Roberto Mulet

List of Publications by Year
in descending order

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Version: 2024-02-01

56 papers	730 citations	623734 14 h-index	580821 25 g-index
56 all docs	56 docs citations	56 times ranked	626 citing authors

#	Article	IF	Citations
1	Coloring Random Graphs. Physical Review Letters, 2002, 89, 268701.	7.8	166
2	Evolutionary prisonerâ€™s dilemma in random graphs. Physica D: Nonlinear Phenomena, 2005, 208, 257-265.	2.8	60
3	Optimally Designed Quantum Transport across Disordered Networks. Physical Review Letters, 2013, 111, 180601.	7.8	53
4	Estimating the size of the solution space of metabolic networks. BMC Bioinformatics, 2008, 9, 240.	2.6	33
5	Replica Cluster Variational Method. Journal of Statistical Physics, 2010, 139, 375-416.	1.2	25
6	Characterizing steady states of genome-scale metabolic networks in continuous cell cultures. PLoS Computational Biology, 2017, 13, e1005835.	3.2	22
7	Centrosymmetry enhances quantum transport in disordered molecular networks. New Journal of Physics, 2014, 16, 055002.	2.9	21
8	Maximum entropy and population heterogeneity in continuous cell cultures. PLoS Computational Biology, 2019, 15, e1006823.	3.2	20
9	Adaptive drivers in a model of urban traffic. Europhysics Letters, 2004, 65, 283-289.	2.0	18
10	Learning to Coordinate in a Complex and Nonstationary World. Physical Review Letters, 2001, 87, 208701.	7.8	17
11	Hâ^'Tphase diagram of the two-dimensional Ising model with exchange and dipolar interactions. Physical Review B, 2010, 81, .	3.2	17
12	Replica cluster variational method: the replica symmetric solution for the 2D random bond Ising model. Journal of Physics A: Mathematical and Theoretical, 2013, 46, 135001.	2.1	16
13	Identifying All Moiety Conservation Laws in Genome-Scale Metabolic Networks. PLoS ONE, 2014, 9, e100750.	2.5	16
14	Statistical theory of designed quantum transport across disordered networks. Physical Review E, 2015, 91, 042137.	2.1	15
15	The marriage problem: From the bar of appointments to the agency. Physica A: Statistical Mechanics and Its Applications, 2006, 364, 389-402.	2.6	14
16	Characterizing and improving generalized belief propagation algorithms on the 2D Edwardsâ€“Anderson model. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P12007.	2.3	14
17	Tumor reactive ringlet oxygen approach for Monte Carlo modeling of photodynamic therapy dosimetry. Journal of Photochemistry and Photobiology B: Biology, 2016, 160, 383-391.	3.8	13
18	Cell population heterogeneity driven by stochastic partition and growth optimality. Scientific Reports, 2019, 9, 9406.	3.3	12

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19	Inâ€silico media optimization for continuous cultures using genome scale metabolic networks: The case of CHOâ€K1. Biotechnology and Bioengineering, 2021, 118, 1884-1897.	3.3	12
20	Inference algorithm for finite-dimensional spin glasses: Belief propagation on the dual lattice. Physical Review E, 2011, 84, 046706.	2.1	10
21	Improving triplet-triplet-annihilation based upconversion systems by tuning their topological structure. Journal of Chemical Physics, 2014, 141, 184104.	3.0	10
22	Zero temperature solutions of the Edwards-Anderson model in random Husimi lattices. European Physical Journal B, 2008, 65, 117-129.	1.5	9
23	Message passing and Monte Carlo algorithms: Connecting fixed points with metastable states. Europhysics Letters, 2014, 107, 57011.	2.0	9
24	Reaction Networks as Systems for Resource Allocation: A Variational Principle for Their Non-Equilibrium Steady States. PLoS ONE, 2012, 7, e39849.	2.5	9
25	Choice of sample size for high transport critical current density in a granular superconductor: percolation versus self-field effects. Superconductor Science and Technology, 1997, 10, 758-762.	3.5	8
26	Langevin dynamics of fluctuation-induced first-order phase transitions: Self-consistent Hartree approximation. Physical Review B, 2007, 75, .	3.2	8
27	Universality of vortex avalanches in a type II superconductor with periodic pinning. Physica A: Statistical Mechanics and Its Applications, 2000, 275, 15-21.	2.6	7
28	Statistical mechanics of interacting metabolic networks. Physical Review E, 2020, 101, 042401.	2.1	7
29	Microenvironmental cooperation promotes early spread and bistability of a Warburg-like phenotype. Scientific Reports, 2017, 7, 3103.	3.3	6
30	In silico modelling of apoptosis induced by photodynamic therapy. Journal of Theoretical Biology, 2018, 436, 8-17.	1.7	6
31	Exploring the diluted ferromagneticp-spin model with a cavity master equation. Physical Review E, 2018, 97, 050103.	2.1	6
32	Theory of Nonequilibrium Local Search on Random Satisfaction Problems. Physical Review Letters, 2019, 123, 230602.	7.8	6
33	Penetration of circular vortices into a superconducting hollow cylinder. Journal of Superconductivity and Novel Magnetism, 1995, 8, 779-780.	0.5	5
34	Dynamics of systems with isotropic competing interactions in an external field: a Langevin approach. European Physical Journal B, 2011, 81, 309-319.	1.5	5
35	QUANTUM TRANSPORT IN BIOLOGICAL FUNCTIONAL UNITS: NOISE, DISORDER, STRUCTURE. Fluctuation and Noise Letters, 2013, 12, 1340007.	1.5	5
36	Photodynamic therapy: Toward a systemic computational model. Journal of Photochemistry and Photobiology B: Biology, 2018, 189, 201-213.	3.8	5

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37	Modeling functional resting-state brain networks through neural message passing on the human connectome. Neural Networks, 2020, 123, 52-69.	5.9	5
38	Flux Creep Simulations in Hard Superconductors for Different Critical State Models. Physica Status Solidi (B): Basic Research, 1994, 182, K31.	1.5	4
39	Random field Ising model in two dimensions: Bethe approximation, cluster variational method and message passing algorithms. Journal of Statistical Mechanics: Theory and Experiment, 2015, 2015, P07003.	2.3	4
40	Quantum cluster variational method and phase diagram of the quantum ferromagnetic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>J</mml:mi><mml:mn>1</mml:mn></mml:msub></mml:mrow></mml:ma Physical Review B, 2021, 104, .	3.2	4
41	Monte Carlo simulations of the equilibrium and non-equilibrium properties of low-dimensional magnetic systems with long-range dipolar interactions. Journal of Magnetism and Magnetic Materials, 2005, 294, e21-e25.	2.3	3
42	Stochastic approximation to the T cell mediated specific response of the immune system. Journal of Theoretical Biology, 2012, 295, 37-46.	1.7	3
43	Non-Arrhenius relaxation of the Heisenberg model with dipolar and anisotropic interactions. Journal of Magnetism and Magnetic Materials, 2012, 324, 128-134.	2.3	3
44	Quantum cluster variational method and message passing algorithms revisited. Physical Review B, 2018, 97, .	3.2	3
45	Bean-livingston barriers in ideal type-II superconductors hollow cylinders. Physica C: Superconductivity and Its Applications, 1995, 252, 295-302.	1.2	2
46	Monte Carlo simulations of Jc(T) dependences for ceramic YBaCuO and BSCCO superconductors. Physica C: Superconductivity and Its Applications, 1996, 262, 227-230.	1.2	2
47	Avalanche behavior in one-dimensional superconductors with a periodic distribution of pinning centers: a Monte Carlo approach. Physica C: Superconductivity and Its Applications, 1997, 281, 317-320.	1.2	2
48	Efficiency scaling of non-coherent upconversion in a one-dimensional model system. Journal of Chemical Physics, 2013, 138, 134505.	3.0	2
49	On the role of intrinsic noise on the response of the p53-Mdm2 module. Journal of Statistical Mechanics: Theory and Experiment, 2015, 2015, P09015.	2.3	2
50	Scattering theory of efficient quantum transport across finite networks. Journal of Physics B: Atomic, Molecular and Optical Physics, 2017, 50, 224003.	1.5	2
51	The azimuthal critical state of a superconducting hollow cylinder. Physica C: Superconductivity and Its Applications, 1997, 292, 39-47.	1.2	1
52	New universality class for the permeability problem in a percolation cluster. Physica A: Statistical Mechanics and Its Applications, 1999, 268, 1-5.	2.6	1
53	Illumination effects on the inter-grain barrier height distribution in CdTe thin films. Physica Status Solidi C: Current Topics in Solid State Physics, 2005, 2, 3734-3737.	0.8	1
54	Gauge-free cluster variational method by maximal messages and moment matching. Physical Review E, 2017, 95, 043308.	2.1	1

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55	Path-integral solution of MacArthurâ€™s resource-competition model for large ecosystems with random species-resources couplings. Chaos, 2021, 31, 103113.	2.5	0
56	Real-time dynamics in diluted quantum networks. Physical Review A, 2022, 105, .	2.5	0