |
| 71 | Stable three-axis nuclear-spin gyroscope in diamond. <i>Physical Review A</i> , 2012, 86, . | 2.5 | 107 |
| 72 | Mixed-state quantum transport in correlated spin networks. <i>Physical Review A</i> , 2012, 85, . | 2.5 | 15 |

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|----|--|------|-----------|
| 73 | Environment-assisted metrology with spin qubits. <i>Physical Review A</i> , 2012, 85, . | 2.5 | 19 |
| 74 | Spin-bath narrowing with adaptive parameter estimation. <i>Physical Review A</i> , 2012, 85, . | 2.5 | 32 |
| 75 | Initialization and readout of spin chains for quantum information transport. <i>New Journal of Physics</i> , 2012, 14, 083005. | 2.9 | 14 |
| 76 | Continuous dynamical decoupling magnetometry. <i>Physical Review A</i> , 2012, 86, . | 2.5 | 46 |
| 77 | Hamiltonian Control of Quantum Dynamical Semigroups: Stabilization and Convergence Speed. <i>IEEE Transactions on Automatic Control</i> , 2012, 57, 1931-1944. | 5.7 | 26 |
| 78 | Suppression of spin-bath dynamics for improved coherence of multi-spin-qubit systems. <i>Nature Communications</i> , 2012, 3, 858. | 12.8 | 177 |
| 79 | Enhanced solid-state multispin metrology using dynamical decoupling. <i>Physical Review B</i> , 2012, 86, . | 3.2 | 98 |
| 80 | Coherent-state transfer via highly mixed quantum spin chains. <i>Physical Review A</i> , 2011, 83, . | 2.5 | 53 |
| 81 | Experimental characterization of coherent magnetization transport in a one-dimensional spin system. <i>New Journal of Physics</i> , 2011, 13, 103015. | 2.9 | 46 |
| 82 | Magnetic field imaging with nitrogen-vacancy ensembles. <i>New Journal of Physics</i> , 2011, 13, 045021. | 2.9 | 228 |
| 83 | Environment-Assisted Precision Measurement. <i>Physical Review Letters</i> , 2011, 106, 140502. | 7.8 | 75 |
| 84 | Feedback schemes for radiation damping suppression in NMR: A control-theoretical perspective. <i>Systems and Control Letters</i> , 2010, 59, 782-786. | 2.3 | 5 |
| 85 | Coherence of nitrogen-vacancy electronic spin ensembles in diamond. <i>Physical Review B</i> , 2010, 82, . | 3.2 | 238 |
| 86 | Imaging mesoscopic nuclear spin noise with a diamond magnetometer. <i>Journal of Chemical Physics</i> , 2010, 133, 124105. | 3.0 | 82 |
| 87 | Strong magnetic coupling between an electronic spin qubit and a mechanical resonator. <i>Physical Review B</i> , 2009, 79, . | 3.2 | 329 |
| 88 | Feedback schemes for radiation damping suppression in NMR: a control-theoretical perspective. , 2009, , . | | 0 |
| 89 | Coherence and Control of Quantum Registers Based on Electronic Spin in a Nuclear Spin Bath. <i>Physical Review Letters</i> , 2009, 102, 210502. | 7.8 | 92 |
| 90 | Quantum correlation in disordered spin systems: Applications to magnetic sensing. <i>Physical Review A</i> , 2009, 80, . | 2.5 | 58 |

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| 91 | Nanoscale magnetic sensing using spin qubits in diamond. , 2009, , . | | 2 |
| 92 | NMR multiple quantum coherences in quasi-one-dimensional spin systems: Comparison with ideal spin-chain dynamics. Physical Review A, 2009, 80, . | 2.5 | 38 |
| 93 | QUANTUM CONTROL OF SPINS AND PHOTONS AT NANOSCALES. , 2009, , . | | 0 |
| 94 | High-sensitivity diamond magnetometer with nanoscale resolution. Nature Physics, 2008, 4, 810-816. | 16.7 | 1,409 |
| 95 | Nanoscale magnetic sensing with an individual electronic spin in diamond. Nature, 2008, 455, 644-647. | 27.8 | 1,554 |
| 96 | Coherence of an Optically Illuminated Single Nuclear Spin Qubit. Physical Review Letters, 2008, 100, 073001. | 7.8 | 51 |
| 97 | Dynamics and control of a quasi-one-dimensional spin system. Physical Review A, 2007, 76, . | 2.5 | 60 |
| 98 | Experimental implementation of a logical Bell state encoding. Physical Review A, 2007, 75, . | 2.5 | 16 |
| 99 | Subsystem pseudopure states. Physical Review A, 2007, 75, . | 2.5 | 5 |
| 100 | Simulations of Information Transport in Spin Chains. Physical Review Letters, 2007, 99, 250506. | 7.8 | 83 |
| 101 | Control of qubits encoded in decoherence-free subspaces. Laser Physics, 2007, 17, 545-551. | 1.2 | 4 |
| 102 | Signatures of Incoherence in a Quantum Information Processor. Quantum Information Processing, 2007, 6, 431-444. | 2.2 | 4 |
| 103 | Principles of control for decoherence-free subsystems. Journal of Chemical Physics, 2006, 125, 044514. | 3.0 | 38 |
| 104 | Decay of highly correlated spin states in a dipolar-coupled solid: NMR study of CaF ₂ . Physical Review B, 2006, 74, . | 3.2 | 44 |
| 105 | Single Spin Measurement Using Cellular Automata Techniques. Physical Review Letters, 2006, 97, 100501. | 7.8 | 26 |
| 106 | Quantum Control of Nuclear Spins. , 2006, , . | | 0 |
| 107 | Entanglement Assisted Metrology. Physical Review Letters, 2005, 94, 020502. | 7.8 | 73 |
| 108 | Encoding multiple quantum coherences in non-commuting bases. Chemical Physics Letters, 2003, 369, 311-317. | 2.6 | 32 |

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|-----|--|-----|-----------|
| 109 | Pulse error compensating symmetric magic-echo trains. Journal of Magnetic Resonance, 2003, 161, 132-137. | 2.1 | 35 |
| 110 | Development of an Extended Range Bonner Sphere Spectrometer. , 2001, , 1157-1162. | | 10 |