# Todd A Brun

List of Publications by Year
in descending order



| 126 | 3,910 | 117625 | 133252 |
|---|---|---|---|
| papers | citations | 34 h-index | 59 g-index |

| 128 | 128 | 128 | 1880 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Correcting Quantum Errors with Entanglement. Science, 2006, 314, 436-439. | 12.6 | 367 |
| 2 | A simple model of quantum trajectories. American Journal of Physics, 2002, 70, 719-737. | 0.7 | 250 |
| 3 | Quantum to Classical Transition for Random Walks. Physical Review Letters, 2003, 91, 130602. | 7.8 | 152 |
| 4 | Weak Measurements Are Universal. Physical Review Letters, 2005, 95, 110409. | 7.8 | 144 |
| 5 | Optimal entanglement formulas for entanglement-assisted quantum coding. Physical Review A, 2008, 77, . | 2.5 | 140 |
| 6 | Quantum walks driven by many coins. Physical Review A, 2003, 67, . | 2.5 | 129 |
| 7 | Quantum random walks with decoherent coins. Physical Review A, 2003, 67, . | 2.5 | 119 |
| 8 | Quantum metrology for a general Hamiltonian parameter. Physical Review A, 2014, 90, . | 2.5 | 111 |
| 9 | General entanglement-assisted quantum error-correcting codes. Physical Review A, 2007, 76, . | 2.5 | 104 |
| 10 | Quantum Bayes rule. Physical Review A, 2001, 64, . | 2.5 | 100 |
| 11 | Hitting time for quantum walks on the hypercube. Physical Review A, 2006, 73, . | 2.5 | 100 |
| 12 | Continuous measurements, quantum trajectories, and decoherent histories. Physical Review A, 2000, 61, . | 2.5 | 78 |
| 13 | Improving the Precision of Weak Measurements by Postselection Measurement. Physical Review Letters, 2015, 115, 120401. | 7.8 | 77 |
| 14 | Entanglement-Assisted Weak Value Amplification. Physical Review Letters, 2014, 113, 030401. | 7.8 | 72 |
| 15 | Quantum chaos in open systems: a quantum state diffusion analysis. Journal of Physics A, 1996, 29, 2077-2090. | 1.6 | 70 |
| 16 | Entanglement-assisted quantum quasicyclic low-density parity-check codes. Physical Review A, 2009, 79, . | 2.5 | 66 |
| 17 | Duality in Entanglement-Assisted Quantum Error Correction. IEEE Transactions on Information Theory, 2013, 59, 4020-4024. | 2.4 | 64 |
| 18 | Quantum walks on quotient graphs. Physical Review A, 2007, 75, . | 2.5 | 62 |

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| 19 | Catalytic Quantum Error Correction. IEEE Transactions on Information Theory, 2014, 60, 3073-3089. | 2.4 | 62 |
| 20 | Fault-Tolerant Holonomic Quantum Computation. Physical Review Letters, 2009, 102, 070502. | 7.8 | 61 |
| 21 | Entanglement increases the error-correcting ability of quantum error-correcting codes. Physical Review A, 2013, 88, . | 2.5 | 61 |
| 22 | Quantum walks with infinite hitting times. Physical Review A, 2006, 74, . | 2.5 | 60 |
| 23 | A C++ library using quantum trajectories to solve quantum master equations. Computer Physics Communications, 1997, 102, 210-228. | 7.5 | 59 |
| 24 | Quantum steganography with noisy quantum channels. Physical Review A, 2011, 83, . | 2.5 | 57 |
| 25 | Quasiclassical equations of motion for nonlinear Brownian systems. Physical Review D, 1993, 47, 3383-3393. | 4.7 | 52 |
| 26 | Localized Closed Timelike Curves Can Perfectly Distinguish Quantum States. Physical Review Letters, 2009, 102, 210402. | 7.8 | 46 |
| 27 | Entanglement-assisted quantum error-correcting codes with imperfect ebits. Physical Review A, 2012, 86, . | 2.5 | 46 |
| 28 | Dualities and identities for entanglement-assisted quantum codes. Quantum Information Processing, 2014, 13, 957-990. | 2.2 | 46 |
| 29 | Generalized stochastic SchrÃ¶dinger equations for state vector collapse. Journal of Physics A, 2001, 34, 4797-4809. | 1.6 | 40 |
| 30 | Hitting time for the continuous quantum walk. Physical Review A, 2008, 78, . | 2.5 | 40 |
| 31 | Achieving a quantum smart workforce. Quantum Science and Technology, 2021, 6, 030501. | 5.8 | 38 |
| 32 | Entanglement-assisted quantum convolutional coding. Physical Review A, 2010, 81, . | 2.5 | 37 |
| 33 | Coupling nanocrystals to a high-Qsilica microsphere: Entanglement in quantum dots via photon exchange. Physical Review A, 2000, 61, . | 2.5 | 36 |
| 34 | Protecting weak measurements against systematic errors. Physical Review A, 2016, 94, . | 2.5 | 36 |
| 35 | Computers with Closed Timelike Curves Can Solve Hard Problems Efficiently. Foundations of Physics Letters, 2003, 16, 245-253. | 0.6 | 32 |
| 36 | Classical dynamics of the quantum harmonic chain. Physical Review D, 1999, 60, . | 4.7 | 31 |

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| 37 | Protecting orbital-angular-momentum photons from decoherence in a turbulent atmosphere. Physical Review A, 2013, 88, . | 2.5 | 30 |
| 38 | Parametrization and distillability of three-qubit entanglement. Physics Letters, Section A: General, Atomic and Solid State Physics, 2001, 281, 88-100. | 2.1 | 29 |
| 39 | How much state assignments can differ. Physical Review A, 2002, 65, . | 2.5 | 27 |
| 40 | Classical enhancement of quantum-error-correcting codes. Physical Review A, 2008, 78, . | 2.5 | 27 |
| 41 | Realizing the quantum bakerâ€™s map on a NMR quantum computer. Physical Review A, 1999, 59, 2649-2658. | 2.5 | 26 |
| 42 | Quantum State Cloning Using Deutschian Closed Timelike Curves. Physical Review Letters, 2013, 111, 190401. | 7.8 | 26 |
| 43 | Distillation of Greenberger-Horne-Zeilinger States by Selective Information Manipulation. Physical Review Letters, 2000, 84, 5908-5911. | 7.8 | 25 |
| 44 | Realistic simulations of single-spin nondemolition measurement by magnetic resonance force microscopy. Physical Review A, 2003, 68, . | 2.5 | 25 |
| 45 | Continuous quantum error correction for non-Markovian decoherence. Physical Review A, 2007, 76, . | 2.5 | 25 |
| 46 | Quantum-state diffusion with a moving basis: Computing quantum-optical spectra. Physical Review A, 1996, 53, 2694-2697. | 2.5 | 24 |
| 47 | Entanglement purification of unknown quantum states. Physical Review A, 2001, 63, . | 2.5 | 24 |
| 48 | Entanglement-assisted codeword stabilized quantum codes. Physical Review A, 2011, 84, . | 2.5 | 22 |
| 49 | Perfect State Distinguishability and Computational Speedups with Postselected Closed Timelike Curves. Foundations of Physics, 2012, 42, 341-361. | 1.3 | 21 |
| 50 | Test of weak measurement on a two- or three-qubit computer. Physical Review A, 2008, 77, . | 2.5 | 19 |
| 51 | Quantum Jumps as Decoherent Histories. Physical Review Letters, 1997, 78, 1833-1837. | 7.8 | 18 |
| 52 | Entanglement-assisted quantum error correction with linear optics. Physical Review A, 2007, 76, . | 2.5 | 18 |
| 53 | Quantum Data-Syndrome Codes. IEEE Journal on Selected Areas in Communications, 2020, 38, 449-462. | 14.0 | 18 |
| 54 | Effects of noise on quantum error correction algorithms. Physical Review A, 1997, 56, 1177-1188. | 2.5 | 17 |

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|---|---|---|---|
| 55 | Coherent communication with continuous quantum variables. Physical Review A, 2007, 75, . | 2.5 | 17 |
| 56 | Suppressing technical noise in weak measurements by entanglement. Physical Review A, 2015, 92, . | 2.5 | 17 |
| 57 | Scheme for fault-tolerant holonomic computation on stabilizer codes. Physical Review A, 2009, 80, . | 2.5 | 16 |
| 58 | Hypersensitivity and chaos signatures in the quantum baker's maps. Journal of Physics A, 2006, 39, 13405-13433. | 1.6 | 15 |
| 59 | Relation between the psychological and thermodynamic arrows of time. Physical Review E, 2014, 89, 052102. | 2.1 | 15 |
| 60 | Robust quantum error syndrome extraction by classical coding. , 2014, , . | | 13 |
| 61 | Fault-tolerant holonomic quantum computation in surface codes. Physical Review A, 2015, 91, . | 2.5 | 13 |
| 62 | Discrete spacetime, quantum walks, and relativistic wave equations. Physical Review A, 2018, 97, . | 2.5 | 13 |
| 63 | Unified quantum convolutional coding. , 2008, , . | | 12 |
| 64 | Correction of data and syndrome errors by stabilizer codes. , 2016, , . | | 12 |
| 65 | Operator quantum error correction for continuous dynamics. Physical Review A, 2008, 78, . | 2.5 | 11 |
| 66 | Quantum convolutional coding with shared entanglement: general structure. Quantum Information Processing, 2010, 9, 509-540. | 2.2 | 11 |
| 67 | Entropy of classical histories. Physical Review E, 1999, 59, 6370-6380. | 2.1 | 10 |
| 68 | Decomposing generalized measurements into continuous stochastic processes. Physical Review A, 2007, 76, . | 2.5 | 10 |
| 69 | Geometric manipulation of ensembles of atoms on an atom chip for quantum computation. Physical Review A, 2012, 86, . | 2.5 | 10 |
| 70 | Implementing generalized measurements with superconducting qubits. Physical Review A, 2014, 90, . | 2.5 | 10 |
| 71 | Method for quantum-jump continuous-time quantum error correction. Physical Review A, 2016, 93, . | 2.5 | 10 |
| 72 | Detecting discrete spacetime via matter interferometry. Physical Review D, 2019, 99, . | 4.7 | 10 |

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| 73 | Extra shared entanglement reduces memory demand in quantum convolutional coding. Physical Review A, 2009, 79, . | 2.5 | 9 |
| 74 | Quantum scattering theory on graphs with tails. Physical Review A, 2009, 80, . | 2.5 | 9 |
| 75 | Fault-tolerant scheme of holonomic quantum computation on stabilizer codes with robustness to low-weight thermal noise. Physical Review A, 2014, 89, . | 2.5 | 9 |
| 76 | Amplification limit of weak measurements: A variational approach. Physical Review A, 2014, 90, . | 2.5 | 9 |
| 77 | Continuous limit of discrete quantum walks. Physical Review A, 2015, 91, . | 2.5 | 9 |
| 78 | Entanglement-Assisted Quantum Error-Correcting Codes. , 2009, , 161-172. | | 9 |
| 79 | General entanglement-assisted quantum error-correcting codes. , 2007, , . | | 8 |
| 80 | Constant depth fault-tolerant Clifford circuits for multi-qubit large block codes. Quantum Science and Technology, 2020, 5, 045007. | 5.8 | 8 |
| 81 | Quantum cellular automata and quantum field theory in two spatial dimensions. Physical Review A, 2020, 102, . | 2.5 | 8 |
| 82 | Quantum state diffusion and time correlation functions. Journal of Modern Optics, 1996, 43, 2289-2300. | 1.3 | 7 |
| 83 | Optimized entanglement-assisted quantum error correction. Physical Review A, 2010, 82, . | 2.5 | 7 |
| 84 | Simulations of Closed Timelike Curves. Foundations of Physics, 2017, 47, 375-391. | 1.3 | 7 |
| 85 | Fault-tolerant preparation of stabilizer states for quantum Calderbank-Shor-Steane codes by classical error-correcting codes. Physical Review A, 2017, 95, . | 2.5 | 7 |
| 86 | Efficient preparation of large-block-code ancilla states for fault-tolerant quantum computation. Physical Review A, 2018, 97, . | 2.5 | 7 |
| 87 | An example of the decoherence approach to quantum dissipative chaos. Physics Letters, Section A: General, Atomic and Solid State Physics, 1995, 206, 167-176. | 2.1 | 6 |
| 88 | Infinitesimal local operations and differential conditions for entanglement monotones. Physical Review A, 2006, 73, . | 2.5 | 6 |
| 89 | Coherent communication with linear optics. Physical Review A, 2008, 77, . | 2.5 | 6 |
| 90 | Non-Markovianity of the post-Markovian master equation. Physical Review A, 2018, 98, . | 2.5 | 6 |

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| 91 | Quantum steganography over noiseless channels: Achievability and bounds. Physical Review A, 2020, 101, . | 2.5 | 6 |
| 92 | Performance and error analysis of Knill's postselection scheme in a two-dimensional architecture. Quantum Information and Computation, 2014, 14, 807-822. | 0.3 | 6 |
| 93 | Convolutional entanglement distillation. , 2010, , . | | 5 |
| 94 | Family of finite geometry low-density parity-check codes for quantum key expansion. Physical Review A, 2013, 87, . | 2.5 | 5 |
| 95 | Protecting quantum information with entanglement and noisy optical modes. Quantum Information Processing, 2009, 8, 401-413. | 2.2 | 4 |
| 96 | Continuous decomposition of quantum measurements via qubit-probe feedback. Physical Review A, 2014, 90, . | 2.5 | 4 |
| 97 | Quantum steganography over noisy channels: Achievability and bounds. Physical Review A, 2019, 100, . | 2.5 | 4 |
| 98 | Interference in dielectrics and pseudo-measurements. Journal of Modern Optics, 1998, 45, 777-783. | 1.3 | 3 |
| 99 | Introduction to decoherence and noise in open quantum systems. , 0, , 3-45. | | 3 |
| 100 | Continuous decomposition of quantum measurements via Hamiltonian feedback. Physical Review A, 2015, 92, . | 2.5 | 3 |
| 101 | Decoherence by coupling to internal vibrational modes. Physical Review A, 2016, 94, . | 2.5 | 3 |
| 102 | Qubit positive-operator-valued measurements by destructive weak measurements. Physical Review A, 2019, 99, . | 2.5 | 3 |
| 103 | Quantum field theory from a quantum cellular automaton in one spatial dimension and a no-go theorem in higher dimensions. Physical Review A, 2020, 102, . | 2.5 | 3 |
| 104 | Fermionic and bosonic quantum field theories from quantum cellular automata in three spatial dimensions. Physical Review A, 2021, 103, . | 2.5 | 3 |
| 105 | Continuous quantum error detection and suppression with pairwise local interactions. Physical Review Research, 2020, 2, . | 3.6 | 3 |
| 106 | Single-spin measurement by magnetic resonance force microscopy: effects of measurement device, thermal noise, and spin relaxation. , 2004, , . | | 2 |
| 107 | REALISTIC SIMULATIONS OF SINGLE-SPIN MEASUREMENT VIA MAGNETIC RESONANCE FORCE MICROSCOPY. International Journal of Quantum Information, 2005, 03, 1-9. | 1.1 | 2 |
| 108 | Continuous monitoring can improve indistinguishability of a single-photon source. Physical Review A, 2009, 79, . | 2.5 | 2 |

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| 109 | Codeword-stabilized quantum codes on subsystems. Physical Review A, 2012, 86, . | 2.5 | 2 |
| 110 | Entanglement-assisted quantum error-correcting codes. , 2013, , 181-200. | | 2 |
| 111 | Compatibility of state assignments and pooling of information. Physical Review A, 2015, 92, . | 2.5 | 2 |
| 112 | Violating the modified Helstrom bound with nonprojective measurements. Physical Review A, 2015, 91, . | 2.5 | 2 |
| 113 | Error correction with orbital angular momentum of multiple photons propagating in a turbulent atmosphere. Physical Review A, 2017, 95, . | 2.5 | 2 |
| 114 | Decomposing qubit positive-operator-valued measurements into continuous destructive weak measurements. Physical Review A, 2018, 98, . | 2.5 | 2 |
| 115 | Gaussian approximation and single-spin measurement in magnetic resonance force microscopy with spin noise. Physical Review A, 2010, 82, . | 2.5 | 1 |
| 116 | Suppression of effective noise in Hamiltonian simulations. Physical Review A, 2017, 96, . | 2.5 | 1 |
| 117 | Quantum state diffusion and time correlation functions. Journal of Modern Optics, 1996, 43, 2289-2300. | 1.3 | 1 |
| 118 | Disproof of a conjectured inequality arising in the theory of magnetic flux diffusion. Journal of Mathematical Physics, 1989, 30, 2947-2950. | 1.1 | 0 |
| 119 | Decoherence and Quantum Trajectories. Lecture Notes in Physics, 2004, , 239-252. | 0.7 | 0 |
| 120 | Fault tolerance for holonomic quantum computation. , 0, , 412-431. | | 0 |
| 121 | Entanglement-assisted operator codeword stabilized quantum codes. Quantum Information Processing, 2016, 15, 1921-1936. | 2.2 | 0 |
| 122 | Switchable detector array scheme to reduce the effect of single-photon detectorâ€™s deadtime in a multi-bit/photon quantum link. Optics Communications, 2019, 441, 132-137. | 2.1 | 0 |
| 123 | Quantum steganography. , 2020, , 215-258. | | 0 |
| 124 | REALISTIC SIMULATIONS OF SINGLE-SPIN MEASUREMENT VIA MAGNETIC RESONANCE FORCE MICROSCOPY. , 2005, , . | | 0 |
| 125 | Coherent Communication of Continuous Quantum Variables with Linear Optics. , 2007, , . | | 0 |
| 126 | Influence of coin symmetry on infinite hitting times in quantum walks. Physical Review A, 2022, 105, . | 2.5 | 0 |