Robert H Swendsen

List of Publications by Year
in descending order

146 papers	21,617 citations	61984 43 h-index	10734 138 g-index
149 all docs	149 docs citations	149 times ranked	12759 citing authors

#	Article	IF	Citations
1	THE weighted histogram analysis method for free-energy calculations on biomolecules. I. The method. Journal of Computational Chemistry, 1992, 13, 1011-1021.	3.3	5,736
2	New Monte Carlo technique for studying phase transitions. Physical Review Letters, 1988, 61, 2635-2638.	7.8	2,350
3	Optimized Monte Carlo data analysis. Physical Review Letters, 1989, 63, 1195-1198.	7.8	2,329
4	Nonuniversal critical dynamics in Monte Carlo simulations. Physical Review Letters, 1987, 58, 86-88.	7.8	2,315
5	Replica Monte Carlo Simulation of Spin-Glasses. Physical Review Letters, 1986, 57, 2607-2609.	7.8	1,547
6	Why the Brazil nuts are on top: Size segregation of particulate matter by shaking. Physical Review Letters, 1987, 58, 1038-1040.	7.8	818
7	Multidimensional free-energy calculations using the weighted histogram analysis method. Journal of Computational Chemistry, 1995, 16, 1339-1350.	3.3	728
8	Magnetic ground state of semiconducting transition-metal trichalcogenide monolayers. Physical Review B, 2015, 91, .	3.2	352
9	Monte Carlo renormalization-group calculations of critical behavior in the simple-cubic Ising model. Physical Review B, 1984, 29, 4030-4040.	3.2	299
10	Monte Carlo Renormalization Group. Physical Review Letters, 1979, 42, 859-861.	7.8	290
11	Dynamics of random sequential adsorption. Physical Review A, 1981, 24, 504-508.	2.5	252
12	Cluster Monte Carlo algorithms. Physica A: Statistical Mechanics and Its Applications, 1990, 167, 565-579.	2.6	240
13	Quasicrystal equilibrium state. Physical Review Letters, 1987, 58, 706-709.	7.8	163
14	First-Order Phase Transitions and the Three-State Potts Model. Physical Review Letters, 1979, 43, 799-802.	7.8	161
15	Transition Matrix Monte Carlo Method. Journal of Statistical Physics, 2002, 106, 245-285.	1.2	148
16	Monte Carlo simulation of particulate matter segregation. Powder Technology, 1986, 49, 59-69.	4.2	145
17	Feeling textures through a probe: Effects of probe and surface geometry and exploratory factors. Perception & Psychophysics, 2003, 65, 613-631.	2.3	138
18	Monte Carlo Renormalization Group and Ising Models withn>~2. Physical Review Letters, 1979, 43, 177-180.	7.8	133

#	Article	IF	Citations
19	Tricritical Universality in Two Dimensions. Physical Review Letters, 1981, 46, 1437-1440.	7.8	130
20	Comparison of free energy methods for molecular systems. Journal of Chemical Physics, 2006, 125, 184114.	3.0	129
21	Monte Carlo studies of the interface roughening transition. Physical Review B, 1977, 15, 5421-5431.	3.2	124
22	First-Order Transition in anxyModel with Nearest-Neighbor Interactions. Physical Review Letters, 1984, 52, 1535-1538.	7.8	124
23	Transition Matrix Monte Carlo Reweighting and Dynamics. Physical Review Letters, 1999, 82, 476-479.	7.8	120
24	Antiferromagnetic Potts models. Physical Review Letters, 1989, 63, 109-112.	7.8	116
25	Three-state antiferromagnetic Potts models: A Monte Carlo study. Physical Review B, 1990, 42, 2465-2474.	3.2	108
26	Efficient Monte Carlo methods for the computer simulation of biological molecules. Physical Review A, 1992, 45, 8894-8901.	2.5	103
27	Monte Carlo Calculation of Renormalized Coupling Parameters. Physical Review Letters, 1984, 52, 1165-1168.	7.8	97
28	A helium diffraction study of the reconstructed Au(100) surface. Surface Science, 1983, 127, 223-242.	1.9	92
29	Statistical errors in histogram reweighting. Physical Review E, 1995, 51, 5092-5100.	2.1	77
30	Low-temperature properties of theÂ±JIsing spin glass in two dimensions. Physical Review B, 1988, 38, 4840-4844.	3.2	76
31	Monte Carlo renormalization-group studies ofq-state Potts models in two dimensions. Physical Review B, 1980, 21, 4094-4107.	3.2	74
32	Optimized Monte Carlo Data Analysis. Computers in Physics, 1989, 3, 101-104.	0.5	74
33	Monte Carlo renormalization-group studies of thed=2Ising model. Physical Review B, 1979, 20, 2080-2087.	3.2	70
34	Gauge-Invariant Renormalization-Group Transformation without Gauge Fixing. Physical Review Letters, 1981, 47, 1775-1777.	7.8	67
35	Modern methods of analyzing Monte Carlo computer simulations. Physica A: Statistical Mechanics and Its Applications, 1993, 194, 53-62.	2.6	63
36	Spiral growth of crystals: Simulations on a stochastic model. Journal of Crystal Growth, 1976, 35, 73-78.	1.5	53

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37	Monte Carlo renormalization-group study of tricritical behavior in two dimensions. Physical Review B, 1986, 33, 7700-7707.	3.2	53
38	Modified Callen Decoupling in the Green's-Function Theory of the Heisenberg Ferromagnet with Application to the Europium Chalcogenides. Physical Review B, 1972, 5, 116-123.	3.2	52
39	Correlation functions inXYmodels and step free energies in roughening models. Physical Review B, 1978, 17, 3710-3713.	3.2	52
40	First- and Second-Order Phase Transitions in thed=2XYModel. Physical Review Letters, 1982, 49, 1302-1305.	7.8	52
41	Statistical mechanics of colloids and Boltzmannâ€™s definition of the entropy. American Journal of Physics, 2006, 74, 187-190.	0.7	49
42	Optimization of Real-Space Renormalization-Group Transformations. Physical Review Letters, 1984, 52, 2321-2323.	7.8	48
43	Monte Carlo calculation of renormalized coupling parameters. I.d=2Ising model. Physical Review B, 1984, 30, 3866-3874.	3.2	44
44	Gibbsâ€™ Paradox and the Definition of Entropy. Entropy, 2008, 10, 15-18.	2.2	43
45	Adaptive integration method for Monte Carlo simulations. Physical Review E, 2004, 69, 056704.	2.1	42
46	The influence of impurities on interstitial diffusion. Journal of Physics F: Metal Physics, 1978, 8, 433-446.	1.6	41
47	Critical behavior of the three-dimensional Ising model. Physical Review B, 1979, 20, 2077-2079.	3.2	41
48	How physicists disagree on the meaning of entropy. American Journal of Physics, 2011, 79, 342-348.	0.7	40
49	Negative temperatures and the definition of entropy. Physica A: Statistical Mechanics and Its Applications, 2016, 453, 24-34.	2.6	36
50	Critical behavior of the four-dimensional Ising model. Physical Review B, 1980, 22, 4481-4483.	3.2	35
51	Critical temperatures of the spin-sIsing model. Physical Review B, 1976, 13, 3071-3073.	3.2	34
52	Statistical Mechanics of Classical Systems with Distinguishable Particles. Journal of Statistical Physics, 2002, 107, 1143-1166.	1.2	34
53	Monte Carlo renormalization-group study of Ising spin glasses. Physical Review B, 1988, 37, 7745-7750.	3.2	33
54	Tricritical Transitions, Interface Roughening, and the ClassicalXYModel. Physical Review Letters, 1977, 39, 1414-1417.	7.8	32

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55	Monte Carlo study of the Coulomb gas and the VillainXYmodel in the discrete Gaussian roughening representation. Physical Review B, 1978, 18, 492-502.	3.2	31
56	Replica Monte Carlo Simulation (Revisited). Progress of Theoretical Physics Supplement, 2005, 157, 317-323.	0.1	29
57	Optimized convergence for multiple histogram analysis. Journal of Computational Physics, 2009, 228, 6119-6129.	3.8	29
58	Roughening transition in the solid-on-solid model. Physical Review B, 1977, 15, 689-692.	3.2	27
59	Monte Carlo calculation of renormalized coupling parameters. II.d=3Ising model. Physical Review B, 1984, 30, 3875-3881.	3.2	27
60	New Universal Behavior for the Impure Baxter Model. Physical Review Letters, 1984, 53, 679-682.	7.8	27
61	Statistical mechanics and disordered systems. Communications of the ACM, 1985, 28, 363-373.	4.5	27
62	Haptic Rendering and Psychophysical Evaluation of a Virtual Three-Dimensional Helical Spring. , 2008, , .		27
63	Critical exponents and marginality of the four-state Potts model: Monte Carlo renormalization group. Physical Review B, 1981, 24, 6732-6735.	3.2	26
64	Gibbs volume entropy is incorrect. Physical Review E, 2015, 92, 020103.	2.1	25
65	Zero-frequency behavior of thermodynamic green's functions. Physics Letters, Section A: General, Atomic and Solid State Physics, 1967, 25, 505-506.	2.1	24
66	Monte Carlo renormalization-group study of thed=3planar model. Physical Review B, 1983, 27, 391-400.	3.2	24
67	Monte Carlo renormalization-group study of the Baxter-Wu model. Physical Review B, 1982, 26, 330-336.	3.2	23
68	New monte carlo methods for improved efficiency of computer simulations in statistical mechanics. Topics in Applied Physics, 1992, , 75-91.	0.8	23
69	Space renormalization group approach to arbitrary spin Ising models. Physics Letters, Section A: General, Atomic and Solid State Physics, 1977, 64, 325-326.	2.1	22
70	Thermodynamics, Statistical Mechanics and Entropy. Entropy, 2017, 19, 603.	2.2	22
71	An iterative method for calculating hard-wall diffraction intensities. Surface Science, 1982, 114, 405-413.	1.9	21
72	TRANSITION MATRIX MONTE CARLO. International Journal of Modern Physics C, 1999, 10, 1563-1569.	1.7	21

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73	Inverse Monte Carlo Renormalization Group Transformations for Critical Phenomena. Physical Review Letters, 2002, 89, 275701.	7.8	20
74	Explaining irreversibility. American Journal of Physics, 2008, 76, 643-648.	0.7	19
75	Thermodynamics of finite systems: a key issues review. Reports on Progress in Physics, 2018, 81, 072001.	20.1	19
76	Comment on a Monte Carlo test of theories for the planar model, theFmodel, and related systems. Physical Review B, 1982, 25, 2019-2021.	3.2	18
77	Rotationally symmetric ordered phase in the three-state antiferromagnetic Potts model. Physical Review B, 1996, 53, 2210-2212.	3.2	17
78	Crystalline ground states of an entropically stabilized quasicrystal model. Physical Review B, 2001, 64, .	3.2	14
79	Sweeny and Gliozzi dynamics for simulations of Potts models in the Fortuin-Kasteleyn representation. Physical Review E, 2002, 66, 057101.	2.1	14
80	Surprising convergence of the Monte Carlo renormalization group for the three-dimensional Ising model. Physical Review E, 2017, 95, 053305.	2.1	14
81	Comparison of canonical and microcanonical definitions of entropy. Physica A: Statistical Mechanics and Its Applications, 2017, 467, 474-489.	2.6	14
82	Antiferromagnetic order in cubic crystals. Journal of Physics C: Solid State Physics, 1973, 6, 3763-3773.	1.5	13
83	"Critical" Slowing Down at the Roughening Transition. Physical Review Letters, 1976, 37, 1478-1481.	7.8	13
84	Monte Carlo Renormalization-Group Transformations in Momentum Space. Physical Review Letters, 1981, 47, 1159-1162.	7.8	13
85	Monte Carlo renormalization-group study of the rectangular Ising ferromagnet: Universality and a fixed line. Physical Review B, 1984, 30, 2787-2794.	3.2	13
86	Choosing a Definition of Entropy that Works. Foundations of Physics, 2012, 42, 582-593.	1.3	13
87	Continuity of the entropy of macroscopic quantum systems. Physical Review E, 2015, 92, 052110.	2.1	13
88	Monte Carlo renormalization group. Journal of Statistical Physics, 1984, 34, 963-973.	1.2	12
89	Magnetic Order in the Heisenberg Model. Physical Review Letters, 1974, 32, 1439-1442.	7.8	11
90	Modified Callen decoupling in the Green's-function theory of Heisenberg antiferromagnets. Physical Review B, 1975, 11, 1935-1942.	3.2	11

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91	Exponent Inequalities at the Roughening Transition. Physical Review Letters, 1977, 38, 615-617.	7.8	11
92	How the maximum step size in Monte Carlo simulations should be adjusted. Physics Procedia, 2011, 15, 81-86.	1.2	11
93	Probability, Entropy, and Gibbsâ€™ Paradox(es). Entropy, 2018, 20, 450.	2.2	11
94	Green's Functions of the Face-Centered-Cubic Heisenberg Ferromagnet with Second-Neighbor Interactions. Physical Review B, 1972, 6, 2860-2875.	3.2	10
95	The surprising effectiveness of the Migdal-Kadanoff renormalization scheme. Physics Letters, Section A: General, Atomic and Solid State Physics, 1979, 69, 382-384.	2.1	10
96	Monte Carlo and high-temperature-expansion calculations of a spin-glass effective Hamiltonian. Physical Review B, 1988, 38, 9086-9092.	3.2	10
97	Unnormalized probability: A different view of statistical mechanics. American Journal of Physics, 2014, 82, 941-946.	0.7	10
98	The definition of the thermodynamic entropy in statistical mechanics. Physica A: Statistical Mechanics and Its Applications, 2017, 467, 67-73.	2.6	10
99	Calculation of the correlation time for motional narrowing of the 181Ta MÃ¶ssbauer line. Solid State Communications, 1976, 18, 541-543.	1.9	9
100	Monte Carlo renormalizationâ€group studies of critical phenomena. Journal of Applied Physics, 1982, 53, 1920-1924.	2.5	9
101	Swendsen Responds. Physical Review Letters, 1986, 56, 2333-2333.	7.8	9
102	Evaluation of experimental parameters for growth of homogeneous solid solutions. Journal of Crystal Growth, 2001, 233, 609-617.	1.5	9
103	The ambiguity of â€œdistinguishabilityâ€•in statistical mechanics. American Journal of Physics, 2015, 83, 545-554.	0.7	9
104	Thermodynamic properties of surface steps. Journal of Crystal Growth, 1976, 36, 11-14.	1.5	8
105	Type-II order in face-centered-cubic Heisenberg antiferromagnets. Physical Review B, 1976, 13, 3912-3915.	3.2	8
106	Intermediate-temperature ordering in a three-state antiferromagnetic Potts model. Physical Review B, 1998, 58, 9125-9130.	3.2	7
107	Duality relations for models with quenched random interactions. Physical Review B, 1981, 24, 313-318.	3.2	6
108	Critical behavior of the three-state Potts model: Monte Carlo renormalization group. Physical Review B, 1983, 28, 3897-3903.	3.2	6

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109	Calculation of effective Hamiltonians for renormalized or non-Hamiltonian systems. Physical Review E, 2001, 63, 066128.	2.1	6
110	Importance of multispin couplings in renormalized Hamiltonians. Physical Review E, 2002, 66, 056106.	2.1	6
111	A model of motor performance during surface penetration: from physics to voluntary control. Experimental Brain Research, 2013, 230, 251-260.	1.5	6
112	The Inverse Ising Problem. Physics Procedia, 2014, 57, 99-103.	1.2	6
113	Improved variational wave function for the two-dimensional spin-1/2 Heisenberg antiferromagnet. Physical Review B, 1994, 49, 3303-3307.	3.2	5
114	A Bayesian analysis of Monte Carlo correlation times for the two-dimensional Ising model. Physica A: Statistical Mechanics and Its Applications, 2003, 323, 487-503.	2.6	5
115	Numerical computation for teaching quantum statistics. American Journal of Physics, 2013, 81, 866-872.	0.7	5
116	Comment on the linewidth of the nuclear acoustic resonance in bcc metals with hydrogen interstitials. Physical Review B, 1976, 13, 5096-5098.	3.2	4
117	First order phase transitions and the three-state potts model. Journal of Magnetism and Magnetic Materials, 1980, 15-18, 399-400.	2.3	4
118	Response to Nagle?s Criticism of My Proposed Definition of the Entropy. Journal of Statistical Physics, 2004, 117, 1063-1070.	1.2	4
119	Computer simulations at the fixed point using an inverse renormalization group transformation. Physica A: Statistical Mechanics and Its Applications, 2005, 346, 387-399.	2.6	4
120	Finite thermal reservoirs and the canonical distribution. Physica A: Statistical Mechanics and Its Applications, 2017, 484, 1-10.	2.6	4
121	Nonmagnetic Impurity in a Heisenberg Ferromagnet with First- and Second-Neighbor Exchange. Physical Review B, 1972, 6, 1903-1907.	3.2	3
122	Does the face-centered-cubic, nearest-neighbor Heisenberg antiferromagnet have a non-zero NÃ©el temperature?. Physics Letters, Section A: General, Atomic and Solid State Physics, 1973, 46, 63-64.	2.1	3
123	Solution of a truncated Kirkwood-Salsburg equation for the hard-sphere gas. Physical Review A, 1976, 13, 872-877.	2.5	3
124	Monte Carlo Renormalization Group. , 1982, , 395-422.		3
125	Efficiency and time-dependent cross correlations in multivariable Monte Carlo updating. Physical Review E, 2013, 88, 053301.	2.1	3
126	Monte Carlo renormalization-group analysis of percolation. Physical Review E, 2013, 88, 043307.	2.1	3

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127	Monte Carlo renormalization-group studies of two-dimensional models. Surface Science, 1983, 125, 104-115.	1.9	2
128	Anisotropic renormalization-group transformations. Physical Review B, 1988, 37, 3531-3533.	3.2	2
129	Acceleration methods for Monte Carlo computer simulations. Computer Physics Communications, 1991, 65, 281-288.	7.5	2
130	The adaptive integration method for calculating general free energy functions. Computer Physics Communications, 2005, 169, 274-276.	7.5	2
131	In defense of thermodynamics. Journal of Thermal Analysis and Calorimetry, 2012, 110, 1547-1551.	3.6	2
132	Cluster simulations of multi-spin Potts models. Journal of Statistical Mechanics: Theory and Experiment, 2015, 2015, P01026.	2.3	2
133	0.234: The Myth of a Universal Acceptance Ratio for Monte Carlo Simulations. Physics Procedia, 2015, 68, 120-124.	1.2	2
134	Detecting multi-spin interactions in the inverse Ising problem. Physica A: Statistical Mechanics and Its Applications, 2017, 483, 293-298.	2.6	2
135	HISTOGRAM ANALYSIS OF MONTE CARLO SIMULATION. International Journal of Modern Physics C, 1996, 07, 281-285.	1.7	1
136	Bayesian analysis of series expansions. Computer Physics Communications, 1999, 121-122, 1-4.	7.5	1
137	Footnotes to the history of statistical mechanics: In Boltzmannâ€™s words. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 2898-2901.	2.6	1
138	Guaranteeing total balance in Metropolis algorithm Monte Carlo simulations. Physica A: Statistical Mechanics and Its Applications, 2013, 392, 6288-6299.	2.6	1
139	Monte Carlo renormalization-group calculation for the d=3 Ising model using a modified transformation. Physical Review E, 2021, 104, 025311.	2.1	1
140	Thermodynamic Identities. , 2012, , 138-155.		1
141	The interpretation of a theorem by Lebowitz. Journal of Statistical Physics, 1973, 8, 293-294.	1.2	0
142	Acceleration Algorithms in Monte Carlo Simulations in Statistical Physics. International Journal of Modern Physics C, 1991, 02, 201-208.	1.7	0
143	Computational statistical physics in the 21st century. Computer Physics Communications, 2002, 146, 135-136.	7.5	0
144	The Development of Cluster and Histogram Methods. AIP Conference Proceedings, 2003, , .	0.4	0

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145	Using computation to teach the properties of the van der Waals fluid. American Journal of Physics, 2013, 81, 776-781.	0.7	0
146	New Monte Carlo Methods for Improved Efficiency of Computer Simulations in Statistical Mechanics. Topics in Applied Physics, 1992, , 75-91.	0.8	0