

Ian P Mcculloch

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/6694369/publications.pdf>

Version: 2024-02-01

109
papers

6,173
citations

71102

41
h-index

69250

77
g-index

110
all docs

110
docs citations

110
times ranked

3775
citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamical phase transitions in the two-dimensional transverse-field Ising model. Physical Review Research, 2022, 4, .	3.6	24
2	Publisher's Note: Low-energy effective theories of the two-thirds filled Hubbard model on the triangular necklace lattice [Phys. Rev. B 90 , 035120 (2014)]. Physical Review B, 2020, 101, .	3.2	0
3	What is a Quantum Shock Wave?. Physical Review Letters, 2020, 125, 180401.	7.8	15
4	Symmetry-protected trivial phases and quantum phase transitions in an anisotropic antiferromagnetic spin-1 biquadratic model. Physical Review B, 2020, 102, .	3.2	3
5	Hybrid infinite time-evolving block decimation algorithm for long-range multidimensional quantum many-body systems. Physical Review B, 2020, 102, .	3.2	14
6	Robustness of gauge-invariant dynamics against defects in ultracold-atom gauge theories. Physical Review Research, 2020, 2, .	3.6	12
7	Dynamics of multiple atoms in one-dimensional fields. Physical Review A, 2019, 99, .	2.5	7
8	Cumulants and scaling functions of infinite matrix product states. Physical Review B, 2019, 100, .	3.2	2
9	Phase diagram of the quantum Ising model with long-range interactions on an infinite-cylinder triangular lattice. Physical Review B, 2018, 97, .	3.2	15
10	Publisher's Note: Precursor of the Laughlin state of hard-core bosons on a two-leg ladder [Phys. Rev. B 96, 014524 (2017)]. Physical Review B, 2018, 98, .	3.2	0
11	Topological phase transition and the effect of Hubbard interactions on the one-dimensional topological Kondo insulator. Physical Review B, 2018, 97, .	3.2	5
12	Topological nature of spinons and holons: Elementary excitations from matrix product states with conserved symmetries. Physical Review B, 2018, 97, .	3.2	24
13	Symmetry between repulsive and attractive interactions in driven-dissipative Bose-Hubbard systems. Scientific Reports, 2018, 8, 3698.	3.3	1
14	Efficient perturbation theory to improve the density matrix renormalization group. Physical Review B, 2017, 95, .	3.2	2
15	Generic construction of efficient matrix product operators. Physical Review B, 2017, 95, .	3.2	73
16	Prethermalization and persistent order in the absence of a thermal phase transition. Physical Review B, 2017, 95, .	3.2	75
17	Precursor of the Laughlin state of hard-core bosons on a two-leg ladder. Physical Review B, 2017, 96, .	3.2	44
18	Detection and characterization of symmetry-broken long-range orders in the spin- $\frac{1}{2}$ triangular Heisenberg model. Physical Review B, 2017, 96, .	3.2	176

#	ARTICLE	IF	CITATIONS
19	Symmetry-broken states in a system of interacting bosons on a two-leg ladder with a uniform Abelian gauge field. Physical Review A, 2016, 94, .	2.5	65
20	Symmetry fractionalization in the topological phase of the spin- $\frac{1}{2}$ Heisenberg model. Physical Review B, 2016, 94, .	3.2	46
21	Optical conductivity of the Hubbard chain away from half filling. Physical Review B, 2016, 93, .	3.2	8
22	Haldane insulator protected by reflection symmetry in the doped Hubbard model on the three-legged ladder. Physical Review B, 2016, 94, .	3.2	14
23	Fast convergence of imaginary time evolution tensor network algorithms by recycling the environment. Physical Review B, 2015, 91, .	3.2	29
24	Vortex and Meissner phases of strongly interacting bosons on a two-leg ladder. Physical Review B, 2015, 91, .	3.2	117
25	Strictly single-site DMRG algorithm with subspace expansion. Physical Review B, 2015, 91, .	3.2	98
26	Spontaneous Increase of Magnetic Flux and Chiral-Current Reversal in Bosonic Ladders: Swimming against the Tide. Physical Review Letters, 2015, 115, 190402.	7.8	76
27	Chebyshev matrix product state approach for time evolution. Physical Review B, 2015, 92, .	3.2	22
28	Nonthermal Melting of Néel Order in the Hubbard Model. Physical Review X, 2015, 5, .	8.9	25
29	Strongly interacting bosons on a three-leg ladder in the presence of a homogeneous flux. New Journal of Physics, 2015, 17, 092001.	2.9	30
30	Imaginary-Time Matrix Product State Impurity Solver for Dynamical Mean-Field Theory. Physical Review X, 2015, 5, .	8.9	45
31	Conformal data from finite entanglement scaling. Physical Review B, 2015, 91, .	3.2	52
32	Spectral functions and time evolution from the Chebyshev recursion. Physical Review B, 2015, 91, .	3.2	44
33	Phase diagram of the spin- $\frac{1}{2}$ Heisenberg model on a three-leg cylinder. Physical Review B, 2015, 91, .	3.2	17
34	Quantum Critical Spin-2 Chain with Emergent SU(3) Symmetry. Physical Review Letters, 2015, 114, 145301.	7.8	20
35	Phase diagram of the spin- $\frac{1}{2}$ Heisenberg model on the Kagome lattice. Physical Review B, 2015, 91, .	3.2	18
36	Haldane Phase in the Hubbard Model at $2/3$ -Filling for the Organic Molecular Compound Mo ₃ S ₇ (dmit) ₃ . Physical Review Letters, 2014, 113, 267204.	7.8	17

#	ARTICLE	IF	CITATIONS
37	Miscible-immiscible quantum phase transition in coupled two-component Bose-Einstein condensates in one-dimensional optical lattices. <i>Physical Review A</i> , 2014, 90, .	2.5	15
38	Domain-wall melting in ultracold-boson systems with hole and spin-flip defects. <i>Physical Review A</i> , 2014, 89, .	2.5	13
39	Chebyshev matrix product state impurity solver for dynamical mean-field theory. <i>Physical Review B</i> , 2014, 90, .	3.2	65
40	Comment on "Phase separation in a two-species Bose mixture". <i>Physical Review A</i> , 2014, 89, .	2.5	9
41	Solving nonequilibrium dynamical mean-field theory using matrix product states. <i>Physical Review B</i> , 2014, 90, .	3.2	91
42	Low-energy effective theories of the two-thirds filled Hubbard model on the triangular necklace lattice. <i>Physical Review B</i> , 2014, 90, .	3.2	11
43	Observation of a Disordered Bosonic Insulator from Weak to Strong Interactions. <i>Physical Review Letters</i> , 2014, 113, 095301.	7.8	93
44	Quantum magnetism of bosons with synthetic gauge fields in one-dimensional optical lattices: A density-matrix renormalization-group study. <i>Physical Review A</i> , 2014, 89, .	2.5	45
45	Deterministic Many-Resonator Entanglement of Nearly Arbitrary Microwave States via Attractive Bose-Hubbard Simulation. <i>Physical Review X</i> , 2013, 3, .	8.9	12
46	Expansion Dynamics of Interacting Bosons in Homogeneous Lattices in One and Two Dimensions. <i>Physical Review Letters</i> , 2013, 110, 205301.	7.8	236
47	Entanglement entropy scaling of the XXZ chain. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2013, 2013, P10007.	2.3	8
48	Sudden expansion of Mott insulators in one dimension. <i>Physical Review B</i> , 2013, 88, .	3.2	58
49	Double zigzag spin chain in a strong magnetic field close to saturation. <i>Physical Review B</i> , 2013, 88, .	3.2	13
50	Dynamical windows for real-time evolution with matrix product states. <i>Physical Review B</i> , 2013, 88, .	3.2	10
51	Entanglement spectroscopy of SU(2)-broken phases in two dimensions. <i>Physical Review B</i> , 2013, 88, .	3.2	37
52	Creation and dynamics of remote spin-entangled pairs in the expansion of strongly correlated fermions in an optical lattice. <i>New Journal of Physics</i> , 2013, 15, 053043.	2.9	21
53	Expansion after a geometric quench of an atomic polarized attractive Fermi gas in one dimension. <i>Journal of Physics: Conference Series</i> , 2013, 414, 012033.	0.4	3
54	Lanczos algorithm with matrix product states for dynamical correlation functions. <i>Physical Review B</i> , 2012, 85, .	3.2	42

#	ARTICLE	IF	CITATIONS
55	Expansion velocity of a one-dimensional, two-component Fermi gas during the sudden expansion in the ballistic regime. Physical Review A, 2012, 85, .	2.5	31
56	Stroboscopic observation of quantum many-body dynamics. Physical Review A, 2012, 85, .	2.5	11
57	Dimerized and trimerized phases for spin-2 bosons in a one-dimensional optical lattice. Physical Review A, 2012, 85, .	2.5	14
58	Long-Time Behavior of the Momentum Distribution During the Sudden Expansion of a Spin-Imbalanced Fermi Gas in One Dimension. Physical Review Letters, 2012, 109, 110602.	7.8	53
59	Infinite boundary conditions for matrix product state calculations. Physical Review B, 2012, 86, .	3.2	63
60	Fractional excitations in cold atomic gases. Physical Review A, 2012, 86, .	2.5	6
61	Ground-state properties of antiferromagnetic anisotropic $S=1$ Heisenberg spin chains. Physical Review B, 2012, 85, .	3.2	12
62	Nature of the Spin-Liquid Ground State of the $S=1$ Kagome Lattice. Physical Review Letters, 2012, 109, 067201.	7.8	487
63	Probing the relaxation towards equilibrium in an isolated strongly correlated one-dimensional Bose gas. Nature Physics, 2012, 8, 325-330.	16.7	762
64	Real-time energy dynamics in spin-1 Heisenberg chains. Physical Review B, 2011, 84, .	3.2	14
65	Statistically induced phase transitions and anyons in 1D optical lattices. Nature Communications, 2011, 2, 361.	12.8	143
66	Landau-Zener Sweeps and Sudden Quenches in Coupled Bose-Hubbard Chains. Physical Review Letters, 2011, 106, 155302.	7.8	30
67	Quantum criticality in the $SO(5)$ bilinear-biquadratic Heisenberg chain. Physical Review B, 2011, 83, .	3.2	20
68	Coherent Spin-Current Oscillations in Transverse Magnetic Fields. Physical Review Letters, 2011, 106, 160602.	7.8	10
69	Coulomb interaction effects and electron spin relaxation in the one-dimensional Kondo lattice model. Physical Review B, 2011, 83, .	3.2	6
70	Chebyshev matrix product state approach for spectral functions. Physical Review B, 2011, 83, .	3.2	96
71	Valence-bond entanglement entropy of frustrated spin chains. Physical Review B, 2010, 82, .	3.2	17
72	Quantum Heisenberg antiferromagnetic chains with exchange and single-ion anisotropies. Journal of Physics: Conference Series, 2010, 200, 022046.	0.4	7

#	ARTICLE	IF	CITATIONS
73	Boundary quantum critical phenomena with entanglement renormalization. Physical Review B, 2010, 82, .	3.2	30
74	Publisher's Note: Quasiparticles in the Kondo lattice model at partial fillings of the conduction band using the density matrix renormalization group [Phys. Rev. B 79 , 235107 (2009)]. Physical Review B, 2009, 79, .	3.2	0
75	Quasiparticles in the Kondo lattice model at partial fillings of the conduction band using the density matrix renormalization group. Physical Review B, 2009, 79, .	3.2	18
76	Spin-one Heisenberg antiferromagnetic chain with exchange and single-ion anisotropies. Physical Review B, 2009, 79, .	3.2	24
77	Magnetism, coherent many-particle dynamics, and relaxation with ultracold bosons in optical superlattices. Physical Review A, 2009, 79, .	2.5	26
78	Phase diagram of an anisotropic frustrated ferromagnetic spin- $\frac{1}{2}$ chain in a magnetic field: A density matrix renormalization group study. Physical Review B, 2009, 80, .	3.2	69
79	Kondo screening cloud in the single-impurity Anderson model: A density matrix renormalization group study. Physical Review B, 2009, 80, .	3.2	58
80	Real-time study of diffusive and ballistic transport in spin- $\frac{1}{2}$ chains using the adaptive time-dependent density matrix renormalization group method. Physical Review B, 2009, 79, .	3.2	104
81	Field-controlled spin current in frustrated spin chains. Condensed Matter Physics, 2009, 12, 429-434.	0.7	6
82	Classical and quantum anisotropic Heisenberg antiferromagnets. Condensed Matter Physics, 2009, 12, 547-558.	0.7	6
83	Quasiperiodic Bose-Hubbard model and localization in one-dimensional cold atomic gases. Physical Review A, 2008, 78, .	2.5	164
84	Excitations in two-component Bose gases. New Journal of Physics, 2008, 10, 045025.	2.9	23
85	Exploring Local Quantum Many-Body Relaxation by Atoms in Optical Superlattices. Physical Review Letters, 2008, 101, 063001.	7.8	114
86	Spin-charge separation in two-component Bose gases. Physical Review A, 2008, 77, .	2.5	75
87	Probing local relaxation of cold atoms in optical superlattices. Physical Review A, 2008, 78, .	2.5	88
88	Vector chiral order in frustrated spin chains. Physical Review B, 2008, 77, .	3.2	49
89	Systematic errors in Gaussian quantum Monte Carlo and a systematic study of the symmetry projection method. Physical Review B, 2008, 77, .	3.2	15
90	Edge singularities in high-energy spectra of gapped one-dimensional magnets in strong magnetic fields. Physical Review B, 2007, 75, .	3.2	14

#	ARTICLE	IF	CITATIONS
91	From density-matrix renormalization group to matrix product states. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, P10014-P10014.	2.3	310
92	The ALPS project release 1.3: Open-source software for strongly correlated systems. Journal of Magnetism and Magnetic Materials, 2007, 310, 1187-1193.	2.3	623
93	Spinful bosons in an optical lattice. Physical Review A, 2006, 74, .	2.5	25
94	Modulation spectroscopy with ultracold fermions in an optical lattice. Physical Review A, 2006, 74, .	2.5	63
95	The ALPS Project: Open Source Software for Strongly Correlated Systems. Journal of the Physical Society of Japan, 2005, 74, 30-35.	1.6	103
96	Geometry and topological order in the Luttinger liquid state. Europhysics Letters, 2004, 65, 512-518.	2.0	12
97	Magnetism in the dilute Kondo lattice model. Physical Review B, 2004, 69, .	3.2	5
98	NMR Evidence for a Two-Step Phase Separation in $\text{Nd}_{1.85}\text{Ce}_{0.15}\text{CuO}_4$. Physical Review Letters, 2004, 93, 037002.	7.8	7
99	Geometry and the hidden order of Luttinger liquids: The universality of squeezed space. Physical Review B, 2004, 70, .	3.2	55
100	Comment on "Equivalence of the variational matrix product method and the density matrix renormalization group applied to spin chains" by J. Dukelsky et al.. Europhysics Letters, 2003, 61, 138-139.	2.0	0
101	Localized spin ordering in Kondo lattice models. Physical Review B, 2002, 65, .	3.2	55
102	Ferromagnetic phases in the Kondo lattice model. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2002, 82, 1211-1224.	0.6	9
103	The non-Abelian density matrix renormalization group algorithm. Europhysics Letters, 2002, 57, 852-858.	2.0	196
104	Ferromagnetism in Kondo lattice models. Philosophical Magazine Letters, 2001, 81, 869-875.	1.2	21
105	Total spin in the density matrix renormalization group algorithm. Philosophical Magazine Letters, 2001, 81, 447-453.	1.2	26
106	Density matrix renormalization group algorithm and the two-dimensional t-J model. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 2001, 81, 1603-1613.	0.6	0
107	Density Matrix Renormalisation Group Method and Symmetries of the Hamiltonian. Australian Journal of Physics, 2000, 53, 597.	0.6	35
108	Phase diagram of the 1D Kondo lattice model. Journal of Low Temperature Physics, 1999, 117, 323-328.	1.4	19

#	ARTICLE	IF	CITATIONS
109	Strong coupling regime in the two-dimensional Hubbard model. Journal of Magnetism and Magnetic Materials, 1998, 184, 316-318.	2.3	0