Alexander K Hartmann

List of Publications by Year
in descending order

113 papers	2,729 citations	186265 28 h-index	243625 44 g-index
129 all docs	129 docs citations	129 times ranked	1193 citing authors

#	Article	IF	Citations
1	Number of Guards Needed by a Museum: A Phase Transition in Vertex Covering of Random Graphs. Physical Review Letters, 2000, 84, 6118-6121.	7.8	156
2	Lower critical dimension of Ising spin glasses. Physical Review B, 2001, 64, .	3.2	120
3	Scaling of stiffness energy for three-dimensional±JIsing spin glasses. Physical Review E, 1999, 59, 84-87.	2.1	86
4	Low-temperature behavior of two-dimensional Gaussian Ising spin glasses. Physical Review B, 2004, 70, .	3.2	83
5	Specific-heat exponent of random-field systems via ground-state calculations. Physical Review B, 2001, 64, .	3.2	71
6	Sampling rare events: Statistics of local sequence alignments. Physical Review E, 2002, 65, 056102.	2.1	71
7	Conformal Invariance and Stochastic Loewner Evolution Processes in Two-Dimensional Ising Spin Glasses. Physical Review Letters, 2006, 97, 267202.	7.8	65
8	FINDING LOW-TEMPERATURE STATES WITH PARALLEL TEMPERING, SIMULATED ANNEALING AND SIMPLE MONTE CARLO. International Journal of Modern Physics C, 2003, 14, 285-302.	1.7	59
9	Minimal vertex covers on finite-connectivity random graphs: A hard-sphere lattice-gas picture. Physical Review E, 2001, 63, 056127.	2.1	58
10	Random number generators for massively parallel simulations on GPU. European Physical Journal: Special Topics, 2012, 210, 53-71.	2.6	52
11	Calculation of ground states of four-dimensional±JIsing spin glasses. Physical Review E, 1999, 60, 5135-5138.	2.1	49
12	Stiffness exponent of two-dimensional Ising spin glasses for nonperiodic boundary conditions using aspect-ratio scaling. Physical Review B, 2002, 66, .	3.2	48
13	On Large Deviation Properties of Erdï¿½s?Rï¿½nyi Random Graphs. Journal of Statistical Physics, 2004, 117, 387-426.	1.2	48
14	Ground-state behavior of the three-dimensional±Jrandom-bond Ising model. Physical Review B, 1999, 59, 3617-3623.	3.2	46
15	Large-scale low-energy excitations in the two-dimensional Ising spin glass. Physical Review B, 2002, 66, .	3.2	43
16	Typical Solution Time for a Vertex-Covering Algorithm on Finite-Connectivity Random Graphs. Physical Review Letters, 2001, 86, 1658-1661.	7.8	42
17	Domain-wall energies and magnetization of the two-dimensional random-bond Ising model. Physical Review B, 2004, 70, .	3.2	42
18	Large-deviation properties of largest component for random graphs. European Physical Journal B, 2011, 84, 627-634.	1.5	42

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19	Cluster-exact approximation of spin glass groundstates. Physica A: Statistical Mechanics and Its Applications, 1996, 224, 480-488.	2.6	39
20	Ground-state clusters of two-, three-, and four-dimensionalÂ±JIsing spin glasses. Physical Review E, 2000, 63, 016106.	2.1	37
21	Fractal dimension of domain walls in two-dimensional Ising spin glasses. Physical Review B, 2007, 76, .	3.2	36
22	High-precision work distributions for extreme nonequilibrium processes in large systems. Physical Review E, 2014, 89, 052103.	2.1	36
23	Spin Domains Generate Hierarchical Ground State Structure inJ=Â±1Spin Glasses. Physical Review Letters, 2001, 86, 3148-3151.	7.8	34
24	Calculation of Partition Functions by Measuring Component Distributions. Physical Review Letters, 2005, 94, 050601.	7.8	34
25	High-precision simulation of the height distribution for the KPZ equation. Europhysics Letters, 2018, 121, 67004.	2.0	33
26	Corrections to Scaling are Large for Droplets in Two-Dimensional Spin Glasses. Physical Review Letters, 2003, 90, 127201.	7.8	32
27	miR-96 is required for normal development of the auditory hindbrain. Human Molecular Genetics, 2018, 27, 860-874.	2.9	31
28	Energy size effects of two-dimensional Ising spin glasses. Physical Review B, 2004, 70, .	3.2	30
29	Critical behavior of the random-field Ising model at and beyond the upper critical dimension. Physical Review B, 2011, 83, .	3.2	30
30	Local sequence alignments statistics: deviations from Gumbel statistics in the rare-event tail. Algorithms for Molecular Biology, 2007, 2, 9.	1.2	29
31	Distribution of diameters for ErdÅ‘s-RÃ©nyi random graphs. Physical Review E, 2018, 97, 032128.	2.1	28
32	The convex hull of the run-and-tumble particle in a plane. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 053401.	2.3	28
33	Critical exponents of four-dimensional random-field Ising systems. Physical Review B, 2002, 65, .	3.2	27
34	Statistical mechanics of the vertex-cover problem. Journal of Physics A, 2003, 36, 11069-11093.	1.6	27
35	Convex hulls of random walks: Large-deviation properties. Physical Review E, 2015, 91, 052104.	2.1	27
36	Large-deviation properties of resilience of power grids. New Journal of Physics, 2015, 17, 015005.	2.9	26

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37	Clustering analysis of the ground-state structure of the vertex-cover problem. Physical Review E, 2004, 70, 066120.	2.1	25
38	Ground-state structure of diluted antiferromagnets and random field systems. Physica A: Statistical Mechanics and Its Applications, 1998, 248, 1-20.	2.6	24
39	Statistical mechanics perspective on the phase transition in vertex covering of finite-connectivity random graphs. Theoretical Computer Science, 2001, 265, 199-225.	0.9	23
40	Probing tails of energy distributions using importance-sampling in the disorder with a guiding function. Journal of Statistical Mechanics: Theory and Experiment, 2006, 2006, P04005-P04005.	2.3	20
41	Droplets in the two-dimensional$\pm J$Ising spin glass. Physical Review B, 2008, 77, .	3.2	19
42	Generating droplets in two-dimensional Ising spin glasses using matching algorithms. Physical Review B, 2004, 69, .	3.2	18
43	Ground States of Two-Dimensional Ising Spin Glasses: Fast Algorithms, Recent Developments and a Ferromagnet-Spin Glass Mixture. Journal of Statistical Physics, 2011, 144, 519-540.	1.2	18
44	Large-deviation properties of resilience of transportation networks. European Physical Journal B, 2014, 87, 1.	1.5	18
45	Large-deviations of the basin stability of power grids. Chaos, 2019, 29, 113103.	2.5	18
46	Negative-weight percolation. New Journal of Physics, 2008, 10, 043039.	2.9	17
47	Minimum-free-energy distribution of RNA secondary structures: Entropic and thermodynamic properties of rare events. Physical Review E, 2010, 82, 021902.	2.1	17
48	Critical behavior of the random-field Ising magnet with long-range correlated disorder. Physical Review B, 2011, 84, .	3.2	17
49	Bias in generation of random graphs. Physical Review E, 2012, 85, 026101.	2.1	15
50	Analysis of the phase transition in the two-dimensional Ising ferromagnet using a Lempel-Ziv string-parsing scheme and black-box data-compression utilities. Physical Review E, 2015, 91, 023306.	2.1	15
51	Large deviations of convex hulls of self-avoiding random walks. Physical Review E, 2018, 97, 062159.	2.1	15
52	Distribution of shortest path lengths in subcritical Erdős-Rényi networks. Physical Review E, 2018, 98, 012301.	2.1	15
53	Optimal paths of nonequilibrium stochastic fields: The Kardar-Parisi-Zhang interface as a test case. Physical Review Research, 2019, 1, .	3.6	15
54	First excitations in two- and three-dimensional random-field Ising systems. Journal of Statistical Mechanics: Theory and Experiment, 2008, 2008, P02012.	2.3	14

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55	Sampling fractional Brownian motion in presence of absorption: A Markov chain method. Physical Review E, 2013, 88, 022119.	2.1	14
56	Diluted antiferromagnets in a field seem to be in a different universality class than the random-field Ising model. Physical Review B, 2013, 88, .	3.2	14
57	Scaling behavior of domain walls at theT=0ferromagnet to spin-glass transition. Physical Review B, 2009, 79, .	3.2	13
58	Large-deviation properties of the largest biconnected component for random graphs. European Physical Journal B, 2019, 92, 1.	1.5	13
59	Upper critical dimension of the negative-weight percolation problem. Physical Review E, 2010, 81, 051108.	2.1	12
60	Numerical solution-space analysis of satisfiability problems. Physical Review E, 2010, 82, 056702.	2.1	12
61	Phase transition for cutting-plane approach to vertex-cover problem. Physical Review E, 2012, 86, 041128.	2.1	12
62	Convex hulls of random walks in higher dimensions: A large-deviation study. Physical Review E, 2017, 96, 062101.	2.1	12
63	Determining energy barriers by iterated optimization: The two-dimensional Ising spin glass. Physical Review B, 2006, 73, .	3.2	11
64	Monodominance in tropical forests: modelling reveals emerging clusters and phase transitions. Journal of the Royal Society Interface, 2016, 13, 20160123.	3.4	11
65	Phase transitions of Traveling Salesperson problems solved with linear programming and cutting planes. Europhysics Letters, 2016, 113, 30004.	2.0	11
66	Phase transitions in diluted negative-weight percolation models. Physical Review E, 2009, 79, 031103.	2.1	10
67	Typical and large-deviation properties of minimum-energy paths on disordered hierarchical lattices. European Physical Journal B, 2013, 86, 1.	1.5	10
68	Nonequilibrium evolution of window overlaps in spin glasses. Physical Review B, 2015, 91, .	3.2	10
69	Convex hulls of multiple random walks: A large-deviation study. Physical Review E, 2016, 94, 052120.	2.1	10
70	Probing large deviations of the Kardar-Parisi-Zhang equation at short times with an importance sampling of directed polymers in random media. Physical Review E, 2020, 101, 012134.	2.1	10
71	Observing symmetry-broken optimal paths of the stationary Kardar-Parisi-Zhang interface via a large-deviation sampling of directed polymers in random media. Physical Review E, 2021, 104, 054125.	2.1	10
72	Information-theoretic approach to ground-state phase transitions for two- and three-dimensional frustrated spin systems. Physical Review E, 2013, 87, 022107.	2.1	9

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73	Rare-event properties of the Nagel-Schreckenberg model. Physical Review E, 2019, 100, 062301.	2.1	9
74	Solution-space structure of (some) optimization problems. Journal of Physics: Conference Series, 2008, 95, 012011.	0.4	8
75	Mean-field behavior of the negative-weight percolation model on random regular graphs. Physical Review E, 2011, 84, 041106.	2.1	8
76	Large-deviation properties of the largest 2-core component for random graphs. European Physical Journal: Special Topics, 2017, 226, 567-579.	2.6	8
77	Large deviations of the length of the longest increasing subsequence of random permutations and random walks. Physical Review E, 2019, 99, 042104.	2.1	8
78	Ordered phase in the two-dimensional randomly coupled ferromagnet. Physical Review B, 2001, 63, .	3.2	7
79	Dependence of RNA secondary structure on the energy model. Physical Review E, 2005, 71, 021913.	2.1	7
80	Low-energy excitations in the three-dimensional random-field Ising model. European Physical Journal B, 2009, 72, 619-627.	1.5	7
81	Fragmentation properties of two-dimensional proximity graphs considering random failures and targeted attacks. Physical Review E, 2016, 94, 062125.	2.1	7
82	Ground-state and domain-wall energies in the spin-glass region of the two-dimensional±Jrandom-bond Ising model. Physical Review B, 2007, 75, .	3.2	6
83	Configurational statistics of densely and fully packed loops in the negative-weight percolation model. European Physical Journal B, 2011, 80, 155-165.	1.5	6
84	Exact ground states of one-dimensional long-range random-field Ising magnets. Physical Review B, 2014, 90, .	3.2	6
85	Aging in the three-dimensional random-field Ising model. Physical Review E, 2017, 96, 013315.	2.1	6
86	Ground-state energy of noninteracting fermions with a random energy spectrum. Europhysics Letters, 2018, 124, 40005.	2.0	6
87	Critical behavior of the Anderson model on the Bethe lattice via a large-deviation approach. Physical Review B, 2022, 105, .	3.2	6
88	No spin-glass transition in the mobile-bond model. Physical Review B, 2003, 67, .	3.2	5
89	Reduction of two-dimensional dilute Ising spin glasses. Physical Review B, 2005, 72, .	3.2	5
90	Analysis of the loop length distribution for the negative-weight percolation problem in dimensionsd=2throughd=6. Physical Review E, 2012, 86, 056708.	2.1	5

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91	Paths in the minimally weighted path model are incompatible with Schramm-Loewner evolution. Physical Review E, 2013, 87, .	2.1	5
92	Large Deviations of Convex Hulls of the "True" Self-Avoiding Random Walk. Journal of Physics: Conference Series, 2019, 1290, 012029.	0.4	5
93	Percolation of Fortuin-Kasteleyn clusters for the random-bond Ising model. Physical Review E, 2020, 102, 012131.	2.1	5
94	Number of longest increasing subsequences. Physical Review E, 2020, 101, 062109.	2.1	5
95	Excitations in high-dimensional random-field Ising magnets. Physical Review B, 2012, 85, .	3.2	4
96	Biased and greedy random walks on two-dimensional lattices with quenched randomness: The greedy ant within a disordered environment. Physical Review E, 2013, 88, 062101.	2.1	4
97	Asymptotic behavior of the length of the longest increasing subsequences of random walks. Physical Review E, 2020, 101, 032102.	2.1	4
98	Revisiting the scaling of the specific heat of the three-dimensional random-field Ising model. European Physical Journal B, 2016, 89, 1.	1.5	3
99	Ordering behavior of the two-dimensional Ising spin glass with long-range correlated disorder. Physical Review E, 2021, 103, 042117.	2.1	3
100	Similarity of extremely rare nonequilibrium processes to equilibrium processes. Physical Review E, 2021, 104, 034407.	2.1	3
101	Large deviations of a susceptible-infected-recovered model around the epidemic threshold. Physical Review E, 2022, 105, 034313.	2.1	3
102	Matrix-power energy-landscape transformation for finding NP-hard spin-glass ground states. Journal of Global Optimization, 2015, 61, 183-192.	1.8	2
103	Using Triplet Ordering Preferences for Estimating Causal Effects in the Analysis of Gene Expression Data. PLoS ONE, 2017, 12, e0170514.	2.5	2
104	Directed negative-weight percolation. Physical Review E, 2019, 100, 022113.	2.1	2
105	Replica symmetry and replica symmetry breaking for the traveling salesperson problem. Physical Review E, 2019, 100, 032135.	2.1	2
106	Large deviations of a random walk model with emerging territories. Physical Review E, 2020, 102, 062141.	2.1	2
107	Non-trivial overlaps and ultrametricity for directed polymers in random media. Europhysics Letters, 0, , .	2.0	2
108	Exact ground states of the Kaya-Berker model. Physical Review E, 2018, 98, 012108.	2.1	1

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109	Phase transition for parameter learning of hidden Markov models. Physical Review E, 2021, 104, 044105.	2.1	1
110	Phase transition in the bipartite z-matching. European Physical Journal B, 2021, 94, 1.	1.5	1
111	Estimating causal effects using triplet orderings: scale free graphs and dependence on the node order. Journal of Physics: Conference Series, 2018, 1036, 012002.	0.4	0
112	From Spin Glasses to Negative-Weight Percolation. Entropy, 2019, 21, 193.	2.2	0
113	Large deviations of connected components in the stochastic block model. Physical Review E, 2020, 102, 052108.	2.1	0