

Lenka Zdeborova

List of Publications by Year in descending order

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92
papers

5,626
citations

172457

29
h-index

82547

72
g-index

92
all docs

92
docs citations

92
times ranked

3652
citing authors

#	ARTICLE	IF	CITATIONS
1	Machine learning and the physical sciences. <i>Reviews of Modern Physics</i> , 2019, 91, .	45.6	1,245
2	Asymptotic analysis of the stochastic block model for modular networks and its algorithmic applications. <i>Physical Review E</i> , 2011, 84, 066106.	2.1	427
3	Spectral redemption in clustering sparse networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 20935-20940.	7.1	392
4	Gibbs states and the set of solutions of random constraint satisfaction problems. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 10318-10323.	7.1	390
5	Inference and Phase Transitions in the Detection of Modules in Sparse Networks. <i>Physical Review Letters</i> , 2011, 107, 065701.	7.8	248
6	Phase transitions in the coloring of random graphs. <i>Physical Review E</i> , 2007, 76, 031131.	2.1	227
7	Statistical physics of inference: thresholds and algorithms. <i>Advances in Physics</i> , 2016, 65, 453-552.	14.4	211
8	Percolation on Sparse Networks. <i>Physical Review Letters</i> , 2014, 113, 208702.	7.8	185
9	Probabilistic reconstruction in compressed sensing: algorithms, phase diagrams, and threshold achieving matrices. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2012, 2012, P08009.	2.3	178
10	Network dismantling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 12368-12373.	7.1	167
11	Fast and simple decycling and dismantling of networks. <i>Scientific Reports</i> , 2016, 6, 37954.	3.3	101
12	The number of matchings in random graphs. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2006, 2006, P05003-P05003.	2.3	91
13	Optimal errors and phase transitions in high-dimensional generalized linear models. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 5451-5460.	7.1	88
14	Hiding Quiet Solutions in Random Constraint Satisfaction Problems. <i>Physical Review Letters</i> , 2009, 102, 238701.	7.8	87
15	On convergence of approximate message passing. , 2014, , .		70
16	New tool in the box. <i>Nature Physics</i> , 2017, 13, 420-421.	16.7	70
17	Model selection for degree-corrected block models. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2014, 2014, P05007.	2.3	69
18	Generalization of the cavity method for adiabatic evolution of Gibbs states. <i>Physical Review B</i> , 2010, 81, .	3.2	57

#	ARTICLE	IF	CITATIONS
19	Constrained low-rank matrix estimation: phase transitions, approximate message passing and applications. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2017, 2017, 073403.	2.3	52
20	Elusive Spin-Glass Phase in the Random Field Ising Model. <i>Physical Review Letters</i> , 2010, 104, 207208.	7.8	49
21	Constraint satisfaction problems with isolated solutions are hard. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2008, 2008, P12004.	2.3	48
22	Locked Constraint Satisfaction Problems. <i>Physical Review Letters</i> , 2008, 101, 078702.	7.8	44
23	Statistical and computational phase transitions in spiked tensor estimation. , 2017, , .		44
24	Information-theoretic thresholds from the cavity method. <i>Advances in Mathematics</i> , 2018, 333, 694-795.	1.1	44
25	Phase diagram of the 1-in-3 satisfiability problem. <i>Physical Review E</i> , 2007, 76, 011101.	2.1	41
26	Modeling the Influence of Data Structure on Learning in Neural Networks: The Hidden Manifold Model. <i>Physical Review X</i> , 2020, 10, .	8.9	40
27	Random Subcubes as a Toy Model for Constraint Satisfaction Problems. <i>Journal of Statistical Physics</i> , 2008, 131, 1121-1138.	1.2	39
28	MMSE of probabilistic low-rank matrix estimation: Universality with respect to the output channel. , 2015, , .		39
29	Understanding deep learning is also a job for physicists. <i>Nature Physics</i> , 2020, 16, 602-604.	16.7	39
30	Phase transitions in semisupervised clustering of sparse networks. <i>Physical Review E</i> , 2014, 90, 052802.	2.1	37
31	The condensation transition in random hypergraph 2-coloring. , 2012, , .		34
32	Entropy and mutual information in models of deep neural networks*. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2019, 2019, 124014.	2.3	34
33	Lattice Model for Colloidal Gels and Glasses. <i>Physical Review Letters</i> , 2008, 101, 165702.	7.8	33
34	Exhaustive enumeration unveils clustering and freezing in the random 3-satisfiability problem. <i>Physical Review E</i> , 2008, 78, 040101.	2.1	29
35	Variational free energies for compressed sensing. , 2014, , .		28
36	Spectral detection on sparse hypergraphs. , 2015, , .		28

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37	Statistical physics of hard optimization problems. <i>Acta Physica Slovaca</i> , 2009, 59, .	1.4	27
38	A conjecture on the maximum cut and bisection width in random regular graphs. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2010, 2010, P02020.	2.3	25
39	On melting dynamics and the glass transition. II. Glassy dynamics as a melting process. <i>Journal of Chemical Physics</i> , 2011, 134, 034513.	3.0	25
40	Quiet Planting in the Locked Constraint Satisfaction Problems. <i>SIAM Journal on Discrete Mathematics</i> , 2011, 25, 750-770.	0.8	24
41	Comparative study for inference of hidden classes in stochastic block models. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2012, 2012, P12021.	2.3	24
42	Spectral detection in the censored block model. , 2015, , .		24
43	Multi-layer generalized linear estimation. , 2017, , .		24
44	Storage capacity in symmetric binary perceptrons. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2019, 52, 294003.	2.1	23
45	Typology of phase transitions in Bayesian inference problems. <i>Physical Review E</i> , 2019, 99, 042109.	2.1	23
46	The hard-core model on random graphs revisited. <i>Journal of Physics: Conference Series</i> , 2013, 473, 012021.	0.4	19
47	Bayesian signal reconstruction for 1-bit compressed sensing. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2014, 2014, P11015.	2.3	19
48	On melting dynamics and the glass transition. I. Glassy aspects of melting dynamics. <i>Journal of Chemical Physics</i> , 2011, 134, 034512.	3.0	18
49	No spin glass phase in the ferromagnetic random-field random-temperature scalar Ginzburg-Landau model. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2011, 44, 042003.	2.1	18
50	Phase diagram and approximate message passing for blind calibration and dictionary learning. , 2013, , .		17
51	High-temperature expansions and message passing algorithms. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2019, 2019, 113301.	2.3	17
52	Glassy Nature of the Hard Phase in Inference Problems. <i>Physical Review X</i> , 2019, 9, .	8.9	16
53	Dynamics of stochastic gradient descent for two-layer neural networks in the teacher-student setup*. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2020, 2020, 124010.	2.3	16
54	Machine learning and statistical physics: preface. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2020, 53, 500401.	2.1	16

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55	Phase transitions and optimal algorithms in high-dimensional Gaussian mixture clustering. , 2016, , .		15
56	Approximate survey propagation for statistical inference. Journal of Statistical Mechanics: Theory and Experiment, 2019, 2019, 023401.	2.3	15
57	The large deviations of the whitening process in random constraint satisfaction problems. Journal of Statistical Mechanics: Theory and Experiment, 2016, 2016, 053401.	2.3	14
58	Generalisation error in learning with random features and the hidden manifold model*. Journal of Statistical Mechanics: Theory and Experiment, 2021, 2021, 124013.	2.3	14
59	Belief propagation for graph partitioning. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 285003.	2.1	13
60	Information-theoretic thresholds from the cavity method. , 2017, , .		13
61	Marvels and Pitfalls of the Langevin Algorithm in Noisy High-Dimensional Inference. Physical Review X, 2020, 10, .	8.9	13
62	The committee machine: computational to statistical gaps in learning a two-layers neural network. Journal of Statistical Mechanics: Theory and Experiment, 2019, 2019, 124023.	2.3	12
63	Stochasticity helps to navigate rough landscapes: comparing gradient-descent-based algorithms in the phase retrieval problem. Machine Learning: Science and Technology, 2021, 2, 035029.	5.0	12
64	Performance of simulated annealing in p -spin glasses. Journal of Physics: Conference Series, 2013, 473, 012022.	0.4	11
65	Following states in temperature in the spherical s - p -spin glass model. Journal of Statistical Mechanics: Theory and Experiment, 2012, 2012, P07002.	2.3	9
66	Reweight Belief Propagation and Quiet Planting for Random K-SAT. Journal of Satisfiability, Boolean Modeling and Computation, 2014, 8, 149-171.	1.2	9
67	Random-field p -spin-glass model on regular random graphs. Journal of Physics A: Mathematical and Theoretical, 2011, 44, 185002.	2.1	8
68	Phase diagram of matrix compressed sensing. Physical Review E, 2016, 94, 062136.	2.1	8
69	Phase transitions in the q -coloring of random hypergraphs. Journal of Physics A: Mathematical and Theoretical, 2017, 50, 505002.	2.1	8
70	Minimal sets to destroy the k -core in random networks. Physical Review E, 2019, 99, 022310.	2.1	8
71	Decoding From Pooled Data: Phase Transitions of Message Passing. IEEE Transactions on Information Theory, 2019, 65, 572-585.	2.4	8
72	The Spiked Matrix Model With Generative Priors. IEEE Transactions on Information Theory, 2021, 67, 1156-1181.	2.4	6

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73	Dynamics and termination cost of spatially coupled mean-field models. <i>Physical Review E</i> , 2014, 89, 012102.	2.1	5
74	Blind sensor calibration using approximate message passing. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2015, 2015, P11013.	2.3	5
75	Recovery thresholds in the sparse planted matching problem. <i>Physical Review E</i> , 2020, 102, 022304.	2.1	5
76	Adversarial satisfiability problem. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2011, 2011, P03023.	2.3	4
77	Clustering from sparse pairwise measurements. , 2016, , .		4
78	Decoding from Pooled Data: Sharp Information-Theoretic Bounds. <i>SIAM Journal on Mathematics of Data Science</i> , 2019, 1, 161-188.	1.8	4
79	On the universality of noiseless linear estimation with respect to the measurement matrix. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2020, 53, 164001.	2.1	4
80	Replica Trick with Real Replicas: A Way to Build in Thermodynamic Homogeneity. <i>Progress of Theoretical Physics Supplement</i> , 2005, 157, 99-102.	0.1	3
81	Aligning random graphs with a sub-tree similarity message-passing algorithm. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2022, 2022, 063401.	2.3	3
82	Circular coloring of random graphs: statistical physics investigation. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2016, 2016, 083303.	2.3	2
83	Spectral bounds for the Ising ferromagnet on an arbitrary given graph. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2017, 2017, 053403.	2.3	2
84	Multilayer Modularity Belief Propagation to Assess Detectability of Community Structure. <i>SIAM Journal on Mathematics of Data Science</i> , 2020, 2, 872-900.	1.8	2
85	Thresholds of descending algorithms in inference problems. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2020, 2020, 034004.	2.3	2
86	The planted k-factor problem. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2021, 54, 175002.	2.1	2
87	Decoding from pooled data: Phase transitions of message passing. , 2017, , .		1
88	Fast Randomized Semi-Supervised Clustering. <i>Journal of Physics: Conference Series</i> , 2018, 1036, 012015.	0.4	1
89	Dense limit of the Dawidâ€™Skene model for crowdsourcing and regions of sub-optimality of message passing algorithms. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2020, 53, 124001.	2.1	1
90	Blind Calibration for Sparse Regression: A State Evolution Analysis. , 2019, , .		0

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91	Blind calibration for compressed sensing: state evolution and an online algorithm. Journal of Physics A: Mathematical and Theoretical, 2020, 53, 334004.	2.1	0
92	Large deviations of semisupervised learning in the stochastic block model. Physical Review E, 2022, 105, 034108.	2.1	0