Matthias Troyer

List of Publications by Year in Descending Order

301 papers	22,067 citations	76 h-index	142 g-index
322 ext. papers	25,980 ext. citations	5.5 avg, IF	7.24 L-index

#	Paper	IF	Citations
301	Embedding Overhead Scaling of Optimization Problems in Quantum Annealing. *PRX Quantum*, **2021**, 2,	6.1	2
300	Distributed quantum computing with QMPI **2021**,		2
299	Band Structure Extraction at Hybrid Narrow-Gap Semiconductor-Metal Interfaces. *Advanced Science* , **2021**, 8, 2003087	13.6	6
298	Toward Quantum Computing for High-Energy Excited States in Molecular Systems: Quantum Phase Estimations of Core-Level States. *Journal of Chemical Theory and Computation*, **2021**, 17, 201-210	6.4	4
297	Quantum computing enhanced computational catalysis. *Physical Review Research*, **2021**, 3,	3.9	17
296	Automated design of pulse sequences for magnetic resonance fingerprinting using physics-inspired optimization. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	4
295	Assertion-based optimization of Quantum programs **2020**, 4, 1-20		2
294	Coral Reef Monitoring by Scuba Divers Using Underwater Photogrammetry and Geodetic Surveying. *Remote Sensing*, **2020**, 12, 3036	5	5
293	Quantum programming languages. *Nature Reviews Physics*, **2020**, 2, 709-722	23.6	13
292	Uncertain fate of fair sampling in quantum annealing. *Physical Review A*, **2019**, 100,	2.6	8
291	Spin-Orbit Protection of Induced Superconductivity in Majorana Nanowires. *Physical Review Letters*, **2019**, 122, 187702	7.4	30
290	Advantages of a modular high-level quantum programming framework. *Microprocessors and Microsystems*, **2019**, 66, 81-89	2.4	1
289	Downfolding of many-body Hamiltonians using active-space models: Extension of the sub-system embedding sub-algebras approach to unitary coupled cluster formalisms. *Journal of Chemical Physics*, **2019**, 151, 014107	3.9	27
288	High resolution topobathymetry using a Pleiades-1 triplet: Moorea Island in 3D. *Remote Sensing of Environment*, **2018**, 208, 109-119	13.2	18
287	Neural-network quantum state tomography. *Nature Physics*, **2018**, 14, 447-450	16.2	297
286	Q# **2018**,		89
285	A software methodology for compiling quantum programs. *Quantum Science and Technology*, **2018**, 3, 020501	5.5	58

284	Multiferroic Magnetic Spirals Induced by Random Magnetic Exchanges. *Physical Review X*, **2018**, 8,	9.1	6
283	WannierTools: An open-source software package for novel topological materials. *Computer Physics Communications*, **2018**, 224, 405-416	4.2	761
282	Very high resolution mapping of coral reef state using airborne bathymetric LiDAR surface-intensity and drone imagery. *International Journal of Remote Sensing*, **2018**, 39, 5676-5688	3.1	34
281	Density functional theory versus quantum Monte Carlo simulations of Fermi gases in the optical-lattice arena. *European Physical Journal B*, **2018**, 91, 1	1.2	1
280	Quantum algorithms for electronic structure calculations: Particle-hole Hamiltonian and optimized wave-function expansions. *Physical Review A*, **2018**, 98,	2.6	108
279	Automated construction of symmetrized Wannier-like tight-binding models from ab initio calculations. *Physical Review Materials*, **2018**, 2,	3.2	15
278	Quantum Algorithm for Spectral Measurement with a Lower Gate Count. *Physical Review Letters*, **2018**, 121, 010501	7.4	47
277	Updated core libraries of the ALPS project. *Computer Physics Communications*, **2017**, 213, 235-251	4.2	43
276	Solving the quantum many-body problem with artificial neural networks. *Science*, **2017**, 355, 602-606	33.3	818
275	Impact of strain on the electronic properties of InAs/GaSb quantum well systems. *Physical Review B*, **2017**, 95,	3.3	4
274	Scaling analysis and instantons for thermally assisted tunneling and quantum Monte Carlo simulations. *Physical Review A*, **2017**, 95,	2.6	26
273	Quantum Monte Carlo annealing with multi-spin dynamics. *Journal of Statistical Mechanics: Theory and Experiment*, **2017**, 2017, 053105	1.9	5
272	Z2Pack: Numerical implementation of hybrid Wannier centers for identifying topological materials. *Physical Review B*, **2017**, 95,	3.3	230
271	Quantum Monte Carlo tunneling from quantum chemistry to quantum annealing. *Physical Review B*, **2017**, 96,	3.3	13
270	Nonstoquastic Hamiltonians and quantum annealing of an Ising spin glass. *Physical Review B*, **2017**, 95,	3.3	54
269	Infinite matrix product states versus infinite projected entangled-pair states on the cylinder: A comparative study. *Physical Review B*, **2017**, 96,	3.3	4
268	Orbital Contributions to the Electron g Factor in Semiconductor Nanowires. *Physical Review Letters*, **2017**, 119, 037701	7.4	34
267	Operator locality in the quantum simulation of fermionic models. *Physical Review A*, **2017**, 95,	2.6	51

266	Entanglement spectroscopy on a quantum computer. *Physical Review B*, **2017**, 96,	3.3	20
265	Elucidating reaction mechanisms on quantum computers. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 7555-7560	11.5	229
264	High-temperature series expansion for spin-1/2 Heisenberg models. *Computer Physics Communications*, **2017**, 212, 180-188	4.2	3
263	Assessment of Quantum Annealing for the Construction of Satisfiability Filters. *SciPost Physics*, **2017**, 2,	6.1	6
262	First-order topological phase transition of the Haldane-Hubbard model. *Physical Review B*, **2016**, 94,	3.3	23
261	The Quantum Future of Computation. *Computer*, **2016**, 49, 21-30	1.6	21
260	Effective models of doped quantum ladders of non-Abelian anyons. *Physical Review B*, **2016**, 93,	3.3	4
259	Smooth gauge and Wannier functions for topological band structures in arbitrary dimensions. *Physical Review B*, **2016**, 93,	3.3	21
258	Topological origin of the fermion sign problem. *Physical Review B*, **2016**, 93,	3.3	10
257	Optimizing spin-orbit splittings in InSb Majorana nanowires. *Physical Review B*, **2016**, 93,	3.3	13
256	Stochastic series expansion simulation of the t-V model. *Physical Review B*, **2016**, 93,	3.3	19
255	Topological Phase Transitions in the Repulsively Interacting Haldane-Hubbard Model. *Physical Review Letters*, **2016**, 116, 225305	7.4	50
254	A bespoke single-band Hubbard model material. *Physical Review B*, **2016**, 93,	3.3	4
253	Publisher's Note: Two-dimensional epitaxial superconductor-semiconductor heterostructures: A platform for topological superconducting networks [Phys. Rev. B 93, 155402 (2016)]. *Physical Review B*, **2016**, 93,	3.3	2
252	Training a quantum optimizer. *Physical Review A*, **2016**, 94,	2.6	43
251	Understanding Quantum Tunneling through Quantum Monte´Carlo Simulations. *Physical Review Letters*, **2016**, 117, 180402	7.4	50
250	Fulde-Ferrell-Larkin-Ovchinnikov pairing as leading instability on the square lattice. *Physical Review B*, **2016**, 94,	3.3	14
249	Topological Thouless pumping of ultracold fermions. *Nature Physics*, **2016**, 12, 296-300	16.2	273

248	High Performance Emulation of Quantum Circuits **2016**,		11
247	Experimental signatures of the inverted phase in InAs/GaSb coupled quantum wells. *Physical Review B*, **2016**, 94,	3.3	22
246	Simulating social-ecological systems: the Island Digital Ecosystem Avatars (IDEA) consortium. *GigaScience*, **2016**, 5, 14	7.6	7
245	Thermodynamics of the Hubbard model on stacked honeycomb and square lattices. *European Physical Journal B*, **2016**, 89, 1	1.2	1
244	Local spin operators for fermion simulations. *Physical Review A*, **2016**, 94,	2.6	28
243	Hybrid Quantum-Classical Approach to Correlated Materials. *Physical Review X*, **2016**, 6,	9.1	80
242	Robust Type-II Weyl Semimetal Phase in Transition Metal Diphosphides XP_{2} (X=Mo, W). *Physical Review Letters*, **2016**, 117, 066402	7.4	131
241	Enigmatic 12/5 fractional quantum Hall effect. *Physical Review B*, **2016**, 94,	3.3	19
240	Ferromagnetism of the repulsive atomic Fermi gas: three-body recombination and domain formation. *European Physical Journal B*, **2016**, 89, 1	1.2	8
239	Topological Phases in InAs_{1-x}Sb_{x}: From Novel Topological Semimetal to Majorana Wire. *Physical Review Letters*, **2016**, 117, 076403	7.4	76
238	MoTe_{2}: A Type-II Weyl Topological Metal. *Physical Review Letters*, **2016**, 117, 056805	7.4	286
237	Optimised simulated annealing for Ising spin glasses. *Computer Physics Communications*, **2015**, 192, 265-271	4.1	84
236	Reexamining classical and quantum models for the D-Wave One processor. *European Physical Journal: Special Topics*, **2015**, 224, 111-129	2.3	64
235	Efficient continuous-time quantum Monte Carlo method for the ground state of correlated fermions. *Physical Review B*, **2015**, 91,	3.3	28
234	Efficient continuous-time quantum Monte Carlo algorithm for fermionic lattice models. *Physical Review B*, **2015**, 91,	3.3	21
233	Minimizing nonadiabaticities in optical-lattice loading. *Physical Review A*, **2015**, 91,	2.6	11
232	The effect of quenched bond disorder on first-order phase transitions. *Annals of Physics*, **2015**, 357, 66-78	2.5	7
231	Quantum versus classical annealing of Ising spin glasses. *Science*, **2015**, 348, 215-7	33.3	117

230	From local to global ground states in Ising spin glasses. *Physical Review B*, **2015**, 91,	3.3	17
229	Type-II Weyl semimetals. *Nature*, **2015**, 527, 495-8	50.4	1482
228	Progress towards practical quantum variational algorithms. *Physical Review A*, **2015**, 92,	2.6	226
227	Solving strongly correlated electron models on a quantum computer. *Physical Review A*, **2015**, 92,	2.6	95
226	Accuracy of downfolding based on the constrained random-phase approximation. *Physical Review B* , **2015**, 91,	3.3	20
225	Negative sign problem in continuous-time quantum Monte Carlo: Optimal choice of single-particle basis for impurity problems. *Physical Review B*, **2015**, 92,	3.3	17
224	Phase Diagram of Pyrochlore Iridates: All-in-All-out Magnetic Ordering and Non-Fermi-Liquid Properties. *Physical Review Letters*, **2015**, 115, 156401	7.4	52
223	Fidelity Susceptibility Perspective on the Kondo Effect and Impurity Quantum Phase Transitions. *Physical Review Letters*, **2015**, 115, 236601	7.4	8
222	Phase Diagram of the 5/2 Fractional Quantum Hall Effect: Effects of Landau-Level Mixing and Nonzero Width. *Physical Review X*, **2015**, 5,	9.1	53
221	Probing for quantum speedup in spin-glass problems with planted solutions. *Physical Review A*, **2015**, 92,	2.6	99
220	Superfluidity and density order in a bilayer extended Hubbard model. *Physical Review B*, **2015**, 91,	3.3	9
219	Pair correlations in doped Hubbard ladders. *Physical Review B*, **2015**, 92,	3.3	34
218	Heavy Tails in the Distribution of Time to Solution for Classical and Quantum Annealing. *Physical Review Letters*, **2015**, 115, 230501	7.4	31
217	Split Orthogonal Group: A Guiding Principle for Sign-Problem-Free Fermionic Simulations. *Physical Review Letters*, **2015**, 115, 250601	7.4	40
216	An efficient matrix product operator representation of the quantum chemical Hamiltonian. *Journal of Chemical Physics*, **2015**, 143, 244118	3.9	100
215	Thermalization of strongly interacting bosons after spontaneous emissions in optical lattices. *EPJ Quantum Technology*, **2015**, 2,	6.9	6
214	Fidelity Susceptibility Made Simple: A Unified Quantum Monte Carlo Approach. *Physical Review X*, **2015**, 5,	9.1	38
213	Improving quantum algorithms for quantum chemistry. *Quantum Information and Computation*, **2015**, 15, 1-21	0.9	62

212	Evidence for quantum annealing with more than one hundred qubits. *Nature Physics*, **2014**, 10, 218-224	16.2	412
211	Ferromagnetism of a repulsive atomic Fermi gas in an optical lattice: a quantum Monte Carlo study. *Physical Review Letters*, **2014**, 112, 015301	7.4	32
210	Topological phase transition in the Hofstadter-Hubbard model. *Physical Review B*, **2014**, 90,	3.3	16
209	Spontaneous emission and thermalization of cold bosons in optical lattices. *Physical Review A*, **2014**, 89,	2.6	29
208	Matrix product state applications for the ALPS project. *Computer Physics Communications*, **2014**, 185, 3430-3440	4.2	62
207	Competing states in the t-J model: uniform D-wave state versus stripe state. *Physical Review Letters* , **2014**, 113, 046402	7.4	225
206	Renyi entanglement entropy of interacting fermions calculated using the continuous-time quantum Monte Carlo method. *Physical Review Letters*, **2014**, 113, 110401	7.4	37
205	Gate-count estimates for performing quantum chemistry on small quantum computers. *Physical Review A*, **2014**, 90,	2.6	145
204	Quantum computing. Defining and detecting quantum speedup. *Science*, **2014**, 345, 420-4	33.3	317
203	Fermionic quantum critical point of spinless fermions on a honeycomb lattice. *New Journal of Physics*, **2014**, 16, 103008	2.9	75
202	Real time evolution at finite temperatures with operator space matrix product states. *New Journal of Physics*, **2014**, 16, 073007	2.9	25
201	Hybridization expansion Monte Carlo simulation of multi-orbital quantum impurity problems: matrix product formalism and improved sampling. *Journal of Statistical Mechanics: Theory and Experiment*, **2014**, 2014, P06012	1.9	17
200	Thermodynamics and magnetic properties of the anisotropic 3D Hubbard model. *Physical Review Letters*, **2014**, 112, 115301	7.4	31
199	Seeing Hofstadter's butterfly in atomic Fermi gases. *Physical Review A*, **2014**, 89,	2.6	7
198	Nonlocal quantum fluctuations and fermionic superfluidity in the imbalanced attractive Hubbard model. *Physical Review Letters*, **2014**, 113, 185301	7.4	17
197	Probing the stability of the spin-liquid phases in the Kitaev-Heisenberg model using tensor network algorithms. *Physical Review B*, **2014**, 90,	3.3	32
196	Critical temperature of interacting Bose gases in periodic potentials. *Physical Review Letters*, **2014**, 112, 170402	7.4	7
195	p-Wave superfluidity by spin-nematic Fermi surface deformation. *Physical Review Letters*, **2014**, 113, 195301	7.4	13

194	Double transfer through Dirac points in a tunable honeycomb optical lattice. *European Physical Journal: Special Topics*, **2013**, 217, 121-133	2.3	33
193	Anyonic quantum spin chains: Spin-1 generalizations and topological stability. *Physical Review B*, **2013**, 87,	3.3	35
192	Néel temperature and thermodynamics of the half-filled three-dimensional Hubbard model by diagrammatic determinant Monte Carlo. *Physical Review B*, **2013**, 87,	3.3	42
191	Fermionic and Continuous Time Quantum Monte Carlo. *Springer Series in Solid-state Sciences*, **2013**, 293-319	0.4	
190	Proposal for direct measurement of topological invariants in optical lattices. *Physical Review Letters* , **2013**, 110, 166802	7.4	59
189	Fibonacci topological order from quantum nets. *Physical Review Letters*, **2013**, 110, 260408	7.4	9
188	Effect of thermal fluctuations in topological p-wave superconductors. *Physical Review B*, **2013**, 87,	3.3	10
187	One-dimensional itinerant interacting non-Abelian anyons. *Physical Review B*, **2013**, 87,	3.3	10
186	Topological charge pumping in a one-dimensional optical lattice. *Physical Review Letters*, **2013**, 111, 026802	7.4	103
185	Supersymmetric multicritical point in a model of lattice fermions. *Physical Review B*, **2013**, 87,	3.3	24
184	VLI A Library for High Precision Integer and Polynomial Arithmetic. *Lecture Notes in Computer Science*, **2013**, 267-278	0.9	1
183	From the Cooper problem to canted supersolids in Bose-Fermi mixtures. *Physical Review Letters*, **2012**, 109, 206401	7.4	14
182	Dipolar dynamics for interacting ultracold fermions in a trapped optical lattice. *Physical Review A*, **2012**, 86,	2.6	3
181	Density functional theory for atomic Fermi gases. *Nature Physics*, **2012**, 8, 601-605	16.2	31
180	Magnetic susceptibility of cerium: An LDA+DMFT study. *Physical Review B*, **2012**, 85,	3.3	12
179	Multiorbital Kondo physics of Co in Cu hosts. *Physical Review B*, **2012**, 85,	3.3	47
178	Bond disorder induced criticality of the three-color Ashkin-Teller model. *Physical Review Letters*, **2012**, 109, 155701	7.4	12
177	Three-sublattice order in the SU(3) Heisenberg model on the square and triangular lattice. *Physical Review B*, **2012**, 85,	3.3	65

176	Strong-disorder renormalization for interacting non-Abelian anyon systems in two dimensions. *Physical Review B*, **2012**, 85,	3.3	15
175	Galois conjugates of topological phases. *Physical Review B*, **2012**, 85,	3.3	14
174	Bosonic superfluid-insulator transition in continuous space. *Physical Review Letters*, **2012**, 108, 155301	7.4	28
173	Translation invariance, topology, and protection of criticality in chains of interacting anyons. *Physical Review B*, **2012**, 86,	3.3	16
172	Multigrid algorithms for tensor network states. *Physical Review Letters*, **2012**, 109, 020604	7.4	23
171	Fractionalization of itinerant anyons in one-dimensional chains. *Physical Review Letters*, **2012**, 108, 207201	7.4	9
170	The ALPS project release 2.0: open source software for strongly correlated systems. *Journal of Statistical Mechanics: Theory and Experiment*, **2011**, 2011, P05001	1.9	426
169	Stripes in the two-dimensional t-J model with infinite projected entangled-pair states. *Physical Review B*, **2011**, 84,	3.3	124
168	Simultaneous dimerization and SU(4) symmetry breaking of 4-color fermions on the square lattice. *Physical Review Letters*, **2011**, 107, 215301	7.4	77
167	Diagrammatic quantum Monte Carlo solution of the two-dimensional cooperon-fermion model. *Physical Review B*, **2011**, 83,	3.3	11
166	Continuous-time Monte Carlo methods for quantum impurity models. *Reviews of Modern Physics*, **2011**, 83, 349-404	40.5	944
165	Continuous-time quantum Monte Carlo impurity solvers. *Computer Physics Communications*, **2011**, 182, 1078-1082	4.2	34
164	Topological phases: An expedition off lattice. *Annals of Physics*, **2011**, 326, 2108-2137	2.5	1
163	A Provenance-Based Infrastructure to Support the Life Cycle of Executable Papers. *Procedia Computer Science*, **2011**, 4, 648-657	1.6	26
162	Two-dimensional quantum liquids from interacting non-Abelian anyons. *New Journal of Physics*, **2011**, 13, 045014	2.9	37
161	Microscopic models of interacting Yang□lee anyons. *New Journal of Physics*, **2011**, 13, 045006	2.9	25
160	Dynamical mean-field theory for bosons. *New Journal of Physics*, **2011**, 13, 075013	2.9	38
159	Quantum spin ladders of non-Abelian anyons. *Physical Review B*, **2011**, 83,	3.3	17

158	Implementing global Abelian symmetries in projected entangled-pair state algorithms. *Physical Review B*, **2011**, 83,	3.3	75
157	Spectral properties of the three-dimensional Hubbard model. *Physical Review B*, **2011**, 83,	3.3	33
156	Dynamics at and near conformal quantum critical points. *Physical Review B*, **2011**, 83,	3.3	23
155	Trapped ultracold bosons in periodically modulated lattices. *Physical Review A*, **2011**, 84,	2.6	7
154	Identifying quantum topological phases through statistical correlation. *Physical Review B*, **2011**, 83,	3.3	4
153	Thermodynamics of the 3D Hubbard model on approaching the Néel transition. *Physical Review Letters*, **2011**, 106, 030401	7.4	90
152	Mutual information in classical spin models. *Journal of Statistical Mechanics: Theory and Experiment*, **2011**, 2011, P10011	1.9	35
151	Suppression of the critical temperature for superfluidity near the Mott transition. *Nature Physics*, **2010**, 6, 998-1004	16.2	153
150	Subband engineering even-denominator quantum Hall states. *Physical Review B*, **2010**, 82,	3.3	9
149	Distinguishing phases with ansatz wave functions. *Physical Review B*, **2010**, 81,	3.3	3
148	Simulation of anyons with tensor network algorithms. *Physical Review B*, **2010**, 82,	3.3	37
147	Diagrammatic Monte Carlo for correlated fermions. *Europhysics Letters*, **2010**, 90, 10004	1.6	85
146	The Beliaev technique for a weakly interacting Bose gas. *New Journal of Physics*, **2010**, 12, 043010	2.9	36
145	Optimized broad-histogram simulations for strong first-order phase transitions: droplet transitions in the large-QPotts model. *Journal of Statistical Mechanics: Theory and Experiment*, **2010**, 2010, P01020	1.9	7
144	Comment on "Exact bosonization for an interacting fermi gas in arbitrary dimensions". *Physical Review Letters*, **2010**, 105, 159701; author reply 159702	7.4	
143	Dynamical mean field solution of the Bose-Hubbard model. *Physical Review Letters*, **2010**, 105, 096402	7.4	56
142	Supersolid phase with cold polar molecules on a triangular lattice. *Physical Review Letters*, **2010**, 104, 125302	7.4	126
141	Quantitative determination of temperature in the approach to magnetic order of ultracold fermions in an optical lattice. *Physical Review Letters*, **2010**, 104, 180401	7.4	125

140	Itinerant ferromagnetism of a repulsive atomic Fermi gas: a quantum monte carlo study. *Physical Review Letters*, **2010**, 105, 030405	7.4	113
139	Estimating errors reliably in Monte Carlo simulations of the Ehrenfest model. *American Journal of Physics*, **2010**, 78, 150-157	0.7	29
138	Complete-graph tensor network states: a new fermionic wave function ansatz for molecules. *New Journal of Physics*, **2010**, 12, 103008	2.9	70
137	Measuring the equation of state of trapped ultracold bosonic systems in an optical lattice with in situ density imaging. *Physical Review A*, **2010**, 82,	2.6	15
136	Continuous-time quantum impurity solvers. *Physics Procedia*, **2010**, 6, 31-34		2
135	The role of defects in Supersolid Helium-4. *Physics Procedia*, **2010**, 7, 80-84		1
134	Bridging Workflow and Data Provenance Using Strong Links. *Lecture Notes in Computer Science*, **2010**, 397-415	0.9	12
133	Discerning incompressible and compressible phases of cold atoms in optical lattices. *Physical Review Letters*, **2009**, 102, 135302	7.4	49
132	Publisher's Note: Collective States of Interacting Anyons, Edge States, and the Nucleation of Topological Liquids [Phys. Rev. Lett. 103, 070401 (2009)]. *Physical Review Letters*, **2009**, 103,	7.4	2
131	Collective states of interacting anyons, edge states, and the nucleation of topological liquids. *Physical Review Letters*, **2009**, 103, 070401	7.4	68
130	Thermal canting of spin-bond order. *Physical Review B*, **2009**, 79,	3.3	7
129	ENCORE: An extended contractor renormalization algorithm. *Physical Review E*, **2009**, 79, 046712	2.4	
128	Assessing the accuracy of projected entangled-pair states on infinite lattices. *Journal of Statistical Mechanics: Theory and Experiment*, **2009**, 2009, P09006	1.9	30
127	Topology-driven quantum phase transitions in time-reversal-invariant anyonic quantum liquids. *Nature Physics*, **2009**, 5, 834-839	16.2	54
126	Absence of a direct superfluid to mott insulator transition in disordered bose systems. *Physical Review Letters*, **2009**, 103, 140402	7.4	101
125	Phase diagram of the disordered Bose-Hubbard model. *Physical Review B*, **2009**, 80,	3.3	86
124	Quantum Monte Carlo Simulations **2009**,		2
123	Influence of the trap shape on the detection of the superfluid–Mott-insulator transition. *Physical Review A*, **2008**, 78,	2.6	5

122	Continuous-time auxiliary-field Monte Carlo for quantum impurity models. *Europhysics Letters*, **2008**, 82, 57003	1.6	181
121	Mixture of bosonic and spin-polarized fermionic atoms in an optical lattice. *Physical Review A*, **2008**, 77,	2.6	46
120	Expansion of a quantum gas released from an optical lattice. *Physical Review Letters*, **2008**, 101, 155303	7.4	92
119	Spin freezing transition and non-Fermi-liquid self-energy in a three-orbital model. *Physical Review Letters*, **2008**, 101, 166405	7.4	171
118	A Short Introduction to Fibonacci Anyon Models. *Progress of Theoretical Physics Supplement*, **2008**, 176, 384-407		75
117	Local order and the gapped phase of the Hubbard model: A plaquette dynamical mean-field investigation. *Europhysics Letters*, **2008**, 84, 37009	1.6	83
116	Temperature changes when adiabatically ramping up an optical lattice. *New Journal of Physics*, **2008** , 10, 065001	2.9	38
115	Local stress and superfluid properties of solid 4He. *Physical Review Letters*, **2008**, 101, 097202	7.4	60
114	Publisher Note: Local Stress and Superfluid Properties of Solid He4 [Phys. Rev. Lett. 101, 097202 (2008)]. *Physical Review Letters*, **2008**, 101,	7.4	5
113	Mechanisms for spin supersolidity in S=12 spin-dimer antiferromagnets. *Physical Review B*, **2008**, 78,	3.3	22
112	Quantum Monte Carlo study of a two-species bosonic Hubbard model. *Physical Review B*, **2008**, 77,	3.3	10
111	Collective states of interacting Fibonacci anyons. *Physical Review Letters*, **2008**, 101, 050401	7.4	57
110	Deconfined criticality: generic first-order transition in the SU(2) symmetry case. *Physical Review Letters*, **2008**, 101, 050405	7.4	118
109	Binding of a 3He impurity to a screw dislocation in solid 4He. *Physical Review Letters*, **2008**, 101, 155302	7.4	26
108	Local interactions and non-abelian quantum loop gases. *Physical Review Letters*, **2008**, 101, 230401	7.4	12
107	Critical temperature curve in BEC-BCS crossover. *Physical Review Letters*, **2008**, 101, 090402	7.4	71
106	Systematic errors in Gaussian quantum Monte Carlo and a systematic study of the symmetry projection method. *Physical Review B*, **2008**, 77,	3.3	10
105	Phase diagram of H4e adsorbed on graphite. *Physical Review B*, **2008**, 78,	3.3	64

104	Quantum phase transition in a Heisenberg antiferromagnet on a square lattice with strong plaquette interactions. *Physical Review B*, **2008**, 78,	3.3	25
103	Engineering exotic phases for topologically protected quantum computation by emulating quantum dimer models. *Physical Review B*, **2008**, 78,	3.3	16
102	A Classical Picture of the Role of Vacancies and Interstitials in Helium-4. *Journal of Low Temperature Physics*, **2008**, 152, 156-163	1.3	14
101	Dimer-Quadrupolar Quantum Phase Transition in the Quasi-One-Dimensional Heisenberg Model with Biquadratic Interaction. *Journal of the Physical Society of Japan*, **2007**, 76, 013703	1.5	34
100	The ALPS project release 1.3: Open-source software for strongly correlated systems. *Journal of Magnetism and Magnetic Materials*, **2007**, 310, 1187-1193	2.8	555
99	Self-Consistent potential calculation for locally oxidized Ga[Al]As heterostructures. *Journal of Computer-Aided Materials Design*, **2007**, 14, 91-96		1
98	Optimized broad-histogram ensembles for the simulation of quantum systems. *Journal of Statistical Mechanics: Theory and Experiment*, **2007**, 2007, P12005-P12005	1.9	8
97	Absence of a structural glass phase in a monatomic model liquid predicted to undergo an ideal glass transition. *Journal of Statistical Mechanics: Theory and Experiment*, **2007**, 2007, P09011-P09011	1.9	1
96	Superfluidity of grain boundaries in solid 4He. *Physical Review Letters*, **2007**, 98, 135301	7.4	128
95	Interacting anyons in topological quantum liquids: the golden chain. *Physical Review Letters*, **2007**, 98, 160409	7.4	194
94	Breakdown of a topological phase: quantum phase transition in a loop gas model with tension. *Physical Review Letters*, **2007**, 98, 070602	7.4	128
93	Performance analysis of continuous-time solvers for quantum impurity models. *Physical Review B*, **2007**, 76,	3.3	49
92	Self-consistent simulation of quantum wires defined by local oxidation of Ga(Al)As heterostructures. *Physical Review B*, **2007**, 76,	3.3	2
91	The Fermi□Hubbard model at unitarity. *New Journal of Physics*, **2006**, 8, 153-153	2.9	76
90	Critical temperature and thermodynamics of attractive fermions at unitarity. *Physical Review Letters*, **2006**, 96, 160402	7.4	198
89	Phase diagram of Bose-Fermi mixtures in one-dimensional optical lattices. *Physical Review Letters*, **2006**, 96, 190402	7.4	70
88	d-Wave resonating valence bond states of fermionic atoms in optical lattices. *Physical Review Letters*, **2006**, 96, 250402	7.4	74
87	Ramping fermions in optical lattices across a Feshbach resonance. *Physical Review A*, **2006**, 74,	2.6	6

86	Optimized parallel tempering simulations of proteins. *Journal of Chemical Physics*, **2006**, 124, 174903	3.9	193
85	Simulations of ultracold bosonic atoms in optical lattices with anharmonic traps. *Physical Review A*, **2006**, 73,	2.6	25
84	Feedback-optimized parallel tempering Monte Carlo. *Journal of Statistical Mechanics: Theory and Experiment*, **2006**, 2006, P03018-P03018	1.9	183
83	Continuous-time solver for quantum impurity models. *Physical Review Letters*, **2006**, 97, 076405	7.4	744
82	Deconfined criticality, runaway flow in the two-component scalar electrodynamics and weak first-order superfluid-solid transitions. *Annals of Physics*, **2006**, 321, 1602-1621	2.5	73
81	A massively parallel particle-in-cell code for the simulation of field-emitter based electron sources. *Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, **2006**, 558, 154-158	1.2	1
80	A Renormalization Approach to Simulations of Quantum Effects in Nanoscale Magnetic Systems. *Multiscale Modeling and Simulation*, **2005**, 4, 237-249	1.8	2
79	Néel temperature of quasi-low-dimensional Heisenberg antiferromagnets. *Physical Review Letters*, **2005**, 94, 217201	7.4	185
78	Optimized ensemble Monte Carlo simulations of dense Lennard-Jones fluids. *Journal of Chemical Physics*, **2005**, 123, 204501	3.9	14
77	Supersolid hard-core bosons on the triangular lattice. *Physical Review Letters*, **2005**, 95, 127205	7.4	265
76	Phase diagram and critical exponents of a dissipative Ising spin chain in a transverse magnetic field. *Physical Review Letters*, **2005**, 94, 047201	7.4	70
75	Generalized directed loop method for quantum Monte Carlo simulations. *Physical Review E*, **2005**, 71, 036706	2.4	173
74	Interacting classical dimers on the square lattice. *Physical Review Letters*, **2005**, 94, 235702	7.4	82
73	Effective charging energy of the single-electron box. *Journal of Statistical Mechanics: Theory and Experiment*, **2005**, 2005, P01003	1.9	1
72	Bosons in Optical Lattices From the Mott Transition to the Tonks Girardeau Gas. *Journal of the Physical Society of Japan*, **2005**, 74, 10-15	1.5	13
71	Computational complexity and fundamental limitations to fermionic quantum Monte Carlo simulations. *Physical Review Letters*, **2005**, 94, 170201	7.4	561
70	Equilibrium and Dynamical Properties of the Boson Hubbard Model in One Dimension. *Journal of Low Temperature Physics*, **2005**, 140, 313-332	1.3	4
69	Cluster Monte Carlo Algorithms for Dissipative Quantum Systems. *Progress of Theoretical Physics Supplement*, **2005**, 160, 395-417		10

68	The ALPS Project: Open Source Software for Strongly Correlated Systems. *Journal of the Physical Society of Japan*, **2005**, 74, 30-35	1.5	95
67	Simulation results for an interacting pair of resistively shunted Josephson junctions. *Journal of Statistical Mechanics: Theory and Experiment*, **2005**, 2005, P12003-P12003	1.9	8
66	Quantum Spin Chains with Site Dissipation. *Journal of the Physical Society of Japan*, **2005**, 74, 67-70	1.5	25
65	Two-step restoration of SU(2) symmetry in a frustrated ring-exchange magnet. *Physical Review Letters*, **2005**, 95, 137206	7.4	72
64	Overcoming the slowing down of flat-histogram Monte Carlo simulations: cluster updates and optimized broad-histogram ensembles. *Physical Review E*, **2005**, 72, 046704	2.4	17
63	Supersolids versus phase separation in two-dimensional lattice bosons. *Physical Review Letters*, **2005**, 94, 207202	7.4	180
62	Efficient simulation of resistively shunted Josephson junctions. *Physical Review Letters*, **2005**, 95, 060201	7.4	18
61	Histogram methods for quantum systems: from reweighting to Wang-Landau sampling. *Brazilian Journal of Physics*, **2004**, 34, 377	1.2	16
60	Universal conductance of nanowires near the superconductor-metal quantum transition. *Physical Review Letters*, **2004**, 92, 237003	7.4	73
59	Melting of bosonic stripes. *Physical Review Letters*, **2004**, 93, 067003	7.4	16
58	Optimizing the ensemble for equilibration in broad-histogram Monte Carlo simulations. *Physical Review E*, **2004**, 70, 046701	2.4	126
57	Quantum Monte Carlo simulations of confined bosonic atoms in optical lattices. *Physical Review A*, **2004**, 70,	2.6	175
56	Dynamics of the Wang□andau algorithm and complexity of rare events for the three-dimensional bimodal Ising spin glass. *Journal of Statistical Mechanics: Theory and Experiment*, **2004**, 2004, P07008	1.9	21
55	Quantum Monte Carlo Simulation of Confined Bosonic Atoms in Optical Lattices. *Advances in Solid State Physics*, **2004**, 265-276		4
54	Computational Complexity and Simulation of Rare Events of Ising Spin Glasses. *Lecture Notes in Computer Science*, **2004**, 36-47	0.9	11
53	Flat histogram methods for quantum systems: algorithms to overcome tunneling problems and calculate the free energy. *Physical Review Letters*, **2003**, 90, 120201	7.4	88
52	Non-local Updates for Quantum Monte Carlo Simulations. *AIP Conference Proceedings*, **2003**,	0	15
51	Object-Oriented C++ Class Library for Many Body Physics on Finite Lattices and a First Application to High-Temperature Superconductivity **2003**, 307-326		

50	Néel and Spin-Peierls ground states of two-dimensional SU(N) quantum antiferromagnets. *Physical Review Letters*, **2003**, 90, 117203	7.4	82
49	Broken time-reversal symmetry in strongly correlated ladder structures. *Physical Review Letters*, **2003**, 90, 186401	7.4	58
48	Dynamical properties and the phase diagram of the projected SO(5)-symmetric model of high-Tc superconductors. *Journal of Physics and Chemistry of Solids*, **2002**, 63, 1365-1370	3.9	1
47	Topologically protected quantum bits using Josephson junction arrays. *Nature*, **2002**, 415, 503-6	50.4	163
46	Finite-temperature phase diagram of hard-core bosons in two dimensions. *Physical Review Letters*, **2002**, 88, 167208	7.4	112
45	Transition between hole pairs and four-hole clusters in four-leg t-J ladders. *Physical Review B*, **2002**, 65,	3.3	8
44	Mott domains of bosons confined on optical lattices. *Physical Review Letters*, **2002**, 89, 117203	7.4	247
43	Symmetry breaking regime in the nonlinear Hartree equation. *Journal of Mathematical Physics*, **2002**, 43, 3879-3891	1.2	40
42	Static and Dynamic Holes in a Quantum Critical Antiferromagnet. *Progress of Theoretical Physics Supplement*, **2002**, 145, 326-331		15
41	A Nonmagnetic Impurity in a Quantum Critical Spin System. *Progress of Theoretical Physics Supplement*, **2002**, 145, 349-352		
40	Destruction of Superfluid and Long Range Order by Impurities in Two Dimensional Systems **2002**, 119-130		
39	Spin orthogonality catastrophe in two-dimensional antiferromagnets and superconductors. *Physical Review Letters*, **2001**, 86, 2617-20	7.4	27
38	Bosonic model of hole pairs. *Physical Review B*, **2001**, 63,	3.3	20
37	Accessing the dynamics of large many-particle systems using the stochastic series expansion. *Physical Review E*, **2001**, 64, 066701	2.4	80
36	Universality in Two-Dimensional Quantum Heisenberg Antiferromagnets **2001**, 193-202		
35	Thermodynamics of spin S=1/2 antiferromagnetic uniform and alternating-exchange Heisenberg chains. *Physical Review B*, **2000**, 61, 9558-9606	3.3	419
34	Li2VO(Si,Ge)O4, a prototype of a two-dimensional frustrated quantum heisenberg antiferromagnet. *Physical Review Letters*, **2000**, 85, 1318-21	7.4	190
33	Thermodynamics of the One-Dimensional SU(4) Symmetric Spin-Orbital Model. *Physical Review Letters*, **1999**, 82, 835-838	7.4	100

32	Exchange Interactions and Magnetic Properties of the Layered Vanadates CaV2O5, MgV2O5, CaV3O7, and CaV4O9. *Physical Review Letters*, **1999**, 83, 1387-1390	7.4	84
31	Thermodynamics of the t Ladder: A Stable Finite-Temperature Density Matrix Renormalization Group Calculation. *Physical Review Letters*, **1999**, 82, 3855-3858	7.4	20
30	Elementary Excitations of the Symmetric Spin-Orbital Model: The XY Limit. *Physical Review Letters*, **1999**, 82, 3697-3700	7.4	24
29	Thermodynamics of random ferromagnetic-antiferromagnetic spin-1/2 chains. *Physical Review B*, **1999**, 60, 3388-3399	3.3	19
28	Quantum spin chains in a magnetic field. *Physical Review B*, **1999**, 59, 1162-1167	3.3	34
27	Are Generic Parallel Algorithms Feasible for Quantum Lattice Models?. *Lecture Notes in Computer Science*, **1999**, 164-169	0.9	5
26	Universal Critical Temperature for Kosterlitz-Thouless Transitions in Bilayer Quantum Magnets. *Physical Review Letters*, **1998**, 81, 5418-5421	7.4	31
25	The Two-DimensionalS=1Quantum Heisenberg Antiferromagnet at Finite Temperatures. *Journal of the Physical Society of Japan*, **1998**, 67, 1130-1133	1.5	42
24	Spin-spin correlation lengths of bilayer antiferromagnets. *Europhysics Letters*, **1998**, 42, 559-564	1.6	8
23	Low Temperature Behavior and Crossovers of the Square Lattice Quantum Heisenberg Antiferromagnet. *Physical Review Letters*, **1998**, 80, 2705-2708	7.4	121
22	Quantum Monte Carlo loop algorithm for the t model. *Physical Review B*, **1998**, 58, 4304-4319	3.3	11
21	Quantum Monte Carlo Simulation of the Trellis Lattice Heisenberg Model for SrCu 2O 3 and CaV 2O 5. *Journal of the Physical Society of Japan*, **1998**, 67, 3918-3923	1.5	27
20	Thermodynamic Properties of the One-Dimensional Kondo Insulators Studied by the Density Matrix Renormalization Group Method. *Journal of the Physical Society of Japan*, **1998**, 67, 1086-1089	1.5	20
19	Parallel Object Oriented Monte Carlo Simulations. *Lecture Notes in Computer Science*, **1998**, 191-198	0.9	85
18	Nearly critical ground state of LaCuO2.5. *Physical Review B*, **1997**, 55, R6117-R6120	3.3	67
17	Temperature Dependent Correlation Length for the S=1/2 Quantum Heisenberg Antiferromagnet on the Square Lattice. *Physical Review Letters*, **1997**, 79, 1583-1583	7.4	14
16	Susceptibilities of Sr(Cu1-xZnx)2O3Studied by Quantum Monte Carlo Simulation. *Journal of the Physical Society of Japan*, **1997**, 66, 2580-2583	1.5	24
15	Critical Exponents of the Quantum Phase Transition in a Planar Antiferromagnet. *Journal of the Physical Society of Japan*, **1997**, 66, 2957-2960	1.5	58

14	Plaquette resonating-valence-bond ground state of CaV4O9. *European Physical Journal D*, **1996**, 46, 1903-1904		
13	Phase diagram of depleted Heisenberg model for CaV4O9. *Physical Review Letters*, **1996**, 76, 3822-3825	7.4	121
12	Susceptibility and low-temperature thermodynamics of spin-1/2 Heisenberg ladders. *Physical Review B*, **1996**, 54, R3714-R3717	3.3	67
11	Properties of lightly doped t-J two-leg ladders. *Physical Review B*, **1996**, 53, 251-267	3.3	144
10	Why do we need numerical methods for constrained fermion systems?. *Journal of Low Temperature Physics*, **1995**, 99, 505-507	1.3	
9	The d-wave resonance valence bond state. *Journal of Physics and Chemistry of Solids*, **1995**, 56, 1663-1667	3.9	9
8	Singlet stripe phases in the planar t-J model. *Physical Review B*, **1995**, 51, 16456-16459	3.3	70
7	Effect of the three-site hopping term on the t-J model. *Physical Review B*, **1995**, 52, 629-636	3.3	22
6	Pairing and excitation spectrum in doped t-J ladders. *Physical Review B*, **1994**, 49, 16078-16081	3.3	123
5	Thermodynamics and spin gap of the Heisenberg ladder calculated by the look-ahead Lanczos algorithm. *Physical Review B*, **1994**, 50, 13515-13527	3.3	299
4	Spin gap and superconductivity in the one-dimensional t-J model with Coulomb repulsion. *Physical Review B*, **1993**, 48, 4002-4013	3.3	25
3	Ferromagnetism of the one-dimensional Kondo-lattice model: A quantum Monte Carlo study. *Physical Review B*, **1993**, 47, 2886-2889	3.3	48
2	ProjectQ: an open source software framework for quantum computing. *Quantum - the Open Journal for Quantum Science*,2, 49		126
1	Efficient Quantum Walk Circuits for Metropolis-Hastings Algorithm. *Quantum - the Open Journal for Quantum Science*,4, 287		8