Nicolas Macris

List of Publications by Year
in descending order

63 papers	**1,250** citations	394421 **19** h-index	454955 **30** g-index
63 all docs	**63** docs citations	**63** times ranked	**468** citing authors

#	Article	IF	Citations
1	Percolation in the signal to interference ratio graph. Journal of Applied Probability, 2006, 43, 552-562.	0.7	94
2	Optimal errors and phase transitions in high-dimensional generalized linear models. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 5451-5460.	7.1	88
3	Threshold Saturation for Spatially Coupled LDPC and LDGM Codes on BMS Channels. IEEE Transactions on Information Theory, 2014, 60, 7389-7415.	2.4	63
4	The adaptive interpolation method: a simple scheme to prove replica formulas in Bayesian inference. Probability Theory and Related Fields, 2019, 174, 1133-1185.	1.8	58
5	Efficient Quantum Algorithms for GHZ and <i>W</i> States, and Implementation on the IBM Quantum Computer. Advanced Quantum Technologies, 2019, 2, 1900015.	3.9	57
6	The mutual information in random linear estimation. , 2016, , .		52
7	Tight Bounds on the Capacity of Binary Input Random CDMA Systems. IEEE Transactions on Information Theory, 2010, 56, 5590-5613.	2.4	44
8	Coupled graphical models and their thresholds. , 2010, , .		41
9	Sharp Bounds on Generalized EXIT Functions. IEEE Transactions on Information Theory, 2007, 53, 2365-2375.	2.4	40
10	Griffithâ€"Kellyâ€"Sherman Correlation Inequalities: A Useful Tool in the Theory of Error Correcting Codes. IEEE Transactions on Information Theory, 2007, 53, 664-683.	2.4	39
11	Ground states and flux configurations of the two-dimensional Falicov-Kimball model. Journal of Statistical Physics, 1997, 86, 57-108.	1.2	38
12	The layered structure of tensor estimation and its mutual information. , 2017, , .		38
13	On the flux phase conjecture at half-filling: An improved proof. Journal of Statistical Physics, 1996, 85, 745-761.	1.2	35
14	Exact Solution of the Gauge Symmetric p-Spin Glass Model on a Complete Graph. Journal of Statistical Physics, 2009, 136, 205-230.	1.2	34
15	Entropy and mutual information in models of deep neural networks*. Journal of Statistical Mechanics: Theory and Experiment, 2019, 2019, 124014.	2.3	34
16	Mutual Information and Optimality of Approximate Message-Passing in Random Linear Estimation. IEEE Transactions on Information Theory, 2020, 66, 4270-4303.	2.4	34
17	The Mutual Information in Random Linear Estimation Beyond i.i.d. Matrices. , 2018, , .		32
18	The adaptive interpolation method for proving replica formulas. Applications to the Curieâ€"Weiss and Wigner spike models. Journal of Physics A: Mathematical and Theoretical, 2019, 52, 294002.	2.1	32

#	ARTICLE	IF	CITATIONS
19	Proof of threshold saturation for spatially coupled sparse superposition codes. , 2016, , .		28
20	Sharp Bounds for Optimal Decoding of Low-Density Parity-Check Codes. IEEE Transactions on Information Theory, 2009, 55, 4635-4650.	2.4	25
21	Chains of mean-field models. Journal of Statistical Mechanics: Theory and Experiment, 2012, 2012, P02011.	2.3	25
22	Approaching the Rate-Distortion Limit With Spatial Coupling, Belief Propagation, and Decimation. IEEE Transactions on Information Theory, 2015, 61, 3954-3979.	2.4	22
23	Spatial Coupling as a Proof Technique and Three Applications. IEEE Transactions on Information Theory, 2016, 62, 5281-5295.	2.4	22
24	Ground-state configurations of the one-dimensional Falicov-Kimball model. Physical Review B, 1993, 48, 4312-4324.	3.2	21
25	Lossy source coding via spatially coupled LDGM ensembles. , 2012, , .		21
26	Low-temperature phases of itinerant fermions interacting with classical phonons: The static Holstein model. Journal of Statistical Physics, 1994, 76, 91-123.	1.2	17
27	Universal Sparse Superposition Codes With Spatial Coupling and GAMP Decoding. IEEE Transactions on Information Theory, 2019, 65, 5618-5642.	2.4	17
28	Threshold Saturation in Spatially Coupled Constraint Satisfaction Problems. Journal of Statistical Physics, 2013, 150, 807-850.	1.2	16
29	Threshold saturation of spatially coupled sparse superposition codes for all memoryless channels. , 2016, , .		16
30	Exact solution for the conditional entropy of Poissonian LDPC codes over the Binary Erasure Channel. , 2007, , .		15
31	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
32	High-dimensional rank-one nonsymmetric matrix decomposition: the spherical case. , 2020, , .		12
33	Sharp Bounds for MAP Decoding of General Irregular LDPC Codes. , 2006, , .		11
34	On the concentration of the capacity for a code division multiple access system. , 2007, , .		10
35	How to prove the Maxwell conjecture via spatial coupling &#x2014; A proof of concept. , 2012, , .		9
36	Decay of Correlations for Sparse Graph Error Correcting Codes. SIAM Journal on Discrete Mathematics, 2011, 25, 956-988.	0.8	8

#	Article	IF	Citations
37	Bounds for Random Constraint Satisfaction Problems via Spatial Coupling. , 2016, , .		8
38	Extended edge states in finite Hall systems. Journal of Mathematical Physics, 2003, 44, 3734.	1.1	6
39	Displacement convexity — A useful framework for the study of spatially coupled codes. , 2013, , .		6
40	Adaptive Path Interpolation for Sparse Systems: Application to a Simple Censored Block Model. , 2018, , .		6
41	A remark on the decay of superconducting correlations in one- and two-dimensional hubbard models. Journal of Statistical Physics, 1994, 75, 1179-1184.	1.2	5
42	On kink states of ferromagnetic chains. Physica A: Statistical Mechanics and Its Applications, 2000, 279, 386-397.	2.6	5
43	Proof of replica formulas in the high noise regime for communication using LDGM codes. , 2008, , .		5
44	And now to something completely different: Spatial coupling as a proof technique. , 2013, , .		5
45	Analysis of coupled scalar systems by displacement convexity. , 2014, , .		5
46	The velocity of the decoding wave for spatially coupled codes on BMS channels. , 2016, , .		5
47	The Velocity of the Propagating Wave for Spatially Coupled Systems With Applications to LDPC Codes. IEEE Transactions on Information Theory, 2018, 64, 7113-7131.	2.4	5
48	Concentration of Multi-overlaps for Random Dilute Ferromagnetic Spin Models. Journal of Statistical Physics, 2020, 180, 534-557.	1.2	5
49	Exact solution of a p-spin model and its relationship to error correcting codes. , 2006, , .		4
50	Mutual information for low-rank even-order symmetric tensor estimation. Information and Inference, 2021, 10, 1167-1207.	1.6	4
51	Decay of correlations: An application to low-density parity check codes. , 2008, , .		3
52	Concentration of magnetization for linear block codes. , 2008, , .		3
53	Beyond the Bethe free energy of LDPC codes via polymer expansions. , 2012, , .		3
54	Atomic versus ionized states in many-particle systems and the spectra of reduced density matrices: A model study. Journal of Statistical Physics, 1992, 67, 909-956.	1.2	2

#	Article	IF	Citations
55	Decay of correlations in low density parity check codes: Low noise regime. , 2009, , .		1
56	The space of solutions of coupled XORSAT formulae. , 2013, , .		1
57	The velocity of the propagating wave for general coupled scalar systems. , 2016, , .		1
58	The Bethe Free Energy Allows to Compute the Conditional Entropy of Graphical Code Instances: A Proof From the Polymer Expansion. IEEE Transactions on Information Theory, 2016, 62, 4003-4023.	2.4	1
59	Mutual Information for the Stochastic Block Model by the Adaptive Interpolation Method. , 2019, , .		1
60	Displacement Convexity in Spatially Coupled Scalar Recursions. IEEE Transactions on Information Theory, 2019, 65, 604-621.	2.4	0
61	Adaptive Path Interpolation Method for Sparse Systems: Application to a Censored Block Model. IEEE Transactions on Information Theory, 2021, 67, 2093-2114.	2.4	0
62	Tensor Estimation With Structured Priors. IEEE Journal on Selected Areas in Information Theory, 2020, 1, 705-722.	2.5	0
63	Information theoretic limits of learning a sparse rule. Journal of Statistical Mechanics: Theory and Experiment, 2022, 2022, 044001.	2.3	0