David DiVincenzo

List of Publications by Year
in descending order

187 papers	36,360 citations	19657 61 h-index	3323 184 g-index
195 all docs	195 docs citations	195 times ranked	14645 citing authors

#	Article	IF	Citations
1	Circuit quantization with time-dependent magnetic fields for realistic geometries. Npj Quantum Information, 2022, 8, .	6.7	18
2	Transmon platform for quantum computing challenged by chaotic fluctuations. Nature Communications, 2022, 13, 2495.	12.8	25
3	Hardware-Encoding Grid States in a Nonreciprocal Superconducting Circuit. Physical Review X, 2021, 11, .	8.9	19
4	Blind oracular quantum computation. Quantum Science and Technology, 2021, 6, 045022.	5.8	3
5	Blind three-qubit exact Grover search on a nitrogen-vacancy-center platform. Physical Review A, 2021, 104, .	2.5	1
6	What is measured when a qubit measurement is performed on a multiqubit chip. Physical Review A, 2020, 102, .	2.5	1
7	Exact rotating wave approximation. Annals of Physics, 2020, 423, 168327.	2.8	26
8	Transmission lines and resonators based on quantum Hall plasmonics: Electromagnetic field, attenuation, and coupling to qubits. Physical Review B, 2019, 100, .	3.2	10
9	Canonical circuit quantization with linear nonreciprocal devices. Physical Review B, 2019, 99, .	3.2	15
10	Hamiltonian quantum computing with superconducting qubits. Quantum Science and Technology, 2019, 4, 035002.	5.8	8
11	Simple Impedance Response Formulas for the Dispersive Interaction Rates in the Effective Hamiltonians of Low Anharmonicity Superconducting Qubits. IEEE Transactions on Microwave Theory and Techniques, 2019, 67, 928-948.	4.6	21
12	Optimal gauge for the multimode Rabi model in circuit QED. Physical Review Research, 2019, 1, .	3.6	15
13	Nonreciprocal quantum Hall devices with driven edge magnetoplasmons in two-dimensional materials. Physical Review B, 2017, 95, .	3.2	12
14	Scientists and citizens: getting to quantum technologies. Ethics and Information Technology, 2017, 19, 247-251.	3.8	5
15	Inductively shunted transmon qubit with tunable transverse and longitudinal coupling. Physical Review B, 2017, 96, .	3.2	32
16	Three-qubit direct dispersive parity measurement with tunable coupling qubits. Physical Review B, 2017, 96, .	3.2	7
17	High-Kinetic-Inductance Superconducting Nanowire Resonators for Circuit QED in a Magnetic Field. Physical Review Applied, 2016, 5, .	3.8	192
18	Qubit quantum-dot sensors: Noise cancellation by coherent backaction, initial slips, and elliptical precession. Physical Review B, 2016, 93, .	3.2	6

#	Article	IF	Citations
19	Circuit design implementing longitudinal coupling: A scalable scheme for superconducting qubits. Physical Review B, 2016, 93, .	3.2	71
20	Multi-qubit joint measurements in circuit QED: stochastic master equation analysis. EPJ Quantum Technology, 2016, 3, .	6.3	9
21	Methodology for bus layout for topological quantum error correcting codes. EPJ Quantum Technology, 2016, 3, .	6.3	3
22	Validity of the single-particle description and charge noise resilience for multielectron quantum dots. Physical Review B, 2015, 91, .	3.2	15
23	Monte Carlo studies of the self-correcting properties of the Majorana quantum error correction code under braiding. Physical Review B, 2015, 92, .	3.2	20
24	Simple operation sequences to couple and interchange quantum information between spin qubits of different kinds. Physical Review B, 2015, 92, .	3.2	9
25	Majorana Braiding with Thermal Noise. Physical Review Letters, 2015, 115, 120402.	7.8	59
26	The Memory Problem of Quantum Information Processing. Proceedings of the IEEE, 2015, 103, 1417-1425.	21.3	3
27	Fault-tolerant quantum computation for singlet-triplet qubits with leakage errors. Physical Review B, 2015, 91, .	3.2	16
28	Multiport impedance quantization. Annals of Physics, 2015, 361, 605-669.	2.8	21
29	Coherent backaction of quantum dot detectors: Qubit isospin precession. Physical Review B, 2014, 89, .	3.2	7
30	Dispersive qubit measurement by interferometry with parametric amplifiers. Physical Review B, 2014, 90, .	3.2	44
31	Publisherâ€™s Note: Hall Effect Gyrators and Circulators [Phys. Rev. X4, 021019 (2014)]. Physical Review X, 2014, 4, .	8.9	2
32	Publisher's Note: Blackbox quantization of superconducting circuits using exact impedance synthesis [Phys. Rev. B 90, 134504 (2014)]. Physical Review B, 2014, 90, .	3.2	1
33	Inverted singlet-triplet qubit coded on a two-electron double quantum dot. Physical Review B, 2014, 90, .	3.2	12
34	High-Fidelity Single-Qubit Gates for Two-Electron Spin Qubits in GaAs. Physical Review Letters, 2014, 113, 150501.	7.8	42
35	Stochastic-master-equation analysis of optimized three-qubit nondemolition parity measurements. Physical Review A, 2014, 89, .	2.5	11
36	Blackbox quantization of superconducting circuits using exact impedance synthesis. Physical Review B, 2014, 90, .	3.2	42

#	Article	IF	Citations
37	Two-qubit couplings of singlet-triplet qubits mediated by one quantum state. Physical Review B, 2014, 90, .	3.2	37
38	Hall Effect Gyrators and Circulators. Physical Review X, 2014, 4, .	8.9	50
39	Self-consistent measurement and state tomography of an exchange-only spin qubit. Nature Nanotechnology, 2013, 8, 654-659.	31.5	204
40	Multi-qubit parity measurement in circuit quantum electrodynamics. New Journal of Physics, 2013, 15, 075001.	2.9	30
41	Noise analysis of qubits implemented in triple quantum dot systems in a Davies master equation approach. Physical Review B, 2013, 87, .	3.2	19
42	Noise-protected gate for six-electron double-dot qubit. Physical Review B, 2013, 88, .	3.2	14
43	Nonlinear spectroscopy of superconducting anharmonic resonators. New Journal of Physics, 2012, 14, 013051.	2.9	6
44	From Majorana fermions to topological order. Physical Review Letters, 2012, 108, 260504.	7.8	71
45	Editorial: PRXâ€™s Scope and Standards: A Case in Point. Physical Review X, 2012, 2, .	8.9	0
46	Quantum circuits for measuring Levin-Wen operators. Physical Review B, 2012, 86, .	3.2	23
47	Schriefferâ€“Wolff transformation for quantum many-body systems. Annals of Physics, 2011, 326, 2793-2826.	2.8	351
48	Quantum computing: An IBM perspective. IBM Journal of Research and Development, 2011, 55, 13:1-13:11.	3.1	45
49	Toward Control of Large-Scale Quantum Computing. Science, 2011, 334, 50-51.	12.6	4
50	A superconducting resonator designed for coupling to spin based qubits in quantum dots. Journal of Physics: Conference Series, 2010, 245, 012024.	0.4	1
51	Better than excellent. Nature Materials, 2010, 9, 468-469.	27.5	39
52	High-Coherence Hybrid Superconducting Qubit. Physical Review Letters, 2010, 105, 100502.	7.8	99
53	Superconducting Resonators as Beam Splitters for Linear-Optics Quantum Computation. Physical Review Letters, 2010, 104, 230502.	7.8	31
54	Readout for phase qubits without Josephson junctions. Applied Physics Letters, 2010, 96, .	3.3	9

#	Article	IF	Citations
55	Coherent spin manipulation in an exchange-only qubit. Physical Review B, 2010, 82, .	3.2	203
56	Exploiting Kerr cross nonlinearity in circuit quantum electrodynamics for nondemolition measurements. Physical Review B, 2010, 82, .	3.2	25
57	Quantum information storage using tunable flux qubits. Journal of Physics Condensed Matter, 2010, 22, 053201.	1.8	13
58	Fault-tolerant architectures for superconducting qubits. Physica Scripta, 2009, T137, 014020.	2.5	85
59	Decoherence of floating qubits due to capacitive coupling. New Journal of Physics, 2009, 11, 033030.	2.9	12
60	Fault-tolerant computing with biased-noise superconducting qubits: a case study. New Journal of Physics, 2009, 11, 013061.	2.9	63
61	Conventional and Unconventional Quantum Physics. International Journal of Theoretical Physics, 2008, 47, 2130-2132.	1.2	0
62	Polynomial-Time Algorithm for Simulation of Weakly Interacting Quantum Spin Systems. Communications in Mathematical Physics, 2008, 284, 481-507.	2.2	5
63	Efficient one- and two-qubit pulsed gates for an oscillator-stabilized Josephson qubit. New Journal of Physics, 2008, 10, 033027.	2.9	16
64	Quantum Simulation of Many-Body Hamiltonians Using Perturbation Theory with Bounded-Strength Interactions. Physical Review Letters, 2008, 101, 070503.	7.8	60
65	Effective Fault-Tolerant Quantum Computation with Slow Measurements. Physical Review Letters, 2007, 98, 020501.	7.8	93
66	Model for1/fFlux Noise in SQUIDs and Qubits. Physical Review Letters, 2007, 98, 267003.	7.8	165
67	Experimental Demonstration of an Oscillator Stabilized Josephson Flux Qubit. Physical Review Letters, 2006, 96, 127001.	7.8	44
68	Decoherence rates in complex Josephson qubit circuits. Physical Review B, 2006, 74, .	3.2	23
69	Fermionic Linear Optics Revisited. Foundations of Physics, 2005, 35, 1967-1984.	1.3	25
70	Low-bandwidth control scheme for an oscillator-stabilized Josephson qubit. Physical Review B, 2005, 72, .	3.2	18
71	Local fault-tolerant quantum computation. Physical Review A, 2005, 72, .	2.5	78
72	Asymmetry and decoherence in a double-layer persistent-current qubit. Physical Review B, 2005, 71, .	3.2	31

#	Article	IF	Citations
73	Detecting Entanglement Using a Double-Quantum-Dot Turnstile. Physical Review Letters, 2005, 95, 160402.	7.8	40
74	Dephasing of a Superconducting Qubit Induced by Photon Noise. Physical Review Letters, 2005, 95, 257002.	7.8	241
75	Rigorous Born approximation and beyond for the spin-boson model. Physical Review B, 2005, 71, .	3.2	99
76	PHYSICS: Double Quantum Dot as a Quantum Bit. Science, 2005, 309, 2173-2174.	12.6	66
77	Locking Classical Correlations in Quantum States. Physical Review Letters, 2004, 92, 067902.	7.8	189
78	Charge Detection Enables Free-Electron Quantum Computation. Physical Review Letters, 2004, 93, 020501.	7.8	156
79	Multilevel quantum description of decoherence in superconducting qubits. Physical Review B, 2004, 69, .	3.2	135
80	Security trade-offs in ancilla-free quantum bit commitment in the presence of superselection rules. New Journal of Physics, 2004, 6, 80-80.	2.9	4
81	Hiding Quantum Data. Foundations of Physics, 2003, 33, 1629-1647.	1.3	30
82	Unextendible Product Bases, Uncompletable Product Bases and Bound Entanglement. Communications in Mathematical Physics, 2003, 238, 379-410.	2.2	263
83	Spin-orbit coupling and time-reversal symmetry in quantum gates. Physical Review B, 2003, 68, .	3.2	62
84	When a little can mean a lot. Physics World, 2003, 16, 26-27.	0.0	1
85	Classical simulation of noninteracting-fermion quantum circuits. Physical Review A, 2002, 65, .	2.5	197
86	Spins for Quantum Information Processing. Nanoscience and Technology, 2002, , 221-227.	1.5	2
87	The entanglement of purification. Journal of Mathematical Physics, 2002, 43, 4286-4298.	1.1	190
88	Remote State Preparation. Physical Review Letters, 2001, 87, 077902.	7.8	699
89	Hiding Bits in Bell States. Physical Review Letters, 2001, 86, 5807-5810.	7.8	192
90	Anisotropic Spin Exchange in Pulsed Quantum Gates. Physical Review Letters, 2001, 87, 207901.	7.8	80

#	Article	IF	Citations
91	The Physical Implementation of Quantum Computation. Fortschritte Der Physik, 2000, 48, 771-783.	4.4	1,412
92	Quantum information and computation. Nature, 2000, 404, 247-255.	27.8	2,142
93	Universal quantum computation with the exchange interaction. Nature, 2000, 408, 339-342.	27.8	774
94	Electron Spins in Quantum Dots as Quantum Bits. Journal of Nanoparticle Research, 2000, 2, 401-411.	1.9	24
95	Problem of equilibration and the computation of correlation functions on a quantum computer. Physical Review A, 2000, 61, .	2.5	125
96	Evidence for bound entangled states with negative partial transpose. Physical Review A, 2000, 61, .	2.5	171
97	Optimal decompositions of barely separable states. Journal of Modern Optics, 2000, 47, 377-385.	1.3	21
98	Electron-spin-resonance transistors for quantum computing in silicon-germanium heterostructures. Physical Review A, 2000, 62, .	2.5	733
99	The Physical Implementation of Quantum Computation. , 2000, 48, 771.		133
100	Thoughts on quantum computation. , 1999, , 482-491.		0
101	Simulating quantum operations with mixed environments. Physical Review A, 1999, 60, 881-885.	2.5	28
102	Quantum computing and single-qubit measurements using the spin-filter effect (invited). Journal of Applied Physics, 1999, 85, 4785-4787.	2.5	69
103	Physical optimization of quantum error correction circuits. Physical Review B, 1999, 60, 11404-11416.	3.2	88
104	Coupled quantum dots as quantum gates. Physical Review B, 1999, 59, 2070-2078.	3.2	1,306
105	Quantum computers and quantum coherence. Journal of Magnetism and Magnetic Materials, 1999, 200, 202-218.	2.3	131
106	Unextendible Product Bases and Bound Entanglement. Physical Review Letters, 1999, 82, 5385-5388.	7.8	569
107	Entanglement of Assistance. Lecture Notes in Computer Science, 1999, , 247-257.	1.3	52
108	Quantum nonlocality without entanglement. Physical Review A, 1999, 59, 1070-1091.	2.5	829

#	Article	IF	Citations
109	Quantum Information Processing Using Quantum Dot Spins and Cavity QED. Physical Review Letters, 1999, 83, 4204-4207.	7.8	1,777
110	Decoherence and Recoherence in Quantum Computation. , 1999, , 7-12.		0
111	Quantum computation with quantum dots. Physical Review A, 1998, 57, 120-126.	2.5	5,712
112	Quantum gates and circuits. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 1998, 454, 261-276.	2.1	95
113	Real and realistic quantum computers. Nature, 1998, 393, 113-114.	27.8	53
114	Quantum-channel capacity of very noisy channels. Physical Review A, 1998, 57, 830-839.	2.5	216
115	Optimal universal and state-dependent quantum cloning. Physical Review A, 1998, 57, 2368-2378.	2.5	468
116	Decoherence: the obstacle to quantum computation. Physics World, 1998, 11, 53-58.	0.0	31
117	Quantum code words contradict local realism. Physical Review A, 1997, 55, 4089-4092.	2.5	59
118	Capacities of Quantum Erasure Channels. Physical Review Letters, 1997, 78, 3217-3220.	7.8	297
119	Quantum computation and spin physics (invited). Journal of Applied Physics, 1997, 81, 4602-4607.	2.5	23
120	Topics in Aperiodicity: Penrose Tiling Growth and Quantum Circuits. , 1997, , 127-140.		1
121	Topics in Quantum Computers. , 1997, , 657-677.		42
122	Mixed-state entanglement and quantum error correction. Physical Review A, 1996, 54, 3824-3851.	2.5	4,032
123	Quantum computers: the first gate opens. Physics World, 1996, 9, 27-27.	0.0	1
124	Fault-Tolerant Error Correction with Efficient Quantum Codes. Physical Review Letters, 1996, 77, 3260-3263.	7.8	256
125	Schumacherâ€™s quantum data compression as a quantum computation. Physical Review A, 1996, 54, 2636-2650.	2.5	34
126	Five two-bit quantum gates are sufficient to implement the quantum Fredkin gate. Physical Review A, 1996, 53, 2855-2856.	2.5	206

#	Article	IF	Citations
127	Response: Does Macroscopic Quantum Coherence Occur in Ferritin?. Science, 1996, 272, 425-426.	12.6	21
128	Towards an engineering era?. Nature, 1995, 377, 389-390.	27.8	34
129	Elementary gates for quantum computation. Physical Review A, 1995, 52, 3457-3467.	2.5	2,958
130	Quantum Computation. Science, 1995, 270, 255-261.	12.6	1,488
131	Complex Dynamics of Mesoscopic Magnets. Physics Today, 1995, 48, 43-48.	0.3	265
132	Two-bit gates are universal for quantum computation. Physical Review A, 1995, 51, 1015-1022.	2.5	818
133	Quantum Computing and Spin Physics. , 1995, , 495-496.		1
134	Quantum tunneling and dissipation in nanometer-scale magnets. Physica B: Condensed Matter, 1993, 189, 189-203.	2.7	38
135	An atomic model of Alî—¸Cuî—¸Fe, and its comparison with high-resolution electron microscope images. Journal of Non-Crystalline Solids, 1993, 153-154, 145-149.	3.1	3
136	2-D Physics. Science, 1993, 259, 390-390.	12.6	1
137	Fluctuating local thermoelectric heat in dirty metals. Physical Review B, 1993, 48, 1404-1408.	3.2	5
138	Quantum interference in small magnetic particles. Physical Review B, 1993, 48, 10548-10551.	3.2	39
139	Comment on â€˜â€˜Have resonance experiments seen macroscopic quantum coherence in magnetic particles? The case from power absorptionâ€™â€™. Physical Review Letters, 1993, 71, 4276-4276.	7.8	24
140	Awschalomet al. reply. Physical Review Letters, 1993, 70, 2199-2199.	7.8	15
141	Macroscopic Quantum Tunneling in Magnetic Proteins. Physical Review Letters, 1993, 71, 4279-4279.	7.8	9
142	High resolution electron microscopy of Alâ€“Cuâ€“Fe quasicrystals: Atomic structure and modeling. Journal of Materials Research, 1993, 8, 24-37.	2.6	10
143	Macroscopic quantum tunneling in magnetic proteins. Physical Review Letters, 1992, 68, 3092-3095.	7.8	273
144	Suppression of tunneling by interference in half-integer-spin particles. Physical Review Letters, 1992, 69, 3232-3235.	7.8	286

#	Article	IF	Citations
145	Macroscopic Quantum Effects in Nanometer-Scale Magnets. Science, 1992, 258, 414-421.	12.6	241
146	Classical and quantum ballistic-transport anomalies in microjunctions. Physical Review B, 1991, 44, 10637-10675.	3.2	279
147	Comment on â€˜â€˜Forbidden nature of multipolar contributions to second-harmonic generation in isotropic fluidsâ€™â€™. Physical Review A, 1990, 42, 6249-6251.	2.5	19
148	Super-roughening: A new phase transition on the surfaces of crystals with quenched bulk disorder. Physical Review B, 1990, 41, 632-650.	3.2	107
149	Physical Models of Perfect Quasicrystal Growth. NATO ASI Series Series B: Physics, 1990, , 133-139.	0.2	2
150	Solid Structures: Introduction to Quasicrystals.. Science, 1989, 246, 1330-1330.	12.6	1
151	Perfect quasicrystals?. Nature, 1989, 340, 504-505.	27.8	5
152	Voltage fluctuations in multilead devices. Physical Review B, 1988, 38, 2995-3005.	3.2	61
153	Growing Perfect Quasicrystals. Physical Review Letters, 1988, 60, 2653-2656.	7.8	105
154	Voltage fluctuations in mesoscopic metal rings and wires. Physical Review B, 1988, 38, 3006-3015.	3.2	37
155	Nonlinear optics as a probe of chiral ordering in amorphous semiconductors. Physical Review B, 1988, 37, 1245-1261.	3.2	14
156	Resistance fluctuations in multiprobe microstructures: Length dependence and nonlocality. Physical Review B, 1988, 37, 6521-6524.	3.2	86
157	Structure of asymmetric small-angle grain boundaries. Physical Review B, 1988, 37, 5242-5251.	3.2	5
158	Dispersive corrections to continuum elastic theory in cubic crystals. Physical Review B, 1986, 34, 5450-5465.	3.2	50
159	Systematics of Disorder in Quasiperiodic Material. Physical Review Letters, 1986, 57, 1444-1447.	7.8	154
160	Electronic and Structural Properties of a Twin Boundary in Si. Physical Review Letters, 1986, 56, 1925-1928.	7.8	113
161	PERFECT AND IMPERFECT ICOSAHEDRAL SOLIDS AND THE PROJECTION METHOD. Journal De Physique Colloque, 1986, 47, C3-237-C3-243.	0.2	9
162	STRUCTURE STUDIES OF ALUMINUM BASED QUASICRYSTALS. Journal De Physique Colloque, 1986, 47, C3-379-C3-387.	0.2	5

#	Article	IF	Citations
163	Phonons on reconstructed silicon surfaces. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1985, 3, 1068.	1.6	13
164	Possible existence of Lyddane-Sachs-Teller splitting in graphite intercalation compounds. Physical Review B, 1985, 31, 1136-1138.	3.2	2
165	Polytope model and the electronic and structural properties of amorphous semiconductors. Physical Review B, 1985, 32, 3974-4000.	3.2	60
166	Cohesion and structure in stage-1 graphite intercalation compounds. Physical Review B, 1985, 32, 2538-2553.	3.2	153
167	ELASTIC ENERGY OF FACETED LOW ANGLE TILT BOUNDARIES. Journal De Physique Colloque, 1985, 46, C4-243-C4-248.	0.2	3
168	A Structural Basis for Electronic Coherence in Amorphous Si and Ge. , 1985, , 803-806.		0
169	Theoretical phase diagram for Li-intercalated graphite. Physical Review B, 1984, 30, 7092-7096.	3.2	26
170	Long-range structural and electronic coherence in amorphous semiconductors. Physical Review B, 1984, 29, 5934-5936.	3.2	25
171	Structural Energies in Stage-One Graphite Intercalation Compounds. Physical Review Letters, 1984, 53, 52-55.	7.8	28
172	(P,T) phase boundary in Li-intercalated graphite: Theory and experiment. Physical Review B, 1984, 29, 1115-1117.	3.2	49
173	Structural Energies in Stage-One Graphite Intercalation Compounds. Physical Review Letters, 1984, 53, 742-742.	7.8	3
174	Self-consistent effective-mass theory for intralayer screening in graphite intercalation compounds. Physical Review B, 1984, 29, 1685-1694.	3.2	611
175	Finite-temperature conductance in one dimension. Physical Review B, 1984, 30, 6877-6888.	3.2	29
176	TDependence of the Conductance in Quasi One-Dimensional Systems. Physical Review Letters, 1984, 52, 1641-1644.	7.8	58
177	Energy-band structure and charge distribution for BaC6. International Journal of Quantum Chemistry, 1983, 23, 1223-1230.	2.0	22
178	Fluctuations in the Temperature Dependence of the Resistance of a One-Dimensional System. Physical Review Letters, 1983, 50, 2102-2105.	7.8	13
179	Effect of In-Plane Density on the Structural and Elastic Properties of Graphite Intercalation Compounds. Physical Review Letters, 1983, 50, 182-185.	7.8	80
180	Localized states and the electronic properties of a hydrogenated defect in amorphous silicon. Physical Review B, 1983, 28, 3246-3257.	3.2	29

#	Article	IF	Citations
181	Density-functional study of interplanar binding in graphite. Physical Review B, 1983, 27, 2458-2469.	3.2	44
182	Valence and core electronic excitations in LiC6. Physical Review B, 1983, 28, 6681-6686.	3.2	30
183	Theoretical investigation of the electronic properties of potassium graphite. Physical Review B, 1982, 25, 4110-4125.	3.2	94
184	Electrostatic effects in the cohesion of an intercalant lattice. Physical Review B, 1982, 25, 7822-7825.	3.2	13
185	Dielectric function and critical-point transitions in boron-doped graphite. Physical Review B, 1982, 26, 4674-4679.	3.2	6
186	Density Functional Theory of Interplane Cohesion in Graphite and Graphite Intercalation Compounds. Materials Research Society Symposia Proceedings, 1982, 20, 123.	0.1	1
187	THE ELECTRONIC STRUCTURE OF A MODEL DEFECT IN HYDROGENATED AMORPHOUS SILICON. Journal De Physique Colloque, 1981, 42, C4-137-C4-140.	0.2	2